



PRODUCT CATALOG 2022

# HVAC products and building automation systems

For more information, visit:  
[siemens.com/hvac-products](https://www.siemens.com/hvac-products)

5 years  
warranty  
on valves,  
actuators,  
sensors



**SIEMENS**

# **HVAC products and building automation systems**



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# Dear customers

Smart infrastructure from Siemens intelligently connects energy systems, buildings and industries to adapt and evolve the way we live and work. We work together with customers and partners to create an ecosystem that intuitively responds to the needs of people and helps customers to better use resources. It helps our customers to thrive, communities to progress and supports sustainable development.

With smart buildings, we're freeing ourselves from rigid, silent, passive structures and developing a new understanding of building technologies. We're creating a living



space that intuitively responds to people's needs and ultimately adapts itself to our changing requirements. Smart buildings interact with their residents, systems, and environment. They learn from previous experience and adapt themselves to people.

This catalog presents our HVAC portfolio. With more than 5000 HVAC products, we offer the right solution for every application in every building. The perfectly coordinated interaction of heating, ventilation and air conditioning, as well as lighting and shading, enables

maximum energy savings over the entire life cycle of a building and increases the comfort of building occupants. Our products meet the highest quality standards and satisfy the most stringent energy efficiency requirements. Ease of use and long life cycles are among our key design criteria. Open communication standards such as KNX, Modbus and BACnet enable seamless integration into any building automation system.

With Siemens, you always make the right choice – for every project and in every building.



//  
Creating  
environments  
that care.

WHAT WE STAND FOR

# A consistent strategy: Smart Infrastructure

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com/  
smartinfra-  
structure



When intelligent energy meets smart buildings, the world around us can adapt and respond intuitively. Smart infrastructure from Siemens makes the world a more connected and caring place – where resources are valued, where the impact on the world is taken into account, and where sustainable energy is delivered reliably and efficiently. It provides the flexible infrastructure to allow society to evolve and respond to changing conditions. Technology and human

ingenuity come together to be at one with the environment and to care for our world. We do this from the macro to the micro level, from physical products, components, and systems to connected, cloud-based digital offerings and services. Siemens offers a broad portfolio of grid control and automation, low- and medium-voltage power distribution, switching, and control, as well as building automation, fire safety and security, HVAC control, and energy solutions.

## Electrical Products



- Low-voltage protection devices (e.g. ACB1, MSP2), switching devices (e.g. soft starters, contactors), measuring (e.g. SENTRON PAC) and monitoring devices (e.g. SIMOCODE)
- Low-voltage distribution cabinets and systems
- Medium-voltage vacuum circuit breakers, contactors, and interrupters
- Wiring accessories and storage systems for apartments

## Building Products



- Building and room automation
- Integrated building management systems

## Distribution Systems



- Medium- and low-voltage switchgears
- Distribution solutions
- Energy storage systems

## Digital Grid



- Energy automation and Smart Grid
- Grid operation and control
- Grid planning and simulation

## Solution and Service Portfolio



- Building operations
- Service and migration



PLANNING TOMORROW

# Turning ideas into perfect places



## Get ready for tomorrow

Buildings are becoming more and more complex. Structures that used to be passive now have to meet higher demands for efficiency, safety, sustainability and comfort. While digitization enables new ways of connecting and operating buildings, cost and time pressures create resistance for the adoption of these new technologies. With decades of experience in building automation, we know these challenges and have the expertise to help master them.

## All you need for turning ideas into perfect places

Thorough planning has never been as important as it is today. The more complex a building becomes, the more detailed the planning process must be. With our extensive market experience, we want to make the planning process as time-efficient as possible. With planning tools, extensive data and comprehensive information about our certified product portfolio we are ready to help turn ideas into perfect places.

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UNDERSTANDING THE LANGUAGE OF BUILDINGS

# Building Information Modeling (BIM)



**Benefits at a glance:**

- Fast download of all data
- Support for 2D and 3D planning
- Simple product search and download
- Visualize data before downloading
- Regular plug-in update to keep data current
- Continuous expansion of BIM data

BIM is the equivalent of digitalization in the construction industry: A digitally supported process for planning, constructing and operating buildings that enables a significant productivity increase in the construction industry.

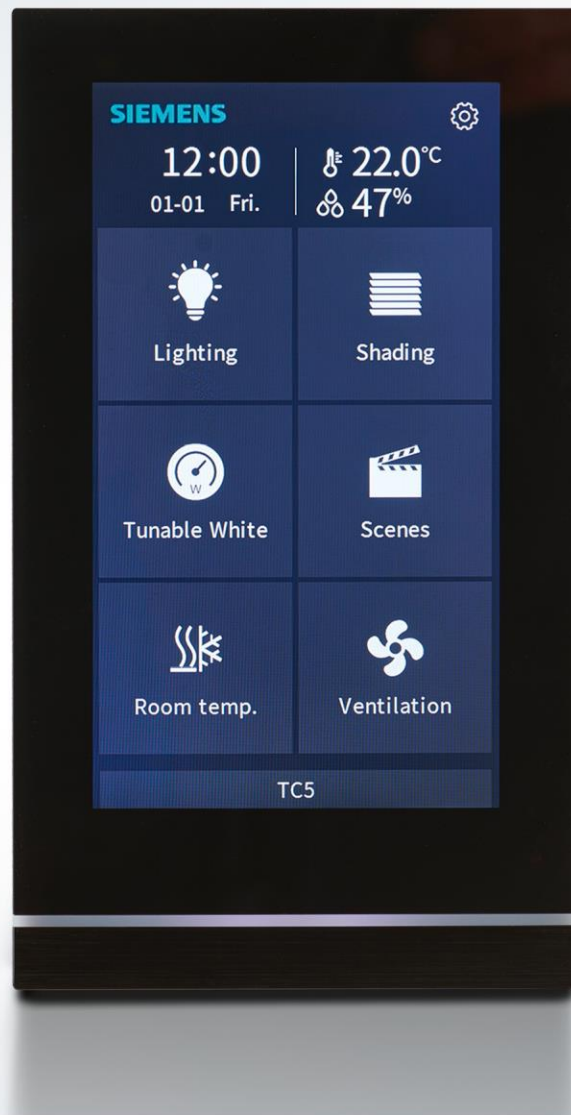
BIM helps to plan, build and operate buildings with greater insight. BIM data combined with real-time building data will enhance predictive data analytics over the building lifecycle. This enables significant gains around productivity, efficiency, reliability and overall quality.

Siemens owes its success in delivering digital services to its strengths and competencies in building management and predictive data analytics, supported by reliable and secure infrastructure. With our trusted domain and IT expertise, we have built long-standing credibility around all disciplines of building technologies. With our proven domain and IT expertise, we have been a credible partner for all building technologies systems for many years.

**Siemens BIM-compliant product data: the basis of the BIM process**

Siemens BIM-compliant product data allows easy integration of the data into authoring processes. With more than 5,000 products already available and more to come, Siemens is setting the benchmark for BIM-compliant product data.





# Get ready, set, touch with the new KNX Touch Control TC5

With its elegant and modern design, it offers intuitive operation and customization with the swipe-and-tap concept and therefore it is your ideal choice to meet the requirements of any room. The device is equipped with a temperature sensor and covers various applications such as lighting control with Tunable White, solar protection and HVAC operations. Thanks to its slim design and high-quality material, it fits any room design and therefore is ideal for the use in commercial buildings like offices, hotels.



# Intelligent Valve – makes installation a snap

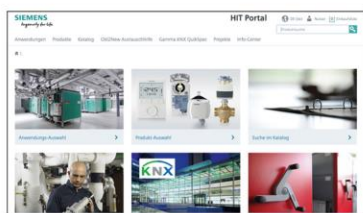
Install the Intelligent Valve right out of the box without any presetting and power supply. After that, you won't have to think about it anymore and you won't have to go back to your valve a second time. The Adaptive Flow Optimizer of the Intelligent Valve in fact adjusts the volumetric flow presetting automatically. This ensures you major time saving and effort reduction.

**YOU GET SUPPORT**

# Tools and apps for every phase of your project

## HIT Portal

Supports the European energy efficiency standard EN 15232. This tool provides more than 400 preconfigured standard HVAC configurations classified according to their energy saving potential. This allows users to select the application that best matches their requirements. Documents linked to the applications describe the conditions that have to be met to ensure compliance with one of the energy efficiency classes defined in EN 15232.



## Industry Mall

All automation, drive and installation products, including products from the HVAC and GAMMA portfolios, are listed in the Industry Mall, a consolidated information and order platform. The Industry Mall also offers various configurators, including the Product Configurator for OpenAir products. You can easily customize the OpenAir products you require. You can choose between labels, place your own logo, determine cable type and length and select from various connector types.



## Consultant support

Find everything you need to plan the buildings of the future in one place. Our site specifically for consultants and planners is a one stop shop for everything from specification text, application guides and BIM data.



## SIOS – Siemens Industry Online System

The Siemens Industry Online System (SIOS) is an Internet portal containing technical information about all KNX products from Siemens. You can download operating and installation instructions, descriptions of individual applications, VD files, technical product information, specification texts for invitations to tender as well as CE certificates. This makes the SIOS the go-to destination for all your questions about KNX products.



### ABT Go

ABT Go is the mobile tool for commissioning and maintenance tasks of Siemens devices used in building automation and control systems such as the Intelligent Valve.



### Slide ruler

The Acvatix slide ruler is a tool to help you find the right valve and actuator for your application.



### Scan to HIT

Use the Scan to HIT app to scan the data matrix code on actuators for immediate access to all essential product information, including data sheets and installation instructions.



### Training and support

Siemens supports you in every project step from the planning stage through the installation to the trouble-free operation. With Siemens standing by as your professional partner, you're well equipped to meet all your customers' challenges. In addition to practical tools and on-site support through the worldwide sales and service network, you also benefit from the knowledge of our experts. Whether you're looking for technical courses – for example, in hydronics – or product training, Siemens supports you every step of the way. Your contact at Siemens will be happy to help you finding the right training for you.

### Combi Valve Sizer for PICVs

The Combi Valve Sizer app makes it very easy to select the right Acvatix PICV and matching actuator. Just enter the maximum volumetric flow desired and select other features such as type of threaded connection or DN size, and the ideal PICV type will be displayed. The app also calculates the maximum volumetric flow and presetting, checks the commissioning settings and provides access to all data sheets.



All Siemens apps can also be found on [siemens.com/bt/apps](https://www.siemens.com/bt/apps)

## Type Overview

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467956290	Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		433
467956300	Sealing gland complete, stem diameter 14 mm, sealing material PTFE, up to 220 °C		449
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## Type Overview

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GDB161.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636149	615
GDB161.1E/09H	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636149	617
GDB161.2E	Linear air damper actuator, AC 24 V, DC 0...10 V, 125 N, 150 s	N4664	629
GDB161.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636150	548
GDB161.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636150_enAP	548
<b>GDB161.9E/MO</b>	Electromotoric rotary actuators 5 Nm without spring return for ball valves	A6V10636150	548
GDB163.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 5 Nm, 150 s	A6V10636149_enAP	615
GDB163.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 5 Nm, 150 s	A6V10636149	615
GDB163.2E	Linear air damper actuator, AC 24 V, DC 0...35 V adjustable, 125 N, 150 s	N4664	629
GDB164.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149_enAP	615
GDB164.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149	615
GDB166.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149_enAP	615
GDB166.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149	615
GDB181.1E/3	VAV compact controller, AC 24 V, DC 0...10 V, 5 Nm, 150 s, 300 Pa	N3544	639
GDB181.1E/KN	VAV compact controller KNX, AC 24 V, 5 Nm, 150 s, 300 Pa	N3547	208
GDB181.1E/MO	VAV compact controller Modbus, AC 24 V, 5 Nm, 150 s, 300 Pa	A6V10631832	638
GDB181.1EMKN	VAV compact controller KNX, multipack 18 pcs. incl. ASK78.12	N3547	208
GDB331.2E	Linear air damper actuator, AC 230 V, 3-position, 125 N, 150 s	N4664	629
GDB336.2E	Linear air damper actuator, AC 230 V, 3-position, 125 N, 150 s, 2 auxiliary switches	N4664	629
GDB341.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 5 Nm, 150 s	A6V10636149	615
GDB341.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 5 Nm, 150 s	A6V10636149_enAP	615
GDB341.1E/09H	Rotary air damper actuator, AC 230 V, 2-position/3-position, 5 Nm, 150 s	A6V10636149	617
GDB341.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC 230 V, 2-position/3-position, 5 Nm, 150 s	A6V10636150	548
GDB341.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC 230 V, 2-position/3-position, 5 Nm, 150 s	A6V10636150_enAP	548
GDB346.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149_enAP	615
GDB346.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 5 Nm, 150 s, 2 auxiliary switches	A6V10636149	615
GDB361.1E	Rotary air damper actuator, AC 230 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636149	615
GDB361.1E	Rotary air damper actuator, AC 230 V, DC 0/2...10 V, 5 Nm, 150 s	A6V10636149_enAP	615
GDB361.1G	Rotary air damper actuators 5 Nm, without spring return	A6V10636149 / A6V10881141	615
GDD141.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 5 Nm, 30 s	A6V10636280	625
GDD142.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 5 Nm, 30 s, potentiometer	A6V10636280	625

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GDD146.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 5 Nm, 30 s, 2 Auxiliary switches	A6V10636280	625
GDD161.1E/RW	Air damper actuators for railway vehicles, DC 24 V, DC0/2... 10V, 5 Nm, 30 s	A6V10636293	625
GEB141.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB142.1E	Rotary air damper actuators 20 Nm, without spring return, Potentiometer	A6V11449860	551
GEB146.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB161.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
<b>GEB161.1E/MO</b>	Rotary air damper actuators 20 Nm, Modbus RTU, without spring return	A6V101037253	551
GEB163.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB164.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB166.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB341.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB346.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GEB361.1E	Rotary air damper actuators 20 Nm, without spring return	A6V11449860	551
GGA126.1E/10	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm	N4617	645
GGA126.1E/12	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm	N4617	645
GGA126.1E/C10	Actuators for fire protection dampers	N4617	645
GGA126.1E/C12	Actuators for fire protection dampers	N4617	645
GGA126.1E/T10	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm, with thermosensor	N4617	645
GGA126.1E/T12	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm, with thermosensor	N4617	645
GGA326.1E/10	Actuator for fire protection dampers, AC 230 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm	N4617	645
GGA326.1E/12	Actuator for fire protection dampers, AC 230 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm	N4617	645
GGA326.1E/T10	Actuator for fire protection dampers, AC 230 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm, with thermosensor	N4617	645
GGA326.1E/T12	Actuator for fire protection dampers, AC 230 V, 2-position, 18 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm, with thermosensor	N4617	645
GIB131.1E	Rotary air damper actuator, AC 24 V, 3-position, 35 Nm, 150 s	N4626	552
GIB135.1E	Rotary air damper actuator, AC 24 V, 3-position, 35 Nm, 150 s, 2 auxiliary switches, potentiometer	N4626	552
GIB136.1E	Rotary air damper actuator, AC 24 V, 3-position, 35 Nm, 150 s, 2 auxiliary switches	N4626	552
GIB161.1E	Rotary air damper actuator, AC 24 V, DC0... 10 V, 35 Nm, 150 s	N4626	552
GIB161.1E/MO	Rotary air damper actuator, AC 24 V, Modbus RTU, 35 Nm, 150 s without spring return	A6V101037253	552
GIB163.1E	Rotary air damper actuator, AC 24 V, DC0...35 V adjustable, 35 Nm, 150 s	N4626	552
GIB164.1E	Rotary air damper actuator, AC 24 V, DC0...35 V adjustable, 35 Nm, 150 s, 2 auxiliary switches	N4626	552
GIB166.1E	Rotary air damper actuator, AC 24 V, DC0... 10 V, 35 Nm, 150 s, 2 auxiliary switches	N4626	552
GIB331.1E	Rotary air damper actuator, AC 230 V, 3-position, 35 Nm, 150 s	N4626	552
GIB335.1E	Rotary air damper actuator, AC 230 V, 3-position, 35 Nm, 150 s, 2 auxiliary switches, potentiometer	N4626	552
GIB336.1E	Rotary air damper actuator, AC 230 V, 3-position, 35 Nm, 150 s, 2 auxiliary switches	N4626	552
GLA141.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 10 Nm, 90 s	A6V10636286	626
GLA142.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 10 Nm, 90 s	A6V10636286	626
GLA146.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 10 Nm, 90 s, 2 Auxiliary switches	A6V10636286	626
GLA161.1E/RW	Air damper actuators for railway vehicles, DC 24 V, DC0/2... 10V, 10 Nm, 90 s	A6V10636299	626
GLB111.1E/KN	Rotary air damper actuators 10 Nm, without spring return	A6V11566316	618
GLB111.1E/MO	Rotary air damper actuator, AC 24 V, 10 Nm, 150 s with Modbus RTU communication	A6V10881141	618

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GLB111.9E/KN	Electromotoric rotary actuator KNX for control ball valves up to DN50	A6V10725318	550
GLB111.9E/MO	Electromotoric rotary actuator, AC 24 V, 10 Nm, 150 s with Modbus RTU	A6V10881143	550
GLB131.2E	Linear air damper actuator, AC 24 V, 3-position, 250 N, 150 s	N4664	630
GLB136.2E	Linear air damper actuator, AC 24 V, 3-position, 250 N, 150 s, 2 auxiliary switches	N4664	630
GLB141.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202_enAP	618
GLB141.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	618
GLB141.1E/09H	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	620
GLB141.1H	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	619
GLB141.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636203_enAP	550
GLB141.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636203	550
GLB142.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s, potentiometer	A6V10636202_enAP	618
GLB142.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s, potentiometer	A6V10636202	618
GLB146.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202	618
GLB146.1E	Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202_enAP	618
GLB161.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636202_enAP	618
GLB161.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636202	618
GLB161.1E/09H	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636202	620
GLB161.2E	Linear air damper actuator, AC 24 V, DC 0...10 V, 250 N, 150 s	N4664	630
GLB161.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636203	550
GLB161.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636203_enAP	550
<b>GLB161.9E/MO</b>	Electromotoric rotary actuators 10 Nm without spring return for ball valves	A6V10636203	550
GLB163.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 10 Nm, 150 s	A6V10636202	618
GLB163.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 10 Nm, 150 s	A6V10636202_enAP	618
GLB163.2E	Linear air damper actuator, AC 24 V, DC 0...35 V adjustable, 250 N, 150 s	N4664	630
GLB164.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202_enAP	618
GLB164.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202	618
GLB166.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202_enAP	618
GLB166.1E	Rotary air damper actuator, AC/DC 24 V, DC 0/2...10 V, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202	618
GLB181.1E/3	VAV compact controller, AC 24 V, DC 0...10 V, 10 Nm, 150 s, 300 Pa	N3544	639
GLB181.1E/BA	VAV compact controller BACnet, AC 24 V, 10 Nm, 150 s, 300 Pa	A6V10631834	637
GLB181.1E/KN	VAV compact controller KNX, AC 24 V, 10 Nm, 150 s, 300 Pa	N3547	208
GLB181.1E/MO	VAV compact controller Modbus, AC 24 V, 10 Nm, 150 s, 300 Pa	A6V10631832	638
GLB181.1EM3	VAV compact controller, AC 24 V, 10 Nm, 150 s, Multipack	A6V10636202 / A6V10881141	618
GLB181.1EMKN	VAV compact controller, AC 24 V, 10 Nm, Multipack with KNX	A6V10636202 / A6V10881141	618
GLB331.2E	Linear air damper actuator, AC 230 V, 3-position, 250 N, 150 s	N4664	630
GLB336.2E	Linear air damper actuator, AC 230 V, 3-position, 250 N, 150 s, 2 auxiliary switches	N4664	630
GLB341.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202_enAP	618
GLB341.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	618
GLB341.1E/09H	Rotary air damper actuator, AC 230 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	620
GLB341.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC 230 V, 2-position/3-position, 10 Nm, 150 s	A6V10636203	550

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GLB341.9E	Electromotoric rotary actuator for ball valves, non-spring return, AC 230 V, 2-position/3-position, 10 Nm, 150 s	A6V10636203_enAP	550
GLB346.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202_enAP	618
GLB346.1E	Rotary air damper actuator, AC 230 V, 2-position/3-position, 10 Nm, 150 s, 2 auxiliary switches	A6V10636202	618
GLB361.1E	Rotary air damper actuator, AC 230 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636202	618
GLB361.1E	Rotary air damper actuator, AC 230 V, DC 0/2...10 V, 10 Nm, 150 s	A6V10636202_enAP	618
GLD141.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 8 Nm, 30 s	A6V10636286	626
GLD142.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 8 Nm, 30 s, potentiometer	A6V10636286	626
GLD146.1E/RW	Air damper actuators for railway vehicles, DC 24 V, 2-position/3-position, 8 Nm, 30 s, 2 Auxiliary switches	A6V10636286	626
GLD161.1E/RW	Air damper actuators for railway vehicles, DC 24 V, DC 0/2...10V, 8 Nm, 30 s	A6V10636299	626
GLD161.9E	Rotary actuators for ball valves, AC/DC 24 V, DC 0/2...10 V, 8 Nm, 30 s	A6V11171770	549
<b>GLD161.9E/MO</b>	Rotary actuators for ball valves	A6V11171770	549
GMA121.1E	Rotary air damper actuator, AC/DC 24 V, 2-position, 7 Nm, spring return 90/15 s	N4614	609
GMA121.9E	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 2-position, 7 Nm, 90/15 s	N4658	549
GMA121.9H	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 2-position, 7 Nm, 90/15 s	N4658	549
GMA126.1E	Rotary air damper actuator, AC/DC 24 V, 2-position, 7 Nm, spring return 90/15 s, 2 auxiliary switches	N4614	609
GMA131.1E	Rotary air damper actuator, AC/DC 24 V, 3-position, 7 Nm, spring return 90/15 s	N4614	609
GMA131.9E	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 3-position, 7 Nm, 90/15 s	N4658	549
GMA136.1E	Rotary air damper actuator, AC/DC 24 V, 3-position, 7 Nm, spring return 90/15 s, 2 auxiliary switches	N4614	609
GMA161.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 7 Nm, spring return 90/15 s	N4614	609
GMA161.1E/MO	Rotary air damper actuator, AC/DC 24 V, Modbus RTU, 7 Nm, spring return 90/15 s	A6V101037201	609
GMA161.9E	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, DC 0...10 V, 7 Nm, 90/15 s	N4658	549
<b>GMA161.9E/MO</b>	Rotary actuators 7 Nm with spring return for ball valves	N4658	549
GMA161.9H	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, DC 0...10 V, 7 Nm, 90/15 s	N4658	549
GMA163.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 7 Nm, spring return 90/15 s	N4614	609
GMA164.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...35 V adjustable, 7 Nm, spring return 90/15 s, 2 auxiliary switches	N4614	609
GMA166.1E	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 7 Nm, spring return 90/15 s, 2 auxiliary switches	N4614	609
GMA321.1E	Rotary air damper actuator, AC 230 V, 2-position, 7 Nm, spring return 90/15 s	N4614	609
GMA321.9E	Electromotoric rotary actuator with spring-return for ball valves, AC 230 V, 2-position, 7 Nm, 90/15 s	N4658	549
GMA326.1E	Rotary air damper actuator, AC 230 V, 2-position, 7 Nm, spring return 90/15 s, 2 auxiliary switches	N4614	609
GNA126.1E/10	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm	N4620	643
GNA126.1E/12	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm	N4620	643
GNA126.1E/12A	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm	N4620	643
GNA126.1E/C10	Actuators for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm, with thermosensor	N4620	643
GNA126.1E/C12	Actuators for fire protection dampers	N4620	643
GNA126.1E/H12	Actuators for fire protection dampers	N4620	643

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GNA126.1E/T10	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10 x 10 mm, with thermosensor	N4620	643
GNA126.1E/T12	Actuator for fire protection dampers, AC/DC 24 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12 x 12 mm, with thermosensor	N4620	643
GNA166.1E/T12	Actuators for fire protection dampers	A6V11465149	643
GNA326.1E/10	Actuator for fire protection dampers, AC 230 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10x10 mm	N4620	643
GNA326.1E/12	Actuator for fire protection dampers, AC 230 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12x12 mm	N4620	643
GNA326.1E/12A	Actuator for fire protection dampers, AC 230 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12x12 mm, with thermosensor	N4620	643
GNA326.1E/T10	Actuator for fire protection dampers, AC 230 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 10x10 mm, with thermosensor	N4620	643
GNA326.1E/T12	Actuator for fire protection dampers, AC 230 V, 2-position, 9 Nm, spring return 90/15 s, 2 auxiliary switches, shaft 12x12 mm, with thermosensor	N4620	643
GNP191.1E	Rotary air damper actuator, AC/DC 24 V, DC 0(2)...10 V / 0(4)...20 mA, 6 Nm, 2 s, with electronic fail-save function	N4609	627
GNP196.1E	Rotary air damper actuator, AC/DC 24 V, DC 0(2)...10 V / 0(4)...20 mA, 6 Nm, 2 s, with electronic fail-save function, 2 auxiliary switches	N4609	627
GPC121.1A	Rotary air damper actuator, AC/DC 24 V, 2-position, 4 Nm, spring return 60/15 s	A6V10636100	608
GPC126.1A	Rotary air damper actuator, AC/DC 24 V, 2-position, 4 Nm, spring return 60/15 s, 2 auxiliary switches	A6V10636100	608
GPC131.1A	Rotary air damper actuator, AC/DC 24 V, 3-position, 4 Nm, spring return 60/15 s	A6V10636100	608
GPC136.1A	Rotary air damper actuator, AC/DC 24 V, 3-position, 4 Nm, spring return 60/15 s, 2 auxiliary switches	A6V10636100	608
GPC161.1A	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 4 Nm, spring return 60/15 s	A6V10636100	608
GPC166.1A	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 4 Nm, spring return 60/15 s, 2 auxiliary switches	A6V10636100	608
GPC321.1A	Rotary air damper actuator, AC 230 V, 2-position, 4 Nm, spring return 60/15 s	A6V10636100	608
GPC326.1A	Rotary air damper actuator, AC 230 V, 2-position, 4 Nm, spring return 60/15 s, 2 auxiliary switches	A6V10636100	608
GPC361.1A	Rotary air damper actuator, AC 230 V, DC 0...10 V, 4 Nm, spring return 60/15 s	A6V10636100	608
GQD121.1A	Rotary air damper actuator, AC/DC 24 V, 2-position, 2 Nm, spring return 30/15 s	N4604	607
GQD121.9A	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 2-position, 2 Nm, 30/15 s	N4659	546
GQD126.1A	Rotary air damper actuator, AC/DC 24 V, 2-position, 2 Nm, spring return 30/15 s, 2 auxiliary switches	N4604	607
GQD131.1A	Rotary air damper actuator, AC/DC 24 V, 3-position, 2 Nm, spring return 30/15 s	N4604	607
GQD131.9A	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 3-position, 2 Nm, 30/15 s	N4659	546
GQD136.1A	Rotary air damper actuator, AC/DC 24 V, 3-position, 2 Nm, spring return, 30/15 s, 2 auxiliary switches	N4604	607
GQD161.1A	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 2 Nm, spring return 30/15 s	N4604	607
GQD161.9A	Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, DC 0...10 V, 2 Nm, 30/15 s	N4659	546
GQD166.1A	Rotary air damper actuator, AC/DC 24 V, DC 0...10 V, 2 Nm, spring return 30/15 s, 2 auxiliary switches	N4604	607
GQD321.1A	Rotary air damper actuator, AC 230 V, 2-position, 2 Nm, spring return 30/15 s	N4604	607
GQD321.9A	Electromotoric rotary actuator with spring-return for ball valves, AC 230 V, 2-position, 2 Nm, 30/15 s	N4659	546
GQD326.1A	Rotary air damper actuator, AC 230 V, 2-position, 2 Nm, spring return 30/15 s, 2 auxiliary switches	N4604	607
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VPF43.125F135/1	Pressure independent control valve (PICV), PN16, DN125, with flanged connections	A6V11213406	524
VPF43.150F160	Pressure independent control valve (PICV), PN16, DN150, with flanged connections	N4315	523
VPF43.150F160/1	Pressure independent control valve (PICV), PN16, DN150, with flanged connections	A6V11213406	524
VPF43.150F200	Pressure independent control valve (PICV), PN16, DN150, with flanged connections	N4315	523
VPF43.150F200/1	Pressure independent control valve (PICV), PN16, DN150, with flanged connections	A6V11213406	524
VPF43.200F210	Pressure independent control valve (PICV), PN16, DN200, with flanged connections	N4315	523
VPF43.200F280	Pressure independent control valve (PICV), PN16, DN200, with flanged connections	N4315	523
VPF44.100F70	Pressure independent control valve (PICV), PN16, DN100, with flanged connections	A6V12273951	526
VPF44.100F90	Pressure independent control valve (PICV), PN16, DN100, with flanged connections	A6V12273951	526
VPF44.50F15	Pressure independent control valve (PICV), PN16, DN50, with flanged connections	A6V12273951	526

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VPF44.65F35	Pressure independent control valve (PICV), PN16, DN65, with flanged connections	A6V12273951	526
VPF44.80F35	Pressure independent control valve (PICV), PN16, DN80, with flanged connections	A6V12273951	526
VPF44.80F45	Pressure independent control valve (PICV), PN16, DN80, with flanged connections	A6V12273951	526
VPF53.125F110	Pressure independent control valve (PICV), PN25, DN125, with flanged connections	N4316	528
VPF53.125F135	Pressure independent control valve (PICV), PN25, DN125, with flanged connections	N4316	528
VPF53.150F160	Pressure independent control valve (PICV), PN25, DN150, with flanged connections	N4316	528
VPF53.150F200	Pressure independent control valve (PICV), PN25, DN150, with flanged connections	N4316	528
VPF53.200F210	Pressure independent control valve (PICV), PN25, DN200, with flanged connections	N4316	528
VPF53.200F280	Pressure independent control valve (PICV), PN25, DN200, with flanged connections	N4316	528
VPF54.100F70	Pressure independent control valve (PICV), PN25, DN100, with flanged connections	A6V12273951	529
VPF54.100F90	Pressure independent control valve (PICV), PN25, DN100, with flanged connections	A6V12273951	529
VPF54.50F15	Pressure independent control valve (PICV), PN25, DN50, with flanged connections	A6V12273951	529
VPF54.50F25	Pressure independent control valve (PICV), PN25, DN50, with flanged connections	A6V12273951	529
VPF54.65F25	Pressure independent control valve (PICV), PN25, DN65, with flanged connections	A6V12273951	529
VPF54.65F35	Pressure independent control valve (PICV), PN25, DN65, with flanged connections	A6V12273951	529
VPF54.80F35	Pressure independent control valve (PICV), PN25, DN80, with flanged connections	A6V12273951	529
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VQI46.15F1.3Q	PICV, internally threaded, PN 25, DN 15, 300...1300 l/h, pressure test points	A6V11877580	544
VQI46.15L0.5	PICV, internally threaded, PN 25, DN 15, 30...520 l/h	A6V11877580	544
VQI46.15L0.5Q	PICV, internally threaded, PN 25, DN 15, 30...520 l/h, pressure test points	A6V11877580	544
VQI46.20F1.5	PICV, internally threaded, PN 25, DN 20, 320...1500 l/h	A6V11877580	544
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VQP46.15L0.5	PICV, externally threaded, PN 25, DN 15, 30...520 l/h	A6V11877580	542
VQP46.15L0.5Q	PICV, externally threaded, PN 25, DN 15, 30...520 l/h, pressure test points	A6V11877580	542
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VVF63.40-20	2-port valve, PN 40, DN 40, kvs 20, with flanged connections	A6V11459527	456
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VVF63.80-100K	2-port seat valve, PN40, DN 80, kvs 100, with flanged connections, pressure compensated	A6V11459527	457
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VVG549.15-0.63	2-port seat valve, externally threaded, PN25, DN15, kvs 0.63	CA1Q4380	477
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VXF22.25-2.5	3-port valve, flanged, PN6, DN25, kvs 2.5	N4401	480
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VXG41.1501	3-port seat valve, external thread, PN16, DN15, kvs 4, tight bypass	N4463	509
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VXG41.32	3-port seat valve, external thread, PN16, DN32, kvs 16	N4463	509
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VXG41.4001	3-port seat valve, external thread, PN16, DN40, kvs 25, tight bypass	N4463	509
VXG41.50	3-port seat valve, external thread, PN16, DN50, kvs 40	N4463	509
VXG41.5001	3-port seat valve, external thread, PN16, DN50, kvs 40, tight bypass	N4463	509
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VXG44.15-0.4	3-port seat valve, external thread, PN16, DN15, kvs 0.4	N4464	511
VXG44.15-0.63	3-port seat valve, external thread, PN16, DN15, kvs 0.63	N4464	511
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VXG44.15-1.6	3-port seat valve, external thread, PN16, DN15, kvs 1.6	N4464	511
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VXG44.25-10	3-port seat valve, external thread, PN16, DN25, kvs 10	N4464	511
VXG44.32-16	3-port seat valve, external thread, PN16, DN32, kvs 16	N4464	511
VXG44.40-25	3-port seat valve, external thread, PN16, DN40, kvs 25	N4464	511
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VXI46.20/2	3-port zone valve, internally threaded, PN16, DN20, kvs 3.5, kvs bypass 2.5	A6V10421629	506
VXI46.25/2	3-port zone valve, internally threaded, PN16, DN25, kvs 5, kvs bypass 3.5	A6V10421629	506
VXI46.25T/2	3-port zone valves, PN16 with on/off characteristic	A6V10421629	506
VXP45.10-0.25	3-port seat valve, external thread, PN16, DN10, kvs 0.25	N4845	502
VXP45.10-0.4	3-port seat valve, external thread, PN16, DN10, kvs 0.4	N4845	502
VXP45.10-0.63	3-port seat valve, external thread, PN16, DN10, kvs 0.63	N4845	502
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VXP45.15-2.5	3-port seat valve, external thread, PN16, DN15, kvs 2.5	N4845	502
VXP45.20-4	3-port seat valve, external thread, PN16, DN20, kvs 4	N4845	502
VXP45.25-10	3-port seat valve, external thread, PN16, DN25, kvs 10	N4845	502
VXP45.25-6.3	3-port seat valve, external thread, PN16, DN25, kvs 6.3	N4845	502
VXP45.32-16	3-port seat valve, external thread, PN16, DN32, kvs 16	N4845	502
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VXP47.10-0.25	3-port seat valve, external thread, PN16, DN10, kvs 0.25	N4847	504
VXP47.10-0.4	3-port seat valve, external thread, PN16, DN10, kvs 0.4	N4847	504
VXP47.10-0.63	3-port seat valve, external thread, PN16, DN10, kvs 0.63	N4847	504
VXP47.10-1	3-port seat valve, external thread, PN16, DN10, kvs 1	N4847	504
VXP47.10-1.6	3-port seat valve, external thread, PN16, DN10, kvs 1.6	N4847	504
VXP47.15-2.5	3-port seat valve, external thread, PN16, DN15, kvs 2.5	N4847	504
VXP47.20-4	3-port seat valve, external thread, PN16, DN20, kvs 4	N4847	504
walk-by	Walk-by radio system		698
WFK240.D080	Mechanical single-jet cold water meter with module slot, Q3 = 2.5 m <sup>3</sup> /h, L = 80 mm, G ¾ "	A6V12048975	668
WFK240.D110	Mechanical single-jet cold water meter with module slot, Q3 = 2.5 m <sup>3</sup> /h, L = 110 mm, G ¾ "	A6V12048975	668
WFK240.E130	Mechanical single-jet cold water meter with module slot, Q3 = 4 m <sup>3</sup> /h, L = 130 mm, G 1 "	A6V12048975	668
WFK30.D080	Mechanical water meters single-jet, with module slot, 2.5 m <sup>3</sup> /h, 80 mm, G ¾ ", cold	N5326	667
WFK30.D110	Mechanical water meters single-jet, with module slot, 2.5 m <sup>3</sup> /h, 110 mm, G ¾ ", cold	N5326	667
WFK30.E130	Mechanical single-jet water meters (module compatible)	N5326	667
WFK636.D080	Electronic impeller type cold water meter Q3 = 2.5 m <sup>3</sup> /h, wall-mounted, mounting length 80 mm, connecting thread 3/4", M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	671
WFK636.D110	Electronic impeller type cold water meter Q3 = 2.5 m <sup>3</sup> /h, wall-mounted, mounting length 110 mm, connecting thread 3/4", M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	671
WFM501-E000H0	Impeller type heat meter, nominal flow rate 0.6 m <sup>3</sup> /h	N5323	674
WFM502-E000H0	Impeller type heat meter, nominal flow rate 1.5 m <sup>3</sup> /h	N5323	674
WFM503-J000H0	Impeller type heat meter, nominal flow rate 2.5 m <sup>3</sup> /h	N5323	674
WFM541-G000H0	Impeller type heat meter 0.6 m <sup>3</sup> /h, with m-bus communication and 2 pulse inputs, mounting length 110 mm	A6V10800216	674
WFM542-C000H0	Impeller type heat meter 1.5 m <sup>3</sup> /h, with m-bus communication and 2 pulse inputs, mounting length 80 mm	A6V10800216	674
WFM542-G000H0	Impeller type heat meter 1.5 m <sup>3</sup> /h, with m-bus communication and 2 pulse inputs, mounting length 110 mm	A6V10800216	674
WFM543-L000H0	Impeller type heat meter 2.5 m <sup>3</sup> /h, with m-bus communication and 2 pulse inputs, mounting length 130 mm	A6V10800216	674
WFM681-G000H0	WFM681-G000H0 RF heat meter set	A6V11259309	675
WFM682-G000H0	WFM682-G000H0 RF heat meter set	A6V11259309	675
WFM683-L000H0	WFM683-L000H0 RF heat meter set	A6V11259309	675
WFW240.D080	Mechanical single-jet hot water meter with module slot, Q3 = 2.5 m <sup>3</sup> /h, L = 80 mm, G ¾ "	A6V12048975	668
WFW240.D110	Mechanical single-jet hot water meter with module slot, Q3 = 2.5 m <sup>3</sup> /h, L = 110 mm, G ¾ "	A6V12048975	668
WFW240.E130	Mechanical single-jet hot water meter with module slot, Q3 = 4 m <sup>3</sup> /h, L = 130 mm, G 1 "	A6V12048975	668
WFW30.D080	Mechanical water meters single-jet, with module slot, 2.5 m <sup>3</sup> /h, 80 mm, G ¾ ", hot	N5326	667
WFW30.D110	Mechanical water meters single-jet, with module slot, 2.5 m <sup>3</sup> /h, 110 mm, G ¾ ", hot	N5326	667
WFW30.E130	Mechanical single-jet water meters (module compatible)	N5326	667
WFW636.D080	Electronic impeller type hot water meter Q3 = 2.5 m <sup>3</sup> /h, wall-mounted, mounting length 80 mm, connecting thread 3/4", M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	671

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WFW636.D110	Electronic impeller type hot water meter Q3 = 2.5 m <sup>3</sup> /h, wall-mounted, mounting length 110 mm, connecting thread 3/4", M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	671
WFZ.IRDA-USB	Infrared read head (with USB interface)	N2886	666
WFZ.MBM-USB	M-bus programming adapter (USB)		677
WFZ.P	Self-lock seal with sealing wire		670
WFZ.PS	Triggering tool for radio telegrams		670
WFZ.R110	Spacer G 3/4", length 110mm		670
WFZ.R130	Spacer G 1", length 130 mm		670
WFZ.R2	WFZ.R2 Mounting kit	 	670
WFZ.R2-1	WFZ.R2-1 Mounting kit		670
WFZ.R80	Spacer G 3/4", length 80 mm		670
WFZ.W	Mounting kit for washstand water meter		670
WFZ.Z	Mounting kit for tap water meter		670
WFZ311	M-bus add-on module for water meters WF.30.. / WM.10..	A6V11991477	701
WFZ43	Pulse add-on module with reed contact and namur circuit for WF.240.. water meters	N5302	670
WFZ44	Pulse add-on module with reed contact for WF.240.. water meters	N5302	670
WFZ51	M-bus add-on module for WfX5.. meters	N5323	701
WFZ661	Add-on radio module WFZ661 for water meters WF.30.. / WM.10..	A6V10986918	696
WFZ662	Radio module with integrated antenna for WfX5.. meters	N5323	697
WHE502-D10	Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 08/31, due date 12/31	A6V10786229	663
WHE542-D100S	Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 08/31, due date 12/31, meter reading by walk-by: Annually, S-mode	A6V10786229	664
WHE542-D291S	Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 09/30, due date 09/30, meter reading by walk-by: Monthly, S-mode	A6V10786229	664
WHE632-D292C	Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 - 09/30, due date 09/30, C-mode	A6V10786229	664
WME.EINPUTZ1	Mounting aid		670
WME.G20/OV/H	Single-pipe connecting piece		670
WME.L15/OV/H	Single-pipe connecting piece (EAT)		670
WME.L18/OV/H	Single-pipe connecting piece (EAT)		670
WME.L22/OV/H	Single-pipe connecting piece (EAT)		670
WME.PRODICHT	Profiled seal		670
WME.VRING	EAT cover		670
WME55ION2011:00S00	Electronic impeller type cold water meter Q3 = 4 m <sup>3</sup> /h, wall-mounted, mounting length 130 mm, connecting thread 1", M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	671
WME55ION4111:00S00	Electronic multi-jet cold water meter for IST measuring capsule Q3 = 2.5 m <sup>3</sup> / h, connection thread G2", M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	672
WME55ION6011:00S00	Electronic multi-jet cold water meter for A34 measuring capsule Q3 = 2.5 m <sup>3</sup> / h, connection thread M77 x 1.5 mm, M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	672
WME55ION8111:00S00	Electronic multi-jet cold water meter for TE1 measuring capsule Q3 = 2.5 m <sup>3</sup> / h, connection thread M62 x 2 mm, M-bus radio communication, 10-year battery, up to 30 °C	A6V12128928	672
WME55I1N2011:00S00	Electronic impeller type hot water meter Q3 = 4 m <sup>3</sup> /h, wall-mounted, mounting length 130 mm, connecting thread 1", M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	671
WME55I1N4111:00S00	Electronic multi-jet hot water meter for IST measuring capsule Q3 = 2.5 m <sup>3</sup> / h, connection thread G2", M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	672
WME55I1N6011:00S00	Electronic multi-jet hot water meter for A34 measuring capsule Q3 = 2.5 m <sup>3</sup> / h, connection thread M77 x 1.5 mm, M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	672

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WME5S1N8111:00S00	Electronic multi-jet hot water meter for TE1 measuring capsule Q3 = 2.5 m <sup>3</sup> /h, connection thread M62 x 2 mm, M-bus radio communication, 10-year battery, up to 90 °C	A6V12128928	672
WMK10.D	Mechanical capsule cold water meter Q3 = 2.5 m <sup>3</sup> /h	N5327	669
WMW10.D	Mechanical capsule hot water meter Q3 = 2.5 m <sup>3</sup> /h	N5327	669
WMXI.KBL1:001	Round cover with thrust tube in white	A6V12128928	670
WMXI.KBL1:002	Inner extensions for thrust tube (5 pcs./PU) in white	A6V12128928	670
WMXI.KBL1:003	Outer extensions for thrust tube (5 pcs./PU) in white	A6V12128928	670
WMXI.KCR1:001	Round cover with thrust tube in chrome look	A6V12128928	670
WMXI.KCR1:002	Inner extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	670
WMXI.KCR1:003	Outer extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	670
WMZ.K5	Mounting key		670
WRI982	Consumption data interface	N2735	223
WSM506-OE	Ultrasonic heat meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, battery life 11 years	N5372	678
WSM506-BE	Ultrasonic heat meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	678
WSM506-FE	Ultrasonic heat meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus radio communication, battery life 11 years	N5372	678
WSM515-OE	Ultrasonic heat meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, battery life 11 years	N5372	678
WSM515-BE	Ultrasonic heat meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	678
WSM515-FE	Ultrasonic heat meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus radio communication, battery life 11 years	N5372	678
WSM525-OE	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread G 1", sensor Ø5.2x45 mm, battery life 11 years	N5372	678
WSM525-BE	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread G 1", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	678
WSM525-FE	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread G 1", sensor Ø5.2x45 mm, M-bus radio communication, battery life 11 years	N5372	678
WSM606-BE	Ultrasonic heat meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSM615-BE	Ultrasonic heat meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G 3/4", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSM625-BE	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread G 1", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSM805-FBBAE3A	Ultrasonic heat meter 0,6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G ¾ ", sensor M10x1 mm, 27,5 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSM805-FHBAE3A	Ultrasonic heat meter 0,6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G ¾ ", sensor Ø5.2x45 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSM821-FBBAE3A	Ultrasonic heat meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread 3/4", sensor M10 x 1 mm, 27,5 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSM821-FHBAE3A	Ultrasonic heat meter 1,5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread 3/4", sensor Ø5,2mm, 45 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSM836-FBBAE3A	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread 1", sensor M10 x 1 mm, 27,5 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSM836-FHBAE3A	Ultrasonic heat meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread 1", sensor Ø5,2mm, 45 mm, M-bus communication, 2 pulse inputs, 6 year battery	A6V11905989	682
WSN506-BE	Ultrasonic heating/cooling meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, sensor Ø5.2x45 mm, connecting thread G ¾ ", M-bus communication, battery life 11 years	N5372	678
WSN506-FE	Ultrasonic heating/cooling meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, sensor Ø5.2x45 mm, connecting thread G ¾ ", M-bus radio communication, battery life 11 years	N5372	678
WSN515-BE	Ultrasonic heating/cooling meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, sensor Ø5.2x45 mm, connecting thread G ¾ ", M-bus communication, battery life 11 years	N5372	678

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WSN515-FE	Ultrasonic heating/cooling meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, sensor Ø5.2x45mm, connecting thread G ¾", M-bus radio communication, battery life 11 years	N5372	678
WSN525-BE	Ultrasonic heating/cooling meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, sensor Ø5.2x45mm, connecting thread G 1", M-bus communication, battery life 11 years	N5372	678
WSN525-FE	Ultrasonic heating/cooling meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, sensor Ø5.2x45mm, connecting thread G 1", M-bus radio communication, battery life 11 years	N5372	678
WSN606-BE	Ultrasonic heat/cooling energy meter, 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G ¾", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSN615-BE	Ultrasonic heat/cooling energy meter, 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread G ¾", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSN625-BE	Ultrasonic heat/cooling energy meter, 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread G 1", sensor Ø5.2x45 mm, M-bus communication, battery life 11 years	N5372	680
WSN805-FBBBF3A	Ultrasonic heat/cooling energy meter 0.6 m <sup>3</sup> /h, mounting length 110 mm, connecting thread ¾", sensor M10 x 1 mm, 27,5 mm, m-bus communication, 2 pulse inputs, 11 year battery	A6V11905989	682
WSN821-FBBBF3A	Ultrasonic heat/cooling energy meter 1.5 m <sup>3</sup> /h, mounting length 110 mm, connecting thread ¾", sensor M10 x 1 mm, 27,5 mm, m-bus communication, 2 pulse inputs, 11 year battery	A6V11905989	682
WSN836-FBBBF3A	Ultrasonic heat/cooling energy meter 2.5 m <sup>3</sup> /h, mounting length 130 mm, connecting thread 1", sensor M10 x 1 mm, 27,5 mm, m-bus communication, 2 pulse inputs, 11 year battery	A6V11905989	682
WTT662-BA1100	Network node	A6V11731517	695
WTT665-BD5000	Mobile data collector		698
WTT667-AE0020	M-bus RF gateway WTT667-AE0020	A6V11918443	696
WTV531-GA5060	Level converter	A6V10844290	700
WTV676-HB6035	M-bus web server	A6V11157961	699
WTX631-GA0090	M-bus Level Converter/Repeater 250	A6V11742346	700
WTX660-E05060	RF converter	A6V11135903	697
WTZ.BAT	Battery for WTT..		696
WZM-E1	Mounting kit G1", for threaded connection R ¾"		679
WZM-E2.1	Mounting kit G2 x R 1½"	N5324	692
WZM-E34	Installation kit G ¾", for threaded connection R ½"		679
WZM-E54	Installation kit G1 1/4 x R1"	N5324	692
WZM-F190	Spacer for heat meter DN20, length 190 mm, PN16, incl. 2 flat gaskets		693
WZM-F260	Spacer for heat meter DN25, length 260 mm, PN16, incl. 2 flat gaskets		693
WZM-F270	Spacer DN 50, length 270 mm, PN16, incl. 2 flat gaskets	N5324	693
WZM-F300	Spacer DN 40, length 300 mm, PN16, incl. 2 flat gaskets	N5324	693
WZM-F300.65	Spacer DN 65, length 300 mm, PN16, incl. 2 flat gaskets	N5324	693
WZM-F300.80	Spacer DN 80, length 300 mm, PN16, incl. 2 flat gaskets	N5324	693
WZM-F360.100-25	Spacer DN 100, length 360 mm, PN25, incl. 2 flat gaskets	N5324	693
WZM-G110	Spacer G ¾", length 110 mm, incl. 2 flat gaskets		679
WZM-G130	Spacer G 1", length 130 mm, incl. 2 flat gaskets		679
WZM-G190	Spacer G 1", length 190 mm, incl. 2 flat gaskets	N5324	693
WZM-G260	Spacer G 1¼", length 260 mm, incl. 2 flat gaskets	N5324	693
WZM-G300.1	Spacer G 2", length 300 mm, incl. 2 gaskets		693
WZM-V110	Adapter set from G ¾" to 1", incl. gaskets		670
WZM-V130	Adapter from 110 mm G ¾" to 130 mm G ¾", incl. gaskets		679
WZM-V130	Extension set from 110 mm G ¾" to 130 mm G ¾", incl. gaskets		670
WZM-V130.G1	Adapter from 110 mm G ¾" to 130 mm G 1B", incl. 4 gaskets		679
WZM-V165	Extension set from 110 mm G ¾" to 165 mm G ¾", incl. gaskets		670

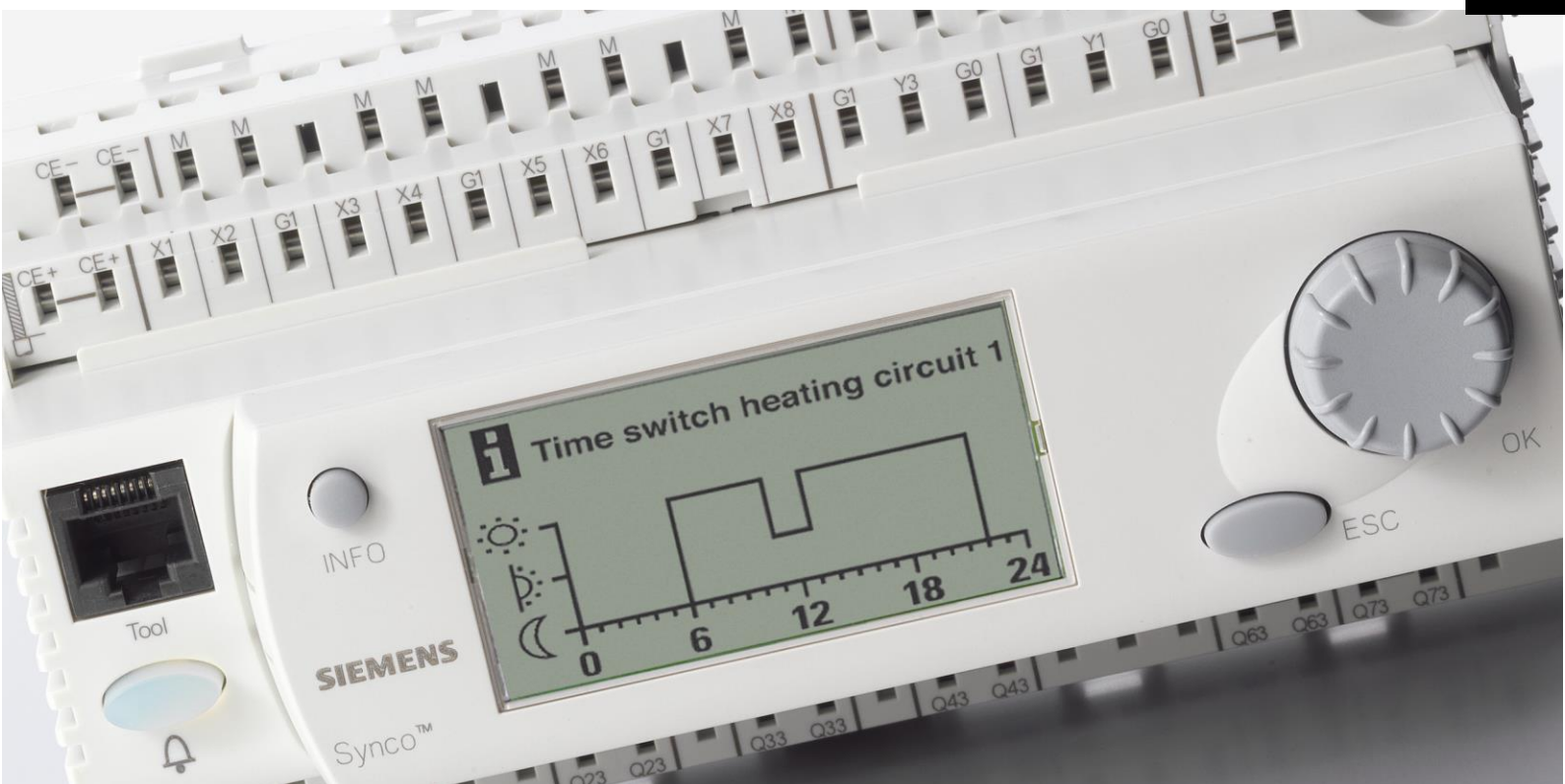
Product no.	Product Title	Data sheet	Page
WZM-V190	Extension set from 110 mm G ¾" to 190 mm G 1", incl. gaskets		670
WZM-V190	Adapter from 110 mm G ¾" to 190 mm G 1B", incl. gaskets		679
WZM-VE165	Adapter from 110 mm G ¾" to 165 mm G ¾", incl. 1 gasket		679
WZR-OP-USB	Optical read head with USB interface for PC		679
WZT-A100	Mounting set G ½" with threaded hole G ¼" for direct mounting of long sensors	N5324	693
WZT-A12	Adapter M10x1 mm x G 1/2 B" for sensor DS M10x1 mm / d=5.2 x 45 mm		679
WZT-A34	Adapter G ¾" with threaded hole to install sensor DS M10x1 mm, incl. gasket G ¾"		679
WZT-A38	Adapter G 3/8 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/8"		679
WZT-FA	Mounting set for sensor Ø 5.2x45 mm		683
WZT-FA	Adapter set brass for sensor 5.2 x 45 mm		681
WZT-G10	Welding sleeve with threaded hole for temperature sensor DS M10x1 mm		532
WZT-G12	Welding sleeve G ½", 45° to the pipe axis, with threaded hole G ½"		521
WZT-GLG	Welding sleeve G ½", 90° to the pipe axis, with threaded hole G ½"		521
WZT-K1	Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		532
WZT-K1-1	Ball valve R 1" with union nut G 1"		679
WZT-K112	Ball valve Rp 1½ for sensors 38 mm M10x1		693
WZT-K12	Ball valve Rp ½" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		532
WZT-K12-34	Ball valve R ½" with union nut G ¾"		679
WZT-K2-2	Ball valve Rp 2" with union nut G 2"		693
WZT-K34	Ball valve Rp ¾" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm		532
WZT-K34-1	Ball valve R ¾" with union nut G 1"		679
WZT-K34-34	Ball valve R ¾" with union nut G ¾"		679
WZT-K54	Ball valve Rp 1¼ for sensors 38 mm M10x1		693
WZT-K54-54	Ball valve Rp 1¼" with union nut G 1¼"		693
WZT-KA	Adapter for ball valve to install sensor DS M10x1 mm, length 38 mm		693
WZT-M35	Protection pocket G ½ B", length 35 mm, made of brass, for temperature sensor Ø 5.2x45 mm		679
WZT-M50	Protection pocket G ½B", brass, Ø 5.2x50 mm, for temperature sensor Ø 5.2x45 mm		679
WZT-MS110	Mounting set 110 mm		679
WZT-MS130	Mounting set 130 mm		679
WZT-S100	Protection pocket G ½ B", stainless steel, with threaded hole G ¼", L = 100 mm	N5324	693
WZT-S150	Protection pocket G ½ B", stainless steel, with threaded hole G ¼", L = 150 mm	N5324	693
WZT-S43V	Pocket G ½" B, stainless steel, 5.2 x 37 mm, with seal		679
WZU-485E-BAC	BACnet module RS-485 (MS/TP)		692
WZU-485E-MOD	Moduł Modbus RTU RS485		692
WZU5-1020	Pair of temperature sensors Pt500, PL Ø 6x100 mm, cable length 2 m	N5324	692
WZU5-1050	Pair of temperature sensors Pt500, PL Ø 6x100 mm, cable length 5 m	N5324	692
WZU5-1520	Pair of temperature sensors Pt500, PL Ø 6x150 mm, cable length 2 m	N5324	692
WZU5-1550	Pair of temperature sensors Pt500, PL Ø 6x150 mm, cable length 5 m	N5324	692
WZU5-2815	Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 1.5 m	N5324	683
WZU5-2825	Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 2.5 m	N5324	683
WZU5-3815	Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 1.5 m	N5324	683
WZU5-3825	Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 2.5 m	N5324	683
WZU5-4515	Pair of temperature sensors Pt500, PS Ø5.2x45 mm, cable length 1.5 m	N5324	683
WZU5-4550	Pair of temperature sensors Pt500, PS Ø 5.2x45 mm, cable length 5 m	N5324	683
WZU-AC110/230-15	Power supply AC 110/230 V for UH50..	N5324	692
WZU-AC110/230-50	Power supply AC 110/230 V for UH50..	N5324	692
WZU-ACDC24-50	Power pack AC/DC 24 V	N5324	692
WZU-AM	Analog module	N5324	692
WZU-ANT-MAG	Antenna with magnetic foot		692

## Type Overview

Product no.	Product Title	Data sheet	Page
WZU-ANT-Wall	Wall mounted antenna		692
WZU-BA+GUM	Standard battery (2x AA) for 6 years, complete with fastener	N5324	692
WZU-BDS	Universal battery (D-cell), life 6 and 16 years respectively	N5324	692
WZU-GPRS	GPRS module with external antenna (magnetic attachment) and power pack 110...230 V	N5324	692
WZU-GPRS-ANT	GPRS module with external antenna (for screw mounting) and power pack 110...230 V	N5324	692
WZU-LR	LoRaWAN communication module	N5324	692
WZU-LR-EXT	LoRaWAN comm. module, ext. antenna	N5324	692
WZU-MB G4	M-bus module for heat and heat/cooling energy meters, generation 4	N5324	692
WZU-MH	Mounting plate for top hat rail	N5324	683
WZU-MI	M-bus module with 2 pulse inputs for heat and heat/cooling energy meters, generation 4	N5324	692
WZU-NE24	Power pack for WZU-AM, WZU-485E-BAC and WZU-485E-MOD	N5324	692
WZU-P2	Pulse module with 2 channels	N5324	692
WZU-WA	Mounting plate for wall mounting		683
WZU-WH	Plate for wall mounting		683
WZX-UA-PEU-MINI	UltraAssist Profi, first license, CD with USB mini-dongle		679
WZX-UA-PFU-MINI	UltraAssist Profi, second license, USB mini-dongle		679
Z155/100	Blanking flange, DN100		501
Z155/15F	Blanking flange, DN15		500
Z155/20F	Blanking flange, DN20		500
Z155/25F	Blanking flange, DN25		500
Z155/32F	Blanking flange, DN32		500
Z155/40	Blanking flange, DN40		500
Z155/50	Blanking flange, DN50		500
Z155/65	Blanking flange, DN65		500
Z155/80	Blanking flange, DN80		501
Z366	Stem heating element for media temperatures 0 °C, 10 W, AC/DC 24 V		516
ZM100/A	Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	596
ZM101/A	Terminal housing for valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	596
ZM120/A	Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	596
ZM121/A	Terminal housing for valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	596
ZM150	Replacement electronic for M3P..GY, M3P..FY, M2H..FY., M3B..GY., M2S..FY and M2FE..	N4348	501
ZM200/A	Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	596
ZM220/A	Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	596
ZM250	Replacement electronic for M3P..FY..	N4454	501



# Standard controllers



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## Standard controllers

### Overview and selection tools

#### Overview of heating controllers product details



Preferential applications	RLE..		RVP..		RVP..			RVL..				RMH..	RMK..
	132	162	201	211	340	350	360	479	480	481	482	760B	770
Heating group	■	■	■	■	■	■	■					■	■
Boiler control			■	■								■	■
1-stage													
2-stage						■	■		■	■	■		■
Multi-boiler system													■
Domestic hot water	■	■		■		■	■			■	■	■	
Domestic water solar						■	■			■	■	■	
2nd heating group							■	■				■	
3rd heating group									■			■	

Operation system	RLE..		RVP..		RVP..			RVL..				RMH..	RMK..
	132	162	201	211	340	350	360	479	480	481	482	760B	770
Type of operation													
analog	■	■	■	■				■	■	■	■	■	■
digital					■	■	■	■	■	■	■	■	■
Heating curve bar								■	■	■	■		
Time switch													
analog			■	■				■	■	■	■	■	■
digital			1)	1)	■	■	■	■	■	■	■	■	■
Programmed plant types	6	3			2	3	6	1	6	29	21	41	18
Yearly clock					■	■	■	■	■	■	■	■	■

1) Variant

Communication	RLE..		RVP..		RVP..			RVL..				RMH..	RMK..
	132	162	201	211	340	350	360	479	480	481	482	760B	770
Controller network					LPB	LPB	LPB	LPB	LPB	LPB	LPB	KNX	KNX
Web operation					OZW672..			OZW672..				OZW772..	

Sensors	RLE..		RVP..		RVP..			RVL..				RMH..	RMK..
	132	162	201	211	340	350	360	479	480	481	482	760B	770
Outside sensor QAC22	■	■	■	■	■	■	■	■	■	■	■	■	■
Outside sensor QAC32			■	■	■	■	■	■	■	■	■	■	■
Strap-on temp. sensor QAD22			■	■	■	■	■	■	■	■	■	■	■
Immersion temp. sensor QAE2..			■	■	■	■	■	■	■	■	■	■	■
Cable temp. sensor QAP2..			■	■	■	■	■	■	■	■	■	■	■
Room temp. sensor QAA24					■	■	■	■	■	■	■	■	■
Room temp. sensor AQR2531ANW					■	■	■	■	■	■	■	■	■
Solar sensor QLS60											■	■	

Room units	RLE..		RVP..		RVP..			RVL..				RMH..	RMK..
	132	162	201	211	340	350	360	479	480	481	482	760B	770
Room unit QAA50.110/101 analog			■	■	■	■	■	■	■	■	■		
Room unit digital QAW70..			■	■	■	■	■	■	■	■	■		
Room unit digital QAW740												■	■

Overview of district heating controllers product details



Preferential applications	RVD120	RVD140	RVD250	RVD260	RVP340	RVL480	RVL481	RMH760B
Heating group	■	■	■	■	■	■	■	■
District heat exchanger	■	■	■	■	1)	1)	1)	■
Domestic hot water	■	■	■	■			■	■
Domestic water solar		■	■	■			■	■
2nd heating group				■				■
3rd heating group								■

1) Variant: For the description of the controllers see chapter 1 „Communicative heating controllers“.

Operation system	RVD120	RVD140	RVD250	RVD260	RVP340	RVL480	RVL481	RMH760B
Type of operation								
analog			■	■	■	■	■	■
digital	■	■						
Heating curve bar						■	■	
Time switch								
analog			■	■	■	■	■	■
digital	■	■						
Programmed plant types	3	8	28	14	2	6	29	41
Yearly clock	■	■	■	■	■	■	■	■

Communication	RVD120	RVD140	RVD250	RVD260	RVP340	RVL480	RVL481	RMH760B
Controller network			LPB	LPB	LPB	LPB	LPB	KNX
M-bus slave			■	■				
Web operation	ext. Modbus-Interface	ext. Modbus-Interface	OZW672.. WTV676		OZW672..	OZW672..		OZW772..

Sensors	RVD120	RVD140	RVD250	RVD260	RVP340	RVL480	RVL481	RMH760B
Outside sensor QAC22	■	■	■	■	■	■	■	■
Outside sensor QAC32	■	■	■	■	■	■	■	■
Strap-on temp. sensor QAD22	■	■	■	■	■	■	■	■
Immersion temp. sensor QAE2..	■	■	■	■	■	■	■	■
Cable temp. sensor QAP2..	■	■	■	■	■	■	■	■
Room temp. sensor QAA24					■	■	■	■
Room temp. AQR2531ANW sensor					■	■	■	■
Solar sensor QLS60								■
Pressure sensor QBE2002..		■	■	■				

Room units	RVD120	RVD140	RVD250	RVD260	RVP340	RVL480	RVL481	RMH760B
Room unit QAA50.110/101 analog	■	■	■	■	■	■	■	
Room unit digital QAW70..	■	■	■	■	■	■	■	
Room unit digital QAW740								■

# Standard controllers

## Overview and selection tools

### Overview of HVAC controllers product details



	RLM..	RLA..	RWD..			RLU..					RMU..			RMS..		RMZ	
	162	162	82	62	68	202	220	222	232	236	710B	720B	730B	705B	785	787	788
	Air duct temperature controller	Room temperature controller	Universal controller, 1 control loop, 2DO	Universal controller, 1 control loop, 2AO	Universal controller, 1 control loop, 1AO, 1DO	Universal controller, 1 control loop, 2DO	Universal controller, 1 control loop, 2AO	Universal controller, 2 control loops, 2AO, 2DO	Universal controller, 2 control loops, 3AO, 2DO	Universal controller, 2 control loops, 3AO, 6DO	Modular universal controller, 1 control loop	Modular universal controller, 2 control loops	Modular universal controller, 3 control loops	Switching and Monitoring Device	Universal module, 8UI	Universal module, 4UI, 4DO	Universal module, 4UI, 2DO, 2AO
Option modules for RMU7..0B and RMS705B											4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	1 <sup>2)</sup>	2 <sup>2)</sup>	2 <sup>2)</sup>
Operation	■	■	■	■	■	■	■	■	■	■	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>			
KNX communication											■	■	■	■			
7-day time switch and holiday/special day program											■	■	■	■			
Supervision											■	■	■	■			
Logic functions											■	■	■	■			

#### Outputs

Step switch						■		■	■	■	■	■	■	■			
Relay	1	1	2		1	2		2	2	6	2	4	6	6		4	2
3-position			1 <sup>3)</sup>			1 <sup>3)</sup>		1 <sup>3)</sup>									
DC 0...10 V	2	2		2	1		2	2	3	3	2	3	4	4			2

#### Universal inputs

T1						■	■	■	■	■	■	■	■	■	■	■	■
Pt1000			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
DC 0...10 V			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Digital						■	■	■	■	■	■	■	■	■	■	■	■
LG-Ni 1000			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Number of universal inputs	-	-	2	2	2	4	4	4	5	5	6	8	8	8	8	4	4

#### Fixed inputs

DC 0...10 V	1	1															
Digital	2	1	1	1	1	1	1	1	2	2							
LG-Ni 1000	1	1															
Integrated LG-Ni 1000 sensor	1	1															

#### Controlled variable

Universal			■	■	■	■	■	■	■	■	■	■	■	■			
Temperature °C	■	■	■	■	■	■	■	■	■	■	■	■	■	■			

#### Control mode

PID						■	■	■	■	■	■	■	■	■			
P/PI	■	■	■	■	■	■	■	■	■	■	■	■	■	■			

#### Control loops

Cascade			■	■	■	■	■	■	■	■	■	■	■	■			
Number	1	1	1	1	1	1	1	2	2	2	1	2	3	3			

- <sup>1)</sup> Optional operation:  
 RMZ790: Plug-in operator unit  
 RMZ791: Detached operator unit  
 RMZ792: Bus operator unit

- <sup>2)</sup> Maximum number of option modules  
 RMZ78x per controller
- <sup>3)</sup> 2 Relays or one 3-position

- AO Analog output
- DO Digital output
- UI Universal inputs

### Immersion temperature controller, AC 230 V, 3-position output

RLE132

Compact electronic controller with immersion type temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for mains connection and controller output need to be laid. Supplied with protection pocket for indirect temperature sensing.



#### Application:

Modulating temperature controller, with 3-position control signal and auxiliary relay. The RLE132 is ideally suited for control of the following heating plants:

- Domestic hot water temperature
- Flow temperature control
- Calorifiers or heat exchangers

#### Features:

- Values for both normal and reduced temperature can be set
- Setpoint changeover via external contact or time switch
- Optional legionella function
- Auxiliary digital output for heat demand
- Connection for remote setting unit
- Minimum limitation of boiler return temperature
- Minimum or maximum limitation of the return temperature
- PI control (selectable)
- Service mode

Data sheet	N3334
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	4 VA
Setpoint setting range	0...130 °C
Setpoint readjustment range	0...50 K
Digital input, contact query	DC 3...6 mA DC 6...15 V
Digital outputs, number	3
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	2 A
PN class	PN 10
Immersion length	150 mm
Degree of protection	IP65
Dimensions (W x H x D)	125 x 152 x 78 mm

Stock no.

Product no.

BPZ:RLE132

RLE132

## RLE162

## Immersion temperature controller, AC 24 V, DC 0...10 V output



Compact electronic controller with immersion type temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for power supply connection and controller output need to be laid. Threaded nipple (AQE2102) for direct temperature comes with the product RLE162.

## Applications:

Modulating temperature controller, with 1 or 2 continuous DC 0...10 V output signals and auxiliary relay. The RLE162 is used for control and limiting of temperature in hot water, heating or cooling plants:

- Domestic hot water temperature
- Heating flow temperature
- Closed circuit heat exchangers
- Water-side control of HVAC units
- Chilled water temperature

## Features:

- High or low temperature limitation
- Auxiliary digital output
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch
- Optional legionella function

Data sheet	N3333
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Setpoint readjustment range	0...60 K
Setpoint setting range	-10...130 °C
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Analog input, signal	LG-Ni1000
	0...1000 Ohm
	DC 0...10 V
Analog outputs, number	2
Digital inputs	Potential-free input signal
Digital input, contact query	DC 3...6 mA
	DC 6...15 V
Digital outputs, number	1
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Immersion length	130 mm
PN class	PN 10
Degree of protection	IP65
Dimensions (W x H x D)	125 x 152 x 78 mm

Stock no. Product no.

BPZ:RLE162 **RLE162**

## Accessories for RLE132 / RLE162

Product Title	Data sheet	Stock no.	Product no.
Protection pocket, 150 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	BPZ:ALT-SB150	<b>ALT-SB150</b>
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>

## Application examples Synco™ 100

These are only a few examples of many applications that can be done with the with Synco™ 100 controllers: RLE..

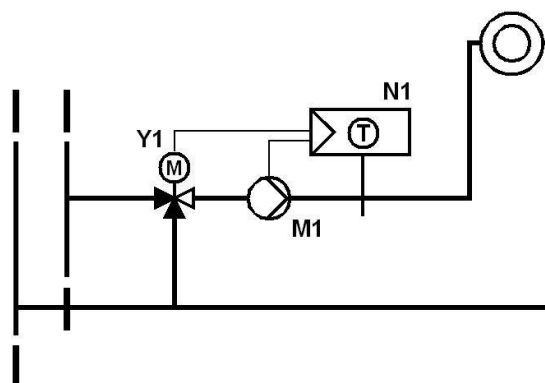
More Synco™ 100 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLE.. data sheet.

### Heating Plant, Flow Temperature Control - Flow temperature control in a common distribution circuit

RLE132

H0C003 LE1 HQ

- Controller (N1) with immersion built-in sensor to control the heating flow temperature via modulating control of the mixing valve (Y1)

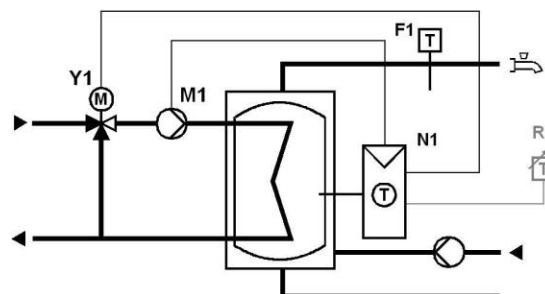


### Domestic Hot Water Plant - Temperature control of domestic hot water storage via mixing valve and HWS circulation pump

RLE162

H00B01 LE1 HQ

- Controller (N1) with built-in immersion sensor to control the d.h.w. storage temperature via modulating control of the primary d.h.w. heating valve (Y1) and the circulating pump (M1).



## Standard controllers

## Standalone heating controllers

## Heating controller RVP2..

## RVP201..



## Heating controller with analog operating elements

Heating controllers for use in residential or smaller commercial buildings that have their own heat generation. Easy-to-understand analog operating elements for the enduser.

## Key functions

Weather-compensated flow or boiler temperature control, with or without room influence or room temperature control. Control of 3- or 2-position actuators or direct control of a burner.

## Additional settings

- Control of the heating pump
- Quick setback and boost heating
- Heating curve
- Room temperature influence
- Frost protection for the plant and the room
- Automatic ECO function for switching the heating system on and off depending on demand
- Maximum limitation of the flow or boiler temperature
- Pump overrun and pump kick
- Remote switching of operating mode via room unit or external switch

## Operating modes

The following operating modes can be selected with the slider: Automatic/Protection, Automatic/Reduced, Setback, Normal operation and Protection.

Data sheet	N2464
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000
	NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Degree of protection	IP40
Dimensions (W x H x D)	144 x 96 x 115 mm

## Range overview RVP201..

Product Title	Stock no.	Product no.
Heating controller without time switch	BPZ:RVP201.0	<b>RVP201.0</b>



## Heating controller incl. DHW heating

RVP211..

Heating controller for use in residential or smaller commercial buildings that have their own heat generation and own DHW heating. Easy-to-understand analog operating elements for the enduser.

Key functions (same as RVP201)

Other settings (same as RVP201)

DHW heating functions

- Storage tank charging by control of a charging pump:
  - Absolute priority: Heating circuit pump remains locked during DHW charging
  - No priority (parallel): Heating circuit pump and DHW charging pump operate parallel
- Storage tank charging by control of a diverting valve
- Frost protection for DHW
- DHW temperature can be acquired via a temperature sensor or thermostat

Operating modes

The following operating modes can be selected with the slider: Automatic/Protection, Automatic/Reduced, Setback, Normal operation, Protection, or DHW heating only.

Data sheet	N2464
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Degree of protection	IP40
Dimensions (W x H x D)	144 x 96 x 115 mm



## Range overview RVP211..

Product Title	Stock no.	Product no.
Heating controller without time switch, with d.h.w. heating	BPZ:RVP211.0	<b>RVP211.0</b>

## Accessories for RVP2..

Product Title	Data sheet	Stock no.	Product no.
Analog 24-hour time switch	N2464	BPZ:AUZ3.1	<b>AUZ3.1</b>
Analog 7-day time switch	N2464	BPZ:AUZ3.7	<b>AUZ3.7</b>

## Field devices for RVP2..

Product Title	Data sheet	Stock no.	Product no.
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	<b>QAE9120.010</b>
Multifunctional room operator unit	N1637	BPZ:QAW70..	<b>QAW70..</b>
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	<b>QAC32</b>
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	<b>QAD22</b>
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	<b>QAE2120.010</b>
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	<b>QAP21.3</b>

## Standard controllers

### Standalone heating controllers

#### Application example RVP2..

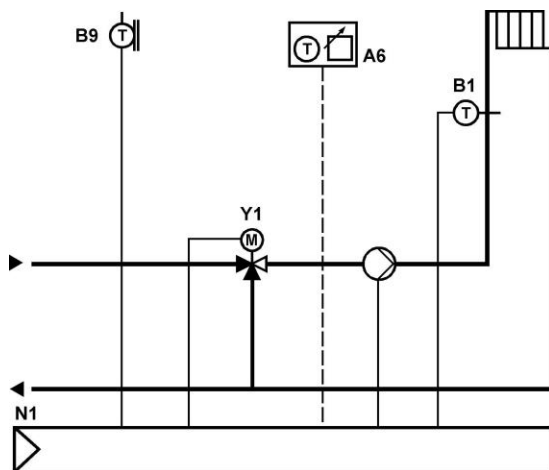
#### Application example RVP2..

These are only a few examples of many applications that can be done with the family of controllers: RVP2...

More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVP2.. data sheet.

#### RVP201.1

H0C001 VP2 HQ b

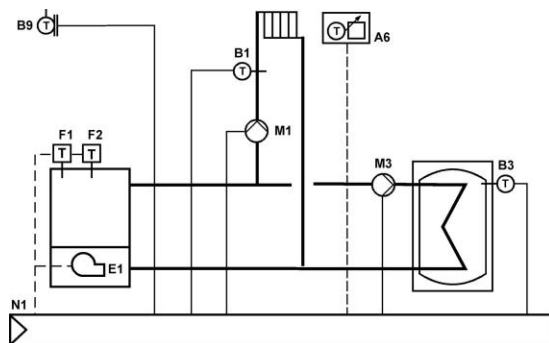


#### Weather-compensated heating system, one heating circuit

- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Time program with analog 24-hour time switch
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only)
- Maximum limitation of flow temperature

#### RVP211.1

HAAA01 VP2 HQ b



#### Weather-compensated heating system, heat generation, one heating circuit, d.h.w. - Weather-compensated flow temperature control acting on boiler

- Weather-compensated flow temperature control acting on boiler with single-stage burner
- Control of d.h.w. supply via pump-charged storage tank
- Frost protection for building and plant
- Time program with analog 24-hour time switch
- ECO function switches off heating depending on outside temperature

## Heating controller for 1 heating circuit

RVP340



Weather-compensated flow temperature control of heating circuit with or without room influence.

Key functions:

- 2 preprogrammed plant types can be selected, with automatic assignment of the functions required for each plant type
- Weather-compensated flow temperature control through control of valve (mixing) in a heating circuit
- Weather-compensated flow temperature control through control of the 2-port valve in the primary return of a heating circuit with district heat connection (substation)

Additional functions

The RVP340 provides the following functions (no submodules or extra devices required):

- Optimum start/ stop
- Quick setback and boost heating
- Automatic ECO function, depending on the outside temperature and the type of building construction
- One 7-day program with 3 heating periods per day
- Yearly time program for holidays
- Digital setting of the heating curve
- Pump kick and pump overrun
- Minimum and maximum limitation of the flow temperature
- Multifunctional outputs
- Digital input for remote control of operating mode
- Communication with other controllers via LPB data bus (RVP3.., RVL4.. and RVD2..)

Data sheet	N2545
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	6 VA
Analog input, signal	LG-Ni1000 NTC575
Digital inputs	Status contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	4 x 2(2) A
Degree of protection	IP40
Dimensions (W x H x D)	144 x 96 x 109 mm

Stock no.	Product no.
S55370-C136	RVP340

## RVP350



## Heating controller for 1 heating circuit and d.h.w.

Weather-compensated flow temperature control of heating circuit with or without room influence, d.h.w. heating and demand based boiler temperature control.

## Key functions

In addition to the functions of the RVP340, the RVP350 provides the following:

- 3 preprogrammed plant types can be selected, with automatic assignment of the functions required for each plant type
- Weather-compensated flow temperature control through control of valve (mixing) in a heating circuit
- Demand based control of the boiler temperature through control of the burner
- D.h.w. heating with charging pump, electric immersion heater and solar collector

## D.h.w. control

D.h.w. control independent of the heating circuit. Control can be enabled as follows:

- According to its own 7-day program
- According to the program of the heating circuit
- According to the programs of the zone controllers on the data bus
- Permanently (24 hours a day)

D.h.w. heating features a legionella function, which can be deactivated. Legionella protection is activated once a week. The d.h.w. temperature is acquired with sensors or thermostats.

## Boiler temperature control

Boiler temperature control operates as demand-dependent 2-position control. The boiler temperature is controlled through cycling of a 1- or a 2-stage burner (direct burner control). When there is no heat request, the boiler will either be shut down or maintained at the minimum temperature (selectable). Both minimum and maximum limitation of the boiler temperature are adjustable.

Data sheet	N2545
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000
	NTC 575
Digital inputs	Status contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 x 2(2) A
	7 x 1(1) A
Degree of protection	IP40
Dimensions (W x H x D)	144 x 96 x 109 mm

Stock no. Product no.

S55370-C137 RVP350

## Heating controller for 2 heating circuits and d.h.w.

RVP360



Weather-compensated flow temperature control of 2 independent heating circuits with or without room influence, d.h.w. heating and demand-dependent boiler control.

### Key functions

In addition to the functions of the RVP350, the RVP360 provides the following:

- 6 preprogrammed plant types can be selected, with automatic assignment of the functions required for each plant type
- Control of 2 mixing heating circuits
- Control of 1 pump heating circuit and 1 mixing heating circuit

Data sheet	N2546
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	8 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 x 2(2) A 9 x 1(1) A
Degree of protection	IP40
Dimensions (W x H x D)	144 x 96 x 109 mm

Stock no.	Product no.
S55370-C139	RVP360

## Accessories for RVP3..

Product Title	Data sheet	Stock no.	Product no.
Front module with passiv temperature measurement, LG-Ni1000	N1408	S55720-S133	AQR2531ANW
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Multifunctional room operator unit	N1637	BPZ:QAW70..	QAW70..
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	QAC32
Web Server for LPB devices	N5712	BPZ:OZW672..	OZW672..
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	QAA24
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3
Mounting plates for front modules with passiv temperature measurement	N1408	BPZ:AQR2500..	AQR2500..

## Service tool

Product Title	Data sheet	Stock no.	Product no.
Commissioning and plant operating software	N5649	S55800-Y100	ACS790
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	OCI700.1
Web Server for LPB devices	N5712	BPZ:OZW672..	OZW672..

The software (ACS790) can be downloaded for free via <http://www.siemens.com/acs790>.

## Standard controllers

### Communicating heating controllers

#### Application examples RVP3..

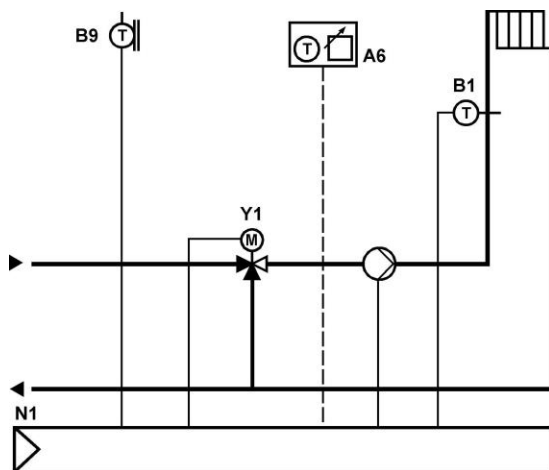
#### Application examples RVP3..

These are only a few examples of many applications that can be done with the family of controllers: RVP3...

More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVP3.. data sheet.

#### RVP340

H0C001 VP3 HQ

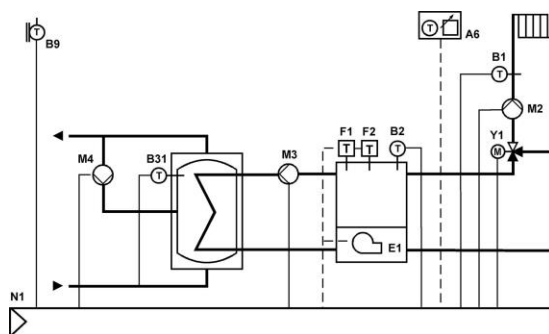


#### Weather-compensated heating system, one heating circuit

- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Digital yearly time switch
- Time switch program with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

#### RVP350

HACA01 VP3 HQ

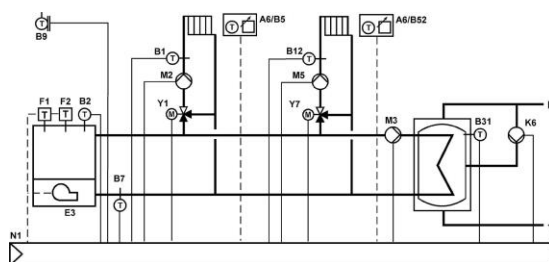


#### Weather-compensated heating system, heat generation, one heating circuit and d.h.w

- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependent flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

#### RVP360

HBDA01 VP3 DE



#### Weather-compensated heating system, heat generation, two heating circuits and d.h.w.

- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependent flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 2 time switch programs, each with 3 heating periods
- Separate time switch program for d.h.w.
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

**Multifunctional Heating Controllers**

**RVL4..**

Multifunctional heating controller for use in all types of residential and nonresidential buildings, configured for all standard heating applications. The RVL controllers provide weather-compensated flow temperature control and preprogrammed plant types with automatic assignment of the functions required for each type of plant.

The RVL controllers are characterized by the easy-to-understand user interface, large display and setting features:

- Analog heating curve
- Room temperature setpoint knob
- Proven operating line principle
- Setting level for the heating engineer
- Communication facilities
- Remote operation

Operating voltage	AC 230 V
Frequency	50 Hz
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 x 144 x 113 mm

**Heating controller for 1 heating circuit or boiler temperature control**

**RVL480**

**Key functions**

Weather-compensated flow temperature control, with or without room influence  
 6 preprogrammed plant types are provided



**Plant system**

- Control of a mixing valve serving a heating zone (space heating)
- Control of a burner (1- or 2-stage)
- Control of a valve in the primary return of a heating zone with district heat connection
- Demand-dependent control (precontrol) of a mixing valve / of the boiler temperature / of a heat exchanger (heat demand signal via data bus)

**Additional functions**

The RVL480 offers the following functions (no submodules or extra devices required):

- Display of parameters, actual values, operating states and fault status signals
- 7-day program with 3 heating periods per day
- 2 additional programs, each with 3 switching periods per day
- Automatic summer/winter changeover
- Holiday program (up to 8 holiday periods per year)
- Optimum start/stop in accordance with the heating program (with or without room influence)
- Automatic ECO function, depending on the outside temperature and the type of building construction
- Optional remote selection of operating modes (via room unit or external switch)
- Scalable DC 0...10 V output for passing on the heat request to other devices
- Quick setback and boost heating
- Preselection of flow temperature setpoint via external contact
- Minimum and maximum limitation of the flow temperature
- Minimum and maximum limitation of the return temperature (shifting / constant)
- Maximum limitation of the room temperature
- Communication with other devices via the data bus
- Limitation of the return temperature differential (DRT) for district heat applications
- Frost protection and pump protection
- Flow temperature alarm

Data sheet	N2540
Power consumption	7 VA

Stock no.	Product no.
BPZ:RVL480	<b>RVL480</b>

## RVL481

## Heating controller for boiler temperature control and d.h.w. heating

**Key functions**

Weather-compensated flow temperature control, with or without room influence, with simultaneous demand-compensated boiler and DHW control.

29 preprogrammed plant types can be selected from a combination of 6 heating applications and 5 DHW applications.

**Heating circuit plant types**

- Control of a mixing valve serving a heating circuit (space heating)
- Control of a burner (1- or 2-stage)
- Control of a valve in the primary return of a heating zone with district heat connection
- Demand-dependent control (precontrol) of a mixing valve / of the boiler temperature / of a heat exchanger (heat demand signal via data bus)

**DHW plant types**

- Charging of DHW storage tank through control of a charging pump.
- Charging of DHW storage tank through control of a mixing valve
- Charging of DHW storage tank through control of a diverting valve
- DHW heating via heat exchanger through control of a 2-port valve in the primary return
- DHW heating with electric immersion heater only
- DHW heating with solar collector

**Additional functions**

In addition to the functions of the RVL480, the RVL481 offers the following functions (no submodules or extra devices required):

- 2 programs for heating and DHW, each with 3 heating periods per day
- 1 multifunctional relay for switching on/off the plant according to various parameters and functions

Data sheet

N2541

Power consumption

9 VA

Stock no.

Product no.

BPZ:RVL481

**RVL481**



## Heating controller for boiler temperature control for modulating or 2-stage burners with d.h.w. heating

RVL482

### Key functions

Weather-compensated flow temperature control, with or without room influence, with simultaneous demand-compensated boiler and DHW control.

21 preprogrammed plant types can be selected from a combination of 5 heating applications and 4 DHW applications.



### Heating circuit plant types

- Control of space heating through control of a mixing valve in the heating circuit
- Control of space heating through control of a mixing valve with simultaneous demand-dependent control of the boiler temperature
- Control of space heating through control of mixing valve and boiler, plus minimum limitation of the boiler return temperature with own mixing valve
- Demand-dependent control (precontrol) of the boiler temperature (heat demand signal via bus)
- Demand-dependent control (precontrol) of the boiler temperature with minimum limitation of the boiler return temperature via mixing valve (heat demand signal via bus)

### DHW plant types

- Charging of DHW storage tank through control of a charging pump.
- Charging of DHW storage tank through control of a mixing valve
- DHW heating via heat exchanger through control of a 2-port valve in the primary return
- DHW heating through electric immersion heater only
- DHW heating with solar collector

### Additional functions

In addition to the functions of the RVL480 and RVL481, the RVL482 offers the following functions:

- 2 scalable DC 0...10 V inputs for heat demand signals from external consumers
- Connection facility for solar and wind sensor (refer to chapter "Sensors")
- Control of a boiler or circulating pump
- Optional selection of circulating pump/bypass pump
- Three 7-day programs, each with 3 heating periods per day

Data sheet	N2542
Power consumption	9 VA

Stock no.	Product no.
BPZ:RVL482	<b>RVL482</b>

## Standard controllers

## Communicating heating controllers

## Heating controller RVL4..

## RVL479

## Heating controller for a second heating circuit

**Application**

Heating controller for use in all types of buildings that require specific control of a second heating zone at an attractive price.

**Key functions**

The RVL479 operates with a partner unit, for independent weather-compensated control of a second heating zone.

1 preprogrammed heating application: Space heating via control 3-position of a mixing valve.

**Additional functions**

- Dedicated control of the second heating zone makes it possible to use an independent user interface for diagnostics
- Separate 7-day program with 3 heating periods per day
- Separate holiday program
- Dedicated display of parameters for the second zone (operating state and fault status signals)
- Independent optimum start/stop for the second heating zone
- Minimum and maximum limitation of the flow temperature
- Minimum limitation of the return temperature
- Maximum limitation of the room temperature
- Communication with other devices via LPB data bus
- Transmission and common usage of data (outside temperature, heat demand, alarms, etc.)
- Frost protection and pump protection

Data sheet

N2543

Power consumption

7 VA

Stock no.

Product no.

BPZ:RVL479

RVL479

**Suitable partner units for RVL479**

Product Title	Data sheet	Stock no.	Product no.
Heating controller for 1 heating circuit or boiler temperature control	N2540	BPZ:RVL480	RVL480
Heating controller for boiler temperature control and d.h.w. heating	N2541	BPZ:RVL481	RVL481
Heating controller for boiler temperature control for modulating or 2-stage burners with d.h.w. heating	N2542	BPZ:RVL482	RVL482

**Field devices for RVL4..**

Product Title	Data sheet	Stock no.	Product no.
Front module with passiv temperature measurement, LG-Ni1000	N1408	S55720-S133	AQR2531ANW
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Solar sensor	N1943	BPZ:QLS60	QLS60
Multifunctional room operator unit	N1637	BPZ:QAW70..	QAW70..
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	QAC32
Web Server for LPB devices	N5712	BPZ:OZW672..	OZW672..
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	QAA24
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3
Mounting plates for front modules with passiv temperature measurement	N1408	BPZ:AQR2500..	AQR2500..

Standard controllers  
Communicating heating controllers  
Heating controller RVL4..

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**Service tool**

Product Title	Data sheet	Stock no.	Product no.
Commissioning and plant operating software	N5649	S55800-Y100	<b>ACS790</b>
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	<b>OCI700.1</b>
Web Server for LPB devices	N5712	BPZ:OZW672..	<b>OZW672..</b>

The software (ACS790) can be downloaded for free via <http://www.siemens.com/acs790>.

## QAW70..



## Multifunctional room operator unit

Programmable unit with display of date, time of day, room temperature, outside temperature, setting values and current 7-day program. With knob for manual setpoint readjustments and presence button for manually activating the savings program

Data sheet	N1637
Measuring range, temperature	0...32 °C
Setpoint readjustment range	±3 K
Communication	PPS
Connection cable	2-wire
Degree of protection	IP30
Dimensions (W x H x D)	97 x 143 x 41 mm

## Range overview QAW70..

Product Title	Stock no.	Product no.
Multifunctional room unit, instructions in en, de, fr, it	BPZ:QAW70-A	<b>QAW70-A</b>
Multifunctional room unit, instructions in nl, sv, el, pl	BPZ:QAW70-B	<b>QAW70-B</b>

## Application examples RVL4..

These are only a few examples of many applications that can be done with the family of controllers: RVL4...

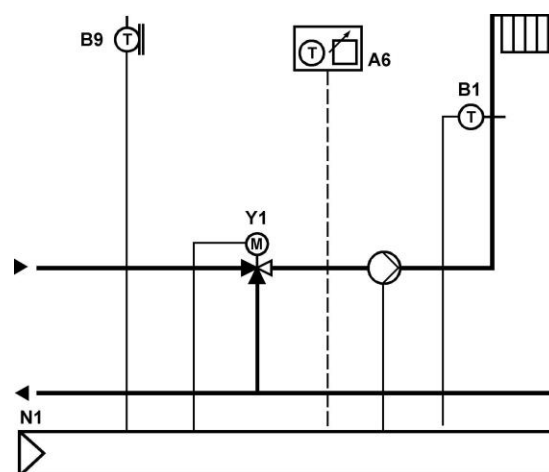
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVL4.. data sheet.

### Weather-compensated heating system, one heating circuit

RVL480

H0C001 VL4 HQ

- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Digital yearly time switch
- Time switch program with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- Analog setting of heating curve

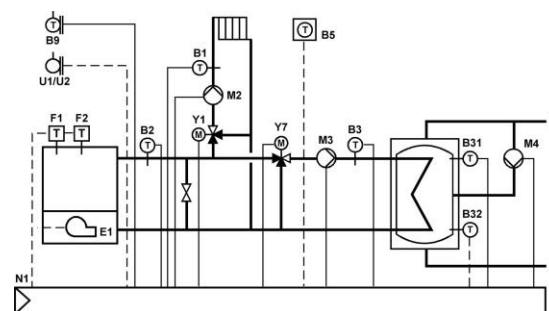


### Weather-compensated heating system, heat generation, one heating circuit, d.h.w.

RVL482

HACB01 VL4 HQ

- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependent flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 3 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- Analog setting of heating curve and room temperature setpoint



## RMH760B-1



## Heating controller

- Heating controller as primary controller or main controller (district heat) or heating circuit controller
- Boiler temperature control
- Control of max. 3 heating circuits and DHW heating (7 variants available) with optional extension modules
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

The RMH760B-1 supports the languages: English, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Norwegian, Swedish, Polish, Czech, Hungarian, Russian, Slovak, Bulgarian, Greek, Romanian, Slovenian, Serbian, Croatian, Turkish.

Extension modules complement the heating controller and offer extra functions. They are attached to the controller via plug-in connectors. The extension modules do not operate autonomously. The operation of the device from commissioning to enduser operation can be done via the operator unit.

Available extension modules:

- 2 heating circuit modules RMZ782B
- 1 DHW module RMZ783B
- 1 universal module RMZ787
- 2 universal modules RMZ789

A total of 4 extension modules can simultaneously be used with the heating controller.

Available operator units:

- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3133
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Communication	KNX (KNX TP1)
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital outputs, number	5
Universal inputs, number	6
Universal input, signal	T1 (PTC) Pt1000 Potential-free digital status contact NTC 575 LG-Ni1000 Digital pulse contact DC 0...10 V 2 x LG-Ni1000 1000...1175 Ohm 0...1000 Ohm
Relay outputs, number	5
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Mounting	DIN rail
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

Stock no.	Product no.
BPZ:RMH760B-1	<b>RMH760B-1</b>

## Boiler sequence controller

RMK770-1



Modular heating controller with integrated control and supervisory functions for:

- Up to 6 boilers, multistage or modulating burners
- Precontrol, heating circuit
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

The RMK770-1 supports the languages: English, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Norwegian, Swedish, Polish, Czech, Hungarian, Russian, Slovak, Bulgarian, Greek, Romanian, Slovenian, Serbian, Croatian, Turkish.

Extension modules complement the boiler sequence controller and offer extra functions. They are attached to the controller via plug-in connectors. The extension modules do not operate autonomously. The operation of the device from commissioning to enduser operation can be done via the operator unit.

Available extension modules:

- 3 universal modules RMZ785
- 3 universal modules RMZ787
- 3 universal modules RMZ788
- 3 universal modules RMZ789

A total of 3 extension modules can simultaneously be used with the boiler sequence controller.

Available operator units:

- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3132
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Communication	KNX (KNX TP1)
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital inputs, number	2
Digital inputs	Potential-free input signal
Digital input, contact query	5 mA
	DC 15 V
Digital outputs, number	7
Universal inputs, number	8
Universal input, signal	T1 (PTC)
	Pt1000
	Potential-free digital status contact
	LG-Ni1000
	DC 0...10 V
	2 x LG-Ni1000
	1000...1175 Ohm
	0...1000 Ohm
Relay outputs, number	7
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Mounting	DIN rail
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

Stock no.

Product no.

BPZ:RMK770-1

RMK770-1

## Standard controllers

### Communicating heating controllers

#### Application examples RMH760B.. and RMK770..

#### BACS Energy Performance Classes – EN 15232

High energy performance  
BACS and TBM

A

Advanced  
BACS and TBM

B

Standard  
BACS

C

Non-energy-efficient  
BACS

D

BACS Building Automation and Control System  
TBM Technical Building Management System

#### Application examples RMH760B.. and RMK770..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMH760B.. / RMK770..

More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMH760B.. / RMK770.. data sheet.

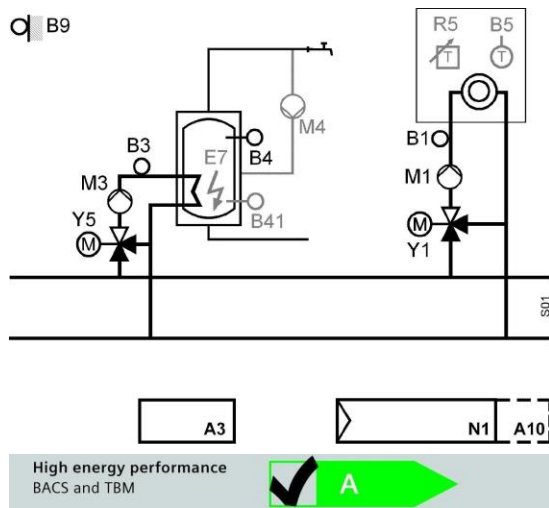
The evaluation of the energy efficiency classification is based on EN15232:2012. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".

Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.

[www.siemens.com/hit](http://www.siemens.com/hit)

#### RMH760B..

HOCB02 H6B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

#### Weather-compensated heating control, one heating circuit, d.h.w.

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Economy and Protective Mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to 16 periods
- 7-day program (maximum six switching points per day)
- Time switch program for the heating circuit
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Control of the storage tank charging temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant  $\Delta p$  (The pump must have integrated output control)
- Variable temperature depending on the load (Heat demand signal required)



## Standard controllers

### Communicating heating controllers

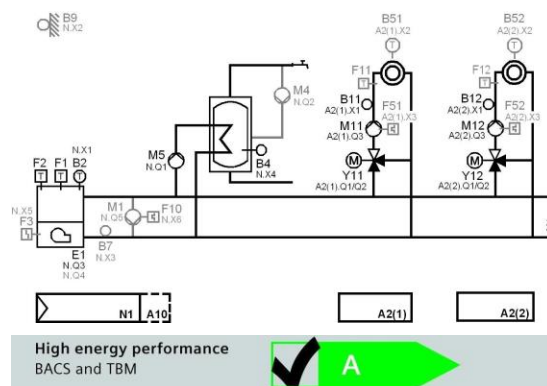
#### Application examples RMH760B.. and RMK770..

#### Weather-compensated heating control, heat generation, 2 heating circuits, d.h.w.

RMH760B..

HCDA01 H6B HQ

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Economy and Protective Mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to 16 periods
- 7-day program (maximum six switching points per day)
- Time switch programs for heating circuits 1 and 2
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Control of the storage tank temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating
- Demand-compensated boiler temperature control
- Protective boiler startup by reducing the consumer setpoints
- Control of a single-stage or 2-stage burner
- Control of the boiler temperature via modulating burner with DC0...10 V control
- Burner fault contact



To fulfill the classification, the plant must be equipped with all indicated functions.

**The indicated energy efficiency classification can be attained only if the following functions are implemented:**

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant  $\Delta p$  (The pump must have integrated output control)
- enerator; Variable temperature depending on the load

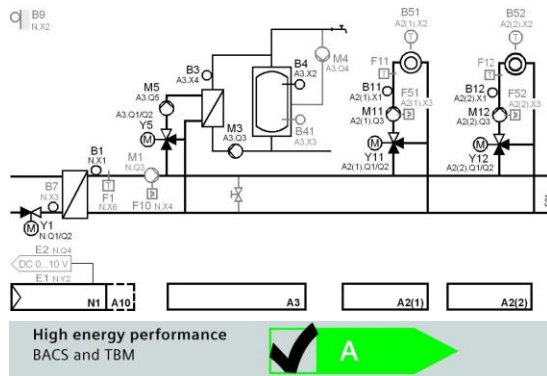
## Standard controllers

## Communicating heating controllers

## Application examples RMH760B.. and RMK770..

## RMH760B..

DADC04 H6B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

**Weather-compensated heating system, district heating connection, 2 heating circuits, d.h.w**

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Economy and Protective mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to 16 periods
- 7-day program (maximum six switching points per day)
- Time switch programs for the heating circuits
- Control of the storage tank charging temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Demand-compensated primary control

**The indicated energy efficiency classification can be attained only if the following functions are implemented:**

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant  $\Delta p$  (The pump must have integrated output control)
- Intermittent control of emission and/or distribution, automatic control with optimum start/stop
- Generator; Variable temperature depending on the load

## Standard controllers

### Communicating heating controllers

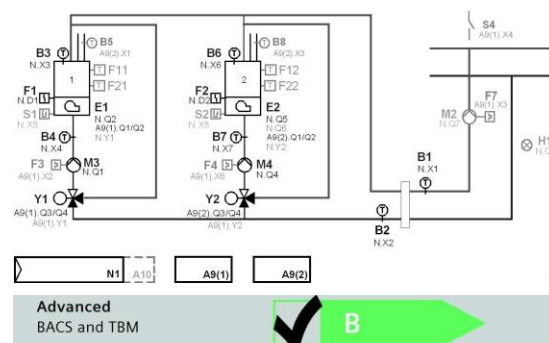
#### Application examples RMH760B.. and RMK770..

#### Dual-boiler plant, boiler pumps, boiler return with 3-port valve

RMK770..

HFF003 MK7 HQ

- Control of the boiler sequence
- Automatic changeover of lead boiler depending on the number of boiler operating hours
- Control of the boiler pumps
- Control of the boiler temperature via modulating burner with 3-position or DC 0...10V control
- Burner fault contact
- Limitation of the burner's minimum on time
- Controlled maintained boiler return temperature with 3-port valve and 3-position or DC 0...10V actuator
- Protective boiler startup
- Maximum and minimum limitation of the boiler temperature
- Selection of boiler operating mode
- Flue gas measuring mode, boiler testing mode
- Burner hours run and burner startup counter
- Minimum and maximum limitation of the flow temperature
- Automatic changeover to summer operation (heating OFF)
- Pump overrun, pump kick
- Valve overrun, valve kick
- Acquisition and evaluation of heat requisition signals via Konnex bus



To fulfill the classification, the plant must be equipped with all indicated functions.

**The indicated energy efficiency classification can be attained only if the following functions are implemented:**

In connection with an application that fulfils the energy efficiency class B, necessary for:

- Emission control
- Control of distribution network hot watertemperature (supply or return)
- Control of distribution pumps
- Intermittent control of emission and/or distribution

**RMZ790****Plug-in type operator unit**

- Operator unit plugs into the Synco™ 700 controllers
- For displaying and changing plant data for service staff and enduser
- Clear-text operation
- Can be plugged in and removed during operation
- Power supply via the controller

Data sheet

N3111

Mounting

DIN rail

Stock no.

Product no.

BPZ:RMZ790

**RMZ790****RMZ791****Detached operator unit with 3 m cable**

Like plug-in type operator unit, but:

- Other mounting choices (typically for control panel door or wall mounting)
- Larger display
- Connection via a prefabricated 3 m cable, supplied as standard

Data sheet

N3112

Mounting

Surface mounted (plaster)

Stock no.

Product no.

BPZ:RMZ791

**RMZ791****RMZ792****Bus operator unit**

Communicating operator unit for operating up to 150 controllers, room units and central units from the Synco™ 700 range via KNX bus.

Favorite pages can be freely defined. Designed for fixed installation or mobile use.

Data sheet

N3113

Operating voltage

AC 24 V

Voltage supply

KNX bus

Power consumption

2.5 VA

Degree of protection

IP20

Dimensions (W x H x D)

145 x 96 x 34 mm

Stock no.

Product no.

BPZ:RMZ792

**RMZ792**

## Standard controllers

### Communicating heating controllers

#### Extension modules and operator units for RMH760B.. and RMK770..

#### Room unit with KNX bus

**QAW740**

Configurable unit with display of operating mode, timer, temperatures and fault.

With 3 operating elements:

- Knob for setpoint readjustments
- Operating mode button
- Timer button



Data sheet	N1633
Operating voltage	DC 24 V
Voltage supply	KNX bus
Measuring range, temperature	0...45 °C
Setpoint readjustment range	-3...3 K
Communication	KNX (KNX TP1)
Connection cable	2-wire
Degree of protection	IP20
Dimensions (W x H x D)	96 x 96 x 47 mm
Weight (net)	0.22 kg

Stock no.

Product no.

BPZ:QAW740

**QAW740**

#### Universal modules

**RMZ78..**

Additional inputs and outputs required by the Synco™ 700 controllers can be provided by these modules. A description of the functions is given with the relevant controller module.



Data sheet	N3146
Voltage supply	Supply from controller module
Power consumption	3 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Universal input, signal	0...1000 Ohm
	1000...1175 Ohm
	DC 0...10 V
	Potential-free digital status contact
	LG-Ni1000
	Pt1000
	T1 (PTC)
	2 x LG-Ni1000
Relay outputs	switching contact, potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A
Degree of protection	IP20
Dimensions (W x H x D)	117 x 90 x 75 mm

#### Range overview RMZ78..

Universal- inputs, number	Analog outputs, number	Relay outputs, number	Weight (net) [kg]	Stock no.	Product no.
4	2	2	0.322	BPZ:RMZ788	<b>RMZ788</b>
6	2	4	0.359	BPZ:RMZ789	<b>RMZ789</b>
8	0	0	0.3	BPZ:RMZ785	<b>RMZ785</b>
4	0	4	0.334	BPZ:RMZ787	<b>RMZ787</b>

**RMZ782B****Heating circuit module**

- Weather-compensated flow temperature control via heating circuit's mixing valve
  - Control of heating circuit pump
- The available heating circuit control and supervisory functions are the same as those of the RMH760B-1

Data sheet	N3136
Operating voltage	AC 24 V
Voltage supply	Supply from controller module
Power consumption	3 VA
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Universal inputs, number	3
Universal input, signal	LG-Ni1000 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Pt1000 NTC 575
Relay outputs, number	2 x LG-Ni1000
Relay outputs	3 Normally open contact Potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3)A
Degree of protection	IP20
Weight (net)	0.334 kg
Dimensions (W x H x D)	117 x 90 x 75 mm

Stock no.	Product no.
BPZ:RMZ782B	<b>RMZ782B</b>

## Standard controllers

### Communicating heating controllers

#### Extension modules and operator units for RMH760B.. and RMK770..

#### DHW module

- Control of the storage tank temperature
- Storage tank charging with integrated coil, with pump or mixing valve
- Storage tank charging with detached heat exchanger, with pump and mixing valve
- Storage tank charging according to a time program
- Control of the circulating pump according to a time program

#### RMZ783B



Data sheet	N3136
Operating voltage	AC 24 V
Voltage supply	Supply from controller module
Power consumption	3 VA
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	1 mA1 A
Universal inputs, number	4
Universal input, signal	LG-Ni1000 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Pt1000 NTC 575 2 x LG-Ni1000
Relay outputs, number	5
Relay outputs	Normally open contact Potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3)A
Degree of protection	IP20
Weight (net)	0.36 kg
Dimensions (W x H x D)	117 x 90 x 75 mm

Stock no.

Product no.

BPZ:RMZ783B

RMZ783B

#### Module connector

Module connector for detached mounting of extension modules within the control panel.

Data sheet	N3138
Max. cable length	10 m
Dimensions (W x H x D)	18.5 x 87.5 x 22.5 mm

#### RMZ780



Stock no.

Product no.

BPZ:RMZ780

RMZ780

## Standard controllers

## Communicating heating controllers

## Field devices for RMH760B.. and RMK770..

**Sensors, setpoint adjusters**

Product Title	Data sheet	Stock no.	Product no.
Flue gas temperature sensor Pt1000	N1846	BPZ:FGT-PT1000	<b>FGT-PT1000</b>
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	<b>QAE9120.010</b>
Solar sensor	N1943	BPZ:QLS60	<b>QLS60</b>
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	<b>QAC32</b>
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	<b>QAD22</b>
Strap-on temperature sensor with cable LG-Ni1000	N1802	BPZ:QAD26.220	<b>QAD26.220</b>
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	<b>QAE2120.010</b>
Immersion temperature sensor Ø 4 mm with cable and fitting	N1790	BPZ:QAE26.9..	<b>QAE26.9..</b>
Cable temperature sensor PVC 2 m, LG-Ni1000	N1831	BPZ:QAP22	<b>QAP22</b>

**Monitors**

Product Title	Data sheet	Stock no.	Product no.
Flow switch for use in hydraulic systems, PN10, DN32...200	N1592	BPZ:QVE1900	<b>QVE1900</b>
Flow switch for use in hydraulic systems, PN25, DN20...200	N1594	BPZ:QVE1901	<b>QVE1901</b>
Thermal reset limit thermostat	N1202	BPZ:RAK-TW.1..H	<b>RAK-TW.1..H</b>
Temperature limiter	N1206	BPZ:RAK-TB.1..M	<b>RAK-TB.1..M</b>
Safety limit thermostat	N1204	BPZ:RAK-ST..M	<b>RAK-ST..M</b>

**Room units / sensors**

Product Title	Data sheet	Stock no.	Product no.
Front module with passive temperature measurement, LG-Ni1000	N1408	S55720-S133	<b>AQR2531ANW</b>
Front module for base modules, temperature (active)	N1411	S55720-S136	<b>AQR2532NNW</b>
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	<b>QAA24</b>
Room sensor KNX for temperature, white	N1602	S55624-H103	<b>QMX3.P30</b>
Room unit with room temperature sensor and setpoint readjuster -3...3 K	N1721	BPZ:QAA27	<b>QAA27</b>
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	N1722	BPZ:QAA64	<b>QAA64</b>
Room unit with KNX bus	N1633	BPZ:QAW740	<b>QAW740</b>
Mounting plates for front modules with passive temperature measurement	N1408	BPZ:AQR2500..	<b>AQR2500..</b>
Base module with KNX for temperature and humidity measurement	N1411	BPZ:AQR2570..	<b>AQR2570..</b>

**Transformers**

Product Title	Data sheet	Stock no.	Product no.
Transformers	N5536	BPZ:SEM62..	<b>SEM62..</b>

**Service tool**

Product Title	Data sheet	Stock no.	Product no.
Commissioning and plant operating software	N5649	S55800-Y100	<b>ACS790</b>
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	<b>OCI700.1</b>
USB - KNX Service interface	A6V10438951	S55800-Y101	<b>OCI702</b>
Web server for Synco devices	N5701	BPZ:OZW772..	<b>OZW772..</b>

The software (ACS790) can be downloaded for free via <http://www.siemens.com/acs790>.



## District heating controller

RVD12..



Control of district heat substations, space heating and d.h.w. heating.  
 Optimized for low return temperatures in district heating networks.

- 3 ready programmed and preselected plant types
- Straightforward, easy-to-understand operation
- Analog adjustment of room temperature setpoint, other adjustments with operating lines
- Display of time of day, time program, setpoints, actual values, limitations, errors, etc.
- Optional remote operation via room unit
- 2 independent switching programs each with 3 occupancy times per day
- Holiday function (via room unit)
- DRT limitation for the reduction of peak loads
- Maximum limitation of the return temperature on the primary side
- Minimum and maximum limitation of the flow temperature
- Automatic summer / winter changeover
- Automatic ECO function
- Pump protection
- Legionella function
- Frost protection function
- Automatic monitoring of sensors with alarm indication
- Relay and sensor tests, manual operation
- Locking function for district heat parameters
- Communication via Modbus
- Display with background lighting

### Plant-specific

- 1 pump heating circuit, control of the flow temperature, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating:
  - Storage system with integrated heat exchanger and 1 storage tank sensor
  - Charging pump

Data sheet	N2510
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	5.5 VA
Analog input, signal	LG-Ni1000 NTC 575
Digital outputs	3 × AC 230 V 1(1) A 1 × AC 230 V 2(2) A
Dimensions (W x H x D)	144 x 96 x 109 mm

## Range overview RVD12..

Product Title	Stock no.	Product no.
Controller, 3 programmed plant types, instructions in da, de, en, fi, fr, it, sv	S55370-C109	RVD120-A

## Standard controllers

## Standalone district heating controllers

## District heating controllers RVD1..

## RVD14..



## District heating controller

Same functionality as the RVD120, but with the following extra features:

- 8 ready programmed and preselected plant types
- Solar d.h.w. heating
- D.h.w. heating with electric immersion heater
- Refill function
- Communication via Modbus

## Plant-specific

- Precontrol of internal control loops
- 1 pump or mixing heating circuit, flow temperature control, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating:
  - Instantaneous system
  - Storage tank charging system with 1 or 2 storage tank sensors
  - Storage system with integrated heat exchanger
  - 2 charging pumps
  - Circulating pump
  - Solar d.h.w. heating

Data sheet	N2510
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	6 VA
Analog input, signal	LG-Ni1000 NTC 575 DC 0...10 V
Digital inputs, number	1
Digital inputs	Flow switch
Digital outputs	5 × AC 230 V 1(1) A 4 × AC 230 V 2(2) A
Dimensions (W x H x D)	144 x 96 x 109 mm

## Range overview RVD14..

Product Title	Stock no.	Product no.
Controller, 8 programmed plant types, instructions in da, de, en, fi, fr, it, sv	S55370-C113	RVD140-A

## Field devices for RVD1..

Product Title	Data sheet	Stock no.	Product no.
Pressure sensor for neutral and slightly aggressive liquids and gases (0...10 V)	A6V10432494	BPZ:QBE2003-P..	QBE2003-P..
Pressure sensor for refrigerants (0...10 V)	A6V10434676	BPZ:QBE2004-P..U	QBE2004-P..U
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Multifunctional room operator unit	N1637	BPZ:QAW70..	QAW70..
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	QAC32
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3

## Application examples RVD1..

These are a few examples of applications that can be done with the controllers RVD1..

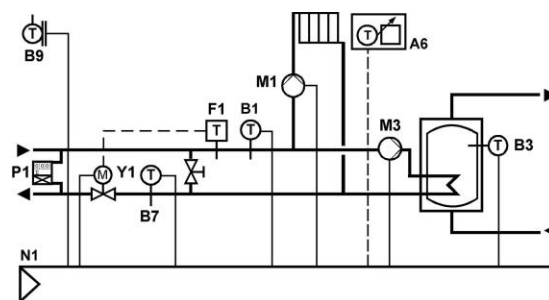
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVD1.. data sheet.

### Direct system, weather-compensated heating and d.h.w.

- Weather-compensated flow temperature control with pump heating circuit
- Demand-dependent flow temperature control with 3-position actuator acting on two-port valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- Digital 7-day time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent quick setback (with room sensor or with building model)
- Optional remote operation via room unit

RVD12..

DAAA01 VD1 HQ

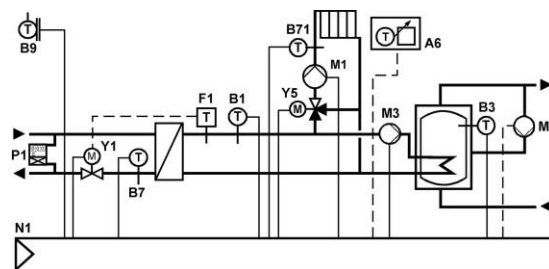


### Weather-compensated flow temperature control acting on mixing circuit, d.h.w. supply with storage tank

- Demand-dependent flow temperature control with 3-position actuator acting on primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- Digital 7-day time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor or with building model)
- Optional remote operation via room unit

RVD14..

DACA01 VD1 HQ



## RVD25..



## District heating controller

Multifunctional heating controller for use in district heating substations and district heating plants with LPB and M-bus communication. Suited for one heating circuit with d.h.w. heating in instantaneous systems or with storage tank. 28 programmed plant types. Operating voltage AC 230 V.

## Key features:

- Optimized for low return temperatures in district heating networks.
- Display of time of day, time program, setpoints, actual values, limitations, errors, etc.
- Optional remote operation via room unit
- 2 independent switching programs each with 3 occupancy times per day
- Yearly clock with automatic summer- / wintertime changeover
- Power and / or volumetric flow limitation in combination with heat meter
- Pump and valve protection
- Automatic monitoring of sensors with display of alarm
- Locking function for district heat parameters
- Optional suppression of hydraulic creep
- Frost protection function
- DRT limitation for the reduction of peak loads and of idle heat
- Maximum limitation of the return temperature on the primary side
- Minimum and maximum limitation of the flow temperature
- Optimum start / stop control of the heating system
- Automatic ECO function
- Legionella function
- Forced charging function for plant with storage tank
- Cooling down protection for the primary supply lines
- Solar d.h.w. heating
- D.h.w. heating with electric immersion heater
- Refill function
- Selectable heating period

## Plant-specific:

- Precontrol internal and interconnected
- 1 mixing or pump heating circuit
- D.h.w. heating with selectable priority:
  - Instantaneous systems
  - Storage charging system
  - Storage system with integrated heat exchanger
  - Circulating pump, 2 charging pumps

Data sheet	N2513
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	5.5 VA
Communication	LPB (interconnected controller) M-bus (slave)
Analog input, signal	DC 0...10 V LG-Ni1000 NTC 575
Digital inputs, number	1
Digital inputs	Pulse transmitter Status contact
Digital outputs	1 × PWM, DC 12 V 2 × AC 230 V 2(2) A 8 × AC 230 V 1(1) A
Dimensions (W x H x D)	144 x 96 x 109 mm

## Range overview RVD25..

Product Title	Stock no.	Product no.
Controller, 28 programmed plant types, instructions in de, en, fr, it, da, fi, sv	S55370-C125	RVD250-A

## Standard controllers

### Communicating district heating controllers

#### District heating controllers RVD2..

#### District heating controller

RVD26..



Multifunctional heating controller for use in district heating substations and district heating plants with LPB and M-bus communication. Suited for 2 heating circuits with d.h.w. heating in instantaneous systems or with storage tank. 14 programmed plant types. Operating voltage AC 230 V.

Same functionality as RVD250, but with the following extra features:

- 2 heating circuits
- Without precontrol in interconnected systems
- 3 independent switching programs each with 3 occupancy times per day

Plant-specific:

- Precontrol internal control loops
- 2 heating circuits (mixing and / or pump heating circuit): Control of flow temperature, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating with selectable priority:
  - Instantaneous systems
  - Storage charging system
  - Storage system with integrated heat exchanger
  - Charging pump
  - Circulating pump

Data sheet	N2515
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	6 VA
Communication	LPB (interconnected controller) M-bus (slave)
Analog input, signal	DC 0...10 V LG-Ni1000 NTC 575
Digital inputs, number	1
Digital inputs	Pulse transmitter Status contact
Digital outputs	1 × PWM, DC 12 V 2 × AC 230 V 2(2) A 8 × AC 230 V 1(1) A
Dimensions (W x H x D)	144 x 96 x 109 mm

#### Range overview RVD26..

Product Title	Stock no.	Product no.
Controller, 14 programmed plant types, instructions in de, en, fr, it, da, fi, sv	S55370-C129	RVD260-A

#### Sensor and room units for RVD..

Product Title	Data sheet	Stock no.	Product no.
Pressure sensor for neutral and slightly aggressive liquids and gases (0...10 V)	A6V10432494	BPZ:QBE2003-P..	QBE2003-P..
Pressure sensor for refrigerants (0...10V)	A6V10434676	BPZ:QBE2004-P..U	QBE2004-P..U
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Multifunctional room operator unit	N1637	BPZ:QAW70..	QAW70..
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Outside sensor NTC 575 Ohm	N1811	BPZ:QAC32	QAC32
Web Server for LPB devices	N5712	BPZ:OZW672..	OZW672..
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3

## Standard controllers

## Communicating district heating controllers

## District heating controllers RVD2..

**Service tool**

Product Title	Data sheet	Stock no.	Product no.
Commissioning and plant operating software	N5649	S55800-Y100	<b>ACS790</b>
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	<b>OCI700.1</b>
Web Server for LPB devices	N5712	BPZ:OZW672..	<b>OZW672..</b>

The software (ACS790) can be downloaded for free via <http://www.siemens.com/acs790>.

## Application examples RVD2..

These are a few examples of applications that can be done with the controllers RVD2...

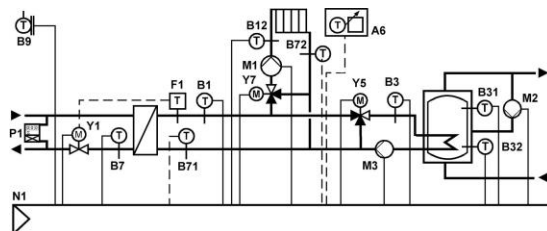
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVD2.. data sheet.

### Indirect system, weather-compensated heating with mixing circuit and d.h.w.

RVD25..

DACB01 VD2 HQ a

- Demand-dependent flow temperature control acting on 3-position actuator with primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank with mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)
- Control of d.h.w. circulation pump

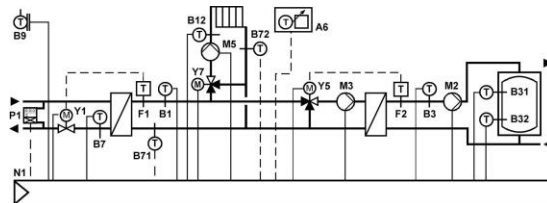


### Demand-dependent control of heat exchanger with indirect district heat substation with 2-port valve

RVD25..

DACC01 VD2 HQ

- Demand-dependent flow temperature control acting on 3-position actuator with primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank with exchanger and mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)

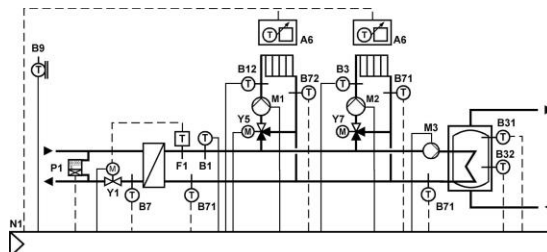


### Weather-compensated flow temperature control of 2 heating circuits with mixing valves

RVD26..

DADA01 VD2 HQ

- Demand-dependent flow temperature control with 3-position actuator acting on primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 3 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)



## RLM162



## Air duct temperature controller, AC 24 V, 2 outputs DC 0...10 V

Compact electronic controller with integral duct mounted temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for power supply connection and controller output need to be laid. Supplied complete with mounting flange.

## Application:

Modulating temperature controller, with 1 or 2 continuous DC 0...10V output signals. The RLM162 is used for control and limiting of extract or supply air temperatures in small HVAC plants:

- Restaurants, conference rooms, store rooms
- Lecture theatres, classrooms
- In conjunction with central air handling units

## The following units can be controlled:

- Heating (or cooling) valve actuators
- Air damper actuators
- Step controllers or current valves for electric heating
- Signal converters
- DX cooling units

## Features:

- Auxiliary digital output
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch
- Heating/cooling changeover via external contact

Data sheet	N3332
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Setpoint readjustment range	0...10 K
Setpoint setting range	0...50 °C
Analog input, signal	LG-Ni1000 0...1000 Ohm DC 0...10 V
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital input, contact query	DC 3...6 mA DC 6...15 V
Digital outputs, number	1
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Probe length	400 mm
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	125 x 152 x 78 mm

Stock no. Product no.

BPZ:RLM162 **RLM162**

## Field devices for RLM162

Product Title	Data sheet	Stock no.	Product no.
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>



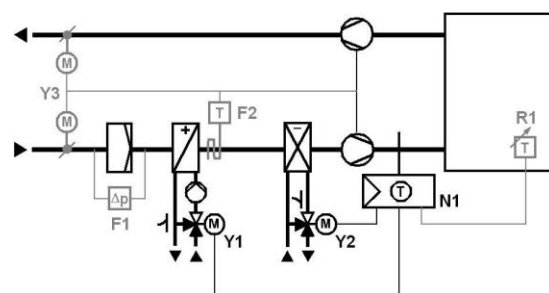
## Application examples Synco™ 100

These are only a few examples of many applications that can be done with the with Synco™ 100 controllers: RLE..

More Synco™ 100 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLE.. data sheet.

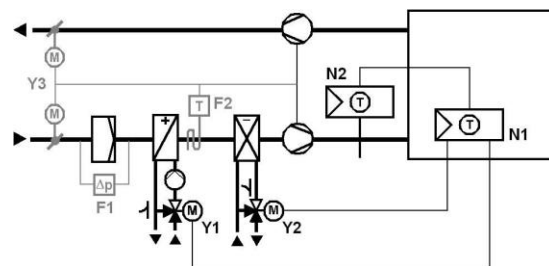
### Partial Air Conditioning Plant, Heating / Cooling - Supply air temperature control

- Controller (N1) with built-in sensor to control the room temperature via sequential control of the heating valve (Y1) or the cooling valve (Y2)
- Frost protection with frost thermostat F2 (independent of controller) to open the heating valve (Y1), close the outside air dampers (Y3) and deactivate the fans
- Air damper actuator with spring return (Y3) to control the fans with an auxiliary switch



### Room temperature control with limitation of supply air temperature

- Room temperature control via control of the heating valve and the cooling valve
- Limitation of supply air temperature
- Outside temperature compensation



**RLA162****Room temperature controller, AC 24 V, 2 outputs DC 0...10 V**

Electronic controller designed for room mounting applications. It is configurable for heating and/or cooling applications and can operate as a single controller or together with duct mounted units (RLM) for limiting.

## Application:

Modulating temperature controller, with 1 or 2 continuous DC 0...10 V output signals. The RLA162 is used for control and limiting of room temperatures in small HVAC plants.

The following units can be controlled:

- Heating (or cooling) valve actuators
- Air damper actuators
- Step controllers or current valves for electric heating
- Signal converters

## Features:

- Low limitation input (supply air temperature)
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch

Data sheet	N3331
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Setpoint readjustment range	0...10 K
Setpoint setting range	8...30 °C
Analog input, signal	LG-Ni1000 DC 0...10 V
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital inputs	Potential-free input signal
Digital input, contact query	DC 3...6 mA DC 6...15 V
Digital outputs, number	1
Degree of protection	IP30
Dimensions (W x H x D)	97 x 114 x 43 mm

Stock no. Product no.

BPZ:RLA162 **RLA162**

**Field devices for RLA162**

Product Title	Data sheet	Stock no.	Product no.
Air duct temperature controller, AC 24 V, 2 outputs DC 0...10 V	N3332	BPZ:RLM162	<b>RLM162</b>
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>

RLU..



## Universal controllers

- Tested, predefined applications
- Flexible configuration
- Suited for the controlled variables temperature, relative / absolute humidity, pressure / differential pressure, air flow rate, indoor air quality, etc.
- Autonomous sequence controllers with P, PI or PID mode
- Integrated operation
- No commissioning tool required (optional)

Data sheet	N3101
Operating voltage	AC 24 V
Frequency	50/60 Hz
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital input, contact query	5 mA
	DC 15 V
Universal input, signal	0...1000 Ohm
	1000...1175 Ohm
	DC 0...10 V
	Potential-free digital status contact
	LG-Ni1000
	Pt1000
	T1 (PTC)
	2 x LG-Ni1000
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A
Degree of protection	IP20

## Range overview RLU..

Digital inputs, number	Universal-inputs, number	Analog outputs, number	Relay outputs, number	Control loops, number	Stock no.	Product no.
1	4	0	2	1	BPZ:RLU202	<b>RLU202</b>
1	4	2	0	1	BPZ:RLU220	<b>RLU220</b>
1	4	2	2	2	BPZ:RLU222	<b>RLU222</b>
2	5	3	2	2	BPZ:RLU232	<b>RLU232</b>
2	5	3	6	2	BPZ:RLU236	<b>RLU236</b>

## Accessories for RLU..

Product Title	Data sheet	Stock no.	Product no.
Front panel mounting frame	N3101	BPZ:ARG62.201	<b>ARG62.201</b>

## Service tool

Product Title	Data sheet	Stock no.	Product no.
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	<b>OCI700.1</b>

## Standard controllers

### Standalone HVAC controllers

#### Application examples RLU..

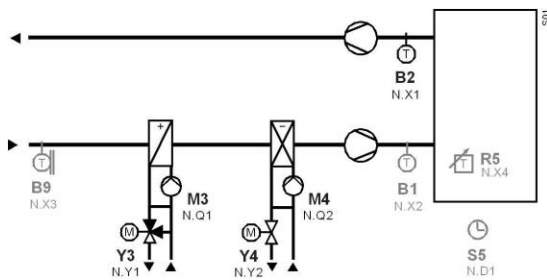
#### Application examples Synco™ 200

These are only a few examples of many applications that can be done with the with Synco™200 controllers: RLU..

More Synco™200 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLU.. data sheet..

#### RLU222

ADC002 LU2 HQ

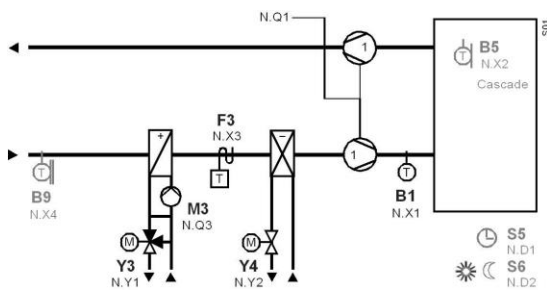


#### Partial Air Conditioning Plant, Heating / Cooling - Extract air (room) temperature control

- Extract air (room) temperature control via the heating coil valve and cooling coil valve in sequence
- Control of the heating coil and cooling coil pumps
- Operating mode selection Comfort/ Protection

#### RLU232

ADC015 LU3 HQ

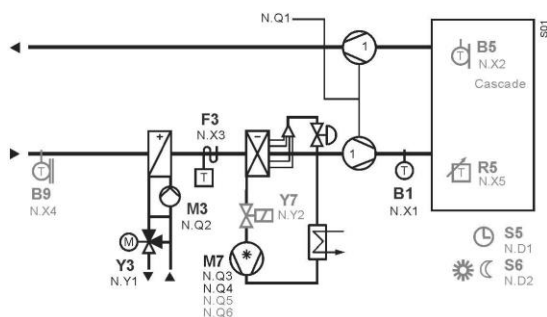


#### Partial Air Conditioning Plant, Heating / Cooling - Supply air temperature control with frost protection and release of fan

- Supply air temperature control via the heating coil valve and cooling coil valve in sequence
- Control of the heating coil and cooling coil pumps
- Fan release via relay output
- Frost protection with frost protection monitor
- Operating mode selection Comfort/ Protection
- Operating mode selection Comfort/Economy

#### RLU236

ADC017 LU3 HQ



#### Partial Air Conditioning Plant, Heating / Cooling - Supply air (room) temperature control with frost protection and release of fan

- Supply air temperature control via the heating coil valve and the direct expansion evaporator in sequence
- Control of the heating coil pump
- Fan release via relay output
- Frost protection with frost protection monitor
- Operating mode selection Comfort/ Protection
- Operating mode selection Comfort/Economy

## Sensors, setpoint adjusters

Product Title	Data sheet	Stock no.	Product no.
Frost detector, modulating	A6V10432020	BPZ:QAF63..J	QAF63..J
Pressure sensor for neutral and slightly aggressive liquids and gases (0...10 V)	A6V10432494	BPZ:QBE2003-P..	QBE2003-P..
Pressure sensor for refrigerants (0...10 V)	A6V10434676	BPZ:QBE2004-P..U	QBE2004-P..U
Differential pressure sensor, DC0...10 V	N1910_01	BPZ:QBM2030..	QBM2030..
Flue gas temperature sensor Pt1000	N1846	BPZ:FGT-PT1000	FGT-PT1000
Immersion temperature sensor 100 mm DC0...10 V	N1782	BPZ:QAE2164.010	QAE2164.010
Immersion temperature sensor 150 mm DC0...10 V	N1782	BPZ:QAE2164.015	QAE2164.015
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Duct temperature sensor 400 mm, LG-Ni1000	N1761	BPZ:QAM2120.040	QAM2120.040
Duct temperature sensor 2000 mm, LG-Ni1000	N1761	BPZ:QAM2120.200	QAM2120.200
Duct temperature sensor 6000 mm, LG-Ni1000	N1761	BPZ:QAM2120.600	QAM2120.600
Window pane temperature sensor	N1830	BPZ:QAT22	QAT22
Duct sensor for humidity (DC0...10 V)	N1864	BPZ:QFM2100	QFM2100
Duct sensor for humidity (0...10 V) and temperature (Ni1000)	N1864	BPZ:QFM2120	QFM2120
Duct sensor for humidity (DC0...10 V) and temperature (DC0...10 V)	N1864	BPZ:QFM2160	QFM2160
Duct sensor for humidity (0...10 V) and temperature (0...10 V) with calibration certificate	N1883	BPZ:QFM4160	QFM4160
Solar sensor	N1943	BPZ:QLS60	QLS60
Duct sensor for air velocity	N1932	BPZ:QVM62.1	QVM62.1
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Differential pressure sensor for liquids and gases	N1923	BPZ:QBE61.3-DP..	QBE61.3-DP..
Differential pressure sensors for liquids and gas (DC0...10 V)	N1920	BPZ:QBE63-DP..	QBE63-DP..
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Strap-on temperature sensor with cable LG-Ni1000	N1802	BPZ:QAD26.220	QAD26.220
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Immersion temperature sensor Ø 6 mm with cable and fitting	N1790	BPZ:QAE26.9	QAE26.9
Duct temperature sensor 400 mm, Pt1000	N1761	BPZ:QAM2112.040	QAM2112.040
Differential pressure sensors for liquids and gas (0...10 V)	N1922	BPZ:QBE3000..	QBE3000..
Immersion temperature sensor 150 mm, LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.015	QAE2120.015
Immersion temperature sensor 100 mm, LG-Ni1000, without protection pocket	N1781	BPZ:QAE2121.010	QAE2121.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3
Outside/room temperature sensor DC0...10 V	N1814	BPZ:QAC3161	QAC3161
Cable temperature sensor PVC 2 m, LG-Ni1000	N1831	BPZ:QAP22	QAP22
Duct sensor for humidity (DC0...10 V) for demanding requirements	N1882	BPZ:QFM3100	QFM3100
Duct air quality sensor CO <sub>2</sub> / temperature / rel. humidity / VOC	N1962	BPZ:QPM21..	QPM..
Duct sensor for humidity (DC0...10 V) and temperature (DC0...10 V) for demanding requirements	N1882	BPZ:QFM3160	QFM3160
Duct air quality sensor CO <sub>2</sub> / temperature / rel. humidity / VOC; Modbus	A6V11610641	BPZ:QPM21..-MO	QPM../MO
Duct temperature sensor	A6V12251940	BPZ:QAM16..020	QAM16..020

## Monitors

Product Title	Data sheet	Stock no.	Product no.
Condensation monitor	A6V10741072	BPZ:QXA21..	QXA21..
Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C	A6V12051788	S55700-P163	QAF65.3AR-J
Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C	A6V12051788	S55700-P164	QAF65.6AR-J
Duct hygostat, setpoint setting range 15...95 % r.h.	N1514	BPZ:QFM81.2	QFM81.2
Room hygostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device	N1514	BPZ:QFM81.21	QFM81.21
Frost detector, air side, 2-point	A6V10432022	BPZ:QAF64..J	QAF64..J
Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C	A6V11965899	S55700-P161	QAF65.3M-J
Frost monitor, 2-point	N1284	BPZ:QAF81..	QAF81..
Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C	A6V11965899	S55700-P162	QAF65.6M-J

## Standard controllers

### Standalone HVAC controllers

#### Field devices for RLU..

#### Monitors

Product Title	Data sheet	Stock no.	Product no.
Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device	N1518	BPZ:QFA1000	<b>QFA1000</b>
Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment	N1518	BPZ:QFA1001	<b>QFA1001</b>
Differential pressure monitor	N1552	BPZ:QBM81..	<b>QBM81..</b>

#### Room units / sensors

Product Title	Data sheet	Stock no.	Product no.
Front module with passiv temperature measurement, LG-Ni1000	N1408	S55720-S133	<b>AQR2531ANW</b>
Room air quality sensor CO <sub>2</sub> / temperature / rel. Humidity / VOC	N1961	BPZ:QPA20..	<b>QPA..</b>
Room sensor for humidity (DC0...10 V) for demanding requirements	N1858	BPZ:QFA3100	<b>QFA3100</b>
Room sensor for humidity (DC0...10V) and temperature (DC0...10V) with calibration certificate	N1859	BPZ:QFA4160	<b>QFA4160</b>
Room unit with room temperature sensor and setpoint adjuster	N1721	BPZ:QAA25	<b>QAA25</b>
Indoor air quality controller with integrated VOC sensor for mixed gas	N1571	BPZ:QPA84	<b>QPA84</b>
Room sensor for humidity (DC0...10 V) and temperature (DC0...10 V) for demanding requirements	N1858	BPZ:QFA3160	<b>QFA3160</b>
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	<b>QAA24</b>
Room sensor for humidity (DC0...10 V)	N1857	BPZ:QFA2000	<b>QFA2000</b>
Room sensor for humidity (DC0...10 V) and temperature (LG-Ni1000)	N1857	BPZ:QFA2020	<b>QFA2020</b>
Room unit with room temperature sensor and setpoint readjuster -3...3 K	N1721	BPZ:QAA27	<b>QAA27</b>
Room sensor for humidity (DC0...10 V) and temperature (DC0...10 V)	N1857	BPZ:QFA2060	<b>QFA2060</b>
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	N1722	BPZ:QAA64	<b>QAA64</b>
Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device	N1518	BPZ:QFA1000	<b>QFA1000</b>
Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment	N1518	BPZ:QFA1001	<b>QFA1001</b>
Mounting plates for front modules with passiv temperature measurement	N1408	BPZ:AQR2500..	<b>AQR2500..</b>

#### Step switches, signal converters, transformers and display

Product Title	Data sheet	Stock no.	Product no.
Transformers	N5536	BPZ:SEM62..	<b>SEM62..</b>
Universal digital indicator	N5312	BPZ:BAU200	<b>BAU200</b>
Current valve	N4938	S55376-C160	<b>SEA45.5</b>
Digital time switch, 1-channel, with 7-day program	N5243	BPZ:SEH62.1	<b>SEH62.1</b>
Signal converter DC0...10V or DC 0 / 10 V in AC 0 / 24 V	N5102	BPZ:SEM61.4	<b>SEM61.4</b>
Variable Speed Drive for pumps and fans, IP55, Filter B (C1)	N5111	BPZ:G120P..AM..B..	<b>G120P..5B</b>
Variable Speed Drive for pumps and fans, IP55, Filter A (C2)	N5111	BPZ:G120P..AM..A..	<b>G120P..5A</b>
Variable Speed Drive for pumps and fans, IP20, Filter B (C1)	N5111	BPZ:G120P..AE..B..	<b>G120P..2B</b>
Variable Speed Drive for pumps and fans, IP20, Filter A (C2)	N5111	BPZ:G120P..AE..A..	<b>G120P..2A</b>
Signal converter with preprogrammed applications	N5146	BPZ:SEZ220	<b>SEZ220</b>

## Universal controller for HVAC systems

RWD Universal..

Universal controller with P or PI action for heating, ventilation and air conditioning.



### Auxiliary functions

- PI limiter function (absolute and relative limit)
- Remote setpoint
- Setpoint compensation
- Winter/summer mode changeover (analogue or digital input)
- Cascade control
- Maximum priority for cooling / dehumidifying

Frequency	50/60 Hz
Digital inputs	Potential-free input signal
Universal inputs, number	2
Universal input, signal	LG-Ni1000 DC 0...10 V Pt1000
Degree of protection	IP20

### Range overview RWD..

Operating voltage [V]	Analog outputs, number	Relay outputs, number	Control loops, number	Stock no.	Product no.
AC 24	2		1	BPZ:RWD62	<b>RWD62</b>
AC 24	1	1	1	BPZ:RWD68	<b>RWD68</b>
AC 24		2	1	BPZ:RWD82	<b>RWD82</b>

## Universal Controller, 1 Analog Output

RWD60



Stock no. Product no.

S55370-C135 **RWD60**

### Field devices for RWD..

Product Title	Data sheet	Stock no.	Product no.
Front module with passiv temperature measurement, LG-Ni1000	N1408	S55720-S133	<b>AQR2531ANW</b>
Duct temperature sensor 400 mm, LG-Ni1000	N1761	BPZ:QAM2120.040	<b>QAM2120.040</b>
Thermal reset limit thermostat, 40...120 °C, protective pocket 100 mm, capillary tube 700 mm, clamping band	N1202	S55700-P117	<b>RAK-TW.1200B-H</b>
Switching and monitoring device	N3124	S55370-C100	<b>RMS705B-1</b>
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	<b>QAC22</b>
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	<b>QAA24</b>
Mounting plates for front modules with passiv temperature measurement	N1408	BPZ:AQR2500..	<b>AQR2500..</b>

### Accessories for RWD..

Product Title	Data sheet	Stock no.	Product no.
Transformers	N5536	BPZ:SEM62..	<b>SEM62..</b>

## Standard controllers

### Standalone HVAC controllers

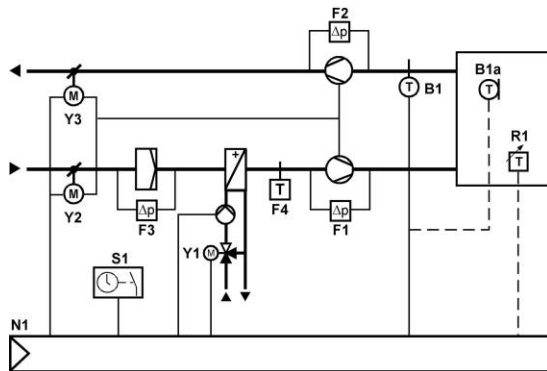
#### Application examples RWD..

#### Application examples RWD..

These are only a few examples of many applications that can be done with the with controllers RWD..  
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RWD.. data sheet.

#### RWD62

ADA002 WC6 HQ a

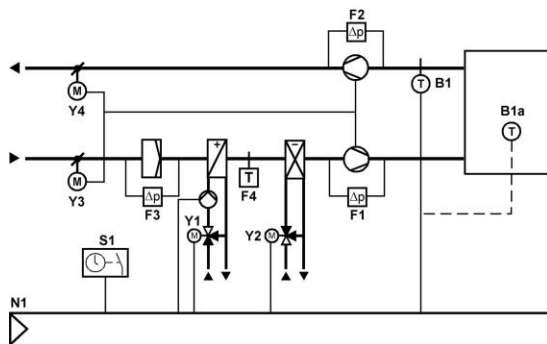


#### Return air temperature control

- Room temperature control by modulating the heater battery valve
- Frost protection with frost protection thermostat (independent of controller) when tripped, heater battery valve fully opens, dampers close, fan switches off

#### RWD62

ADC003 WC6 HQ a



#### Return air temperature control

- Return air temperature control by modulating the heater battery valve and the cooler battery valve in sequence
- Frost protection with frost protection thermostat (independent of controller): when tripped, heater battery valve fully opens, supply and extract fans switch off, outside air and extract air dampers close
- Use of an external time switch to provide day/night settings
- Summer compensation



## Universal controller

RMU7..0B-1



- Universal controllers with integrated control and supervisory functions
- Suited for the controlled variables temperature, relative / absolute humidity, pressure / differential, air flow rate, indoor air quality, etc.
- Autonomous sequence controllers with P, PI or PID mode
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

The RMU7..0B-1 supports the languages: English, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Norwegian, Swedish, Polish, Czech, Hungarian, Russian, Slovak, Bulgarian, Greek, Romanian, Slovenian, Serbian, Croatian, Turkish, Chinese.

Extension modules complement the universal controller and offer extra functions. They are attached to the controller via plug-in connectors. The extension modules do not operate autonomously. The operation of the device from commissioning to enduser operation can be done via the operator unit.

Available extension modules:

- 1 universal module RMZ785
- 2 universal modules RMZ787
- 2 universal modules RMZ788

A total of 4 extension modules can simultaneously be used with the universal controller.

Available operator units:

- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operating unit RMZ792

Data sheet	N3150
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Communication	KNX (KNX TP1)
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Universal input, signal	LG-Ni1000
	T1 (PTC)
	Pt1000
	0...1000 Ohm
	1000...1175 Ohm
	DC 0...10 V
	Digital pulse contact
	Potential-free digital status contact
	2 x LG-Ni1000
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

## Range overview RMU7..0B..

Analog outputs, number	Universal- inputs, number	Relay outputs, number	Control loops, number	Stock no.	Product no.
2	6	2	1	BPZ:RMU710B-1	<b>RMU710B-1</b>
3	8	4	2	BPZ:RMU720B-1	<b>RMU720B-1</b>
4	8	6	3	BPZ:RMU730B-1	<b>RMU730B-1</b>

## Standard controllers

### Communicating HVAC controllers

#### Application examples RMU7..0B..

#### BACS Energy Performance Classes – EN 15232

High energy performance  
BACS and TBM

A

Advanced  
BACS and TBM

B

Standard  
BACS

C

Non-energy-efficient  
BACS

D

BACS Building Automation and Control System  
TBM Technical Building Management System

#### Application examples RMU710B..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU710B..

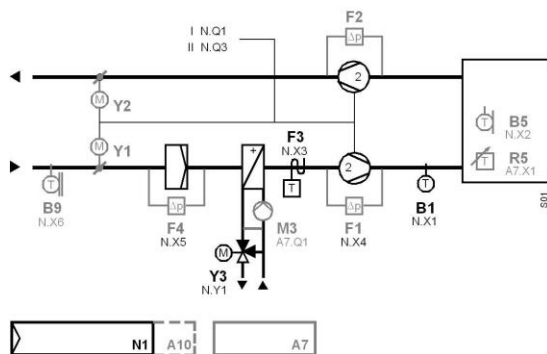
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU710B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2012. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".

Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.

[www.siemens.com/hit](http://www.siemens.com/hit)

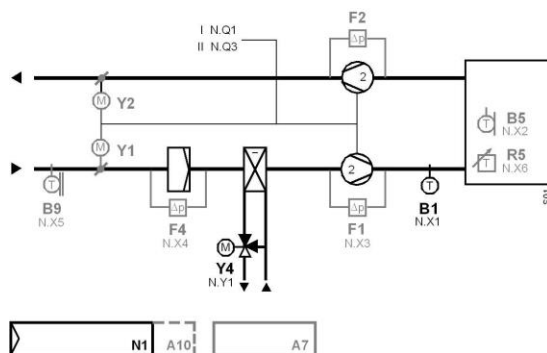
#### ADA001 U1B HQ



- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

#### Ventilation Plant, Cooling - Room-supply air temperature cascade control

#### ADB001 U1B HQ



- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the cooling coil valve
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

The indicated energy efficiency classification can be attained only if the following functions are implemented:

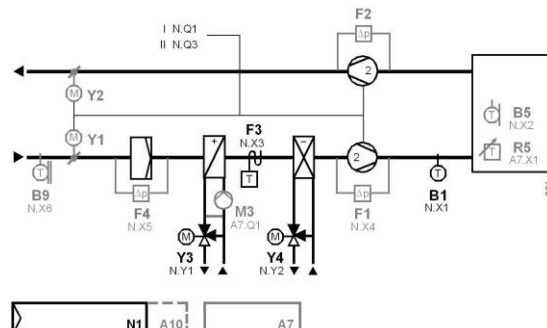
- Air flow control at the room level on demand (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply temperature control, variable set point with load dependant compensation
- Humidity control (Not applicable, as no humidity control)

To fulfill the classification, the plant must be equipped with all indicated functions.

#### Partial Air Conditioning Plant, Heating / Cooling - Room-supply air temperature cascade control

ADC001 U1B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and the cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor



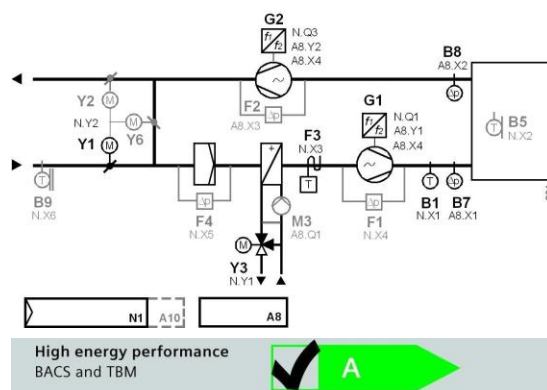
#### Ventilation Plant, Heating

AEA001 U1B DE

- 7-day time switch with holiday / special day program
- Control of a variable-speed fan
- Control of the supply air temperature via the mixed air dampers and the heating coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling (Not applicable due to lack of cooling sequence)
- Humidity control (Not applicable, as no humidity control)
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A



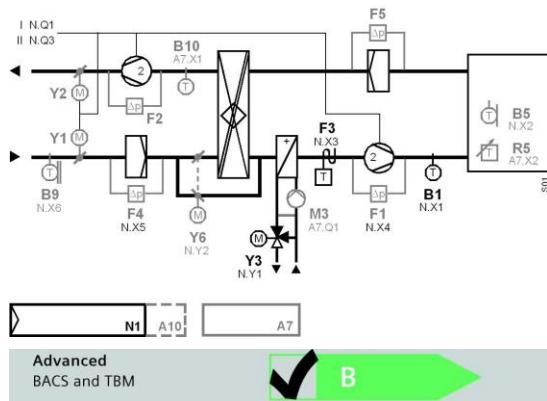
To fulfill the classification, the plant must be equipped with all indicated functions.

## Standard controllers

### Communicating HVAC controllers

#### Application examples RMU7..0B..

ADAE01 U1B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

#### Ventilation Plant, Heating - Room-supply air temperature cascade control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system and the heating coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors

The indicated energy efficiency classification can be attained only if the following functions are implemented:

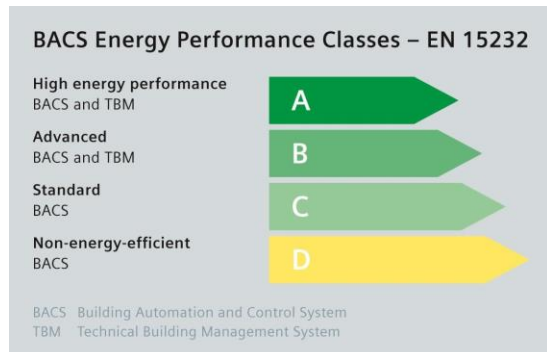
- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- Heat exchanger overheating control
- Supply Temperature control (Variable setpoint with load dependant compensation)

#### Application examples RMU720B..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU720B..  
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU720B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2012. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".  
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.

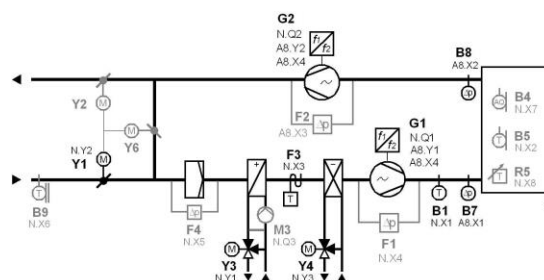
[www.siemens.com/hit](http://www.siemens.com/hit)



#### Partial Air Conditioning Plant, Heating / Cooling

- 7-day time switch with holiday / special day program
- Control of a variable-speed fan
- Control of the supply air temperature via the mixed air dampers, the heating coil valve and cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A

AEC001 U2B DE



To fulfill the classification, the plant must be equipped with all indicated functions.

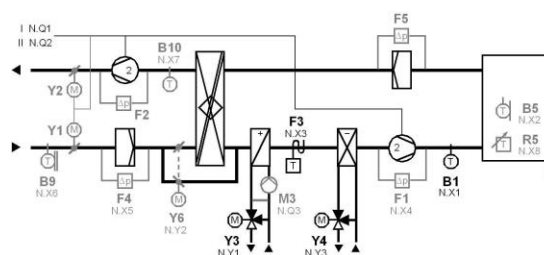
The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply temperature control, variable set point with load dependant compensation

#### Partial Air Conditioning Plant, Heating / Cooling - Room-supply air temperature cascade control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and the cooling coil valve in sequence
- Frost protection with the frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filter with a differential pressure sensor

ADCE01 U2B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

The indicated energy efficiency classification can be attained only if the following functions are implemented:

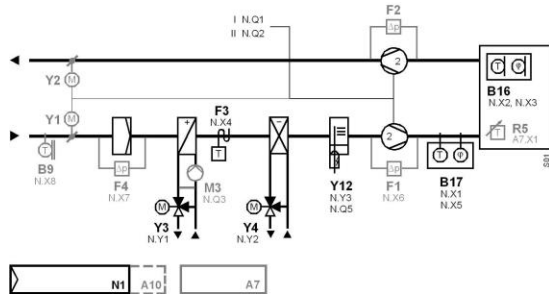
- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation

## Standard controllers

### Communicating HVAC controllers

#### Application examples RMU7..0B..

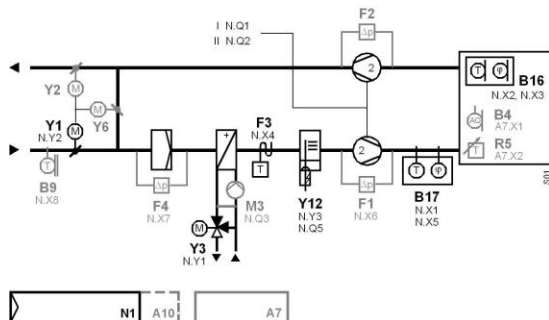
ADFB01 U2B HQ



#### Partial Air Conditioning Plant, Heating / Cooling / Humidifying - Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with differential pressure sensors
- Limitation of supply air humidity

AEDB01 U2B HQ



#### Partial Air Conditioning Plant, Heating / Humidifying - Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the mixed air dampers and the heating coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

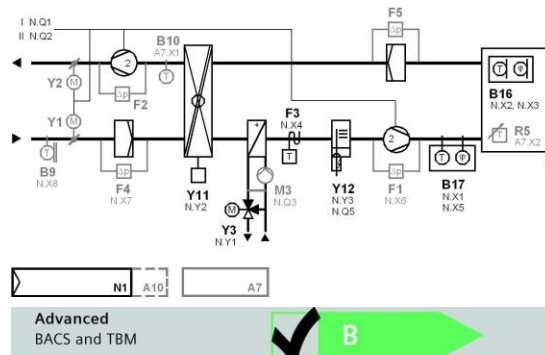


To fulfill the classification, the plant must be equipped with all indicated functions.

#### Partial Air Conditioning Plant, Heating / Humidifying - Room-supply air temperature cascade and humidity control

ADDP01 U2B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system and the heating coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors
- Limitation of supply air humidity



The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

To fulfill the classification, the plant must be equipped with all indicated functions.

#### Application examples RMU730B..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU730B..

More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU730B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2012. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".

Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.

[www.siemens.com/hit](http://www.siemens.com/hit)

#### BACS Energy Performance Classes – EN 15232

High energy performance  
BACS and TBM

A

Advanced  
BACS and TBM

B

Standard  
BACS

C

Non-energy-efficient  
BACS

D

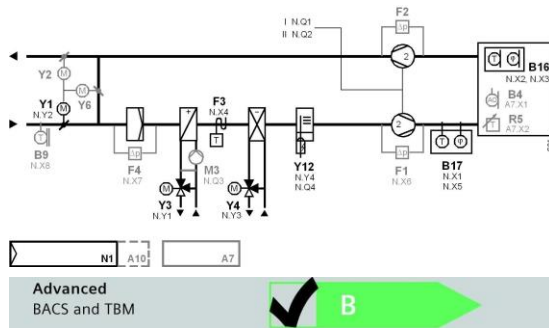
BACS Building Automation and Control System  
TBM Technical Building Management System

## Standard controllers

### Communicating HVAC controllers

#### Application examples RMU7..0B..

AEFB01 U3B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

### Partial Air Conditioning Plant, Heating / Cooling / Humidifying - Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the mixed air dampers, the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

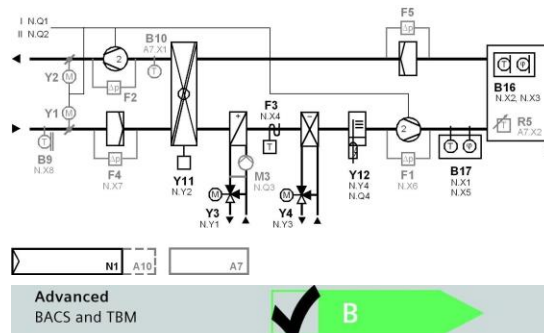
- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control



#### Air Conditioning Plant, Heating / Cooling / Humidifying / Dehumidifying - Room-supply air temperature cascade and humidity control

ADFP01 U3B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system, the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors
- Limitation of the supply air humidity



To fulfill the classification, the plant must be equipped with all indicated functions.

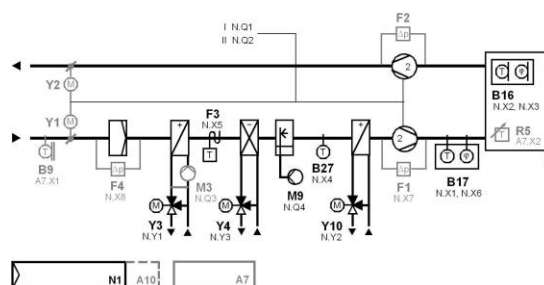
The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

#### Air Conditioning Plant, Heating / Cooling / Humidifying / Dehumidifying - Room-supply air temperature cascade and humidity control

ADZA01 U3B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the reheater valve and the cooling coil valve in sequence
- Control of the dewpoint temperature via the preheater valve and the cooling coil valve in sequence
- Control of room humidification via the air humidifier (on command)
- Control of room dehumidification by changing the outputs of dewpoint temperature control
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity by shutting down the preheater and by switching off the air humidifier in sequence

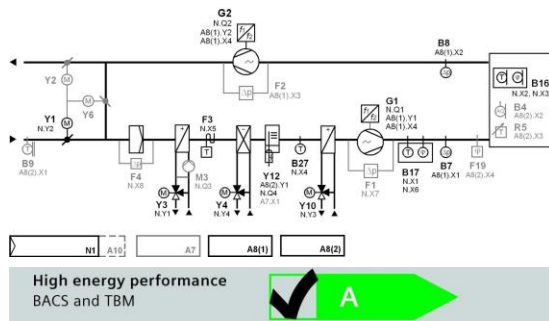


## Standard controllers

### Communicating HVAC controllers

#### Application examples RMU7..0B..

AEZH01 U3B DE



To fulfill the classification, the plant must be equipped with all indicated functions.

### Air Conditioning Plant, Heating / Cooling / Humidifying / Dehumidifying

- 7-day time switch with holiday / special day program
- Control of variable speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the mixed air dampers, the reheater valve and cooling coil valve in sequence
- Control of the dewpoint temperature via the mixed air dampers, the preheater valve and cooling coil valve in sequence
- Control of room humidification via the air humidifier (on command)
- Control of room dehumidification by changing the outputs of dewpoint temperature control
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

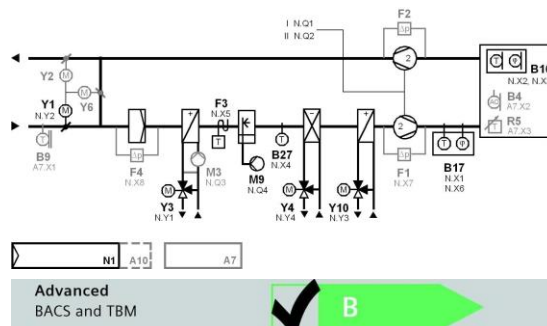
**The indicated energy efficiency classification can be attained only if the following functions are implemented:**

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A

#### Air Conditioning Plant, Heating / Cooling / Humidifying / De-humidifying - Room-supply air temperature cascade and humidity control

AEZH02 U3B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the mixed air dampers, the reheater valve and the cooling coil valve in sequence
- Control of the dewpoint temperature via the mixed air dampers and the preheater valve in sequence
- Control of room humidification via the air humidifier (on command) and the cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity by switching off the air humidifier in sequence



To fulfill the classification, the plant must be equipped with all indicated functions.

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan stepswitching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- With supply air humidity control

## RWG1.M12

## RWG1.M12 Universal building controller



For monitor and control in FAU, AHU, heat exchange units, fans, pumps, lighting and other electromechanical equipments. Onboard RS485 and ethernet interface for flexible field data acquisition and communication. Smart and graphical program tools.

Universal IO to support AI, AO, DI, DO

Universal building controller with 12IOs, Modbus RTU and Modbus TCP interface

Data sheet

A6V10733750

Stock no.

Product no.

S55370-C171

**RWG1.M12**

## RWG1.M8

## RWG1.M8 Universal controller

For monitor and control in FAU, AHU, heat exchange units, fans, pumps, lighting and other electromechanical equipments.

- High flexibility and economical efficiency
- Onboard RS485 and ethernet interface for flexible field data acquisition and communication
- Smart and graphical user interface
- Self-explanatory programming language
- Comprehensive Siemens reference application library
- Powerful offline simulator

Data sheet

A6V10733750

Operating voltage

AC 24 V

DC 24 V

Frequency

50/60 Hz

Power consumption

7 W / DC 24 V

14 VA / AC 24 V

Communication

Modbus RS485 and TCP

Max. cable length

30 m

Universal inputs/outputs, number

8

Degree of protection

IP20

Dimensions (W x H x D)

143 x 131 x 61 mm

Stock no.

Product no.

S55370-C172

**RWG1.M8**

## Standard controllers

### Communicating HVAC controllers

#### Switching and monitoring device RMS705B..

#### Switching and monitoring device

#### RMS705B-1



The RMS705B-1 complements the range of Synco700 products as a freely configurable unit for

- control and supervisory functions in heating, ventilation and refrigeration plant
- non-standard applications

and, for this reason, offers no predefined standard applications.

The RMS705B-1 is especially suited for the following functions:

- Connection of additional universal alarm inputs
- Adding free inputs for display and supervision
- Event logging (e.g. legionella function)
- Additional time programs (ON / OFF) for basic functions
- Calculation of enthalpy, enthalpy differential, absolute humidity, dewpoint and wet bulb temperature
- Logic function blocks for switching on / off depending on different conditions
- Lead / lag control of pumps, fans, motors, etc., with automatic changeover
- Step switch with linear, binary or flexible functionality

The RMS705B-1 supports the languages: English, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Norwegian, Swedish, Polish, Czech, Hungarian, Russian, Slovak, Bulgarian, Greek, Romanian, Slovenian, Serbian, Croatian, Turkish, Chinese.

Extension modules complement the switching and monitoring device and offer extra functions. They are attached to the controller via plug-in connectors. The extension modules do not operate autonomously.

The operation of the device from commissioning to enduser operation can be done via the operator unit.

Available extension modules:

- 1 universal module RMZ785
- 2 universal modules RMZ787
- 2 universal modules RMZ788

A total of 4 extension modules can simultaneously be used with the switching and monitoring device.

Available operator units:

- Plug-in operator unit RMZ790
- Detached operator unit RMZ791
- Bus operating unit RMZ792

Data sheet	N3124
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Communication	KNX (KNX TP1)
Analog outputs, number	4
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital outputs, number	6
Universal inputs, number	8
Universal input, signal	T1 (PTC) Pt1000 Potential-free digital status contact LG-Ni1000 Digital pulse contact DC 0...10 V 2 x LG-Ni1000 0...1000 Ohm
Relay outputs, number	6
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Mounting	DIN rail
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

Stock no.

Product no.

S55370-C100

**RMS705B-1**

## Standard controllers

## Communicating HVAC controllers

## Extension modules and operator units for RMU7..0B.. and RMS705B..

## RMZ790



## Plug-in type operator unit

- Operator unit plugs into the Synco™ 700 controllers
- For displaying and changing plant data for service staff and enduser
- Clear-text operation
- Can be plugged in and removed during operation
- Power supply via the controller

Data sheet

N3111

Mounting

DIN rail

Stock no.

Product no.

BPZ:RMZ790

RMZ790

## RMZ791



## Detached operator unit with 3 m cable

Like plug-in type operator unit, but:

- Other mounting choices (typically for control panel door or wall mounting)
- Larger display
- Connection via a prefabricated 3 m cable, supplied as standard

Data sheet

N3112

Mounting

Surface mounted (plaster)

Stock no.

Product no.

BPZ:RMZ791

RMZ791

## RMZ792



## Bus operator unit

Communicating operator unit for operating up to 150 controllers, room units and central units from the Synco™ 700 range via KNX bus.

Favorite pages can be freely defined. Designed for fixed installation or mobile use.

Data sheet

N3113

Operating voltage

AC 24 V

Voltage supply

KNX bus

Power consumption

2.5 VA

Degree of protection

IP20

Dimensions (W x H x D)

145 x 96 x 34 mm

Stock no.

Product no.

BPZ:RMZ792

RMZ792



## Extension modules and operator units for RMU7..0B.. and RMS705B..

## Room unit with KNX bus

QAW740

Configurable unit with display of operating mode, timer, temperatures and fault.

With 3 operating elements:

- Knob for setpoint readjustments
- Operating mode button
- Timer button



Data sheet	N1633
Operating voltage	DC 24 V
Voltage supply	KNX bus
Measuring range, temperature	0...45 °C
Setpoint readjustment range	-3...3 K
Communication	KNX (KNX TP1)
Connection cable	2-wire
Degree of protection	IP20
Dimensions (W x H x D)	96 x 96 x 47 mm
Weight (net)	0.22 kg

Stock no.

Product no.

BPZ:QAW740

QAW740

## Universal modules

RMZ78..

Additional inputs and outputs required by the Synco™ 700 controllers can be provided by these modules.  
A description of the functions is given with the relevant controller module.



Data sheet	N3146
Voltage supply	Supply from controller module
Power consumption	3 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Universal input, signal	0...1000 Ohm
	1000...1175 Ohm
	DC 0...10 V
	Potential-free digital status contact
	LG-Ni1000
	Pt1000
	T1 (PTC)
	2 x LG-Ni1000
Relay outputs	switching contact, potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A
Degree of protection	IP20
Dimensions (W x H x D)	117 x 90 x 75 mm

## Range overview RMZ78..

Universal- inputs, number	Analog outputs, number	Relay outputs, number	Weight (net) [kg]	Stock no.	Product no.
4	2	2	0.322	BPZ:RMZ788	<b>RMZ788</b>
6	2	4	0.359	BPZ:RMZ789	<b>RMZ789</b>
8	0	0	0.3	BPZ:RMZ785	<b>RMZ785</b>
4	0	4	0.334	BPZ:RMZ787	<b>RMZ787</b>

**RMZ780****Module connector**

Module connector for detached mounting of extension modules within the control panel.

Data sheet	N3138
Max. cable length	10 m
Dimensions (W x H x D)	18.5 x 87.5 x 22.5 mm

Stock no.	Product no.
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BPZ:RMZ780	<b>RMZ780</b>
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Standard controllers  
**Communicating HVAC controllers**  
 Field devices for RMU7..OB.. and RMS705B..

**Sensors, setpoint adjusters**

Product Title	Data sheet	Stock no.	Product no.
Frost detector, modulating	A6V10432020	BPZ:QAF63..J	QAF63..J
Differential pressure sensor, DC0...10 V	N1910_01	BPZ:QBM2030..	QBM2030..
Flue gas temperature sensor Pt1000	N1846	BPZ:FGT-PT1000	FGT-PT1000
Immersion temperature sensor 100 mm DC0...10 V	N1782	BPZ:QAE2164.010	QAE2164.010
Immersion temperature sensor 150 mm DC0...10 V	N1782	BPZ:QAE2164.015	QAE2164.015
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	S55720-S516	QAE9120.010
Duct temperature sensor 400 mm, LG-Ni1000	N1761	BPZ:QAM2120.040	QAM2120.040
Duct temperature sensor 2000 mm, LG-Ni1000	N1761	BPZ:QAM2120.200	QAM2120.200
Duct temperature sensor 6000 mm, LG-Ni1000	N1761	BPZ:QAM2120.600	QAM2120.600
Window pane temperature sensor	N1830	BPZ:QAT22	QAT22
Duct sensor for humidity (DC0...10 V)	N1864	BPZ:QFM2100	QFM2100
Duct sensor for humidity (0...10 V) and temperature (Ni1000)	N1864	BPZ:QFM2120	QFM2120
Duct sensor for humidity (DC0...10 V) and temperature (DC0...10 V)	N1864	BPZ:QFM2160	QFM2160
Duct sensor for humidity (0...10 V) and temperature (0...10 V) with calibration certificate	N1883	BPZ:QFM4160	QFM4160
Solar sensor	N1943	BPZ:QLS60	QLS60
Duct sensor for air velocity	N1932	BPZ:QVM62.1	QVM62.1
Frost detector, air side, 2-point	A6V10432022	BPZ:QAF64..J	QAF64..J
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	QAC22
Differential pressure sensor for liquids and gases	N1923	BPZ:QBE61.3-DP..	QBE61.3-DP..
Differential pressure sensors for liquids and gas (DC0...10 V)	N1920	BPZ:QBE63-DP..	QBE63-DP..
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	QAD22
Strap-on temperature sensor with cable LG-Ni1000	N1802	BPZ:QAD26.220	QAD26.220
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.010	QAE2120.010
Duct temperature sensor 400 mm, Pt1000	N1761	BPZ:QAM2112.040	QAM2112.040
Immersion temperature sensor Ø 4 mm with cable and fitting	N1790	BPZ:QAE26.9..	QAE26.9..
Differential pressure sensors for liquids and gas (0...10 V)	N1922	BPZ:QBE3000..	QBE3000..
Immersion temperature sensor 150 mm, LG-Ni1000, with protection pocket	N1781	BPZ:QAE2120.015	QAE2120.015
Immersion temperature sensor 100 mm, LG-Ni1000, without protection pocket	N1781	BPZ:QAE2121.010	QAE2121.010
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	QAP21.2
Cable temperature sensor silicone 1.5 m, LG-Ni1000	N1831	BPZ:QAP21.3	QAP21.3
Immersion temperature sensor 150 mm LG-Ni1000, without protection pocket	N1781	BPZ:QAE2121.015	QAE2121.015
Outside/room temperature sensor DC0...10 V	N1814	BPZ:QAC3161	QAC3161
Cable temperature sensor PVC 2 m, LG-Ni1000	N1831	BPZ:QAP22	QAP22
Duct sensor for humidity (DC0...10 V) for demanding requirements	N1882	BPZ:QFM3100	QFM3100
Duct air quality sensor CO <sub>2</sub> / temperature / rel. humidity / VOC	N1962	BPZ:QPM21..	QPM..
Duct sensor for humidity (DC0...10 V) and temperature (DC0...10 V) for demanding requirements	N1882	BPZ:QFM3160	QFM3160
Duct air quality sensor CO <sub>2</sub> / temperature / rel. humidity / VOC; Modbus	A6V11610641	BPZ:QPM21..-MO	QPM../MO
Duct temperature sensor	A6V12251940	BPZ:QAM16..020	QAM16..020

**Monitors**

Product Title	Data sheet	Stock no.	Product no.
Condensation monitor	A6V10741072	BPZ:QXA21..	QXA21..
Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C	A6V12051788	S55700-P163	QAF65.3AR-J
Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C	A6V12051788	S55700-P164	QAF65.6AR-J
Duct hygrostat, setpoint setting range 15...95 % r.h.	N1514	BPZ:QFM81.2	QFM81.2
Room hygrostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device	N1514	BPZ:QFM81.21	QFM81.21
Frost detector, air side, 2-point	A6V10432022	BPZ:QAF64..J	QAF64..J
Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C	A6V11965899	S55700-P161	QAF65.3M-J
Frost monitor, 2-point	N1284	BPZ:QAF81..	QAF81..
Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C	A6V11965899	S55700-P162	QAF65.6M-J

## Standard controllers

## Communicating HVAC controllers

## Field devices for RMU7..0B.. and RMS705B..

**Monitors**

Product Title	Data sheet	Stock no.	Product no.
Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device	N1518	BPZ:QFA1000	<b>QFA1000</b>
Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment	N1518	BPZ:QFA1001	<b>QFA1001</b>
Temperature controller	N1205	BPZ:RAK-TR.1..H	<b>RAK-TR.1..H</b>
Thermal reset limit thermostat	N1202	BPZ:RAK-TW.1..H	<b>RAK-TW.1..H</b>
Temperature limiter	N1206	BPZ:RAK-TB.1..M	<b>RAK-TB.1..M</b>
Safety limit thermostat	N1204	BPZ:RAK-ST..M	<b>RAK-ST..M</b>
Temperature controller/ thermal reset limit thermostat	N1212	BPZ:RAZ-TW.1..J	<b>RAZ-TW.1..J</b>
Differential pressure monitor	N1552	BPZ:QBM81..	<b>QBM81..</b>
Temperature controller/ safety limit thermostat	N1214	BPZ:RAZ-ST..J	<b>RAZ-ST..J</b>

**Room units / sensors**

Product Title	Data sheet	Stock no.	Product no.
Front module with passiv temperature measurement, LG-Ni1000	N1408	S55720-S133	<b>AQR2531ANW</b>
Room air quality sensor CO <sub>2</sub> / temperature / rel. Humidity / VOC	N1961	BPZ:QPA20..	<b>QPA..</b>
Room sensor for humidity (DC0...10 V) for demanding requirements	N1858	BPZ:QFA3100	<b>QFA3100</b>
Room sensor for humidity (DC0..10V) and temperature (DC0..10V) with calibration certificate	N1859	BPZ:QFA4160	<b>QFA4160</b>
Room sensor CO <sub>2</sub> / Humidity / Temperature Modbus	A6V12046144	S55720-S510	<b>QPA2052/MO</b>
Front module for base modules, temperature (active)	N1411	S55720-S136	<b>AQR2532NNW</b>
Room unit with room temperature sensor and setpoint adjuster	N1721	BPZ:QAA25	<b>QAA25</b>
Indoor air quality controller with integrated VOC sensor for mixed gas	N1571	BPZ:QPA84	<b>QPA84</b>
Room sensor for humidity (DC0...10 V) and temperature (DC0...10 V) for demanding requirements	N1858	BPZ:QFA3160	<b>QFA3160</b>
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	<b>QAA24</b>
Room sensor for humidity (DC0...10 V)	N1857	BPZ:QFA2000	<b>QFA2000</b>
Room sensor KNX for temperature, white	N1602	S55624-H103	<b>QMX3.P30</b>
Room sensor for humidity (DC0...10 V) and temperature (LG-Ni1000)	N1857	BPZ:QFA2020	<b>QFA2020</b>
Room unit with room temperature sensor and setpoint readjuster -3...3 K	N1721	BPZ:QAA27	<b>QAA27</b>
Room sensor for humidity (DC0...10 V) and temperature (DC0...10 V)	N1857	BPZ:QFA2060	<b>QFA2060</b>
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	N1722	BPZ:QAA64	<b>QAA64</b>
Room unit with KNX bus	N1633	BPZ:QAW740	<b>QAW740</b>
Room sensor KNX for temperature and humidity, white	N1602	S55624-H116	<b>QMX3.P40</b>
Room sensor KNX for temperature, humidity, CO <sub>2</sub> , white	N1602	S55624-H104	<b>QMX3.P70</b>
Mounting plates for front modules with passiv temperature measurement	N1408	BPZ:AQR2500..	<b>AQR2500..</b>
Base module with KNX for temperature and humidity measurement	N1411	BPZ:AQR2570..	<b>AQR2570..</b>

**Step switches, signal converter and transformers**

Product Title	Data sheet	Stock no.	Product no.
Transformers	N5536	BPZ:SEM62..	<b>SEM62..</b>
Universal digital indicator	N5312	BPZ:BAU200	<b>BAU200</b>
Current valve	N4938	S55376-C160	<b>SEA45.5</b>
Signal converter DC0...10 V or DC 0 / 10 V in AC 0 / 24 V	N5102	BPZ:SEM61.4	<b>SEM61.4</b>
Variable Speed Drive for pumps and fans, IP55, Filter B (C1)	N5111	BPZ:G120P..AM..B..	<b>G120P..5B</b>
Variable Speed Drive for pumps and fans, IP55, Filter A (C2)	N5111	BPZ:G120P..AM..A..	<b>G120P..5A</b>
Variable Speed Drive for pumps and fans, IP20, Filter B (C1)	N5111	BPZ:G120P..AE..B..	<b>G120P..2B</b>
Variable Speed Drive for pumps and fans, IP20, Filter A (C2)	N5111	BPZ:G120P..AE..A..	<b>G120P..2A</b>
Signal converter with preprogrammed applications	N5146	BPZ:SEZ220	<b>SEZ220</b>

Standard controllers  
**Communicating HVAC controllers**  
**Field devices for RMU7..0B.. and RMS705B..**

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**Service tool**

Product Title	Data sheet	Stock no.	Product no.
Commissioning and plant operating software	N5649	S55800-Y100	<b>ACS790</b>
Service tool for KNX / LPB	N5655	BPZ:OCI700.1	<b>OCI700.1</b>
USB - KNX Service interface	A6V10438951	S55800-Y101	<b>OCI702</b>
Web server for Synco devices	N5701	BPZ:OZW772..	<b>OZW772..</b>

The software (ACS790) can be downloaded for free via <http://www.siemens.com/acs790>.

## Standard controllers

### Various electrical accessories

### Interfaces

#### SEA45.5



#### Current valve

Current valve for AC 24 V pulse/pause control of electrical loads up to 30 kW

Mounting & local electrical regulations to be considered

SEA45.5 Current valve

Data sheet	N4938
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	0.24 VA
Degree of protection	IP20
Dimensions (W x H x D)	35.6 x 110 x 136 mm

Stock no. Product no.

S55376-C160 **SEA45.5**

#### SEM61.4



#### Signal converter DC 0...10 V or DC 0 / 10 V in AC 0 / 24 V

For converting a DC 0...10 V or DC 0 / 10 V input signal to a pulse-width modulated output signal AC 24 V for the control of maximum 20 current valves

Data sheet	N5102
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	1 VA
Analog input, signal	DC 0...10 V
Digital input, contact query	DC 0/10 V
Relay output, switching voltage	24 V
Triac output, switching voltage	24 V
Triac output, switching current	0.5 A
Degree of protection	IP20
Dimensions (W x H x D)	36 x 90 x 60 mm

Stock no. Product no.

BPZ:SEM61.4 **SEM61.4**

#### UA1T



#### Power amplifier for thermal actuators AC 24 V, PWM

The UA1T power amplifier is used to allow the connection of additional valve actuators to controllers with an AC 24 V output signal.

Indoor use

Data sheet	N3591
Operating voltage	AC 24 V
Current consumption	15 A
Digital outputs	AC 24V PWM, for max. 2x2 therm. Fan
Universal input, signal	AC 24 V
Degree of protection	IP20
Weight (incl. packaging)	0.42 kg
Dimensions (W x H x D)	55 x 18 x 22 mm

Stock no. Product no.

BPZ:UA1T **UA1T**

### Signal converter with preprogrammed applications

SEZ220

- Maximum and minimum selection
- Calculation of average
- Calculation of enthalpy, enthalpy differential, absolute humidity, dewpoint
- Flexible adaptation, limitation, inversion and conversion of input signal
- Tested preselected applications
- Flexible configuration



Data sheet	N5146
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	5 VA
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Universal inputs, number	5
Universal input, signal	0...1000 Ohm DC 0...10 V LG-Ni1000 Pt1000 T1 (PTC) 2 x LG-Ni1000
Degree of protection	IP20
Dimensions (W x H x D)	123 x 90 x 86 mm

Stock no.	Product no.
BPZ:SEZ220	SEZ220

### Signal converter DC 0...20 V Phs to DC 0...10 V

SEZ91.6

For the conversion of DC 0...20 VPh signals  
to DC 0...10 V signals



Data sheet	N5143
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	0.5 VA
Analog input, signal	DC 0...20 V Phs
Analog output, signal	DC 0...10 V
Degree of protection	IP20
Dimensions (W x H x D)	57 x 22 x 18 mm

Stock no.	Product no.
BPZ:SEZ91.6	SEZ91.6

## BAU200

## Universal digital indicator



Universal single point digital indicator

- Suitable for front-mounting in control panel
- With LED display
- Input signal (type of signal and measuring range) can be set with buttons
- For all Siemens Building Technologies sensors (LG-Ni 1000, T1, PT100, PT 1000, 0 ... 10 V)

Data sheet

N5312

Analog input, signal

DC 0...10 V

LG-Ni1000

Pt100

Pt1000

T1 (PTC)

Analog output, signal

DC 0...10 V

Mounting

Front mounting

DIN rail

Stock no.

Product no.

BPZ:BAU200

**BAU200**

### Digital time switch, 1-channel, with 7-day program

SEH62.1

Programmable as 24-hour or 7-day time switch. Wall or DIN rail mounting.



Data sheet	N5243
Operating voltage	AC 230 V
Power consumption	3 VA
Frequency	50/60 Hz
Buffer time	72 h
Display	LCD
Digital inputs, number	1
Digital input, contact query	8 mA
	DC 24 V
Digital input, application	Countdown timer
Relay output, switching voltage	AC 24...250 V
	24 V
Relay output, switching current	AC 6 (3) A
	DC 0.1...4 A
Relay outputs	Change-over contact, potential-free
Connection cable	Max. 2.5 mm <sup>2</sup>
Type of fixing	Wall mouting with screws
	DIN rail 60 mm long min.
Degree of protection	IP20
Ambient temperature, operation	0...50 °C
Dimensions (W x H x D)	79 x 106 x 56 mm

Stock no.

Product no.

BPZ:SEH62.1

SEH62.1

## Standard controllers

### Various electrical accessories

### Transformers

#### SEM62..



#### Transformers

Transformer with housing, providing a reduction in voltage from AC 230 V to AC 24 V (output power 30 VA)

- Self-resetting fuse integrated on the primary side
- Secondary On/Off switch and replaceable fuse (SEM62.2 only)
- Plug-in screw terminals
- Two secondary output plug-in terminals

Data sheet	N5536
Frequency	50/60 Hz
Primary voltage	AC 230 V
Secondary voltage	AC 24 V
Output rating	30 VA
Degree of protection	IP20
Dimensions (W x H x D)	114 x 106 x 57 mm

#### Range overview SEM62..

Product Title	Stock no.	Product no.
Transformer	BPZ:SEM62.1	<b>SEM62.1</b>
Transformer with switch and replaceable fuse	BPZ:SEM62.2	<b>SEM62.2</b>



# Software, web server and system devices



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Engineering and service tool (Synco / LPB)	For HVAC plants	151
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	For LPB	155
KNX system devices	Interfaces and gateways	157
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**Overview standard systems**

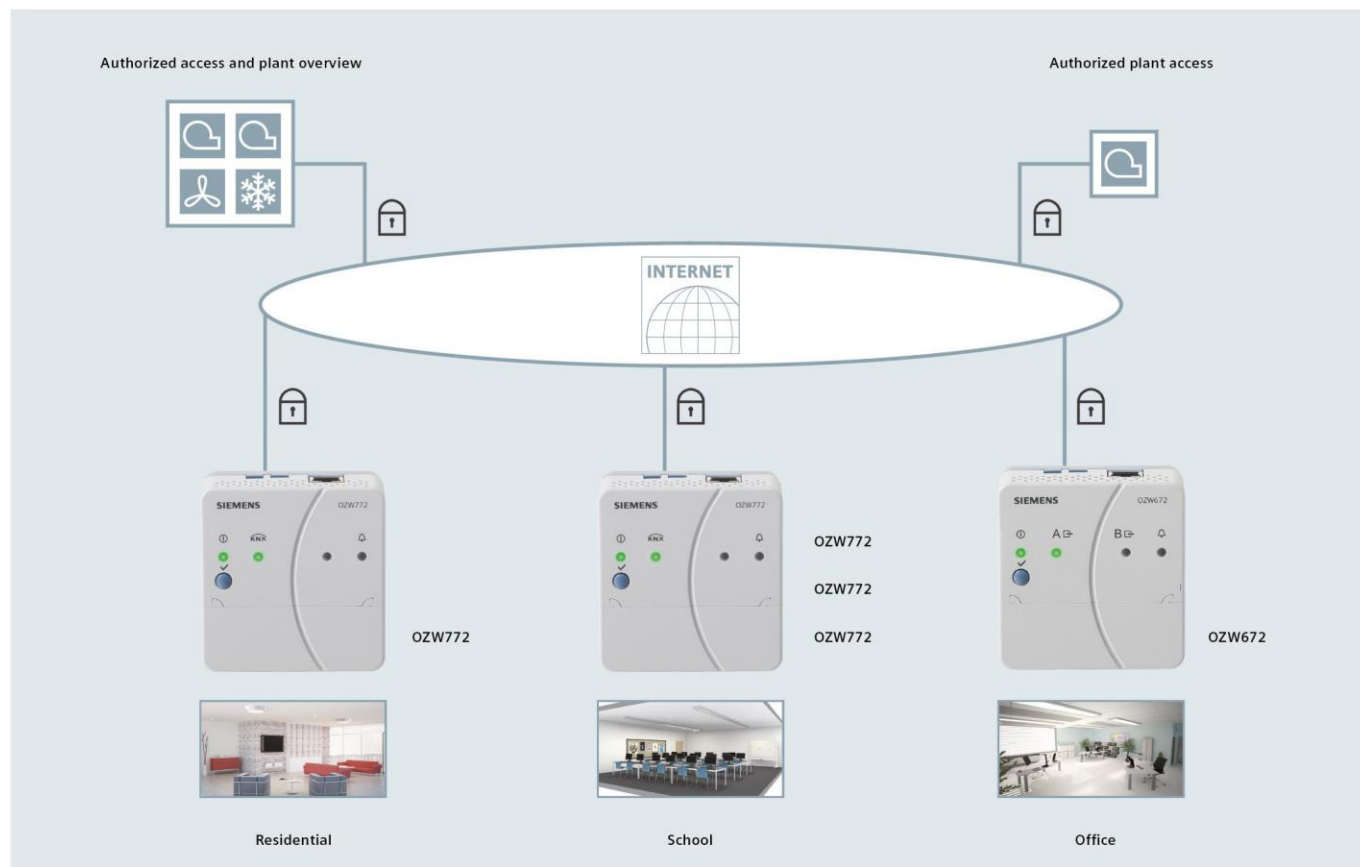
Communication	KNX (Konnex)	LPB (Local process bus)
Standard systems for:	Heating, ventilation or air conditioning	Heating plants
Web server	OZW772..	OZW672..
PC Tool	ACS790	ACS790
Service Tool	OCI700.1	OCI700.1
USB-KNX Interface with Bus Power supply	OCI702	
Heating controllers	Synco™ ■ RMH760B-1 Heating controller ■ RMK770-1 Boiler sequence controller	■ RVL4.. Heating controllers ■ RVP3.. Heating controllers ■ RVD2.. District heating controllers
Ventilation and air conditioning controllers	Synco™ ■ RMU7..0B.. Universal controllers	
Switching and Monitoring Device	Synco™ ■ RMS705B-1 Switching and monitoring device	
Room controllers	Synco™ ■ RMB795B-1 Central control unit ■ RXB Room controllers	
Home Automation System	Synco™ living ■ QAX903, QAX913	
Thermostats	Synco™ ■ RDF600KN, RDF600KN/S, RDF870KN, RDF880KN/NF ■ RDG100KN, RDG160KN, RDG165KN, RDG405KN ■ RDF600KN/VB, RDF800KN, RDF800KN/VB, RDG200KN, RDG260KN	
Flush-mount room sensor	■ AQR253.. ■ AQR257..	
Wall-mount room sensor	■ QMX3.P30 ■ QMX3.P70	

## Synco IC

### Easy and secure remote access and plant overview

Synco IC is a web-based Remote Access System. Setting-up Internet access to your plant is easy: just connect your web server OZW with the Internet, create your user account on the web page and enter the key for your web server OZW.

[www.siemens-syncoic.com](http://www.siemens-syncoic.com)



### Internet portal Synco IC offers simple and secure access to your plants

#### Simple and fast set up of access via the Internet:

- fixed net- or mobile router
- neither a fixed IP address, nor a dynamic IP address service, nor port forwarding (NAT/PAT) is required

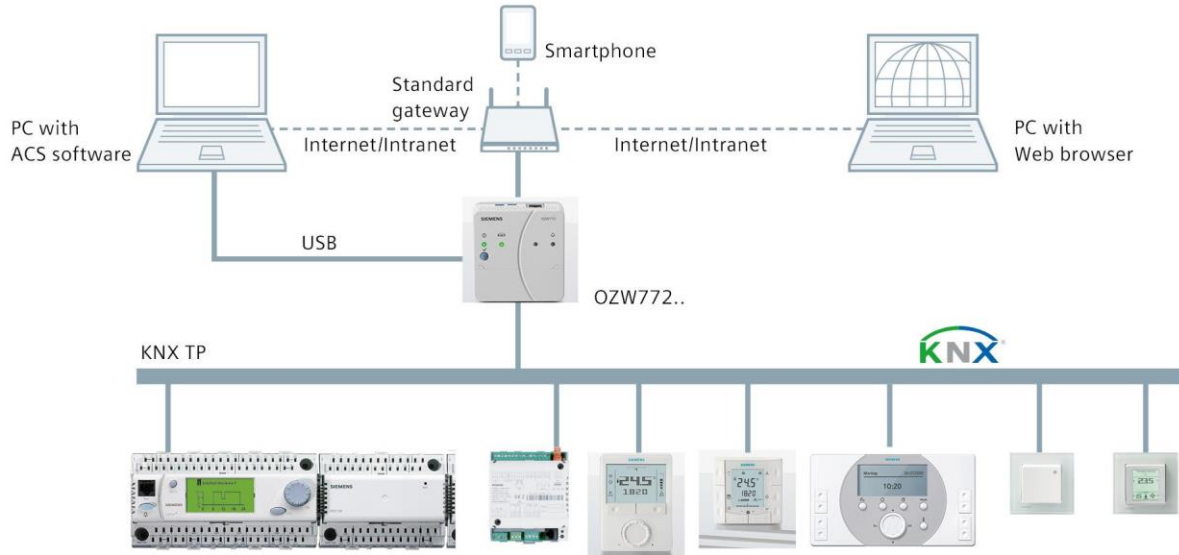
#### The portal provides additional functions:

- Manage one or multiple plants
- Central user management
- Display of plant overview, state of Energy indicators, and alarms
- Send alarm notifications per e-mail
- Secured communications through encryption (https)

**Synco Webserver**

**Standard systems for heating, ventilation or air conditioning Synco™ (KNX)**

Low engineering system to easily build complex applications with flexible and modular combinations of standard controllers Synco™ 700. Standard Systems for HVAC plants are capable to be remote operated and can generate alarms to service centers. Full control without extensive engineering.



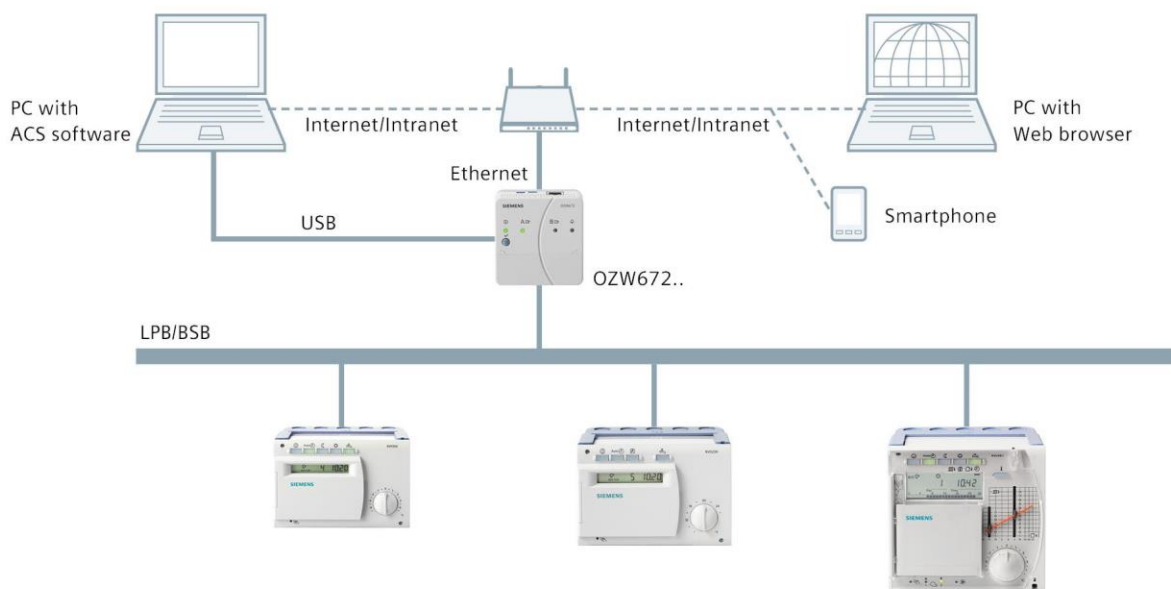
Webserver	OZW772			
Device versions	OZW772.01	OZW772.04	OZW772.16	OZW772.250
No. of Synco devices <sup>1)</sup>	1	4	16	250
KNX S-Mode data points	7	237	237	237
<b>Plant operation</b>				
ACS software	Yes			
Web Browser	Yes			
Interface	Ethernet, USB			
<b>Alarming</b>				
Max. message receivers	4			
ACS alarm via PC	No			
Fax	No			
Pager	No			
SMS	No			
e-Mail	Yes (Ethernet)			
Offline trend function	Yes			
Digital alarm inputs (potential free)	None			
Local device operation	Button			
Bus power supply	No			
<b>General device data</b>				
Operating voltage	AC 230 V ±15 %			
Frequency	50/60 Hz			
Power consumption	3 VA			
Degree of protection	IP30			

<sup>1)</sup> Synco™ controller series 700, QAW740, RXB., RDG., RDF., Synco™ living QAX9..

**LPB Webservice**

**Standard system for heating plants (LPB)**

Low engineering system to easily build complex applications with flexible combinations of standard controllers Series RVL4.., RVP3.., and RVD2... Standard Systems for heating plants are capable to be remote operated and can generate alarms to service centres: Full control without extensive engineering.



Webserver	OZW672		
Device versions	OZW672.01	OZW672.04	OZW672.16
No. of comm. devices <sup>1)</sup>	1	4	16
<b>Plant operation</b>			
ACS software		Yes	
Web Browser		Yes	
Interface		Ethernet, USB	
<b>Alarming</b>			
Max. message receivers		4	
ACS alarm via PC		No	
Fax		No	
Pager		No	
SMS		No	
e-Mail		Yes (Ethernet)	
Offline trend function		Yes	
Digital alarm inputs (potential free)		2	
Local device operation		Button	
Bus power supply		No	
<b>General device data</b>			
Operating voltage		AC 230 V ±15 %	
Frequency		50/60 Hz	
Power consumption		3 VA	
Degree of protection		IP30	

<sup>1)</sup> RVL4..,RVP3..,RVD2..

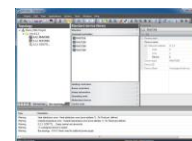
**Interfaces**

Different interfaces are available for the connection with a Microsoft Windows PC tool. The units OCI7... are designed for portable use and devices N 148/... for mounting on a DIN rail.

				
<b>Interface</b>	OCI700	OCI702	N 148/12	N 148/23
Type	USB	USB	USB	Ethernet RJ45
Long frames up to 64 Bytes	Yes	Yes	Yes	Yes
<b>Tool (starting with version)</b>				
ACS	V1	V10	V10	No
ETS	V3	V3	V3	V5
Desigo ABT Site	V6	V6	No	No
<b>Devices</b>				
Heating controller RVD, RVP, RVL	Yes	None	None	None
Synco 200 controller	Yes	None	None	None
Synco 700 and individual room controller	Yes	Yes	Yes	Yes
Synco living apartment unit	Yes	Yes	Yes	Yes
Gamma devices	Yes	Yes	Yes	Yes
Desigo TRA (DXR, PXC3)	None	Yes	None	None
KNX TP devices	Yes	Yes	Yes	Yes
<b>Power supply</b>				
Bus power supply (KNX TP)	No	25 mA, switchable	No	No
Power consumption from field bus	5 mA	5 mA	5 mA	5 mA
Operating voltage	USB	USB	USB	Power over Ethernet
Alternative power supply	No	No	No	24 VAC/DC
<b>Mounting</b>				
Mounting	portable	portable	DIN-Rail	DIN-Rail
<b>Supplied accessories</b>				
Cable for PC	USB	USB		
Cable for field bus	KNX RJ45 LPB RJ12	KNX RJ45 Jack plug Bus terminal		
Transport container	Service case	Bag		

**Commissioning and plant operating software**

**ACS790**



PC software for commissioning, operating and supervision of HVAC plants.  
 Consists of 3 programs: ACS Tool, ACS Alarm and Remote Tool Access.

**ACS Tool:**

for plant commissioning, operating and service

- Popcard (standard and customized)
- Plant diagram (standard and customized)
- Plant view (standard and customized)
- Trend functions (online and offline)
- File transfer
- Parameter settings
- Commissioning protocol

**ACS Alarm:**

- For receiving and managing alarms

**Remote Tool Access:**

On web servers as of V7.0, you can establish a secure connection to the web server with the ACS790 and the "Remote Tool Access" software via Synco IC portal.

**Commissioning and service via OCI7.. service interface**

Compatible devices OCI700.1 and OCI702.

**Plant operation and supervision for**

KNX systems

- Web server: OZW772
- Synco™ living: QAX9...
- Controllers: Synco™700, Synco RXB
- Thermostats: RDF..., RDG...
- Sensors: QMX3.P30, QMX3.P70, AQR253.. and AQR257..

LPB/BSB systems

- Web server units: OZW672
- Sigmagyr controllers: RVD., RVL., RVP..
- Albatros controllers

The software can be downloaded for free via <http://www.siemens.com/acs790>.

Data sheet

N5649

Stock no.

Product no.

S55800-Y100

**ACS790**

Software, web server and system devices  
**Engineering and service tool (Synco / LPB)**  
**For HVAC plants**

2

**OCI700.1**



**Service tool for KNX / LPB**

The service tool consists of:

- OCI700 service interface
- USB cable
- Service cable for Synco™ controllers
- Service cable for SIGMAGYR® and ALBATROS controllers

Commissioning and diagnostics of the following devices:

Synco devices:

- Web Server OZW772
- Heating controller RMH760B-1
- Boiler sequence controller RMK770-1
- Universal controllers RMU7..0B-1
- Universal controllers RLU2..
- Switching and monitoring device RMS705B-1
- Room unit QAW740
- Central control unit RMB795B-1
- Individual room controllers RXB..
- Signal converter SEZ220
- Synco™ living central apartment unit QAX9..
- Synco™ thermostats RDF.., RDG..
- Sensores: QMX3.P30, QMX3.P70, AQR253.. and AQR257..

LPB/BSB systems

- Web server units: OZW672
- Sigmagyr controllers: RVD.., RVL.., RVP..
- Albatros controllers

Data sheet	N5655
Mounting	Adapter plug
Color	Gray

Stock no.	Product no.
BPZ:OCI700.1	<b>OCI700.1</b>

**OCI702**



**USB - KNX Service interface**

The service interface consists of:

- OCI702 service interface
- USB 2.0 cable (Type A / B)
- KNX service cable for Synco™ controllers (RJ45 / RJ45)
- KNX service cable for Desigo™ TRA (RJ45 / jack plug 2.5 mm)
- KNX service cable (RJ45 / KNX bus terminal)

With the respective PC software, the interfaces allows to commission and service devices with KNX communication, e.g. from the following ranges:

- Synco™ 700 controllers and room devices
- KNX room thermostats RDF..., RDG..
- Individual room controllers RXB..
- Synco™ living central apartment units QAX9...
- Desigo TRA
- GAMMA devices

Data sheet	A6V10438951
Degree of protection	IP20

Stock no.	Product no.
S55800-Y101	<b>OCI702</b>



**Web server for Synco devices**

OZW772..



Web server OZW772 allows for remote plant control and monitoring via the web.

- Operate web browser via PC/laptop and Smartphone
- Operate ACS (PC/laptop with ACS plant operating software)
- Connections: USB and Ethernet
- Display fault messages in the web browser
- Send fault messages to a maximum of 4 e-mail recipients
- Periodically send system reports to e-mail recipients
- Visualize the plants in the web browser based on standard plant diagrams and customized plant web pages
- Acquire and display consumption data
- Send consumption data file to 2 email recipients
- Function "Energy indicator" to monitor data points for energy-related limit values, or "Green limits"
- Web services for external applications via Web API (Web Application Programming Interface)
- Encrypted with https and TLS for e-mails
- Record of trends, display and dispatch to 2 e-mail recipients
- Integration up to 237 S-Mode data points of KNX devices (not OZW772.01)
- Direct commissioning with webbrowser or ACS service tool
- Easy and secure remote access and plant overview with Synco IC Remote Access - a web-based service for secure remote access ([www.siemens-syncoic.com](http://www.siemens-syncoic.com))

Internet portal Synco IC offers simple and secure access to your plants

- Simple and fast set up of access via the Internet (fixed net- or mobile router)
- The portal provides additional functions:
  - Manage one or multiple plants
  - Central user management
  - Display of plant overview, state of Energy indicators and alarms
  - Send alarm notifications per e-mail
  - Secured communications through encryption (https)

Web servers OZW772.01, OZW772.04, OZW772.16, OZW772.250 can connect 1, 4, 16, or 250 KNX devices from the product ranges Synco 700, Synco RXB, and RDG/RDF room thermostats, and the QAX Synco living central apartment units.

Data sheet	N5701
Operating voltage	Power pack: AC 230 V Web server: DC 24 V
Communication	KNX TP (twisted pair) Ethernet, RJ45 plug socket (shielded) USB V2.0
Mounting	On DIN rails With Screws
Degree of protection	IP30
Dimensions (W x H x D)	87.5 x 90 x 40 mm

**Range overview OZW772..**

Product Title	Stock no.	Product no.
Web server for 1 Synco device	BPZ:OZW772.01	<b>OZW772.01</b>
Web server for 4 Synco devices	BPZ:OZW772.04	<b>OZW772.04</b>
Web server for 16 Synco devices	BPZ:OZW772.16	<b>OZW772.16</b>
Web server for 250 Synco devices	BPZ:OZW772.250	<b>OZW772.250</b>

## Synco standard system main components

Product Title	Data sheet	Stock no.	Product no.
VAV compact controller KNX	N3547	BPZ:G..B181.1E/KN	<b>G..B181.1E/KN</b>
Room thermostats with KNX communications	A6V11545853	BPZ: RDG2..KN	<b>RDG2..KN</b>
Flush mount KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes	N3076	S55770-T293	<b>RDF600KN</b>
Central control unit for room controllers and room thermostats	N3122	S55370-C162	<b>RMB795B-1</b>
Heating controller	N3133	BPZ:RMH760B-1	<b>RMH760B-1</b>
Boiler sequence controller	N3132	BPZ:RMK770-1	<b>RMK770-1</b>
Switching and monitoring device	N3124	S55370-C100	<b>RMS705B-1</b>
Room controller for 3-speed fan	N3873	BPZ:RXB21.1/FC-10	<b>RXB21.1/FC-10</b>
Room controller for 3-speed fan	N3873	BPZ:RXB21.1/FC-11	<b>RXB21.1/FC-11</b>
Room controller with 3-speed fan and electric heating coil	N3873	BPZ:RXB22.1/FC-12	<b>RXB22.1/FC-12</b>
Room controller for chilled ceilings and radiators	N3874	BPZ:RXB24.1/CC-02	<b>RXB24.1/CC-02</b>
Room controller for fan-coil applications with KNX communication	N3875	S55373-C121	<b>RXB39.1/FC-13</b>
Room thermostat for temperature and air quality control with KNX communications, AC 24 V, VAV heating and cooling systems	N3192	S55770-T348	<b>RDG405KN</b>
Room sensor KNX for temperature, white	N1602	S55624-H103	<b>QMX3.P30</b>
Flush mount touch KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes	N3174	S55770-T350	<b>RDF800KN</b>
Universal controller	N3150	BPZ:RMUB..	<b>RMU7..0B-1</b>
Web server for Synco devices	N5701	BPZ:OZW772..	<b>OZW772..</b>
Flush mount touch KNX PM2.5 & CO2 & Ventilation Controls with on/off or ECM fans selectable and 2x DC 0-10 V input, fit for both round and square conduit boxes	A6V11439454	S55770-T407	<b>RDF870KN</b>
Room unit with KNX bus	N1633	BPZ:QAW740	<b>QAW740</b>
Flush mount touch MODBUS PM2.5 & CO2 & Ventilation Controls with on/off or ECM fans selectable and 2x DC 0-10 V input, fit for both round and square conduit boxes	A6V11439454	S55770-T408	<b>RDF870MB</b>
Room sensor KNX for temperature, humidity, CO2, white	N1602	S55624-H104	<b>QMX3.P70</b>
Front modules for base module	N1411	BPZ:AQR253..	<b>AQR253..</b>
Base module with KNX for temperature and humidity measurement	N1411	BPZ:AQR2570..	<b>AQR2570..</b>
Base modules with KNX for CO <sub>2</sub> measurement	N1411	BPZ:AQR2576..	<b>AQR2576..</b>

## Web Server for LPB devices

OZW672..



Web server OZW672 allows for remote plant control and monitoring via the web

- Operate web browser via PC/laptop and Smartphone
- Operate via ACS790 PC tool
- Connections: USB and Ethernet
- 2 digital inputs for fault messages
- Display fault messages in the web browser
- Send fault messages to a maximum of 4 email recipients
- Periodically send system reports to email recipients
- Visualize the plants in the web browser based on standard plant diagrams and customized plant web pages
- Function "Energy indicator" to monitor data points for energy-related limit values, or "Green limits"
- Web services for external applications via Web API (Web Application Programming Interface)
- Encrypted with https and TLS for emails
- Record of trends, display and dispatch to 2 e-mail recipients

Internet portal Synco IC offers simple and secure access to your plants

- Simple and fast set up of access via the Internet (fixed net- or mobile router)
- The portal provides additional functions:
  - Manage one or multiple plants
  - Central user management
  - Display of plant overview, state of Energy indicators and alarms
  - Logging fault messages
  - Send alarm notifications per e-mail
  - Secured communications through encryption (https)

Package insert:

Mounting Instructions M5712

Power pack AC 230 V / DC 24 V

Ethernet-cable

USB-cable

2 cable ties

Web servers OZW672.. can connect 1 LPB/BSB device or 4 or 16 LPB devices from the product ranges Sigmagyr, Albatros and Albatros2.

Data sheet	N5712
Operating voltage	Power pack: AC 230 V Web server: DC 24 V
Communication	LPB/BSB (twisted pair) Ethernet, RJ45 plug socket (shielded) USB V2.0
Digital inputs, number	2
Degree of protection	IP30
Dimensions (W x H x D)	87.5 x 90 x 40 mm

### Range overview OZW672..

Product Title	Stock no.	Product no.
Web Server for 1 LPB/BSB device	BPZ:OZW672.01	<b>OZW672.01</b>
Web Server for 4 LPB devices	BPZ:OZW672.04	<b>OZW672.04</b>
Web Server for 16 LPB devices	BPZ:OZW672.16	<b>OZW672.16</b>

**LPB standard system main components**

Product Title	Data sheet	Stock no.	Product no.
Web Server for LPB devices	N5712	BPZ:OZW672..	<b>OZW672..</b>
Heating controller for 1 heating circuit or boiler temperature control	N2540	BPZ:RVL480	<b>RVL480</b>
Heating controller for boiler temperature control and d.h.w. heating	N2541	BPZ:RVL481	<b>RVL481</b>
Heating controller for boiler temperature control for modulating or 2-stage burners with d.h.w. heating	N2542	BPZ:RVL482	<b>RVL482</b>
Heating controller for a second heating circuit	N2543	BPZ:RVL479	<b>RVL479</b>
Heating controller for 1 heating circuit	N2545	S55370-C136	<b>RVP340</b>
Heating controller for 1 heating circuit and d.h.w.	N2545	S55370-C137	<b>RVP350</b>
Heating controller for 2 heating circuits and d.h.w.	N2546	S55370-C139	<b>RVP360</b>
District heating controller	N2513	BPZ:RVD25..	<b>RVD25..</b>
District heating controller	N2515	BPZ:RVD26..	<b>RVD26..</b>

### IP Interface Secure

N 148/23

- For communication between KNX devices and PCs or other devices with Ethernet (10BaseT or 100BaseT) interface, for remote access to an KNX installation
- Uses the KNXnet/IP protocol or secured access and data transmission via KNXnet/IP Secure
- Up to five KNXnet/IP Tunneling connections for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, automatically by a DHCP server in the network
- 5 LEDs for display of availability, KNX communication and IP communication
- Electronics powered via "Power over Ethernet" according to IEEE 802.3af or alternatively by an external safety extra low voltage power supply for AC/DC 24V
- Pluggable terminal block for connection of external power supply unit (not included)
- Ethernet connection via RJ45 socket
- Housing: plastic, color RAL 7035 (light grey), N-system
- DIN rail mounted device for mounting on rail TH35 according to DIN EN 60715
- Type of protection: IP 20



Data sheet A6V11689764  
 Dimensions (W x H x D) 36 x 90 x 61 mm  
 Dimension width (1 MW = 18 mm) 2 MW

Stock no. Product no.  
 5WG1148-1AB23 N 148/23

### IP Router Secure

N 146/03

- For interconnection of bus lines or bus areas via a fast data network (Ethernet 10BaseT or 100BaseT) with Internet Protocol (IP)
- To be used as line, area and system coupler
- Uses the KNXnet/IP protocol or secured access and data transmission via KNXnet/IP Secure
- Up to five KNXnet/IP Tunneling connections for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, automatically by a DHCP server in the network
- 5 LEDs for display of availability, KNX communication and IP communication
- Electronics powered via "Power over Ethernet" according to IEEE 802.3af or alternatively by an external safety extra low voltage power supply for AC/DC 24 V
- Pluggable terminal block for connection of external power supply unit (not included)
- Ethernet connection via RJ45 socket
- Housing: plastic, color RAL 7035 (light grey), N-system
- DIN rail mounted device for mounting on rail TH35 according to DIN EN 60715
- Type of protection: IP 20



Data sheet A6V11656735  
 Dimensions (W x H x D) 36 x 90 x 61 mm  
 Dimension width (1 MW = 18 mm) 2 MW

Stock no. Product no.  
 5WG1146-1AB03 N 146/03

**N 148/12**



**USB Interface**

- Compatible with USB 2.0 and USB 3.0
- For isolated access to the bus line over the built-in USB socket (type B)
- For connection of a PC for addressing, parameterization, visualization, logging and diagnosis of bus devices
- Access to all bus devices in the whole bus system
- Support of bus telegrams with up to 64 bytes length
- Power supply over the bus line and over USB through the connected PC
- Integrated bus coupling unit, bus connection over bus terminal
- Transmission at USB 2.0 speed (max. 12 Mbit/s) between PC and USB interface
- Modular installation device for mounting on TH35 DIN EN 60715 mounting rail

Data sheet	A6V11535346
Dimensions (W x H x D)	55 x 18 x 90 mm
Dimension width (1 MW = 18 mm)	1 MW

Stock no.	Product no.
5WG1148-1AB12	<b>N 148/12</b>

**N 143/01**



**IP Gateway KNX/BACnet**

- BACnet Application Specific Controller (B-ASC) as Gateway between KNX TP and BACnet IP
- BTL certified
- Up to 250 BACnet objects
- Up to 455 BACnet COV subscriptions
- Automatic translation of KNX communication objects into BACnet objects according to the configuration with ETS
- For communication between KNX EIB devices and PCs or other devices with Ethernet (10BaseT) interface, as well as in conjunction with a LAN modem or DSL router for remote access to an KNX EIB installation
- For use as an interface e.g. for ETS3 or for visualization software
- Use the KNXnet/IP protocol
- KNXnet/IP Tunneling connection for parallel bus access by ETS and further PC software
- ObjectServer connection for visualization via network connections with long signal transmission duration
- Assignment of the network parameters by the installer using ETS, or automatically by a DHCP server in the network
- 2 LEDs for display of operational availability and IP communication
- Additional power supply by an external safety extra low voltage power supply for AC/DC 24 V, 40 mA
- Pluggable terminal block for connection of external power supply unit (not included)
- Integrated bus coupling unit with bus connection via bus terminal
- Ethernet connection via RJ45 socket
- Mounting on DIN rail EN 60715-TH35-7.5

Data sheet	A6V10466141
Dimensions (W x H x D)	90 x 72 x 55 mm
Dimension width (1 MW = 18 mm)	4 MW

Stock no.	Product no.
5WG1143-1AB01	<b>N 143/01</b>

## IP Control Center

Visualisation controller for full-graphic visualizations on web-compatible end devices such as PCs, tablets and smart phones with a standard web browser.

For communication between KNX devices and PCs and, in connection with a LAN-/WLAN modem or DSL router, for remote access to a KNX installation, for usage as an interface for the ETS 3/4/5 and as an interface for a visualization, with usage of the KNXnet/IP protocol, with the following simultaneously usable functions:

- Web server for operating and monitoring up to 1250 statuses and values transmitted by the KNX network, which can be displayed using a standard browser on PCs, tablets, or smartphones connected to the IP network
- Special web-configuration page for a firmware update, to set the IP configuration, SMTP server, security settings, password protection, certificates, Sonos module, API connection and restart
- Graphical web editor for a creation of fully graphical visualization with control and display elements, configurable in various styles
- Smart editor for the creation of a visualisation, tuned for mobile browsers, smartphones, tablets with control and display elements, configurable in various styles and layouts
- Annual timer, with astronomical calendar, for 300 time switch schedules with up to 30 time switch commands per time switch schedule
- Scene module with up to 5000 scenes or events
- Chart module for recording and reporting of up to 10 data points
- Monitoring module for monitoring and storage of up to 1000 events into a ring buffer
- IP interface for control of up to 20 IP-devices via up to 20 TCP/UDP commands per IP-device
- Fully graphical logic module with up to 1000 logic functions
- Alarm function for up to 250 different alarms
- E-mail function, with up to 20 contacts, for transmission of chart data from chart module, logged data from monitoring module or alarm data
- Data point management for viewing, managing, editing and categorizing all available data points
- Module for controlling SONOS loudspeakers
- Module for controlling the Philips HUE LED lighting system
- Ethernet interface 10/100 Mbits/s with RJ45 socket for connection to the IP network using the Internet Protocol
- 2 LED displays for IP connection/communication and for error messages
- Integrated bus connector and bus terminal for connection to a KNX network
- Power supply of the electronics by an external voltage source for AC/DC 24 V, 50 mA
- Series installation device for mounting on support rails TH35 DIN EN 60715

Data sheet	A6V10417875
Dimensions (W x H x D)	90 x 72 x 55 mm
Dimension width (1 MW = 18 mm)	4 MW



Stock no.	Product no.
5WG1152-1AB01	N 152/01

N 140/13



Line/backbone coupler

- For data exchange between two KNX bus lines with telegrams of up to 64 byte
- For use as line coupler for connecting a line to the main line or as backbone coupler for connecting a main line to the backbone line or as repeater for connecting two segments of the same line, with electrical isolation of the two bus lines
- Loadable filter table for control of the data exchange between the two bus lines
- Additional loadable filter table for telegrams with LTE addressing
- Detection of a communication fault on the lower-level line and signaling to the higher-level line
- 3 LEDs for display of availability and receipt of a telegram per line
- Power supply from the main line
- Modular installation devices for mounting on TH35 EN 60715 mounting rail
- With bus connection to the line and to the main line via bus terminal.

Data sheet	A6V10416071
Dimensions (W x H x D)	60 x 36 x 90 mm
Dimension width (1 MW = 18 mm)	2 MW

Stock no. Product no.

5WG1140-1AB13 **N 140/13**



### Power supply unit

- Integrated chokes
- Bus connection via bus terminal
- Parallel operating mode power supplies
- Rated operational voltage AC 120...230 V, 50...60 Hz, DC 220 V
- Output voltage DC 29 V
- Additional unchoked output for DC 29 V, for powering a second bus line via an external choke N 120/2
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

N 125/..2



Data sheet A6V10416488

### Range overview N 125/..2

Product Title	Dimensions (WxHxD) [mm]	Dimension width (1 MW = 18 mm)	Stock no.	Product no.
Power supply unit DC 29 V, 160 mA with additional unchoked output, N 125/02	90 x 72 x 55	4 MW	5WG1125-1AB02	<b>N 125/02</b>
Power supply unit DC 29 V, 320 mA with additional unchoked output, N 125/12	60 x 72 x 90	4 MW	5WG1125-1AB12	<b>N 125/12</b>
Power supply unit DC 29 V, 640 mA with additional unchoked output, N 125/22	60 x 72 x 90	4 MW	5WG1125-1AB22	<b>N 125/22</b>

### Choke, 640 mA

- For operation with a KNX power supply without integrated choke or for connection to the unchoked output of the KNX N 125/x2 power supplies
- Low-voltage terminal for unchoked voltage and bus
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

N 120/02

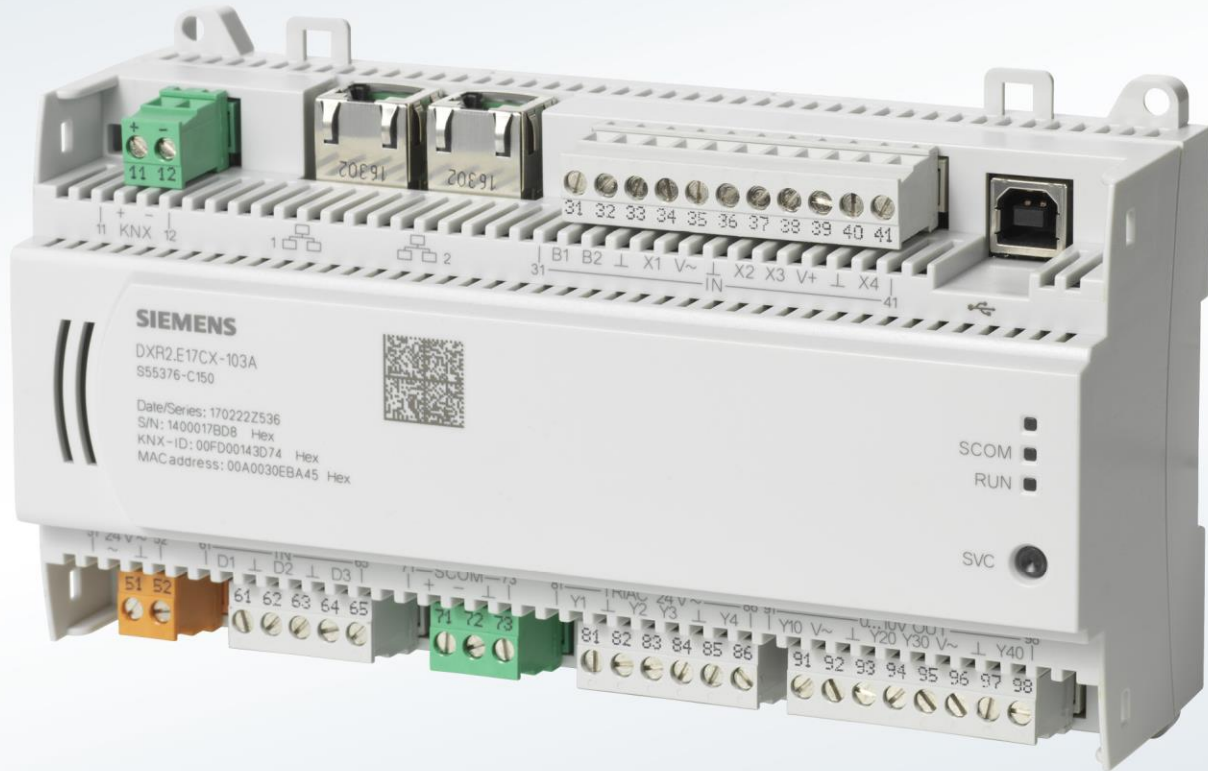


Data sheet A6V10416067  
 Dimension width (1 MW = 18 mm) 2 MW

Stock no. Product no.  
 5WG1120-1AB02 **N 120/02**



# Room automation



Overview and selection tools		164
Room automation RXB (KNX)	Room controllers RXB	177
	Room operator units QAX3.. / QAX8.. (PPS2)	180
	Central control unit RMB	183
Room automation DXR (BACnet)	Room automation station DXR	184
	Room units with KNX PL-Link	193
	Field devices with KNX PL-Link	205

# Room automation

## Overview and selection tools

3

### RXB applications

#### RXB hardware

The product range comprises compact controllers and corresponding room units for comfortable control. The compact room controllers are optimized to the respective application with regard to input/output configuration. HVAC functions are operated via standard room units. Communication is based on KNX S-mode. The fan coil room controllers communicate also in KNX LTE mode. KNX LTE mode is used to communicate with control equipment from the Synco™ 700 product range.

#### RXB software

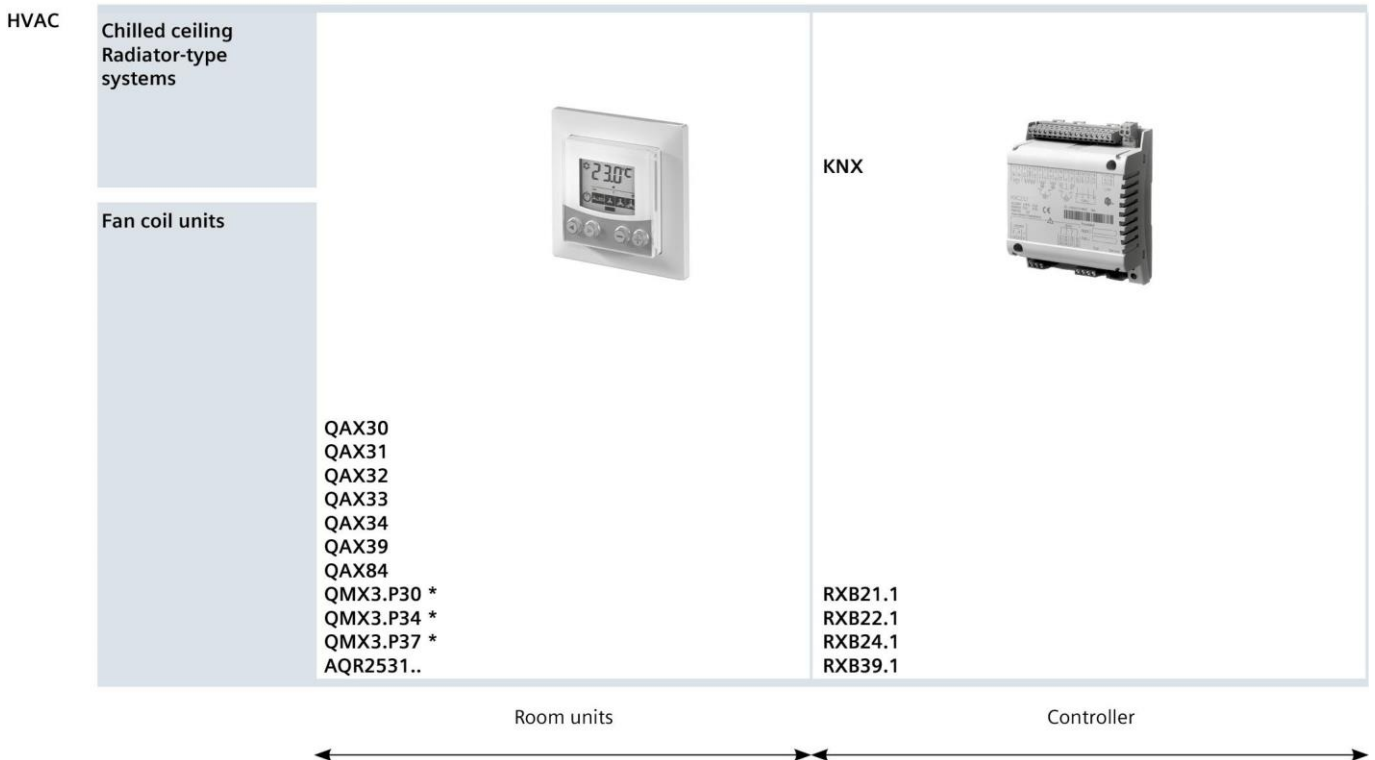
Each RXB unit comes with preloaded application software featuring one or several applications (see next page). The ETS software helps engineer and commission a network with RXB units. In addition, the Synco™ tool and room unit QAX34.3 by Siemens can be used for commissioning and parameterization. To use QMX3 room operating units or sensors ETS-software must be used in every case.

#### Integration into Synco™

The central control unit RMB795B-1 is used for controlling and monitoring the RXB controllers in a Synco™ system.

#### Connection to the Designo building automation and control system

Designo PX KNX allow for flexibly connecting RXB controllers to the Designo building automation and control system, and hence acts as a gateway to BACnet. The connection provides access to other functions such as time schedules and central control of setpoints. RXB thus fits into the overall expandable modular system, and ensures long-term cost-efficiency.



\* ETS-software must be used

**Fields of application**

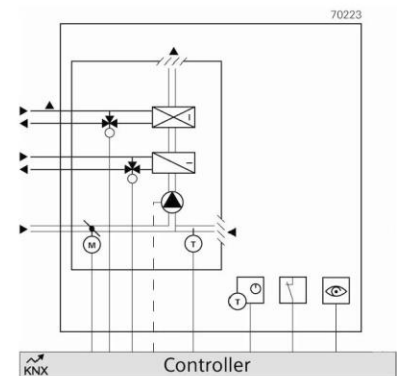
The scope of RXB is defined by the preprogrammed application software. The following pages provide an overview of the options and the corresponding devices, divided into different areas of application. The devices are supplied preprogrammed with the applications. The required application can be selected by means of the ETS, Synco™ tool or the Handy tool QAX34.3.

Due to the fact that the applications are predefined, engineering simply involves the definition of a small number of parameters, e. g.:

- PWM or 3-point control of the valves and actuators (RXB39.1: 0-10 V DC control of motoric actuator)
- Temperature setpoints
- Manual or automatic fan control

**Fan coil systems**

Application	Description	Devices
FNC02	2-pipe system with changeover	RXB21.1/FC-10
FNC03	2-pipe system with changeover and electrical reheater	RXB22.1/FC-12
FNC04	4-pipe system	RXB21.1/FC-10
FNC05	4-pipe system with electrical reheater	RXB22.1/FC-12
FNC08	4-pipe system with supply air temperature limitation	RXB21.1/FC-10
FNC10	2-pipe system with changeover and outside air damper	RXB21.1/FC-11
FNC12	4-pipe system with outside damper	RXB21.1/FC-11
FNC18	2-pipe system with change over and radiator	RXB21.1/FC-11
FNC20	4-pipe system with air-side control	RXB21.1/FC-10
FNC02/03/04/08	2-pipe/4-pipe system with EC fan-coil support	RXB39.1/FC-13

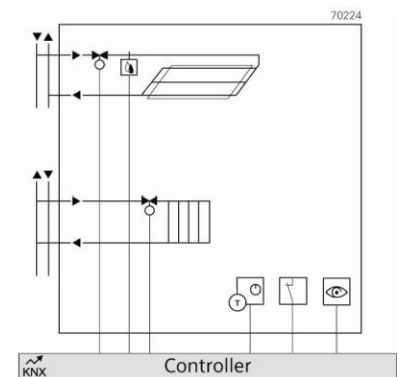


**Common functions**

- Window contact, occupancy detector, 4 operating modes
- Manual fan control with room unit
- Automatic fan control (RXB21.1/RXB22.1 three speed; RXB39.1 continuous speed 0...10 V)
- Options for 2-pipe systems: heating only, cooling only or change-over, via KNX bus

**Heated/chilled ceilings and radiators**

Application	Description	Devices
CLC01	Chilled ceiling with dewpoint monitoring	RXB24.1/CC-02
CLC02	Chilled ceiling with dewpoint monitoring and radiator	RXB24.1/CC-02
RAD01	Radiator with downdraft compensation	RXB24.1/CC-02



**Common functions**

- Window contact, occupancy detector, 4 operating modes

# Room automation

## Overview and selection tools

3

### Room operation



Features	30.1	31.1	32.1	QAX.. 33.1	34.3	39.1	84.1
Display					■		■
Mode selection			■	■	■		■
Fan switch				■	■		■
Setpoint adjuster		■	■	■	■	■	■
Temperature sensor	■	■	■	■	■		■
<b>Mounting</b>							
Flush-mounted						■	■
Directly on wall	■	■	■	■	■		
Control panel(door)						■	
<b>Communication</b>							
PPS2	■	■	■	■	■	■	■

### Room units KNX



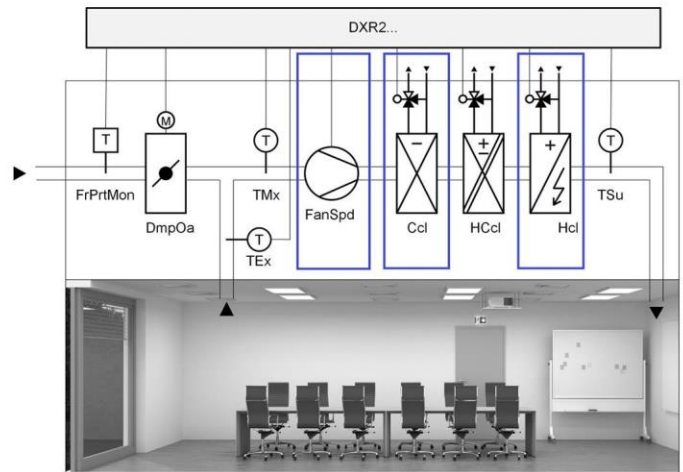
Features	P30	QMX3.. P34	P37	AQR.. 2570.. & 253..
Display		■	■	
Mode selection		■	■	
Fan switch		■	■	
Setpoint adjuster		■	■	
Temperature sensor	■	■	■	■
<b>Mounting</b>				
Flush-mounted				■
Directly on wall	■	■	■	
<b>Communication</b>				
KNX	■	■	■	■

## Usage of DXR

### 1. Check application requirements

#### Requirements

- Fan coil
- 4-pipe system
- 3-speed fan
- 2 valves with electrothermal actuators (2-point control signal)
- Voltage AC 230 V
- Presence detector
- Room unit with built-in temperature sensor



3

	Frost protection (FrPrtMon)	Outside air damper (DmpOa)	Extract air temperature (TEx)	Mixed air temperature (TMx)	Fan speed (FanSpd)	Cooling coil (Ccl)	Heating/cooling coil (HCcl)	Heating coil (Hcl)	Supply air temperature (TSu)
DI									
AI									
Relais					3				
Triac						1		1	
0..10 V									
Relais + 0..10 V									

### 2. Find matching products in overview tables

Products matching application requirements above:

Product Number	Description	Qty
DXR2.E10	Compact room automation stations, BACnet/IP, 230 V	1
QMX3.P34	Room operator unit KNX with temperature sensor, segmented backlit display, touchkeys	1
UP 258D11	Passive infrared presence detector	1
STP73	Electrothermal actuator, AC/DC 24 V, NO, 2P, 1 m	2
VMP47.10-1.6	3-port seat valve with bypass, external thread, PN16, DN10, kvs 1.6	2

Note:

Product overview tables provide quick overview and show main features, nevertheless, we recommend checking technical parameters of each product.

### 3. Check total data points and bus load

Used DXR2.. on-board data points:	5
KNX PL-link data points:	5
Total used data points:	10 < 30
Total KNX PL-link bus load:	17.5 mA < 50 mA

Correct, total values do not exceed maximum configuration.

## Room automation

### Overview and selection tools

3

#### Application configuration

Applications can be configured by combining functions from one or several application types:

- Room sensor and operating
- Radiant (heated/chilled) ceiling and Radiator
- Fan coil
- VAV system or Fan powered box
- Radiant (heated/chilled) ceiling and Radiator
- Lighting
- Shading

Configuration is limited by total number of data points.

Application group Central functions requires dedicated room automation station.




#### Room Automation Station



	DXR1.E09PDZ-11	DXR1.E09PDZ-11	DXR1.E10PL-112	DXR1.E10PL-113	DXR2.E10PL(X)-102B
<b>Communication</b>					
BACnet/IP	DXR1.E09PDZ-11	DXR1.E09PDZ-11	DXR1.E10PL-112	DXR1.E10PL-113	DXR2.E10PL(X)-102B
<b>Application types</b>					
Room operating	■ (QMX1 only)	■ (QMX1 only)	■	■	■
Heated / Chilled ceiling and Radiator			■	■	■
Fan coil					
VAV system or fan powered box	■	■	■	■	■
Pressurized and fume hood					
Lighting					■
Shading					■
Central functions					
Damper actuator torque	5 Nm	5 Nm	10 Nm	10 Nm	10 Nm
<b>Operating voltage</b>					
230 V					
24 V	■	■	■	■	■
<b>Inputs and outputs onboard</b>					
Resistor inputs	0	0	0	0	0
Digital inputs	0	0	1	1	1
Universal inputs	2	2	2	2	2
Relay outputs					
Triac outputs	4	4	4	4	4
Analog outputs (DC 0...10 V)	1	1	1	1	1
Pressure sensor	1	1	1	1	1
SCOM communication for sensors					
<b>Maximum configuration</b>					
Total data points	n/a	n/a	n/a	n/a	30 (60)
Integrated power supply for KNX (mA)			50	50	50



Configurable controllers

							
<b>Communication</b>							
BACnet/IP	DXR2.E09-101A	DXR2.E09T-101A	DXR2.E10-101A	DXR2.E12P(X)-102A	DXR2.E18-101A	DXR2.E18-102A	DXR2.E17C(X)-103A
<b>Application types</b>							
Room operating	■	■	■	■	■	■	■
Heated / Chilled ceiling and Radiator	■	■	■	■	■	■	■
Fan coil	■	■	■		■		
VAV system or fan powered box				■		■	■
Pressurized and fume hood							■
Lighting	■	■	■	■	■	■	■
Shading	■	■	■	■	■	■	■
Central functions					■*	■*	
<b>Housing</b>							
DIN				■	■	■	
Flat	■	■	■				
<b>Operating voltage</b>							
230 V	■	■	■				
24 V				■	■	■	■
<b>Inputs and outputs onboard</b>							
Resistor inputs	0	0	0	0	0	0	2
Digital inputs	1	1	1	1	2	2	3
Universal inputs	2	2	2	2	4	4	4
Relay outputs	3	1	3				
Triac outputs		4	4	6	8	8	4
Analog outputs (DC 0...10 V)	3	1		2	4	4	4
Pressure sensor				1			
SCOM communication for sensors							■
<b>Maximum configuration</b>							
Total data points	30	30	30	30 (60)	60	60	30 (60)
Integrated power supply for KNX (mA)	50	50	50	50	50	50	50

\* Cannot be combined with other applications

Configuration Tool

DXR2.. comes with set of standard applications that can be flexibly configured with the tool ABT Site.

	Product No.	SSN	Description
	CTX-ABT-SITE-SW	P55802-Y169-S100	ABT Site Software

# Room automation

## Overview and selection tools

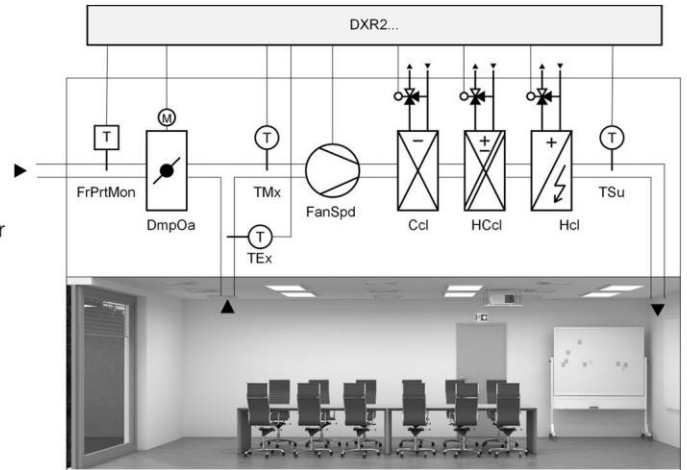
### HVAC applications

#### Application types

##### Fan coil

Application can be configured from these functions:

- Outside Air Damper
- Single Speed Fan, Multi Speed Fan or Variable Speed Fan
- Chilled water cooling coil
- Direct expansion evaporator cooling coil
- Heating/Cooling coil
- Hot water heating coil
- Electric heating coil modulating, single stage or two stage
- Room temperature control by two-pipe system with change-over
- Room temperature control by four-pipe system
- Supply air temperature cascade control
- Room dehumidification control
- Air volume flow control
- Rapid ventilation
- Green leaf



	Frost protection monitor (FrPrtMon)	Outside air damper (DmpOa)	Extract air temperature (TEx)	Mixed air temperature (TMx)	Fan speed (FanSpd)	Cooling coil (Ccl)	Heating/cooling coil (HCcl)	Heating coil (Hcl)	Supply air temperature (TSu)
DI	1		1	1					1
AI					1-3				
Relais					1-2	1-2	1, 2, 4, 8	1-2	
0..10 V		1			1*	1	1, 4	1**	

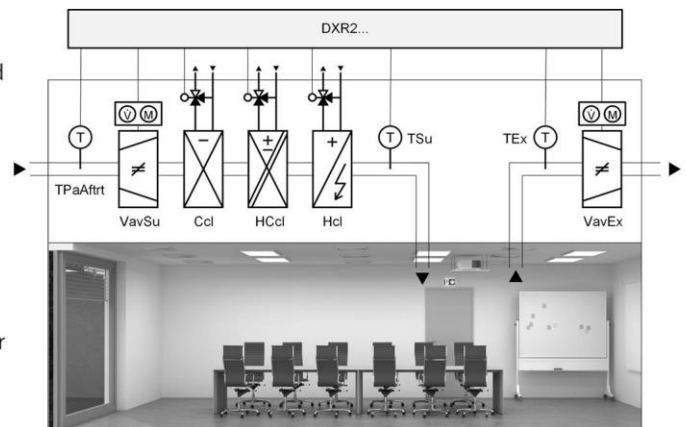
\* Requires additional relays or triac for enable signal

\*\* Requires additional triac for electric heating enable signal

##### VAV (Variable Air Volume system)

Application can be configured from these functions:

- Supply and extract air control
- External flow control for VAV with integrated flow controller and differential pressure sensor
- Internal flow controller and differential pressure sensor for damper actuator control
- Internal flow controller and velocity sensor for damper actuator control
- Chilled water cooling coil
- Heating/Cooling coil
- Hot water heating coil
- Electric heating coil modulating, single stage or two stage
- Room temperature control by two-pipe system with change-over
- Room temperature control by four-pipe system
- Supply air temperature cascade control
- Air flow tracking for under/overpressure
- Room dehumidification control
- Room air quality control
- Rapid ventilation
- Green leaf



	Primary air temperature for air after-treatment (TPaAfrt)	Supply air VAV (VavSu)	Cooling coil (Ccl)	Heating/cooling coil (HCcl)	Heating coil (Hcl)	Supply air temperature (TSu)	Extract air temperature (TEx)	Extract air VAV (VavEx)
DI								
AI	1					1	1	
Relais								
Triac		2**	1-2	1, 2, 4, 8	1-2			2**
0..10 V		1	1	1, 4	1*			1
Actuator for VAV (KNX PL-Link)		1						1

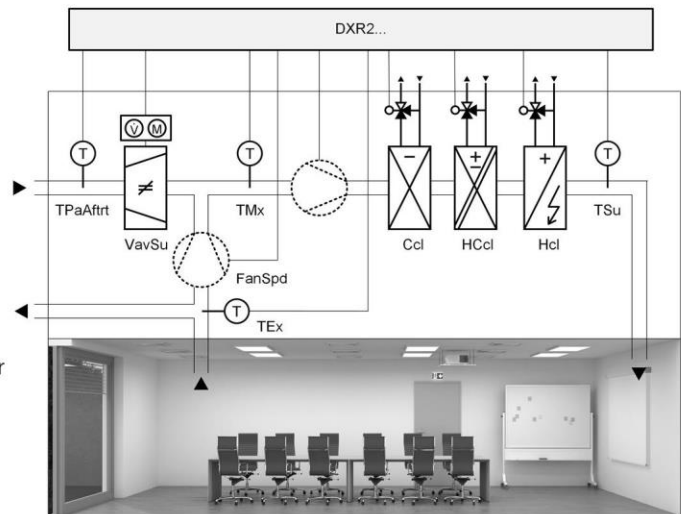
\* Requires additional triac for electric heating enable signal

\*\* When using DXR2.. with AC 24 V power supply in combination with GDB181.1E/3 or GLB181.1E/3, use 0..10V signals.

**Fan powered box**

Application can be configured from these functions:

- Supply air control
- External flow control for VAV with integrated flow controller and differential pressure sensor
- Internal flow controller and differential pressure sensor for damper actuator control
- Internal flow controller and velocity sensor for damper actuator control
- Single Speed Fan, 2 speed Fan or Variable Speed Fan
- Chilled water cooling coil
- Heating/Cooling coil
- Hot water heating coil
- Electric heating coil modulating, single stage or two stage
- Room temperature control by two-pipe system with change-over
- Room temperature control by four-pipe system
- Supply air temperature cascade control
- Room air quality control
- Rapid ventilation
- Green leaf



	Primary air temperature for air after-treatment (TPaAfrt)	Supply air VAV (VavSu)	Extract air temperature (TEx)	Mixed air temperature (TMx)	Fan speed (FanSpd)	Cooling coil (Ccl)	Heating/cooling coil (HCcl)	Heating coil (Hcl)	Supply air temperature (TSu)
DI									
AI	1		1	1					1
Relais									
Triac		2			1-2	1-2	1, 2, 4, 8	1-2	
0..10 V		1			1*	1	1, 4	1**	
Actuator for VAV (KNX PL-Link)		1*							

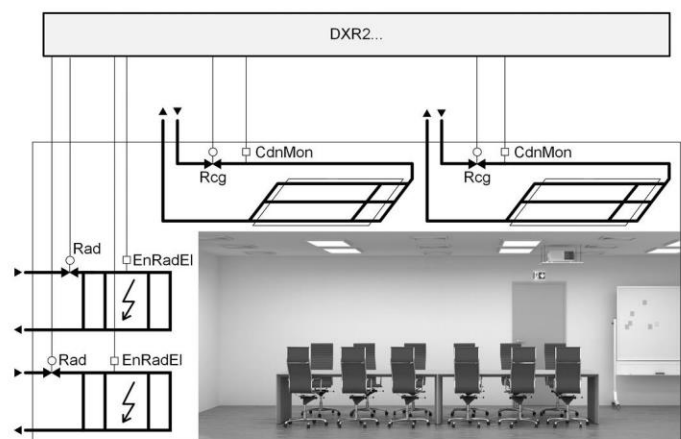
\* Requires additional triac for enable signal

\*\* Requires additional triac for electric heating enable signal

**Radiant ceiling and Radiator**

Application can be configured from these functions:

- Chilled ceiling with chilled water
- Heated/chilled ceiling by two-pipe system with change-over
- Heated/chilled ceiling by four-pipe system with 6 way valves
- Heating ceiling with hot water
- Hot water radiator
- Electric radiator modulating or staged
- Dwndraft compensation for radiators
- Condensation monitor
- Room temperature control
- Green leaf



	Radiator (Rad)	Radiator overtemperature (RadOvrT)	Radiant ceiling (Rcg)	Condensation monitor (CdnMon)
DI		1		1
AI				
Relais				
Triac	1-4		1-4	
0..10 V	1-2*		1-2	

\* Requires additional triac or relais for electric heating enable signal

## Room automation

### Overview and selection tools

#### Pressurized rooms and fume hoods

Desigo room pressurization and fume hood control is a range of dedicated reliable air volume flow controllers and supplementary components for secure, precise and fast measurement, control and monitoring of air volume flows and room pressures in highly specialized working spaces. It is part of the Desigo building automation and control system.

As a result, the overall system maximizes security, efficiency and cost effectiveness.

#### Locations:

- Highly specialized research and manufacturing spaces requiring dedicated high speed control solutions for room pressurization & fume hood control

#### Rooms in:

- Research facilities
- Pharma/Biotech
- Healthcare
- Hi-tech manufacturing
- Vivariums
- Battery factories
- Universities
- Higher education customers etc.



#### Applications:





- Room ventilation and general extraction, measuring, controlling and monitoring air volume flows
- Room balancing and room pressurization control
- Laboratory fume hood air volume flow control and monitoring
- Room air conditioning together with lighting & shading control
- Fume hood control with stabilizing jet
- Room and fume hood emergency functions

ASN	Description	Product picture
DXR2.E17C-103A	BACnet/IP, 24VAC, 17 I/O Room Pressurization & Fume Hood Automation Station, 30 data-points	
DXR2.E17CX-103A	BACnet/IP, 24VAC, 17 I/O Room Pressurization & Fume Hood Automation Station, 60 data-points	
QMX3.P87-1WSC	Operating Display Panel – Wall mounted (KNX)	
QMX3.P88-1WSC	Operating Display Panel – Thin & Flush mounted (KNX)	
DXA.S04P1	Air Flow Pressure Sensor (SCOM)	
DXA.S04P1-B	Air Flow Pressure Sensor with IP54 box (SCOM)	
DXA.B130	Sash Sensor 130mm (50")	
DXA.B200	Sash Sensor 200mm (80")	
RPM.S00-SD	Room Condition Monitor	
QVE3001	Flow Sensor	
GAP191.1E	Rotary air damper actuator, 6Nm, 2s	
QBM3020...	Air duct differential pressure sensors	



### Room sensor and operating

**Application can be configured from these functions:**

- Room operating units QMX3 on KNX PL-Link
- Sensors for onboard IO's or KNX PL-Link
- Presence/brightness sensors for onboard IO's or KNX PL-Link

	 Temperature sensor	 Air quality Sensor	 Humidity sensor	 Presence detector
DI				2
AI	1	1	1	
HVAC Sensor (KNX PL-Link)	1	1	1	
Presence and brightness sensor (KNX PL-Link)				1-4*
Room unit (KNX PL-Link)	1	1	1	

\* Must be the same device









	 Window contact	 Room operator unit
DI	1	
Room unit (KNX PL-Link)		2*

\* Must be the same device

### Central functions

**Application can be configured from these functions:**

- Central operation group including room operating mode and start optimization, setpoints and seasonal compensation
- Demand controlled hot water supply system, includes temperature setpoint
- Demand controlled chilled water supply system, includes temperature setpoint, shift to avoid condensation by collecting condensation monitors, free cooling calculation
- Demand controlled 2 pipe heating / cooling water supply system includes temperature setpoint, changeover, free cooling calculation
- Demand controlled air handling unit (supply and extract air) includes temperature setpoint, maximum humidity setpoint, pressure setpoint, maintain minimal central air volume, flow deviation calculation, summed air volume setpoints
- Variable air volume (VAV) emergency group includes shut down, extract, pressurization or purge
- Central weather station information includes outside temperature, outside brightness, outside solar radiation, outside wind speed, outside precipitation







	Central Weather Station Controller					Central Emergency Controller		
	 Outside temperature	 Relative outside humidity	 Atmospheric pressure	 Wind speed	 Precipitation detector	 Forced Emergency shut down air supply	 Forced Smoke extraction (exhaust air)	 Forced Smoke pressurization (supply air)
DI					1	1-2	1-2	1-2
AI	1	1	1	1				
Push button (KNX PL-Link)								
DXR2.. Type			DXR2..18..			DXR2..18..		

# Room automation










## Overview and selection tools

3





### Room units

	 QMX3.. P35H	 P33	 QMX2.. P43	 P36	 QMX3.. P34	 P74
<b>Features</b>						
Mode selection	■	■	■	■	■	■
Fan switch	■	■	■	■	■	■
Setpoint adjuster	■	■	■	■	■	■
Temperature sensor	■	■	■	■	■	■
Humidity sensor			■			■
Air quality sensor						■
Green Leaf	■			■	■	■
<b>Mounting</b>						
Flush mounted	■			■		
Direct on wall		■	■		■	■
<b>Integration into DXR2...</b>						
Data points	3	3	3	3	3	5
KNX PL-Link bus load (mA)	15	7.5	7.5	12.5	7.5	15

### HVAC Sensor (KNX PL-Link)



	 AQR2570... and AQR2532NNW	 AQR2570... and AQR2535NNW	 AQR2576... and AQR2530NNW	 AQR2576... and AQR2532NNW	 AQR2576... and AQR2535NNW	 AQR2576... and AQR2533NNWQ	 QMX3.P30	 QMX3.P40	 QMX3.P70
<b>Features</b>									
LED indication air quality						■			■
Temperature sensor	■	■		■	■	■	■	■	■
Humidity sensor		■			■	■		■	■
Air quality sensor			■	■	■	■			■
<b>Mounting</b>									
Flush mounted	■	■	■	■	■	■			
Direct on wall							■	■	■
<b>Integration into DXR2...</b>									
Data points	1	2	1	2	3	3	1	2	3
KNX PL-Link bus load (mA)	5	5	15	15	15	15	7.5	7.5	15

Physical Sensors with KNX connection



				
Type	UP 258D31	UP 258D41	UP 258D51	UP 258D61
<b>Features</b>				
Mounting <sup>1)</sup>	UP/AP	UP/AP	UP/AP	UP/AP
Degree of protection	IP54	IP20	IP20	IP20
Presence detector	■	■	■	■
Detection capability	PIR	PIR	PIR	Ultrasound/PIR
Detection area at mounting height 2.5 m (m)	320 m <sup>2</sup>	320 m <sup>2</sup>	320 m <sup>2</sup>	70 m <sup>2</sup>
Brightness sensor	■	■	■	■
Temperature sensor	■	■	■	■
Humidity sensor		■	■	
CO <sub>2</sub> sensor			■	
Infrared (IR) receiver	■	■	■	■
Data points	3	4	5	3
KNX PL-link bus load (mA)	12.5	12.5	30	20

<sup>1)</sup> AP surface mounted, UP flush mounted

Presence and brightness sensor (KNX PL-link)

		
Type	UP 255D21	UP 258D12
<b>Features</b>		
Presence detector	■	■
Detection area at mounting height 2.5 m (m)	4.5	4.5
Brightness sensor		■
<b>Integration into DXR2..</b>		
Data points	2	2
KNX PL-link bus load (mA)	10	10

Actuator for VAV (KNX PL-Link)

		
Type	GDB181.1E/KN	GLB181.1E/KN
<b>Features</b>		
Torque (Nm)	5	10
Air damper area (m <sup>2</sup> )	0.8	1.5
Operating range (Pa)	0...300	0...300
Operating voltage (V AC)	24	24
<b>Integration into DXR2..</b>		
Data points	2	2
KNX PL-link bus load (mA)	5	5





### Room controller with KNX communication

The controllers are used for temperature control in individual rooms.

- For 2-pipe with changeover or 4-pipe fan coil systems
- For radiator and chilled ceiling (RXB24.1 only)
- Control of thermal valve actuators AC 24 V, PWM, valve actuators AC 24 V (3-position) as well as KNX bus actuators
- Potential-free relay contacts for fan speed control
- Connecting relay for electric heating (RXB22.1 und RXB39.1)
- KNX bus communication
- Connection to Desigo building automation and control system via PXXNX
- Commissioning with "Handy Tool" QAX34.3 or Synco ACS

Application description fan coil: CM110672

Application description RAD/CLC: CM110671

Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	Max. 12 VA
Control Algorithm	PI
Communication	Bus: KNX (S-mode and LTE mode) Room unit: PPS2
Service plug	RXT20.1
Digital inputs, number	2
Relay output, switching voltage	AC 250 V
Relay output, switching current	5 (4) A
Triac outputs	PWM 3-position
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Interface type	KNX-bus
Mounting	DIN rail
Mounting location	Ceiling voids with cover Fan coil Panel
Degree of protection	IP30
Dimensions (W x H x D)	113 x 167 x 62 mm

RXB2..



### Range overview RXB2..

Product Title	Triac outputs, number	Relay outputs, number	Data sheet	Stock no.	Product no.
Room controller for 3-speed fan	4	3	N3873	BPZ:RXB21.1/FC-10	<b>RXB21.1/FC-10</b>
Room controller for 3-speed fan	4	3	N3873	BPZ:RXB21.1/FC-11	<b>RXB21.1/FC-11</b>
Room controller with 3-speed fan and electric heating coil	2	4	N3873	BPZ:RXB22.1/FC-12	<b>RXB22.1/FC-12</b>
Room controller for chilled ceilings and radiators	4	0	N3874	BPZ:RXB24.1/CC-02	<b>RXB24.1/CC-02</b>

The application determines the usable actuator (PWM /3-position) with the triac output.

**RXB39.1/FC-13**



**Room controller for fan-coil applications with KNX communication**

The RXB39.1 room controller is used for temperature control in individual rooms.

- For 2-pipe and 4-pipe fan coil systems with or without changeover
- PI control
- KNX bus communication
- Connection to Desigo building automation and control system via PXKNX
- DC 0...10 V control of valve and actuators, fan (ECM), and electric heater
- 2 Potential-free relay contacts to release fan and electric heating
- Commissioning with ETS Professional, "Handy Tool" QAX34.3 or Synco ACS
- Operating voltage AC 230 V
- Plug-in screw terminals

Data sheet	N3875
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	12 VA
Control Algorithm	PI
Communication	Bus: KNX Room unit: PPS2
Service plug	ETS Professional, ACS, HandyTool
Analog inputs, number	2
Analog outputs, number	3
Analog output, signal	DC 0...10 V
Digital inputs, number	4
Relay outputs, number	1
Electric reheater relay	1
Relay output, switching voltage	AC 250 V
Relay output, switching current	5 (4) A
Dimension width (1 MW = 18 mm)	9.5 MW
Mounting	DIN rail For screw fixing
Mounting location	Ceiling voids with cover Fan coil Panel
Degree of protection	IP20
Dimensions (W x H x D)	152 x 120 x 62 mm

Stock no.	Product no.
S55373-C121	<b>RXB39.1/FC-13</b>

**Accessories for RXB..**

Product Title	Data sheet	Stock no.	Product no.
Power supply unit DC 29 V, 160 mA with additional unchoked output, N 125/02	A6V10416069	5WG1125-1AB02	<b>N 125/02</b>
Power supply unit DC 29 V, 320 mA with additional unchoked output, N 125/12	A6V10416069	5WG1125-1AB12	<b>N 125/12</b>
Power supply unit DC 29 V, 640 mA with additional unchoked output, N 125/22	A6V10416069	5WG1125-1AB22	<b>N 125/22</b>
Terminal cover for RXB2../RXC2../RXM2..	N3834	BPZ:RXZ20.1	<b>RXZ20.1</b>
Power amplifier for thermal actuators AC 24 V, PWM	N3591	BPZ:UA1T	<b>UA1T</b>
Terminal cover for RXB3../RXC3../RXM3..	N3840	BPZ:RXZ30.1	<b>RXZ30.1</b>

**Temperature sensors for RXB..**

Product Title	Data sheet	Stock no.	Product no.
Duct temperature sensor 400 mm, LG-Ni1000	N1761	BPZ:QAM2120.040	<b>QAM2120.040</b>
Room temperature sensor LG-Ni1000	N1721	BPZ:QAA24	<b>QAA24</b>
Room sensor KNX for temperature, white	N1602	S55624-H103	<b>QMX3.P30</b>

### Temperature sensors for RXB..

Product Title	Data sheet	Stock no.	Product no.
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	N1722	BPZ:QAA64	<b>QAA64</b>
Front modules with passiv temperature measurement	N1408	BPZ:AQR2531..	<b>AQR2531..</b>
Cable temperature sensor PVC 2 m, LG-Ni1000	N1831	BPZ:QAP22	<b>QAP22</b>

### Dewpoint sensor for RXB..

Product Title	Data sheet	Stock no.	Product no.
Condensation monitor	A6V10741072	BPZ:QXA21..	<b>QXA21..</b>

### Damper actuators for RXB..

Product Title	Data sheet	Stock no.	Product no.
Rotary air damper actuators 5 Nm, without spring return	A6V10636149 / A6V10881141	BPZ:GDB..1E	<b>GDB..1E</b>
Linear air damper actuators 125 N, without spring return	N4664	BPZ:GDB..2E	<b>GDB..2E</b>
Rotary air damper actuators 10 Nm, without spring return	A6V10636202 / A6V10881141	BPZ:GLB..1E	<b>GLB..1E</b>
Linear air damper actuators 250 N, without spring return	N4664	BPZ:GLB..2E	<b>GLB..2E</b>
Mounting Bracket, BG		S55859-Z115	<b>ASK71.04</b>
Position Indicator, BG		S55859-Z116	<b>ASK71.05</b>
Mounting Bracket, BG, short		S55859-Z119	<b>ASK71.08</b>
Centering insert 2 x square 10 mm		S55859-Z123	<b>ASK71.21</b>
Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s	A6V10636202	S55499-D443	<b>GLB141.1H</b>

### Valve actuators for RXB..

Product Title	Data sheet	Stock no.	Product no.
Electromotoric actuator, 200 N, 5.5 mm, AC 24 V, 1.5 m, 3P	N4891	BPZ:SSB81	<b>SSB81</b>
Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 24 V, 3P	N4864	BPZ:SSP81	<b>SSP81</b>



**QAX3..**

**Room unit with PPS2 interface**

Room units for acquiring the room temperature and operation of individual room control.

Voltage supply	PPS2
Power consumption	0.10 VA
Time constant	≤8 min
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC
Measurement accuracy	±0.25 K at 25 °C
	±0.5 K at 5...30 °C
Setpoint readjustment range	±12 K
Mounting location	Indoors
Degree of protection	IP30

**QAX30.1**



**Room unit with sensor and PPS2 interface**

- Acquisition of room temperature

Data sheet	N1741
Dimensions (W x H x D)	90 x 100 x 32 mm

Stock no.	Product no.
BPZ:QAX30.1	QAX30.1

**QAX31.1**



**Room unit with sensor, setpoint adjuster and PPS2 interface**

- Acquisition of room temperature
- Setpoint adjuster for room temperature

Data sheet	N1741
Dimensions (W x H x D)	90 x 100 x 36 mm

Stock no.	Product no.
BPZ:QAX31.1	QAX31.1

**QAX32.1**



**Room unit with sensor, setpoint and operating mode selector and PPS2 interface**

- Acquisition of room temperature
- Setpoint adjuster for room temperature
- Rocker switch for mode selection (Off / Auto)

Data sheet	N1641
Dimensions (W x H x D)	90 x 100 x 36 mm

Stock no.	Product no.
BPZ:QAX32.1	QAX32.1

**Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface**

**QAX33.1**



- Acquisition of room temperature
- Setpoint adjuster for room temperature
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)

Data sheet N1642  
 Dimensions (W x H x D) 90 x 100 x 36 mm

Stock no.	Product no.
BPZ:QAX33.1	QAX33.1

**Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface**

**QAX34.3**



- Acquisition of room temperature
- Rocker switch for adjustment of room temperature setpoint
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and control mode
- Together with the RXB controllers for parameter setting

Data sheet N1640  
 Dimensions (W x H x D) 96 x 119 x 24 mm

Stock no.	Product no.
BPZ:QAX34.3	QAX34.3

**Universal setpoint adjuster with PPS2 interface**

**QAX39.1**



- Setpoint adjuster for room temperature

Data sheet N1646  
 Dimensions (W x H x D) 48 x 48 x 15 mm

Stock no.	Product no.
BPZ:QAX39.1	QAX39.1



Room automation

Room automation RXB (KNX)

Room operator units QAX3.. / QAX8.. (PPS2)

QAX84.1/PPS2

Flush-mounted room unit complete with PPS2 interface and design frame



The set consists of:

- Operator unit,
- PPS2 bus coupling unit and
- Design frame DELTA line in titanium white.

Functionality:

- Acquisition of room temperature
- Switch for adjustment of room temperature setpoint
- Switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and control mode

Data sheet	N1649
Voltage supply	PPS2
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC
Degree of protection	IP30
Dimensions (W x H x D)	80 x 80 x 30.5 mm
Weight (net)	0.13 kg

Stock no.                      Product no.

BPZ:QAX84.1/PPS2    **QAX84.1/PPS2**

3

### Central control unit for room controllers and room thermostats

RMB795B-1



3

- Central control unit with integrated control and supervisory functions for individual room control with RXB room controllers and room thermostats RDG/RDF
- Central collection of heating and cooling demands from any KNX room controllers
- Control of any HVAC primary controllers in dependence on the received and calculated heating/cooling demands
- Individual time programs for room groups
- Preselected operating modes and setpoints, minimum / maximum temperature supervision and supervision of RXB room controllers and room thermostats RDG/RDF
- Trend and fault reporting functions for the input variables temperature, relative / absolute humidity, pressure / differential pressure, volumetric air flow, indoor air quality, etc.
- Heating / cooling changeover function for operation with 2-pipe systems
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

The RMB795B-1 supports the languages: English, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Norwegian, Swedish, Polish, Czech, Hungarian, Russian, Slovak, Bulgarian, Greek, Romanian, Slovenian, Serbian, Croatian, Turkish, Chinese.

Extension modules complement the central control unit and offer extra functions. They are attached to the controller via plug-in connectors. The extension modules do not operate autonomously. The operation of the device from commissioning to enduser operation can be done via the operator unit.

Available extension modules:

- 1 universal module RMZ785
- 2 universal modules RMZ787

A total of 3 extension modules can simultaneously be used with the central control unit.

Available operator units:

- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3122
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Communication	KNX (KNX TP1)
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Digital outputs, number	4
Universal inputs, number	6
Universal input, signal	2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Relay outputs, number	4
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Mounting	DIN rail
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

Stock no.	Product no.
S55370-C162	RMB795B-1

## Room automation

### Room automation DXR (BACnet)

#### Room automation station DXR

DXR2.E12P..



**Compact room automation station, BACnet/IP, 24 V, DIN housing, 1 DI, 2 UI, 2 AO, 6 triac, pressure sensor**

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool

Data sheet	N9205
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	70 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	2
Digital inputs, number	1
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Triac outputs, number	6
Triac output, switching voltage	AC 24 V
Triac output, switching current	250 mA
Mounting	DIN rail
Degree of protection	IP20
Dimensions (W x H x D)	180 x 60 x 105 mm

#### Range overview DXR2.E12P..

Product Title	Stock no.	Product no.
Compact room automation station, BACnet/IP, 24 V, DIN housing, 1 DI, 2 UI, 2 AO, 6 triac, pressure sensor, 30 data points	S55376-C108	<b>DXR2.E12P-102A</b>
Compact room automation station, BACnet/IP, 24 V, DIN housing, 1 DI, 2 UI, 2 AO, 6 triac, pressure sensor, 30 data points, bulk pack 18 pcs.	S55376-C163	<b>DXR2.E12P-102A/BP</b>



**Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 4 AO, 8 triac**

**DXR2.E18..**



Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool



Data sheet	N9205
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	78 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	4
Digital inputs, number	2
Analog outputs, number	4
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Triac outputs, number	8
Triac output, switching voltage	AC 24 V
Triac output, switching current	250 mA
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	180 x 105 x 60 mm

**Range overview DXR2.E18..**

Product Title	Stock no.	Product no.
Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 4 AO, 8 triac, (Fancoil, Radiant ceiling, Radiator, 4 Lights & 2 Shades)	S55376-C107	<b>DXR2.E18-101A</b>
Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 4 AO, 8 triac, bulk pack 18 pcs.	S55376-C162	<b>DXR2.E18-101A/BP</b>
Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 4 AO, 8 triac, (Variable air volume, Fan-powered box, Radiant ceiling, Radiator, 4 Lights & 2 Shades)	S55376-C128	<b>DXR2.E18-102A</b>
Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 4 AO, 8 triac, bulk pack 18 pcs.	S55376-C167	<b>DXR2.E18-102A/BP</b>

## Room automation

### Room automation DXR (BACnet)

#### Room automation station DXR

DXR2.E09..



**Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 3 AO**

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool

Data sheet	N9204
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	2
Digital inputs, number	1
Analog outputs, number	3
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Relay outputs, number	3
Relay output, switching voltage	AC 250 V
Relay output, switching current	4 (3) A
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	112 x 165 x 49 mm

#### Range overview DXR2.E09..

Product Title	Stock no.	Product no.
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 3 AO	S55376-C110	<b>DXR2.E09-101A</b>
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 3 AO, bulk pack 18 pcs.	S55376-C165	<b>DXR2.E09-101A/BP</b>

**Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 1 relay, 1 AO, 4 triac**

DXR2.E09T..



Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool

Data sheet	N9204
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	2
Digital inputs, number	1
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Relay outputs, number	1
Relay output, switching voltage	AC 250 V
Relay output, switching current	4 (3) A
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Triac output, switching current	150 mA
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	112 x 165 x 49 mm

**Range overview DXR2.E09T..**

Product Title	Stock no.	Product no.
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 1 relay, 1 AO, 4 triac	S55376-C111	<b>DXR2.E09T-101A</b>
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 1 relay, 1 AO, 4 triac, bulk pack 18 pcs.	S55376-C166	<b>DXR2.E09T-101A/BP</b>

Room automation

Room automation DXR (BACnet)

Room automation station DXR

DXR2.E10..



**Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 4 triac**

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool

Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	2
Digital inputs, number	1
Relay outputs, number	3
Relay output, switching voltage	AC 250 V
Relay output, switching current	4 (3) A
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Triac output, switching current	150 mA
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	112 x 165 x 49 mm

**Range overview DXR2.E10..**

Product Title	Stock no.	Product no.
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 4 triac, bulk pack 18 pcs.	S55376-C164	<b>DXR2.E10-101A/BP</b>
Compact room automation station, BACnet/IP, 230 V, flat housing, 1 DI, 2 UI, 3 relay, 4 triac	S55376-C109	<b>DXR2.E10-101A</b>

**Compact room automation stations, BACnet/IP, 24 V**

**DXR2.E10PL..**

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool



Data sheet	A6V11259958
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	Max. 66 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	3
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Triac output, switching current	150 mA
Degree of protection	IP20
Dimensions (W x H x D)	201 x 137 x 82 mm

**Range overview DXR2.E10PL..**

Product Title	Stock no.	Product no.
Compact room automation station and actuator combination, BACnet/IP, 24 V, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 30 data points	S55376-C145	<b>DXR2.E10PL-102B</b>
Compact room automation station, BACnet/IP, 24 V, DIN housing, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 60 data points	S55376-C146	<b>DXR2.E10PLX-102B</b>

**Accessories for Design DXR2..**

Product Title	Data sheet	Stock no.	Product no.
Terminal cover for DXR., 110 mm, 2 pieces		S55376-C119	<b>DXA.H110</b>
Terminal cover for DXR., 180 mm, 2 pieces		S55376-C120	<b>DXA.H180</b>

**DXR2.E17C-103A**

**Compact Room Automation Station (30DP)**



Compact room automation stations for HVAC, lighting, and shading:

- BTL Listed and a BACnet Advanced Application Controller (B-AAC) device
- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool
- Dedicated SCOM communication for fast and high resolution sensor input

Applications: Pressurized room, fume hood control, variable and constant volume flow, chilled beam, radiant ceiling, radiator, 4 lights & 2 shades

Data sheet	N9205
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	66 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode SCOM
Universal inputs, number	4 UI, 2 resistive
Digital inputs, number	3
Analog outputs, number	4
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Triac outputs, number	4
Triac output, switching voltage	24 V
Triac output, switching current	0.5 A
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	180 x 105 x 60 mm

Stock no.	Product no.
S55376-C134	<b>DXR2.E17C-103A</b>

**Compact Room Automation Station (60DP)**

**DXR2.E17CX-103A**

Compact room automation stations for HVAC, lighting, and shading:

- BTL Listed and a BACnet Advanced Application Controller (B-AAC) device
- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool
- Dedicated SCOM communication for fast and high resolution sensor input



Applications: Variable air volume, Fan-powered box, Radiant ceiling, Radiator, 4 Lights & 2 Shades

Data sheet	N9205
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	66 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode SCOM
Universal inputs, number	4 UI, 2 resistive
Digital inputs, number	3
Analog outputs, number	4
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Triac outputs, number	4
Triac output, switching voltage	24 V
Triac output, switching current	0.5 A
Mounting	DIN rail Wall mounting
Degree of protection	IP20
Dimensions (W x H x D)	180 x 105 x 60 mm

Stock no.	Product no.
S55376-C150	DXR2.E17CX-103A

**Accessories room pressurization**

Product Title	Data sheet	Stock no.	Product no.
Rotary air damper actuator, AC/DC 24 V, DC 0(2)...10 V / 0(4)...20 mA, 6 Nm, 2 s	N4608	BPZ:GAP191.1E	<b>GAP191.1E</b>
Rotary air damper actuators 6 Nm, without electronic fail-save function	A6V11991159	S55499-D639	<b>GAP191.1E/IHT</b>
Rotary air damper actuator, AC/DC 24 V, DC 0(2)...10 V / 0(4)...20 mA, 6 Nm, 2 s, with electronic fail-save function	N4609	BPZ:GNP191.1E	<b>GNP191.1E</b>
Air duct differential pressure sensor, 0...100 Pa	N1916	S55720-S234	<b>QBM3020-1</b>
Air duct differential pressure sensor, 0...300 Pa for VAV	N1925	S55720-S118	<b>QBM3460-3</b>
Duct sensor for air velocity	N1932	BPZ:QVM62.1	<b>QVM62.1</b>
Communicative Air Flow Pressure Sensor (250 Pa / 1"WC)		S55376-C139	<b>DXA.S04P1</b>
Air duct differential pressure sensor, -50...50 Pa	N1916	S55720-S233	<b>QBM3020-1U</b>
Communicative Air Flow Pressure Sensor IP54 (250 Pa / 1"WC)		S55376-C140	<b>DXA.S04P1-B</b>
Air duct differential pressure sensor, 0...300 Pa	N1916	S55720-S235	<b>QBM3020-3</b>
Room Condition Monitor		S55624-H130	<b>RPM.00-SD</b>
Room Condition Monitor with Pressure Sensor (+-12 Pa / +-0.05"WC)		S55624-H131	<b>RPM.12-SD</b>
Room Condition Monitor with Pressure Sensor (+-25 Pa / +-0.1"WC)		S55624-H132	<b>RPM.25-SD</b>
Room Condition Monitor with Pressure Sensor (+-62 Pa / +-0.25"WC)		S55624-H133	<b>RPM.62-SD</b>
Room Condition Monitor with Pressure Sensor (+-125 Pa / +-0.5"WC)		S55624-H134	<b>RPM.125-SD</b>
Room Condition Monitor with Pressure Sensor (+-250 Pa / +-1.0"WC)		S55624-H135	<b>RPM.250-SD</b>

## Room automation

### Room automation DXR (BACnet)

#### Room automation station DXR

##### Accessories fume hood control

Product Title	Data sheet	Stock no.	Product no.
Control Module Box	A6V11438329	5WG1118-4AB01	<b>AP 118/01</b>
Rotary air damper actuator, AC/DC 24 V, DC0(2)...10 V/ 0(4)...20 mA, 6 Nm, 2 s	N4608	BPZ:GAP191.1E	<b>GAP191.1E</b>
Fume Hood Operator Display (Thin and Flush Mount)	A6V10959882	S55624-H112	<b>QMX3.P88-1WSC</b>
Flow sensor		S55720-S397	<b>QVE3001</b>
Fume Hood Operator Display (Wide)		S55624-H111	<b>QMX3.P87-1WSC</b>
Communicative Air Flow Pressure Sensor (250 Pa / 1"WC)		S55376-C139	<b>DXA.S04P1</b>
Communicative Air Flow Pressure Sensor IP54 (250 Pa / 1"WC)		S55376-C140	<b>DXA.S04P1-B</b>
Cable Sash Sensor, 1270 mm	A6V11178716	S55376-C158	<b>DXA.B130</b>
Cable Sash Sensor, 2032 mm	A6V11178716	S55376-C159	<b>DXA.B200</b>
Switching actuator 1 x AC 230 V, 16 AX, C load	A6V10416159	5WG1512-4AB23	<b>RL 512/23</b>

3



**Room operator unit for KNX PL-Link, room temperature sensor**

**QMX2.P33**

Functionality:

- Room temperature sensor
- LCD display of room temperature, operating modes, etc.
- Operation with 8 push buttons
- Interface KNX PL-Link (for TRA, with plug and play functionality)
- Powered over KNX PL-Link



Data sheet	A6V10733768
Operating voltage	KNX PL-Link DC 21...30 V
Power consumption	Max. 7...10 mA
Measuring range, temperature	0...50°C
Communication	KNX PL-Link
Mounting	Wall mounting
Degree of protection	Housing Protection: IP30 Protection standard as per EN 60529: IP33 for surface part
Dimensions (W x H x D)	89 x 133 x 21 mm
Weight (net)	0.146 kg

Stock no.	Product no.
S55624-H118	<b>QMX2.P33</b>

**Room operator unit for KNX PL-Link, room temperature sensor and humidity sensor**

**QMX2.P43**

Functionality:

- Room temperature sensor
- Humidity sensor
- LCD display of room temperature, operating modes, etc.
- Operation with 8 push buttons
- Interface KNX PL-Link (for TRA, with plug and play functionality)
- Powered over KNX PL-Link



Data sheet	A6V10733768
Operating voltage	KNX PL-Link DC 21...30 V
Power consumption	Max. 7...10 mA
Measuring range, temperature	0...50°C
Communication	KNX PL-Link
Mounting	Wall mounting
Degree of protection	Housing Protection: IP30 Protection standard as per EN 60529: IP33 for surface part
Dimensions (W x H x D)	89 x 133 x 21 mm
Weight (net)	0.146 kg

Stock no.	Product no.
S55624-H117	<b>QMX2.P43</b>



3

QMX3.P..H..



**Room operator unit KNX PL-Link with temperature sensor, Dot matrix backlit display, touchscreen**

- Functions:
- \* Temperature sensor
  - \* Dot matrix backlit display and touch screen
  - \* PM2.5 and CO2 display

Data sheet	A6V11521633
Operating voltage	DC 21...30 V
Voltage supply	KNX PL-Link
Power consumption	Max. 15 mA at DC 24 V
Operating range	DC 21...30 V
Measuring range	0...50 °C
Degree of protection	IP30

QMX3.P35H



**Room operator unit KNX PL-Link with temperature sensor, Dot matrix backlit display, touchscreen, white**

- Functions:
- Temperature sensor
  - Dot matrix backlit display and touch screen

Data sheet	A6V11521633
Color	White
Dimensions (W x H x D)	86.2 x 88.2 x 17.2 mm



Stock no.	Product no.
S55624-H137	QMX3.P35H

QMX3.P35H-BSC



**Room operator unit KNX PL-Link with temperature sensor, Dot matrix backlit display, touchscreen, black**

- Functions:
- \* Temperature sensor
  - \* Dot matrix backlit display and touch screen
  - \* PM2.5 and CO2 display

Data sheet	A6V11521633
Color	Black
Dimensions (W x H x D)	86.2 x 88.2 x 17.2 mm



Stock no.	Product no.
S55624-H139	QMX3.P35H-BSC

**Room operator unit KNX PL-Link with temperature sensor, Dot matrix backlit display, touchscreen, Lighting/Blinds, white**

**QMX3.P38H**

Functions:

- Temperature sensor
- Dot matrix backlit display and touch screen
- PM2.5 and CO2 display
- Lighting/Blinds Control



Data sheet A6V11521633  
 Color White  
 Dimensions (W x H x D) 86.2 x 88.2 x 17.2 mm



Stock no. Product no.

S55624-H138 QMX3.P38H

**Room operator unit KNX PL-Link with temperature sensor, Dot matrix backlit display, touchscreen, Lighting/Blinds, black**

**QMX3.P38H-BSC**

Functions:

- \* Temperature sensor
- \* Dot matrix backlit display and touch screen
- \* PM2.5 and CO2 display
- \* Lighting/Blinds Control



Data sheet A6V11521633  
 Color Black  
 Dimensions (W x H x D) 86.2 x 88.2 x 17.2 mm



Stock no. Product no.

S55624-H140 QMX3.P38H-BSC

**QMX3.P36..**



**Room sensor and unit for KNX PL-Link, freely configurable, flush-mounted**

The flush-mounted room unit QMX3.. consists of:

- Operator unit
- Bezel, titanium white
- Base plate and KNX plug.

Functionality:

- Freely configurable user interface (keys and visual items) as part of Total Room Automation
- RoomOptiControl energy efficiency function
- Room temperature measurement
- Display of room temperature, control mode, scenes etc. (dot matrix LCD)
- Backlit display, white or blue selection
- KNX PL-Link interface to the room automation station with plug & play functionality
- Can be combined with different standard and design bezels

Data sheet	N1601
Voltage supply	KNX bus
Measuring range, temperature	0...50 °C
Sensing element, temperature	NTC
Communication	KNX PL-Link
Dimensions (W x H x D)	55 x 55 x 38 mm

**Range overview QMX3..**

Product Title	Stock no.	Product no.
Room unit for KNX PL-Link, freely configurable, flush-mounted with square bezel	S55624-H100	<b>QMX3.P36F</b>
Room unit for KNX PL-Link, freely configurable, flush-mounted with landscape bezel (3 modules landscape)	S55624-H101	<b>QMX3.P36G</b>

**QMX3..**



**Wall-mounted room sensors and operator units for KNX**

The wall-mounted room unit QMX3.. consists of:

- Base plate
- Sensor or room operator unit

The following functions are (depending on type):

- Temperature sensor or multisensor (T, r.h., CO2)
- Backlit display or LED display
- Touchkeys
- Switching and control of lighting, blinds, scenes

Data sheet	N1602
Voltage supply	KNX bus
Measuring range, temperature	0...50 °C
Sensing element, temperature	NTC
Communication	KNX PL-Link KNX S-Mode
Degree of protection	IP30

**Room operator unit KNX with temperature sensor, configurable touchkeys, LED display, white**

**QMX3.P02**

Functions:

- Temperature sensor
- Configurable touchkeys with LED display
- Switching and control of lighting, blinds, scenes
- Window for labels

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no. S55624-H107  
 Product no. **QMX3.P02**

**Room operator unit KNX with temperature sensor, configurable touchkeys, LED display, black**

**QMX3.P02-1BSC**

Functions:

- Temperature sensor
- Configurable touchkeys with LED display
- Switching and control of lighting, blinds, scenes
- Window for labels

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no. S55624-H128  
 Product no. **QMX3.P02-1BSC**

**Room sensor KNX for temperature, white**

**QMX3.P30**

Functions:

- Temperature sensor

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no. S55624-H103-A  
 Product no. **QMX3.P30**

Room automation  
**Room automation DXR (BACnet)**  
**Room units with KNX PL-Link**

3

**QMX3.P30-1BSC**

**Room sensor KNX for temperature, black**



Functions:

- Temperature sensor

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Stock no.

Product no.

S55624-H123

**QMX3.P30-1BSC**

**QMX3.P34**

**Room operator unit KNX with temperature sensor, segmented backlit display, touchkeys, white**



Functions:

- Temperature sensor
- Segmented backlit display and touchkeys

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Stock no.

Product no.

S55624-H105-A

**QMX3.P34**

**QMX3.P34-1BSC**

**Room operator unit KNX with temperature sensor, segmented backlit display, touchkeys, black**



Functions:

- Temperature sensor
- Segmented backlit display and touchkeys

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Stock no.

Product no.

S55624-H126

**QMX3.P34-1BSC**

**Room operator unit KNX with temperature sensor, segmented backlit display, configurable touchkeys, LED display, white**

**QMX3.P37**

Functions:

- Temperature sensor
- Segmented backlit display and touchkeys
- Configurable touchkeys with LED display
- Switching and control of lighting, blinds, scenes
- Window for labels

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H108	QMX3.P37

**Room operator unit KNX with temperature sensor, segmented backlit display, configurable touchkeys, LED display, black**

**QMX3.P37-1BSC**

Functions:

- Temperature sensor
- Segmented backlit display and touchkeys
- Configurable touchkeys with LED display
- Switching and control of lighting, blinds, scenes
- Window for labels

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H129	QMX3.P37-1BSC

**Room sensor KNX for temperature and humidity, white**

**QMX3.P40**

Functions:

- Multisensor for temperature and humidity

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H116	QMX3.P40

Room automation

Room automation DXR (BACnet)

Room units with KNX PL-Link

3

QMX3.P40-1BSC

Room sensor KNX for temperature and humidity, black



Functions:

- Multisensor for temperature and humidity

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Stock no.

Product no.

S55624-H124

QMX3.P40-1BSC

QMX3.P44

Room operator unit KNX with sensors for temperature, humidity, segmented backlit display, touchkeys, white



Functions:

- multisensor for temperature and humidity
- Segmented backlit display and touchkeys

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm



Stock no.

Product no.

S55624-H143-A

QMX3.P44

QMX3.P44-1BSC

Room operator unit KNX with sensors for temperature, humidity, segmented backlit display, touchkeys, black



Functions:

- Multisensor for temperature and humidity
- Segmented backlit display and touchkeys

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm



Stock no.

Product no.

S55624-H144

QMX3.P44-1BSC



**Room sensor KNX for temperature, humidity, CO2, white**

**QMX3.P70**

Functions:

- Multisensor for temperature, humidity and CO2
- Air quality indicator with LED

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H104-A	<b>QMX3.P70</b>

**Room sensor KNX for temperature, humidity, CO2, black**

**QMX3.P70-1BSC**

Functions:

- multisensor for temperature, humidity and CO2
- Air quality indicator with LED

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H125	<b>QMX3.P70-1BSC</b>

**Room operator unit KNX with sensors for temperature, humidity, CO2, segmented backlit display, touchkeys, white**

**QMX3.P74**

Functions:

- multisensor for temperature, humidity and CO2
- Segmented backlit display and touchkeys

Data sheet N1602  
 Dimensions (W x H x D) 88.4 x 133.4 x 18 mm



Stock no.	Product no.
S55624-H106-A	<b>QMX3.P74</b>

Room automation

Room automation DXR (BACnet)

Room units with KNX PL-Link

3

QMX3.P74-1BSC



Room operator unit KNX with sensors for temperature, humidity, CO2, segmented backlit display, touchkeys, black

Functions:

- Multisensor for temperature, humidity and CO2
- Segmented backlit display and touchkeys

Data sheet

N1602

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Stock no.

Product no.

S55624-H127

QMX3.P74-1BSC

QMX3.P44



Room operator unit KNX with sensors for temperature, humidity, segmented backlit display, touchkeys, white

Functions:

- multisensor for temperature and humidity
- Segmented backlit display and touchkeys

Data sheet

N1602

Voltage supply

KNX bus

Measuring range

NTC: 0...50 °C

Humidity: 10%...95 % r.F.

Measuring range, temperature

0...50 °C

Sensing element, temperature

NTC

Communication

KNX PL-Link

KNX S-Mode

Color

White

Degree of protection

IP30

Dimensions (W x H x D)

88.4 x 133.4 x 18 mm

Weight (net)

0.21 kg

Stock no.

Product no.

S55624-H143

QMX3.P44

**Room operator unit KNX with sensors for temperature, humidity, segmented backlit display, touchkeys, black**

**QMX3.P44-1BSC**

Functions:

- Multisensor for temperature and humidity
- Segmented backlit display and touchkeys

Data sheet	N1602
Voltage supply	KNX bus
Measuring range	NTC: 0...50 °C Humidity: 10%...95 % r.F.
Measuring range, temperature	0...50 °C
Sensing element, temperature	NTC
Communication	KNX PL-Link KNX S-Mode
Color	Black
Degree of protection	IP30
Dimensions (W x H x D)	88.4 x 133.4 x 18 mm
Weight (net)	0.21 kg



Stock no.	Product no.
S55624-H144	QMX3.P44-1BSC

**Front modules for base module**

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years



**AQR253..**

**Range overview AQR253..**

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	AQR2534ANW
				55 x 55 x 12	S55720-S137	AQR2530NNW
0...50	Active			55 x 55 x 12	S55720-S136	AQR2532NNW
0...50	Active	0...100		55 x 55 x 12	S55720-S141	AQR2535NNW
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	AQR2535NNWQ

The matching design frame must be ordered separately.

**AQR2570..**

**Base module with KNX for temperature and humidity measurement**



- Base module without sensor for plugging onto a front module
- 1 analog input to connect temperature sensors with NTC 10k sensing element to measure room, floor, or ceiling temperature
- 2 multifunctional binary inputs to connect window contacts or buttons
- Power supply via KNX bus, bus load < 5 mA
- Communication: KNX S-Mode, KNX LTE-Mode (Synco)

Data sheet	N1411
Voltage supply	KNX bus
Analog inputs, number	1
Analog inputs	Passive temperature sensor NTC 10k
Digital inputs, number	2
Digital inputs	Potential-free contacts
Warranty	5 Years

**Range overview AQR2570..**

Mechanical design	Data sheet	Stock no.	Product no.
EU (CEE/VDE)	N1411	S55720-S203	<b>AQR2570NF</b>
IT (3 Modular)	N1411	S55720-S205	<b>AQR2570NG</b>
UK (British Standard)	N1411	S55720-S204	<b>AQR2570NH</b>
US (UL)	N1411	S55720-S206	<b>AQR2570NJ</b>

**AQR2576..**

**Base modules with KNX for CO<sub>2</sub> measurement**



- Base module with maintenance and recalibration-free CO<sub>2</sub> sensor to plug onto a front module
- 1 analog input to connect temperature sensors with NTC 10k sensing element to measure room, floor, or ceiling temperature
- 2 multifunctional binary inputs to connect window contacts or buttons
- Power supply via KNX bus, bus load < 5 mA
- Communication: KNX S-Mode, KNX LTE-Mode (Synco)

Data sheet	N1411
Voltage supply	KNX bus
Measuring range	CO <sub>2</sub> : 0...5000 ppm
Analog inputs, number	1
Analog inputs	Passive temperature sensor NTC 10k
Digital inputs, number	2
Digital inputs	Potential-free contacts
Warranty	5 Years

**Range overview AQR2576..**

Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
EU (CEE/VDE)	71 x 71 x 45	S55720-S207	<b>AQR2576NF</b>
IT (3 Modular)	71 x 71 x 45	S55720-S209	<b>AQR2576NG</b>
UK (British Standard)	71 x 71 x 45	S55720-S208	<b>AQR2576NH</b>
US (UL)	64 x 110 x 45	S55720-S210	<b>AQR2576NJ</b>

**Presence Detector WIDE**

UP 258D..1

- Passive infrared detector for ceiling installation
- Horizontal 360° motion detection area
- Presence/motion detection up to 64 m<sup>2</sup> / 400 m<sup>2</sup> (depending on mounting or room height)
- A 7-level setting to adjust the presence detection range
- Brightness and temperature measurement
- Integrated IR receiver and IR decoder for IR remote control with six pairs of buttons
- LED for display of detected motions in the delivery state for easy commissioning
- Programming button operable from the front
- Integrated bus coupler, bus connection via bus terminal, operation of electronics with bus voltage
- Mounting on the ceiling on a flush-mounting box with diameter of 60 mm, in a separately ordered housing for surface mounting or mounting plate for 4 x 4 boxes
- Color white (similar to RAL 9016)

**Presence Detector WIDE with temperature measurement**

UP 258D31



- Passive infrared detector for ceiling installation
- Horizontal 360° motion detection area
- Presence/motion detection up to 64 m<sup>2</sup> / 400 m<sup>2</sup> (depending on mounting or room height)
- A 7-level setting to adjust the presence detection range
- Brightness and temperature measurement
- Integrated IR receiver and IR decoder for IR remote control with six pairs of buttons
- LED for display of detected motions in the delivery state for easy commissioning
- Programming button operable from the front
- Integrated bus coupler, bus connection via bus terminal, operation of electronics with bus voltage
- Mounting on the ceiling on a flush-mounting box with diameter of 60 mm, in a separately ordered housing for surface mounting or mounting plate for 4 x 4 boxes
- Color white (similar to RAL 9016)

Data sheet A6V11895382  
 Dimensions (W x H x D) 120 x 41 x 120 mm

Stock no.	Product no.
5WG1258-2DB31	UP 258D31

**Presence Detector WIDE pro with temperature and relative humidity measurement**

UP 258D41



- Passive infrared detector for ceiling installation
- Horizontal 360° motion detection area
- Presence/motion detection up to 64 m<sup>2</sup> / 400 m<sup>2</sup> (depending on mounting or room height)
- A 7-level setting to adjust the presence detection range
- Brightness and temperature measurement
- Integrated IR receiver and IR decoder for IR remote control with six pairs of buttons
- LED for display of detected motions in the delivery state for easy commissioning
- Programming button operable from the front
- Integrated bus coupler, bus connection via bus terminal, operation of electronics with bus voltage
- Mounting on the ceiling on a flush-mounting box with diameter of 60 mm, in a separately ordered housing for surface mounting or mounting plate for 4 x 4 boxes
- Color white (similar to RAL 9016)

Data sheet A6V11895382  
 Dimensions (W x H x D) 120 x 41 x 120 mm

Stock no.	Product no.
5WG1258-2DB41	UP 258D41

3

**UP 258D51**



**Presence Detector WIDE multi with temperature, humidity and CO2 measurement**

- Passive infrared detector for ceiling installation
- Horizontal 360° motion detection area
- Presence/motion detection up to 64 m<sup>2</sup> / 400 m<sup>2</sup> (depending on mounting or room height)
- A 7-level setting to adjust the presence detection range
- Brightness and temperature measurement
- Integrated IR receiver and IR decoder for IR remote control with six pairs of buttons
- LED for display of detected motions in the delivery state for easy commissioning
- Programming button operable from the front
- Integrated bus coupler, bus connection via bus terminal, operation of electronics with bus voltage
- Mounting on the ceiling on a flush-mounting box with diameter of 60 mm, in a separately ordered housing for surface mounting or mounting plate for 4 x 4 boxes
- Color white (similar to RAL 9016)

Data sheet A6V11895382  
 Dimensions (W x H x D) 120 x 41 x 120 mm

Stock no. Product no.  
 5WG1258-2DB51 **UP 258D51**

**UP 258D61**



**Presence Detector WIDE DualTech with temperature measurement**

- Ultrasound for reliable detection for ceiling installation indoors even behind objects
- Additional detection options through PIR technology
- Horizontal 360° motion detection area
- Presence/motion detection up to 28 m<sup>2</sup> / 79 m<sup>2</sup> (depending on mounting or room height)
- Brightness and temperature measurement
- Integrated IR receiver and IR decoder for IR remote control with six pairs of buttons
- LED for display of detected motions in the delivery state for easy commissioning
- Programming button operable from the front
- Integrated bus coupler, bus connection via bus terminal, operation of electronics with bus voltage
- Mounting on the ceiling on a flush-mounting box with diameter of 60 mm, in a separately ordered housing for surface mounting or mounting plate for 4 x 4 boxes
- Color white (similar to RAL 9016)

Data sheet A6V11895378  
 Dimensions (W x H x D) 120 x 41 x 120 mm

Stock no. Product no.  
 5WG1258-2DB61 **UP 258D61**

**Presence detector with brightness sensor**

UP 258D12

- Passive infrared detector for ceiling mounting indoors
- Adjustable sensitivity of detection
- Mixed light measurement
- Ceiling mounting on a flush-mounting box with 60 mm diameter and min. 40 mm depth or in a housing for surface-mounting AP 258E01 (to be ordered separately)
- Integrated IR decoder for S 255/11
- Programming button reachable from front
- Monitoring range horizontal 360°, vertical approx. 105°
- Monitoring motion of an area of diameter 8 m (depending on mounting/room height)
- Optional blinding of parts of the detection area
- Power supply via KNX bus
- Integrated bus coupling unit, bus connection via bus terminal
  
- Monitoring motion range horizontal 360°, vertical approx. 105°
- Optional blinding of parts of the detection area
- UP mounting with fixing claws in suspended ceiling
- Power supply via bus line
- Integrated bus coupling unit, bus connection via bus terminal



Data sheet	A6V10489482
Dimensions (W x H x D)	88 x 63 x 88 mm
Dimension (Ø x H)	88 x 63 mm

Stock no.	Product no.
5WG1258-2DB12	UP 258D12

**Brightness sensor with constant light level controller**

UP 255D21

- Mixed light measurement
- Ceiling mounting on a flush-mounting box with 60 mm diameter and min. 40 mm depth or in a housing for surface-mounting (to be ordered separately)
- Programming button reachable from front
- Integrated IR decoder for S 255/11



Data sheet	A6V10489482
Dimensions (W x H x D)	88 x 63 x 88 mm
Dimension (Ø x H)	88 x 63 mm

Stock no.	Product no.
5WG1255-2DB21	UP 255D21

3

**G..B181.1E/KN**



**VAV compact controller KNX**

- Compact controller with KNX communication for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor, damper actuator and digitally configurable air volume controller
- Nominal torque 5 or 10 Nm
- Air damper rotation angle mechanically adjustable between 0 and 90°
- Configurable as single device per room or for cascade control with pressure ratio 1:1, positive pressure, or negative pressure
- Prewired with a 0.9 m cable and a 0.9 m cable

Data sheet	N3547
Positioning time	150 s
Communication	KNX S-Mode KNX LTE-Mode KNX PL-Link
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 158 x 61 mm
Warranty	5 Years

**Range overview G..B181.1E/KN**

Torque [Nm]	Operating voltage [V]	Air damper area [m <sup>2</sup> ]	Power consumption	Stock no.	Product no.
5	AC 24	0.8	3 VA 2.5 W	S55499-D134	<b>GDB181.1E/KN</b>
5	AC 24	0.8	3 VA 2.5 W	S55499-D505	<b>GDB181.1EMKN</b>
10	AC 24	1.5	3 VA 2.5 W	S55499-D135	<b>GLB181.1E/KN</b>

GDB181.EMKN packaging unit 18 pieces.  
Basic Documentation No.: P3547



**Electromotoric rotary actuator KNX for control ball valves up to DN25**

**GDB111.9E/KN**

- Electromotoric rotary actuator
- for KNX S-Mode or KNX PL-Link communication
  - for 2-/3-port control ball valves up to DN25
  - for 6-port control ball valves up to DN25
  - without spring-return
  - pre-wired with two 0.9 m connection cables



Data sheet	A6V10725318
Torque	5 Nm
Angular rotation	90°
Power consumption	3 VA 2.5 W
Positioning time	150 s
Cable length	0.9 m
Communication	KNX S-Mode or KNX PL-Link
Positioning signal	KNX S-Mode or KNX PL-Link
Spring return function	No
Degree of protection	IP54
Medium temperature	5...90°C
Ambient humidity, operation	95 % r.h.
Dimensions (W x H x D)	88 x 112 x 143 mm
Mounting position	Horizontal or vertical
Operating voltage	AC 24 V
Position feedback	KNX S-Mode or KNX PL-Link
Auxiliary switch	0
Warranty	5 Years

Stock no.	Product no.
S55499-D203	<b>GDB111.9E/KN</b>





# Home automation system



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# Home automation system

## Overview and selection tools

### Central apartment unit (1)



The heart and brain of the system. From here you can control all different functions for up to 12 rooms quickly and easily and monitor them via the display.

### Room unit / room temperature sensor (2)



The room unit measures the room temperature and allows the settings entered into the central apartment unit, such as temperature and operating parameters, to be adjusted for individual rooms. The comfort settings can be extended at the push of a button. The room temperature sensor measures the room temperature and communicates this by radio to the central apartment unit.

### Radiator control actuator (3)



Receives the pre-set desired temperature for this room by radio signal from the central apartment unit and regulates room temperature by adjusting the radiator valve. It can also be regulate up to 5 additional radiators per room, thereby ensuring an even temperature between radiators.

### Heating circuit controller / Multicontroller (4)



The heating circuit controller compares the actual values and setpoints for each room communicated from the central apartment unit via RF and regulates the temperature by adjusting the valve settings of the heat distributor. The multicontroller is for precontrol of up to 2 independent hydraulic room groups (e.g. radiators, floor heating) or for control of ventilation plant with up to 3 stages.

### Web server (5)



The web server connects the home automation system to the internet. It allows you to access and operate the system from a remote location via Smartphone, tablet or PC. With the HomeControl app from Siemens, you have an intuitive and simple control for your heating, air conditioning and ventilation system, as well as light and shading control. Alarm messages, reports and consumption data can be sent to email recipients as required.

### Consumption data interface (6)



The consumption data interface collects consumption data of heat/cool energy, electricity, water and gas.

### Meteo sensor (7)



Acquires the outside temperature and atmospheric pressure and communicates this via RF to the central apartment unit.

### Lighting and blind control (8)



Convenient control of lighting and blinds – centrally, locally in the room, or as a scene. Naturally, the components can also be operated automatically, e.g. via time programs or simulation of presence.

4

### Use Synco™ living – and technology becomes your valued companion in the house

Synco™ living is the outstanding modular Homeautomation system from Siemens. It offers central operation and adapts all parameters for comfortable living, such as optimum room temperatures, air and light conditions, safety and security, plus economical use of energy and financial resources, to individual needs. The system can be dynamically matched to changing living conditions. Information within the system is transmitted either wire-bound (KNX TP) or via radio (KNX RF).

To be able to satisfy all kinds of requirements in the residential sector, today's Homeautomation systems must be compatible with a large number of systems on the market. Synco™ living offers absolute openness. This means that – now or later – you can integrate almost any type of system into your Synco™ living configuration conforming to international KNX standard.

More information about Synco living see [www.siemens.com/syncoliving](http://www.siemens.com/syncoliving)



# Home automation system

## Overview and selection tools

### Synco living – more comfort at home

Synco living is specially tailored to the needs of private areas. The unique home automation system unites all functions such as heating, ventilation, lighting, blinds, security technology as well as consumption data acquisition. All components can be integrated wired or wireless in a flexible way. The control in line with the demand allows up to 30% less heating energy use – and lower CO<sub>2</sub> emissions for your home. Synco living fulfils all requirements to achieve energy efficiency class A in accordance with EN 15232. In addition the eu.bac certification demonstrates proven quality and energy efficiency according to European standards and directives.

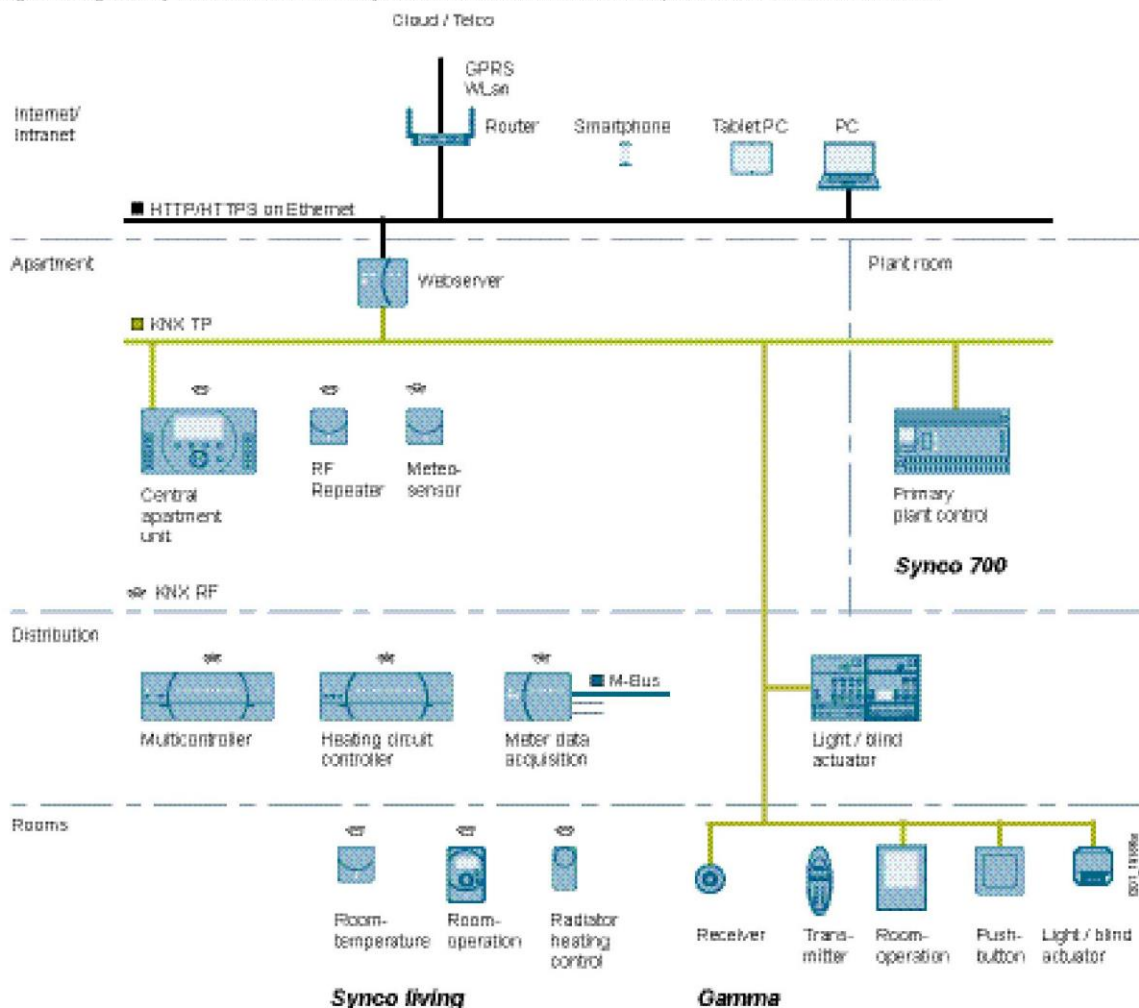
### Synco operating – efficient operation of plant with straightforward remote control

Thanks to Synco's Web server, plant operation and monitoring can be effected from a PC or Smartphone at any time and from any location. An alarm system delivers fault status or maintenance messages in due time, also via SMS or e-mail, if required. The app allows operation from underway or from the sofa.

### Monitored energy efficiency

The energy indicator monitors end user settings, shows exceeded limit values and reports them to the residents periodically via e-mail or app. A leaf symbol shows the energy status for each setting: Green means that the setting is correct from an energetic point of view; orange signals that a setting is energetically unfavorable. This way, each deviation is made transparent and visible at all times.

4



### Gamma – The tried-and-tested building control

Gamma building control enables all components in house and building control systems to be networked flexibly via the two wires of the bus cable. Whether you want to realize highly complex multi-utility systems or are looking for small solutions – this technology can be adapted to your individual requirements.

### Synco 700 – versatile HVAC controller range of modular design

Being the heart for manages the primary energy plant. This modular product range controls and monitors the HVAC plant. Installation and commissioning work can be performed quickly and efficiently: The extension modules simply click onto the controllers. Thanks to standard applications integrated in the controllers, there is no need for programming. The documentation gives you an overview of all integrated applications. Also, customized configurations can be made very straightforwardly.

## Central apartment unit for HVAC and energy consumption data collection

QAX903-9



The central apartment unit serves as an operator and display unit for an apartment. It manages individual room control (heating/cooling) of up to 12 rooms, comfort ventilation, precontrol, control of air conditioning equipment, and acquires the consumption data of heat, water, electricity and gas.

- Management of heating and cooling control for one apartment
  - Suited for heating and cooling plants with central distribution (e.g. underfloor heating) and radiators with decentral connections
  - Selection of operating mode, timer and holidays / special day function for the apartment
  - Independent time switches and operating modes for 12 rooms
  - Flow temperature control of 2 independent room groups including limitation (min. / max.) and maintained return temperature (high / low)
  - Increase of economy room temperature setpoint and minimum flow temperature setpoint depending on the composite outside temperature
  - Collection of heat / cooling requests from the individual rooms and forwarding the requests to the heat/cooling sources via wired bus, heat/cooling demand relay or DC0...10 V output to the RRV912 or RRV934
- Absence function (heating, cooling, ventilation)
- Management of 3-stage ventilation plant via RRV934 multicontroller, incl. night cooling
- Control of air conditioners (split units) via universal outputs (locally and RRV91x) or via S-Mode (KNX TP)
- Collection of meter data (heat / cool, electricity, water, gas) to support automated meter reading & billing
- Display of meteorological data
- Presentation of key data on info pages
- Plain text output in bg, cs, de, dk, el, en, es, fi, fr, hr, hu, it, nl, no, pl, pt, ro, ru, sk, sl, sr, sv, tr
- Wireless communication with the devices of Synco living product ranges
- Remote access via Siemens web server OZW772.xx
- Intuitive and simple control with Android or IOS App

Data sheet	N2741
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Display	Full graphic backlit display
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) and KNX TP (wired bus)
Indoor wireless range	30 m
Universal inputs, number	1
Universal inputs	Digital 0/1 LG-Ni1000
Universal input, signal	Digital 0/1 LG-Ni1000
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay outputs, type	Normally open contact
Relay output, switching current	AC 0.02...2 (2) A
Mounting	For screw fixing
Degree of protection	IP20D
Dimensions (W x H x D)	230 x 130 x 29.7 mm

Stock no. Product no.

S55621-H125 **QAX903-9**



QAX913-9



Central apartment unit with energy consumption data collection

The central apartment unit serves as an operator and display unit for an apartment. It manages individual room control (heating/cooling) of up to 12 rooms, comfort ventilation, precontrol and DHW control, control of air conditioning equipment, and acquires the consumption data of heat, water, electricity and gas. Additional functions include the control of lights and blinds. Door and window contacts plus smoke detectors and water monitors can be integrated for monitoring purposes.

- Management of heating and cooling control for one apartment
  - Suited for heating and cooling plants with central distribution (e.g. underfloor heating) and radiators with decentral connections
  - Selection of operating mode, timer and holidays / special day function for the apartment
  - Independent time switches and operating modes for 12 rooms
  - Flow temperature control of 2 independent room groups including limitation (min. / max.) and maintained return temperature (high / low)
  - Increase of economy room temperature setpoint and minimum flow temperature setpoint depending on the composite outside temperature
  - Collection of heat / cooling requests from the individual rooms and forwarding the requests to the heat/cooling sources via wired bus, heat/cooling demand relay or DC0...10 V output to the RRV912 or RRV934
- Absence function (heating, cooling, ventilation, lights) with simulation of presence (lights)
- DHW heating with time switch and selection of operating mode
- Management of 3-stage ventilation plant via RRV934 multicontroller, incl. night cooling
- Control of air conditioners (split units) via universal outputs (locally and RRV91x) or via S-Mode (KNX TP)
- Collection of meter data (heat / cool, electricity, water, gas) to support automated meter reading & billing
- Operation of lights and blinds via 4 softkeys, time switch and events
- Monitoring smoke detectors
- Display of meteorological data
- Presentation of key data on info pages
- Plain text output in bg, cs, de, dk, el, en, es, fi, fr, hr, hu, it, nl, no, pl, pt, ro, ru, sk, sl, sr, sv, tr
- Remote access via Siemens web server OZW772.xx
- Intuitive and simple control with Android or IOS App

Data sheet	N2740
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Display	Full graphic backlit display
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) and KNX TP (wired bus)
Indoor wireless range	30 m
Universal inputs, number	1
Universal inputs	Digital 0/1 LG-Ni1000
Universal input, signal	Digital 0/1 LG-Ni1000
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay outputs, type	Normally open contact
Relay output, switching current	AC 0.02...2 (2) A
Mounting	For screw fixing
Degree of protection	IP20D
Dimensions (W x H x D)	230 x 130 x 29.7 mm

Stock no. Product no.

S55621-H126

**QAX913-9**



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**Web server for QAX9..**

Product Title	Data sheet	Stock no.	Product no.
Web server for 1 Synco device	N5701	BPZ:OZW772.01	<b>OZW772.01</b>
Web server for 4 Synco devices	N5701	BPZ:OZW772.04	<b>OZW772.04</b>
Web server for 16 Synco devices	N5701	BPZ:OZW772.16	<b>OZW772.16</b>
Web server for 250 Synco devices	N5701	BPZ:OZW772.250	<b>OZW772.250</b>

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**QAW910**



**Room unit**

Wireless room unit.

The QAW910 is used for the operation and display of basic space heating functions. It also forwards the acquired room temperature to the central apartment unit QAX9.., either periodically or when changes occur. The room temperature is shown on the display of the QAW910.

- Operation and display of space heating functions
- Selection of room operating mode, timer function and room temperature setpoint readjustment
- Display of space heating function and status messages
- Acquisition of the room temperature
- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
  - Renovation projects (old buildings, museums, churches, historical buildings, etc.)
  - Difficult wall-mounting situations (sandstone, glass, etc.)
  - Variable floor plans (different décors, furniture changes)
  - New houses and buildings
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2703
Voltage supply	Mignon (2xAA) LR6
Battery capacity	2.5 Ah
Battery life	3 years
Sensing element	NTC 10k
Measuring range, temperature	0...50 °C
Display	Segment LCD
Display size	Resolution 0.1 °C
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP40
Dimensions (W x H x D)	84 x 130 x 23.6 mm

Stock no.	Product no.
BPZ:QAW910	QAW910

**QAA910**



**Room temperature sensor**

Wireless room temperature sensor for acquiring the room temperature.

During operation, the QAA910 forwards the acquired room temperature to the central apartment unit QAX9.., either periodically or in the case of changes.

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
  - Renovation projects (old buildings, museums, churches, historical buildings, etc.)
  - Difficult wall-mounting situations (sandstone, glass, etc.)
  - Variable floor plans (different décors, furniture changes)
  - New construction projects
- RF communication based on KNX standard (868 MHz, unidirectional)

Data sheet	N2701
Voltage supply	Mignon (2xAA) LR6
Battery capacity	2.5 Ah
Battery life	3 years
Sensing element	NTC 10k
Measuring range, temperature	0...50 °C
Communication	KNX RF-compatible, 868.3 MHz unidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 23 mm

Stock no.	Product no.
BPZ:QAA910	QAA910

SSA955



## Radiator control actuator

RF-based actuator for radiator valves.

The SSA955 controls the room temperature based on the data forwarded by the central apartment unit QAX9...

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Silent mode (e.g. for use in sleeping rooms)
- Automatic identification of valve stroke
- Parallel connection of multiple actuators possible
- Integrated temperature sensor
- For direct mounting with coupling nut (no tools required)
- Manual adjustment
- RF communication based on KNX standard (868 MHz, bidirectional)

Suitable adaptors for valves of other manufacturers refer to AV5.. and AV6..

Data sheet	N2700
Voltage supply	Mignon (3xAA) LR6
Battery life	3 years (2 years in silent mode)
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Sound power level	Silent mode: <25 dB (A) Normal mode: <30 dB (A)
Stroke	2.5 mm
Positioning force	110 N
Medium temperature	1... 110 °C
Measuring range, temperature	0...50 °C
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined
Degree of protection	IP40
Dimensions (W x H x D)	48 x 95 x 80.6 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:SSA955	SSA955

**RRV912**



**Heating circuit controller, 2 heating circuits**

RF-based heating circuit controller for up to 2 heating circuits and DHW heating.

In operation, the RRV912 maintains the required room temperature of the individual heating circuits. The central apartment unit QAX9.. forwards the relevant data via RF.

- Suited for use in heating and cooling plants
- With central distributors (e.g. underfloor heating or soft steel piping system)
- For use with motorized radiator valves (e.g. with sill covers)
- Heating circuit control with 2- or 3-position actuators
- 2 universal relay outputs, e.g. for control of the room group pump and DHW heating
- 1 universal input, e.g. for connection of a DHW temperature sensor or an alarm
- 1 universal output DC 0...10 V for forwarding the heat / cooling demand signal
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2705
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Control Algorithm	2-point: PID 3-point: PID
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Analog outputs, number	1
Universal inputs, number	1
Universal input, signal	Digital 0/1 LG-Ni1000
Measuring range, temperature	0...120 °C
Digital outputs, number	4
Universal outputs, number	1
Universal output, signal	DC 0...10 V
Universal output, current	max. DC 1 mA
Relay outputs, number	2
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Triac outputs, number	2
Triac output, switching voltage	AC 230 V
Triac output, switching current	30 mA
Degree of protection	IP30
Dimensions (W x H x D)	180 x 98 x 50 mm

Stock no.	Product no.
BPZ:RRV912	<b>RRV912</b>

**RRV918**



### Heating circuit controller, 8 heating circuits

RF-based heating circuit controller for up to 8 heating circuits.

In operation, the RRV918 maintains the required room temperature of the individual heating circuits. The central apartment unit QAX9.. forwards the relevant data via RF.

- Suited for use in heating and cooling plants
- With central distributors (e.g. underfloor heating or soft steel piping system)
- For use with motorized radiator valves (e.g. with sill covers)
- Connection facility for up to eight 2-position actuators
- 1 Universal relay output, e.g. for control of the room group pump and DHW heating
- 1 Universal input, e.g. for connection of a DHW temperature sensor or an alarm
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2706
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Control Algorithm	2-point: PID
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Universal inputs, number	1
Universal input, signal	Digital 0/1 LG-Ni1000
Measuring range, temperature	0...120 °C
Digital outputs, number	9
Universal outputs, number	1
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Triac outputs, number	8
Triac output, switching voltage	AC 230 V
Triac output, switching current	30 mA
Degree of protection	IP30
Dimensions (W x H x D)	245 x 98 x 50 mm

Stock no. Product no.

BPZ:RRV918

**RRV918**

Home automation system  
**Synco™ living**  
**Multi controller RRV93..**

**RRV934**



**Multicontroller**

RF-based multicontroller for precontrol of up to 2 room groups or control of ventilation plant with up to 3 stages. All inputs and outputs are also suited for universal use. The relevant data are forwarded wirelessly by the central apartment unit QAX9...

- Suited for use in heating and cooling plants for precontrol of up to 2 room groups
- 2 primary controllers each with a DC 0...10 V actuator
- 1 primary controller with a DC 0...10 V actuator and 1 primary controller with a 3-position actuator
- Flow and return temperature limitation, optional control of room group pumps and DHW heating
- Suited for control of 3-stage ventilation plant incl. HR bypass, with impact from humidity, indoor air quality or CO<sub>2</sub>- level, incl. fault monitoring
- Forwarding the heat / cooling demand signal to primary energy plant
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2709
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Control Algorithm	Precontroller: PI
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Universal inputs, number	4
Universal input, signal	Digital 0/1 LG-Ni1000 DC 0...10 V
Measuring range, temperature	0...120 °C
Universal outputs, number	2
Universal output, signal	DC 0...10 V
Universal output, current	max. DC 1 mA
Relay outputs, number	4
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	AC 0,02...2 (2) A
Mounting	DIN rail For screw fixing
Degree of protection	IP30
Dimensions (W x H x D)	245 x 98 x 50 mm

Stock no.	Product no.
BPZ:RRV934	<b>RRV934</b>

## Consumption data interface

WRI982



The consumption data interface collects consumption (meter) data and communicates these data using KNX RF directly to the central apartment unit (QAX913 or QAX903). Meters may be connected either via Impulse inputs or via M-Bus (wired). There is an additional interface for communication with the Synergry central communication device, OZW30, for the purpose system migration.

- M-Bus MiniMaster for up to 3 M-Bus meters
- 2 Impulse inputs for impulse meters
- BatiBus communication to Synergry OZW30
- KNX RF communication to QAX913 or QAX903

Data sheet	N2735
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) BatiBus communication to Synergry OZW30
Indoor wireless range	30 m
Mounting	DIN rail For screw fixing
Degree of protection	IP30
Dimensions (W x H x D)	120 x 90 x 50 mm

Stock no.	Product no.
S55621-H112	<b>WRI982</b>

Home automation system  
**Synco™ living**  
**Meteo sensor QAC910**

**QAC910**



**Meteo sensor**

Wireless sensor for acquiring outside temperature and atmospheric pressure. In operation, the QAC910 forwards the acquired outside temperature and atmospheric pressure to the central apartment unit QAX9.., either periodically or when changes occur.

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
  - Renovation projects (old buildings, museums, churches, historical buildings, etc.)
  - Difficult wall-mounting situations (sandstone, glass, etc.)
  - Variable floor plans (different décors, other furniture)
  - New houses or buildings
- RF communication based on KNX standard (868 MHz, unidirectional)
- 2-Wire cable between meteo sensor and transmitter required

- Dimensions (W x H x D):
  - Outside sensor: 80 x 92 x 50 mm
  - RF transmitter: 84 x 84 x 23 mm

Data sheet	N2702
Voltage supply	Mignon (2xAA) LR6
Battery capacity	2.5 Ah
Battery life	3 years
Measuring range, temperature	-50...50 °C
Sensing element	NTC 1k
Communication	KNX RF-compatible, 868.3 MHz unidirectional (RF)
Indoor wireless range	30 m
Dimensions (W x H x D)	50 x 92 x 80 mm

Stock no.	Product no.
BPZ:QAC910	<b>QAC910</b>



**RF repeater**

**ERF910**



Wireless RF repeater for extending plant.

In operation, the ERF910 repeats the RF telegrams from the devices attuned to it.

- Extending and ensuring RF coverage in the Siemens Synco living system
- Especially suited for:
  - Renovation projects (old buildings, museums, churches, historical buildings, etc.)
  - Difficult wall-mounting situations (sandstone, glass, etc.)
  - Variable floor plans (different décors, furniture changes)
- New houses and buildings
- External power pack
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2704
Operating voltage	AC 230 V
Power consumption	0.2 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 23 mm

Stock no.	Product no.
BPZ:ERF910	<b>ERF910</b>





# Thermostats



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# Thermostats

## Overview and selection tools

### Room thermostats

Siemens is a leading supplier of room temperature controllers for a wide range of heating, ventilation and cooling applications in residential buildings, hotels, office and commercial buildings.

Siemens solutions meet every budget: Basic electromechanical on/off units, RF-based or with infrared remote control, as well as thermostats with modulating outputs. Programmable thermostats with 24-hour or 7-day programs and non-programmable room temperature thermostats are available as analog or digital products with displays.

Quality, reliability, outstanding functionality, ease of installation and use: Our room controls satisfy your needs. The unique and acclaimed Siemens design is an additional stylish feature.

### Proudly made around the world.

- Quality really is the issue
- Product lifecycles and environment in partnership
- Standards are not negotiable

### Heating / Cooling applications

	Basic		With display					With time switch					
	RAA	RCU	RDD	RDD 310/EH	RDF3xx RDF6xx	RDH	RDF800..	RDE	RDE 410/EH	RDG	RDJ	REV	RDS
<b>Type</b>													
<b>Housing</b>													
Setpoint knob	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		
Setpoint buttons			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
LED indicators	<input checked="" type="checkbox"/>												
Digital display			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Programming slider											<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Touch screen					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>
<b>Wiring</b>													
Mains-independent	<input checked="" type="checkbox"/>												
Battery-powered			<input type="checkbox"/>					<input type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Mains-powered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*	*	<input checked="" type="checkbox"/>
Radio frequency transmission			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modulating heating valve control		<input checked="" type="checkbox"/>								<input type="checkbox"/>		<input type="checkbox"/>	
Multifunctional input					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Remote control input												<input checked="" type="checkbox"/>	
Analog output	<input type="checkbox"/>	<input type="checkbox"/>											
Relay output	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Functionalities</b>													
Heating plants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cooling plants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Domestic hot water control			<input type="checkbox"/>					<input type="checkbox"/>					<input checked="" type="checkbox"/>
Humidity control										<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Air quality monitoring													<input checked="" type="checkbox"/>
Green leaf										<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Remote operation (mobile app)													<input checked="" type="checkbox"/>
Commissioning mobile app										<input checked="" type="checkbox"/>			
Time switch	Daily										<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Weekly					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Operating mode	Comf. mode	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Eco mode		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Standby.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Frost protect.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Holidays											<input type="checkbox"/>	<input checked="" type="checkbox"/>
Control loop	2-point	2-point/ PI	2-point	2-point	2-point	2-point/ PID	2-point/ PI	2-point/ PID	2-point	2-point/ PI	2-point/ PID	2-point/ PID or PI	2-point/ PID
Communication					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Valid for all variants    
  Depending on variants    
  Main feature    
 \* Radio frequency receiver only  
 RDD810.../NF only compatible with square conduit box and Arina frame ARG800.1    
  KNX, MODBUS







Fan-coils application									
Type	Basic		With display				With time switch		
	RAB	RCC	RDG1xx RDG2xxKN	RDF3xx RDF6xx	RDF5...	RDF8xx	RDG1..T RDG2xxKN	RDF6xxT	
<b>Housing</b>									
Setpoint knob	■	■	■				■		
LED indicators	□	★							
Digital display			★	■	■	■	■	■	
Auto fan speed			■				■		
Flush mounting				★	★			★	
Touch screen						★			
<b>Wiring</b>									
Mains-independent	★								
Mains-powered		■	□	□	■	■	□	■	
Multifunctional input			■	□		■	■	■	
Sensor input		□	■	□		■	■	■	
Changeover input		■	■	□		■	■	■	
Analog output			□	□			□		
Relay output (on/off)	■	□	□	□	■	■	□	■	
Triac 2-p/3-p/PWM			□				□		
DC-fan			□	□			□	□	
<b>Functionalities</b>									
2-pipe-system	□	□	■	■	□	■	■	■	
4-pipe-system	□	□	■	□	□	■	■	■	
Electric heater		□	□	□		■	■	■	
Radiator			■			■			
Humidity control			★				★		
Green leaf			★				★		
Master /Slave			□				□		
Delta Temp. Control			□				□		
Commissioning mobile app			★				★		
Time switch weekly							★		
Operating mode			■	■	■	■	■	■	
Comfort	■	■	■	■	■	■	■	■	
Economy			■	■		■	■	■	
Standby/Prot.	□	■	■	■	■	■	■	■	
Frost protect.		□	■	■		■	■	■	
Control loop	2-point	2-point/PI	2-point/PI	2-point/PI	2-point	2-point/PI	2-point/PI	2-point/PI	
Infrared remote control				□			■	□	
Communication			□ KNX	□ KNX, Modbus		□ KNX	□ KNX		

# Thermostats

## Overview and selection tools




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### Heat Pumps applications

	With display				With time switch	
						
Type	RDG110, RDG160T	RDG260KN	RDF3xx/ RDF8xx	RDF6xx	RDF6xxT	RDG160T
<b>Housing</b>						
Digital display	■	■	■	■	■	■
Fan speed command	- / 1 / 3 / DC	- / 1 / 3 / DC	1 / 3	1 / 3 / DC	1 / 3 / DC	- / 1 / 3 / DC
<b>Wiring</b>						
Mains-powered	■	■	■	■	■	■
Sensor input	■	■	■	■	■	■
Relay output	■	■	■	■	■	■
<b>Functionalities</b>						
Electric heater	■	■	■	■	■	■
DX compressor	■	■	□	□	□	■
Manuel Heat / Cool changeover	■	■	■	■	■	■
Weekly time clock		■			■	
Operating mode	Comf. mode	■	■	■	■	■
	Eco mode	■	■	■	■	■
	Standby.	■	■	■	■	■
	Frost protect.	■	■	■	■	■
Control loop	2-point	2-point	2-point	2-point	2-point	2-point
Green leaf		⊕				
Master / Slave		■				
Delta Temp. Control		■				
Commissioning mobile app		⊕				
Communication		■ KNX	□ KNX, Modbus	□ KNX, Modbus		

■ Valid for all variants    □ Depending on variants    ⊕ Main feature

### VAV applications

	Basic	With display	
			
Type	RCU50.2	RDU340	RDG40..
<b>Housing</b>			
Setpoint knob	■		■
Digital display		■	■
Flush mounting		■	
<b>Wiring</b>			
Mains-powered	■	■	■
Senor input		■	■
Changeover input		■	■
Analog output	■	■	■
Relay output		■	
<b>Functionalities</b>			
Indoor air quality			□
Manuel Heat / Cool changeover	■	■	■
External setpoint shift			
Vmin Cooling	■	■	■
Operating mode	Comf. mode	■	■
	Eco mode	■	■
	Sandby/Prot.	■	■
	Frost protect.	■	■
Control loop	2-point	P/I	P/I
Communication			□ KNX

■ Valid for all variants    □ Depending on variants







RDS110



## Smart Room Thermostat

Room thermostat for the control of heating applications in apartments, single family homes, dormitories and other residential-type as well as light commercial spaces. With remote access via computer, tablet, or smartphone using the Siemens Comfort Cloud service.

### Room thermostat features

- Backlit, auto-dimming 90 mm color LCD touch screen for intuitive local operation
- Mobile app for smartphones
- Air quality indication via built-in sensor
- Operate automatically following a scheduler
- Direct temperature and operating mode selection
- RoomOptiControl function with Green leaf button for energy-optimized operation
- Temperature setting limitation for use in public spaces
- Screen lock protection against unauthorized access
- Manual switchover between "Home", "Away" and "OFF" on touch screen
- Room temperature control using the built-in temperature sensor or an optional remote sensor
- Optional temperature averaging using an additional remote temperature sensor
- Patented self-learning algorithm with PID response (patent pending) guaranteeing optimum temperature control performance in all room types
- Optimum start control function that advances the switch-on time to ensure the selected setpoint is reached as required
- Floor temperature limitation using a remote sensor in electric floor-heating applications
- Humidity control using the built-in humidity sensor or an optional remote sensor
- Presence detection using a built-in PIR sensor or approach sensor
- Two multifunctional inputs, optional and configurable for operating mode switchover contact (e.g. window contact), remote room temperature sensor, floor temperature sensor, outside air temperature sensor, remote humidity sensor
- Two relay outputs for heating equipment, extra output for domestic hot water (DHW) boiler, humidifier or dehumidifier
- Periodic pump/valve operation to protect against seizing
- Navigation wizard for guided, fast commissioning
- Remote firmware upgrade capability

### Remote operation and monitoring

- Mobile App for smartphones and tablets based on iOS and Android
- Individual time program for each day of the week
- Energy consumption indication
- Manual switchover between "Home", "Away" and "OFF" operating modes on mobile app
- Individual scheduler for domestic hot water boiler
- User account management

Data sheet	A6V10807602
Operating voltage	AC/DC 230 V
Power consumption	9 VA
Setpoint setting range	5...40 °C
Sensing element	Resistance sensor
Switching differential	0.5...6 K
Communication	Connectable with a WLAN (802.11b/g/n) compatible router
Analog inputs, number	2
Relay outputs	Potential-free
Relay outputs, number	2
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Design	External sensor
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	91 x 91 x 26 mm
Color	Black

Stock no.	Product no.
S55772-T100	RDS110

RDS110.R



Smart Thermostat Wireless

Wireless room thermostat for the control of heating applications in apartments, single family homes, dormitories and other residential-type as well as light commercial spaces. With remote access via computer, tablet, or smartphone using the Siemens Comfort Cloud service.

Room thermostat features

- Backlit, auto-dimming 90 mm color LCD touch screen for intuitive local operation
- Air quality indication via built-in sensor
- Presence detection via geo-fencing
- Direct temperature and operating mode selection
- Temperature setting limitation for use in public spaces
- Screen lock protection against unauthorized access
- Room temperature control using the built-in temperature sensor or an optional remote sensor
- Optional temperature averaging using an additional remote temperature sensor
- Patented self-learning algorithm with PID response (patent pending) guaranteeing optimum temperature control performance in all room types
- Optimum start control function that advances the switch-on time to ensure the selected setpoint is reached as required
- Viewing temperature, humidity and heat demand trends
- Floor temperature limitation using a remote sensor in electric floor-heating applications
- Humidity control using the built-in humidity sensor or an optional remote sensor
- Multifunctional inputs for remote sensors
- Navigation wizard for guided, fast commissioning
- Remote firmware upgrade capability

Remote operation and monitoring

- Mobile App for smartphones and tablets based on iOS and Android
- Individual time program for each day of the week
- Energy consumption indication
- Manual switchover between "Home", "Away" and "OFF" operating modes on mobile app
- Wireless communication with receiver and radiator valve
- Support Dark and Light background colors on mobile app

Data sheet	A6V11562461
Operating voltage	AC 230 V
Power consumption	9 VA
Setpoint setting range	0...50 °C
Switching differential	0.5...6 K
Communication	Connectable with a WLAN (802.11b/g/n) compatible router
Analog inputs, number	2
Relay outputs	Potential-free
Relay outputs, number	2
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	91 x 91 x 26 mm

Stock no.	Product no.
S55772-T103	<b>RDS110.R</b>

Wireless accessory smart thermostats

Product Title	Data sheet	Stock no.	Product no.
Theft protection kit	A6V11739247	S55845-Z244	<b>ATN5</b>
Smart Thermostat Receiver	A6V11562464	S55772-T104	<b>RCR114.1</b>
Radiator valve actuator	A6V11739247	S55181-A101	<b>SSA911.01TH</b>

### Smart Room Thermostat

RDS120

Room thermostat for the control of Conventional & Heat Pumps HVAC systems in apartments, single family homes, dormitories and other residential-type as well as light commercial spaces. With remote access via tablet & smartphone using the Siemens Comfort Cloud service.



#### Room thermostat features

- (1) Controls conventional HVAC systems up to 3H/2C and heat pumps up to 4H/2C,
- (2) Easy to read, backlit, auto-dimming 3.5" color LCD touch,
- (3) One-touch green leaf button to maximize energy efficiency,
- (4) Built-in Volatile Organic Compounds (VOC) sensor enables ventilation strategies for optimum indoor air quality,
- (5) Built-in humidity sensor,
- (6) Built-in occupancy sensor and window / door contact enables smart occupancy control

#### Remote operation and monitoring

- (1) Mobile App for smartphones and tablets based on iOS and Android,
- (2) Individual time program for each day of the week,
- (3) Manual switchover between "Home", "Away" and "OFF" operating modes on mobile app,
- (4) User account management

Data sheet	A6V10807603
Operating voltage	AC 24 V
Power consumption	9 VA
Color	Black
Dimensions (W x H x D)	91 x 91 x 26 mm

Stock no.	Product no.
S55772-T101	RDS120

### RDS120.B Smart Room Thermostat

RDS120.B

Room thermostat for the control of Conventional & Heat Pumps HVAC systems in apartments, single family homes, dormitories and other residential-type as well as light commercial spaces. With remote access via tablet & smartphone using the Siemens Comfort Cloud service.



#### Room thermostat features

- (1) Controls conventional HVAC systems up to 3H/2C and heat pumps up to 4H/2C,
- (2) Easy to read, backlit, auto-dimming 3.5" color LCD touch,
- (3) One-touch green leaf button to maximize energy efficiency,
- (4) Built-in Volatile Organic Compounds (VOC) sensor enables ventilation strategies for optimum indoor air quality,
- (5) Built-in humidity sensor,
- (6) Built-in occupancy sensor and window / door contact enables smart occupancy control
- (7) BACnet enabled

#### Remote operation and monitoring

- (1) Mobile App for smartphones and tablets based on iOS and Android,
- (2) Individual time program for each day of the week,
- (3) Manual switchover between "Home", "Away" and "OFF" operating modes on mobile app,
- (4) User account management

Operating voltage	24 V
Power consumption	9 VA
Dimensions (W x H x D)	91 x 91 x 26 mm
Color	Black

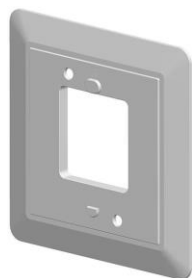
Stock no.	Product no.
S55772-T106	RDS120.B

Thermostats  
Smart thermostats  
Accessories for smart thermostats

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ARG100.01

**Mounting frame set ARG100.01**



Mounting frame set for square conduit boxes for use with room thermostats

Data sheet

A6V11190640

Stock no.

Product no.

S55772-T102

**ARG100.01**

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**Room thermostats with KNX communications**

RDG2..KN

- For temperature and humidity control
- KNX communications
- Built-in temperature and humidity sensors

Data sheet

A6V11545853

# Thermostats

## Communicating room thermostats

### Fan coils – KNX

RDG200KN



**KNX communicating room thermostat. Outputs modulating (PWM / 3-pos.) or on/off. Fan coil (3-speed / DC fan), universal applications**

- KNX communications
- Built-in temperature and humidity sensors and control
- For applications with 2-position (on/off or PWM) or 3-position control outputs
- For applications with 3-speed or DC 0...10 V fan
- AC 230V or AC 24V power supply.
- 3 multifunctional inputs for keycard contact, external room / return air temperature (NTC3K; QAH11.1, QAA32 or LG-Ni1000 sensors), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- Operating modes: Comfort, Economy and Protection
- Automatic or manual DC fan or 1-/3-speed
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display
- Green leaf function
- Local weekly time program (with 3 Comfort periods per day)
- Master / Slave function
- Delta temperature control for district heating
- Commissioning via Smartphone APP "PCT Go", local HMI or KNX tools.

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 2-pipe 2-stage heating or cooling systems
- 4-pipe system
- 4-pipe system with electrical heater
- 4-pipe / 2-stage heating and cooling system (selectable also for 2-stage cooling / 1-stage heating or 2-stage heating / 1-stage cooling)

Data sheet	A6V11545853
Operating voltage	AC 24 V AC 230 V
Setpoint setting range	5...40 °C
Switching differential	Heating: 0,5...6 K Cooling: 0,5...6 K
Communication	Bus: KNX (S-mode and LTE with Synco)
Analog inputs, number	3
Analog outputs	Fan. 1 (DC 0...10 V)
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Digital inputs, number	3
Relay outputs	Fan: 1- or 3-speed
Relay outputs, number	3
Relay output, switching voltage	AC 24 V or 230 V
Relay output, switching current	5 (4) A
Triac outputs	Valve, el. heater 2-position, PWM, 3-position
Triac outputs, number	4
Triac output, switching voltage	AC 24 V or 230 V
Triac output, switching current	Max. 1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	92 x 134 x 25 mm

Stock no.	Product no.
S55770-T409	RDG200KN

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**KNX communicating room thermostat. Outputs modulating (DC) or on/off. Fan coil (3-speed / DC fan) or universal applications**

**RDG260KN**



- KNX communications
- Built-in temperature and humidity sensors and control
- For applications with DC control outputs and DC or 3-speed fan output
- For applications with 2-position control output with DC fan output
- AC or DC 24 V operating voltage
- 3 multifunctional inputs for keycard contact, external room / return air temperature (NTC3K; QAH11.1, QAA32 or LG-Ni1000 sensors), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- Operating modes: Comfort, Economy and Protection
- Automatic or manual DC fan or 1-/3-speed
- Automatic or manual heating / cooling changeover
- Minimum and maximum setpoint limitation
- Backlit display
- Green leaf function
- Local weekly time program (with 3 Comfort periods per day)
- Master / Slave function
- Delta temperature control for district heating
- Adjustable commissioning and control parameters
- Commissioning via Smartphone APP "PCT Go", local HMI or KNX tools

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 2-pipe 2-stage heating or cooling
- 4-pipe system
- 4-pipe system with electrical heater
- 4-pipe / 2-stage heating and cooling system (selectable also for 2-stage cooling / 1-stage heating or 2-stage heating / 1-stage cooling)
- Heating / cooling with 6-port ball valves

Data sheet	A6V11545853
Operating voltage	AC/DC 24 V
Setpoint setting range	5...40 °C
Switching differential	Heating: 0,5...6 K Cooling: 0,5...6 K
Communication	Bus: KNX (S-mode and LTE with Synco)
Analog inputs, number	3
Analog outputs	Valve, el. heater: 4 Fan: 1 (DC 0...10 V)
Analog outputs, number	5
Analog output, signal	DC 0...10 V
Digital inputs, number	3
Relay outputs	Valve, compressor or el. heater: 2 outputs, 2-position Fan: 1- or 3-speed
Relay outputs, number	3
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (4) A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	92 x 134 x 25 mm

Stock no.	Product no.
S55770-T412	<b>RDG260KN</b>

## Thermostats

### Communicating room thermostats

#### Fan coils – KNX

##### RDF8..KNX Flush Mount

##### Touch screen room thermostat for 2-/4- pipe fan coil, universal applications or compressors in DX-type equipment



- Operating modes: Comfort, Economy and Protection
- For heating and/or cooling applications
- 2 or 3-position control outputs
- Output for 1-speed or 3-speed fan
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white or black
- Backlit display

##### Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3174
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)
Analog inputs, number	2
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Relay outputs, number	5
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 47 mm

##### Range overview RDF8..KNX Flush Mount

Product Title	Operating voltage [V]	Stock no.	Product no.
Flush mount touch KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes, black	AC 230	S55770-T429	<b>RDF800KN/VB</b>
Flush mount touch KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes	AC 230	S55770-T350	<b>RDF800KN</b>



**Flush-mount room thermostat with KNX communications, 2-/4-pipe fan coils or DX type equipment for both round and square conduit boxes** **RDF6..KNX Flush Mount**



Flush-mount room thermostat with LCD for fan coil units and compressors in DX-type equipment

- KNX communications
- For heating and/or cooling applications
- 2 or 3-position control outputs
- Output for 1-speed or 3-speed fan
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- Operating modes: Comfort, Economy and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display
- Color of housing: signal white (RAL 9003) or black
- Independent function for window contact, presence detector (standard presence and hotel presence)

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3076
Power consumption	2 VA
Switching differential	0.5...6 K
Communication	KNX
Analog inputs, number	2
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Relay outputs, number	5
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Type of fixing	With screws on recessed round conduit box diameter min. 60 mm
Dimensions (W x H x D)	86 x 86 x 46 mm

**Range overview RDF6..KNX Flush Mount**

Product Title	Operating voltage [V]	Stock no.	Product no.
Flush mount KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes	AC 230	S55770-T293	<b>RDF600KN</b>
Flush mount KNX room thermostat for 2-/4-pipe FCU with on/off output, KNX switching group, four buttons for switching lights and blinds and 2x universal input, fit for both round and square conduit boxes	AC 230	S55770-T400	<b>RDF600KN/S</b>
Flush mount KNX room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes, black	AC 230	S55770-T430	<b>RDF600KN/VB</b>

## Thermostats

### Communicating room thermostats

#### Fan coils - Modbus

##### RDF3..MB Flush Mount



Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off outputs and optional 2x universal input and electrical heater application, fit for square conduit boxes

##### Range overview RDF3.. Modbus Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off outputs, 2x universal input optional electrical heater application, fit for square conduit boxes, BLACK	AC 230	Black	S55770-T428	<b>RDF302/VB</b>
Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off outputs and optional electrical heater application, fit for square conduit boxes	AC 230 230	White	S55770-T416	<b>RDF302.B</b>
Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off outputs, 2x universal input optional electrical heater application, fit for square conduit boxes	AC 230	White	S55770-T238	<b>RDF302</b>

##### RDF6..MB Flush Mount



Flush-mount room thermostat with Modbus communications

Relay outputs  
Relay output, switching voltage  
Relay output, switching current

Valve: On/Off  
AC 230 V  
5 (2) A

##### Range overview RDF6.. Modbus Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off valves, ECM fan and 2x universal input with optional electrical heater application, fit for both round and square conduit boxes	AC 230	White	S55770-T439	<b>RDF660MB</b>
Flush mount MODBUS room thermostat for 2-/4-pipe FCU with on/off valves, ECM fan and 2x basic input, fit for both round and square conduit boxes	AC 230	White	S55770-T433	<b>RDF660MB/MM</b>

##### Accessories for RDF302

Product Title	Data sheet	Stock no.	Product no.
Mounting bracket 10 mm thick	N3009	BPZ:ARG70.3	<b>ARG70.3</b>

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RDB1..



**BACnet communicating room thermostat**

- BACnet MS/TP communication
- For applications with DC control outputs and DC or 3-speed fan output
- For applications with 2-position, 3-position or DC control output with DC fan output
- 3 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, window contact on/off, presence detector
- Operating modes: Comfort, Economy
- Automatic or manual DC fan or 1-/3-speed
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display
- On Off button

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Power consumption	3 W, class II construction
Measuring range	0...50 °C
Digital output, switching current	3 A
Communication	BACnet MS/TP
Analog outputs, number	2
Digital inputs, number	1
Relay outputs	Fan: 1-,2- or 3-speed
Triac outputs, number	2
Degree of protection	IP20
Dimensions (W x H x D)	102 x 120 x 29 mm

**Range overview RDB1..**

Operating voltage [V]	Color	Stock no.	Product no.
AC 230	White	S55770-T426	RDB160BN



**RDG405KN**



**Room thermostat for temperature and air quality control with KNX communications, AC 24 V, VAV heating and cooling systems**

- KNX communications
- Output DC 0...10 V for VAV actuator and auxiliary output ON/OFF, PWM or 3-position or 3-position for VAV actuator and auxiliary output DC 0...10 V
- 2 multifunctional inputs for keycard contact, external room / return air temperature (1x, QAH11. 1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- 1 input DC 0...10 V for damper position feedback, for CO2 sensor
- Operating modes: Comfort, Economy and Protection
- Modulating PI control
- Control depending on the room or the return air temperature and air quality
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Minimum and maximum limitation of air flow signal
- Output signal inversion (DC 0...10 V) as an option
- Backlit display

Application selectable:

- Single-duct system
- Single-duct system with electrical heater
- Single-duct system and radiator / floor heating
- Single-duct system with heating / cooling coil

Data sheet	N3192
Operating voltage	AC 24 V
Power consumption	2 VA
Setpoint setting range	5...40 °C
Switching differential	Heating: 0.5...6 K; Cooling: 0.5...6 K
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)
Analog inputs, number	2
Analog outputs	VAV actuator, electric heater, valve
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Digital inputs, number	1
Triac outputs	VAV actuator, valve, el. heater
	2-position, PWM, 3-position
Triac outputs, number	1
Triac output, switching voltage	24 V
Triac output, switching current	1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T348	<b>RDG405KN</b>

**Flush mount touch screen KNX room thermostat for heating (SPDT) with 2x universal input, fit for both round and square conduit boxes**

**RDD810KN**



- KNX communications
- Operating modes: Comfort, Economy and Protection
- Control output: changeover contact (SPDT)
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), window contact on/off, presence detector, fault contact, presence detector
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white
- Backlit display

Data sheet	N3175
Operating voltage	AC 230 V
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)
Analog inputs, number	2
Relay outputs	Heating: contacts, floating
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Degree of protection	IP30
Dimensions (W x H x D)	82 x 82 x 47 mm

Stock no.	Product no.
S55770-T444	<b>RDD810KN</b>

**Touch screen room thermostat with KNX communications, for heating application (for China frames)**

**RDD810KN/NF**



- KNX communications
- Operating modes: Comfort, Economy and Protection
- Control output: changeover contact (SPDT)
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), window contact on/off, presence detector, fault contact, presence detector
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white
- Backlit display
- Mounting on chinese mounting frames

Data sheet	N3175
Operating voltage	AC 230 V
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)
Analog inputs, number	2
Relay outputs	Heating: contacts, floating
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Type of fixing	Only on China frames
Degree of protection	IP30
Dimensions (W x H x D)	82 x 82 x 47 mm

Stock no.	Product no.
S55770-T336	<b>RDD810KN/NF</b>

## Thermostats

### Communicating room thermostats Conventional and heat pump - BACnet

#### RDY2000BN



#### Room thermostat RDY2000BN

Dimensions (W x H x D)  
Color

121.9 x 121.9 x 64.5 mm  
White

Stock no.

Product no.

RDY2000BN

**RDY2000BN**

#### RDY2000BN/NL



#### BACnet Commercial Thermostat No Logo

- Controls conventional systems with up to 3 stages heating and 3 stages cooling
- Controls heat pumps with 1 or 2 compressors and up to 2-stage auxiliary heat
- Backlit 5-inch LCD touch screen
- On-board temperature and humidity sensor
- Multiple configurable inputs and outputs enable advanced control strategies
- Seven-day (2- or 4-event) occupancy scheduling
- BTL listed MS/TP BACnet communication
- No Siemens logo on front panel

Operating voltage  
Power consumption

AC 24 V  $\pm$  20%, Class 2, 4A maximum  
Max. 96 VA

Stock no.

Product no.

S55770-T395

**RDY2000BN/NL**

**Flush mount touch KNX PM2.5 & CO2 & Ventilation Controls with on/off or ECM fans selectable and 2x DC 0-10 V input, fit for both round and square conduit boxes**

RDF870KN



- AC 230 V operating voltage, large, backlit display
- Display and setpoint adjustment for PM2.5 and CO2 control
- Display of room temperature, outside temperature, VOC (volatile organic compound) and RH (relative humidity)
- Support 1-/3-/4-speed On/Off fan or DC fan output
- Two multifunctional inputs for external passive and DC 0... 10 V sensors
- Operating modes: Comfort, Economy and Protection
- KNX S-Mode
- KNX commissioning via ETS or local control parameters
- KNX integration into Desigo via group (ETS) or individual addressing
- KNX integration into third-party system via group addressing (ETS)
- Mounting on recessed square 86 mm box or round 60 mm with 60 mm fixing centers and minimum 40 mm depth
- Color of housing: Ivory white (RAL 9001)

Application selectable:

- PM2.5 control only
- CO2 control only
- PM2.5 & CO2 controls (CO2 higher priority in control)
- Ventilation control

2x sensor inputs are selectable:

- 0: No function
- 1: Temperature (AI) (NTC 10k)
- 2: Temperature (AI) (0...10 V)
- 3: PM2.5 (AI) µg/m<sup>3</sup> (0...10 V)
- 4: CO2 (AI) ppm (0...10 V)
- 5: VOC (AI) % (0...10 V)
- 6: VOC (AI) mg/m<sup>3</sup> (0...10 V)
- 7: RH (AI) % (0...10 V)
- 8: Alarm input (DI)
- 9: Dummy AI (0...10 V) (RU only)

Data sheet	A6V11439454
Operating voltage	AC 230 V 230 V
Power consumption	7 VA 2.5 W
Communication	KNX S-Mode
Analog outputs	DC 0... 10 V for ECM fan output
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 46.8 mm
Color	White

Stock no.	Product no.
S55770-T407	RDF870KN



## Thermostats

### Communicating room thermostats

#### IAQ control - KNX / Modbus

##### RDF870MB



#### Flush mount touch MODBUS PM2.5 & CO2 & Ventilation Controls with on/off or ECM fans selectable and 2x DC 0-10 V input, fit for both round and square conduit boxes

- AC 230 V operating voltage, large, backlit display
- Display and setpoint adjustment for PM2.5 and CO2 control
- Display of room temperature, outside temperature, VOC (volatile organic compound) and RH (relative humidity)
- Support 1-/3-/4-speed On/Off fan or DC fan output
- Two multifunctional inputs for external passive and DC 0...10 V sensors
- Operating modes: Comfort, Economy and Protection
- RS485 Modbus RTU slave mode
- Modbus commissioning via third-party tool, e.g. Modbus scan, Modbus poll, etc
- Mounting on recessed square 86 mm box or round 60 mm with 60 mm fixing centers and minimum 40 mm depth
- Color of housing: Ivory white (RAL 9001)

RDF870MB can be configured as a room unit via DIP switches.

It provides the following additional functions:

- Setpoint adjustment and display for room temperature, VOC, RH and display of outside temperature
- Four remote digital outputs via bus and controlled by a master controller

Application selectable:

- PM2.5 control only
- CO2 control only
- PM2.5 & CO2 controls (CO2 higher priority in control)
- Ventilation control

2x sensor inputs are selectable:

- 0: No function
- 1: Temperature (AI) (NTC 10k)
- 2: Temperature (AI) (0...10 V)
- 3: PM2.5 (AI)  $\mu\text{g}/\text{m}^3$  (0...10 V)
- 4: CO2 (AI) ppm (0...10 V)
- 5: VOC (AI) % (0...10 V)
- 6: VOC (AI)  $\text{mg}/\text{m}^3$  (0...10 V)
- 7: RH (AI) % (0...10 V)
- 8: Alarm input (DI)
- 9: Dummy AI (0...10 V) (RU only)

Data sheet	A6V11439454
Operating voltage	AC 230 V
Power consumption	6 VA
	2.1 W
Communication	RS485 Modbus
Analog outputs	DC 0...10 V for ECM fan output
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 47 mm
Color	White

Stock no.	Product no.
S55770-T408	RDF870MB



**Flush mount touch KNX room thermostat for heating applications and/or VRF Room Unit with KNX Interface to VRF Gateway, fit for square conduit boxes**

**RDF880KN**



- Large display, touch screen with backlight
- VRF HMI: temperature setpoint, fan speed and operating mode selections
- 2-position (ON/OFF) temperature control with potential free output for UFH via build-in / external temperature sensor
- Display room temperature value ( ↓ C) and relative humidity value (% r.h.) via a build-in temperature and humidity sensor
- One setpoint adjustment for both VRF HMI and UFH controls
- Fan auto and manual speed setting from 1 up to 7 speed
- Operating mode selection for VRF: AUTO, COOL, HEAT, FAN and DRY
- Operating mode selection for UFH: Comfort and Protection
- Economy operating mode for both VRF and UFH to save energy
- 2 multifunctional inputs (see details in functional descriptions)
- Adjustable control parameters for alternative settings
- KNX bus communications via S-mode
- Integration to VRF system via S-mode and third party gateways
- Commissioning via ETS download
- Wizard function for fast commissioning via HMI
- Alarm / Error information
- AC 230 V operating voltage
- Mounting on round box, with min 60 mm diameter or recessed square 86 mm box with 60.3 mm fixing centers and min 40 mm depth

User Application selections via dipswitches:

1. Under Floor Heating only (UFH)
2. VRF HMI only (note: interface to VRF indoor unit via a third party VRF/KNX gateway)
3. Both UFH and VRF HMI

When VRF HMI is selected, it covers most daily VRF operations and the following parameters can be set to fit different VRF brands:

- Setpoint adjustment: - maximum / minimum limitations
- Fan speed adjustment: - auto / manual speeds (up to 7 speeds)
- Operating mode selection: - AUTO, HEAT, COOL, FAN and DRY
- Economy mode: - energy saving
- Fan swing adjustment (optional): - auto swing or fix at any position (10)
- Delay off timer (optional): - allow up to 23 hours operations before off

Data sheet	A6V11282546
Operating voltage	AC 230 V
Power consumption	6 VA
Communication	Bus: KNX (S-mode with Synco 700)
Relay outputs	Heating: contacts, floating
Dimensions (W x H x D)	86 x 86 x 47 mm

Stock no.	Product no.
S55770-T415	<b>RDF880KN</b>

## Thermostats

### Communicating room thermostats

#### Room unit – KNX

##### UP 205/21



##### Touch Control TC5, 5 inch touch panel, black

- Aluminium and glass housing
- Capacitive touch colour display 5", 480 x 854 pixels
- LED colour light strip as orientation light, respectively to signal alarms
- Integrated room temperature sensor
- Micro SD card reader for on-site customization of wallpaper, screen saver and icons
- Connection to external power supply DC 24 V
- Flush mounted device for mounting in a flush wall box 60 mm Ø, for screw fixing
- Mounting plate included in gift box

Data sheet

A6V12259028

Dimensions (W x H x D)

86 x 148.8 x 11.5 mm

Stock no.

Product no.

5WG1205-2AB21

UP 205/21

**Touch Screen Flush-mount Room Thermostats with KNX Communications**

**RDF880KN/NF**



- Large display, touch screen with backlight
- VRF HMI: temperature setpoint, fan speed and operating mode selections
- 2-position (ON/OFF) temperature control with potential free output for UFH via build-in / external temperature sensor
- Display room temperature value ( ↓ C) and relative humidity value (% r.h.) via a build-in temperature and humidity sensor
- One setpoint adjustment for both VRF HMI and UFH controls
- Fan auto and manual speed setting from 1 up to 7 speed
- Operating mode selection for VRF: AUTO, COOL, HEAT, FAN and DRY
- Operating mode selection for UFH: Comfort and Protection
- Economy operating mode for both VRF and UFH to save energy
- 2 multifunctional inputs (see details in functional descriptions)
- Adjustable control parameters for alternative settings
- KNX bus communications via S-mode and LTE-mode
- Integration to VRF system via S-mode and third party gateways
- Commissioning via ETS download
- Wizard function for fast commissioning via HMI
- Alarm / Error information
- AC 230 V operating voltage
- Mounting on recessed square 86 mm box with 60.3 mm fixing centers and min 40 mm depth, requires additional mounting frame to complete installation
- Color of housing: Ivory white (RAL 9001)

- Fits DELTA arina mounting frame concept
- Additional mounting frame is required: ARG800.1

Data sheet	A6V11282546
Operating voltage	AC 230 V
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Communication	Bus: KNX (S-mode with Synco 700)
Analog inputs, number	2
Relay outputs	Heating: contacts, floating
Relay outputs, number	1
Relay output, switching voltage	230 V
Relay output, switching current	5 (2) A
Type of fixing	Only on China frames
Degree of protection	IP30
Dimensions (W x H x D)	82 x 82 x 47 mm
Color	White

Stock no.	Product no.
S55770-T398	<b>RDF880KN/NF</b>



## Thermostats

### Communicating room thermostats

#### Accessories

#### ARG70



#### Mounting plate 120 x 120 mm for 4 x 4" housing

Accessories for use with room thermostats RAA.., RAB.., RCC.., RCU.., RDD.., RDE.., RDF..

Data sheet	N3009
Dimensions (W x H x D)	120 x 120 x 6 mm

Stock no.	Product no.
BPZ:ARG70	<b>ARG70</b>

#### ARG86.3



#### Changeover cable holder for QAH11..

Changeover mounting kit for QAH11.. sensor for universal use as a strap-on sensor

Data sheet	N3009
Packaging unit	10 pieces
Warranty	2 Years

Stock no.	Product no.
BPZ:ARG86.3	<b>ARG86.3</b>

#### QAP1030/UFH



#### Cable temperature sensor PVC 4 m, NTC 3k

Data sheet	N1854
Measuring range, temperature	-20...70 °C
Sensing element, temperature	NTC 3k
Measurement accuracy	At -20...70 °C: ±0.3 K
Time constant	1.5 min to air
Protection pocket	Non
Material, protection pocket	None
Cable length	4 m

Stock no.	Product no.
S55720-S289	<b>QAP1030/UFH</b>

#### ARG70.2



#### Mounting plate 112 x 130 mm for surface wiring

Accessories for use with room thermostats RAA.., RAB.., RCC.., RCU.., RDD.., RDE.., RDF..

Data sheet	N3009
Dimensions (W x H x D)	112 x 130 x 10 mm

Stock no.	Product no.
BPZ:ARG70.2	<b>ARG70.2</b>

**Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, without connectors**

QAH11.1



For installation in fan coil units as

- a return air temperature sensor
- a changeover sensor

Packing size: 10 pcs

Data sheet	N1840
Measuring range	For fixed cable
Sensing element	NTC 3k
Measuring range, temperature	-20...70 °C
Sensing element, temperature	NTC 3k
Time constant	Air v=0 m/s: 90 s
Connection cable	2-wire Ferrules
Cable length	2.5 m
Warranty	5 Years

Stock no.	Product no.
BPZ:QAH11.1	QAH11.1

**Room temperature sensor NTC 3 kOhm**

QAA32



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Data sheet	N1747
Sensing element	NTC 3k
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC 3k
Time constant	360 s
Measurement accuracy	25 °C: ±0.3 K
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	97 × 100 × 36 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QAA32	QAA32

## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

##### RAA20U



#### Thermostat, Electric, Line Voltage, Exp Setpoint Knob, Dual Scale

Wall-mounted Electric Room Thermostat for Heating only or Cooling only applications with 24 to 277 Vac. It has an exposed setpoint knob, dual Fahrenheit/Celsius scale with a 50 to 85 degree Fahrenheit setpoint range, adjustable limit stops, and two-point control algorithm. An ARG70 Wall Plate Adapter must be used to meet UL and cUL requirements.

Data sheet	155-519P25
Dimensions (W x H x D)	150 x 117 x 65 mm

Stock no.	Product no.
BPZ:RAA20U	RAA20U

##### RDH100..

#### Room thermostat with large LCD

Mains independent, battery powered electronic room thermostat with TPI output control. The required temperature is adjusted with the large setting knob on the front of the unit.

- Easy operation by large setting knob and large display
- For heating only
- Color of housing front: signal white RAL9003
- Color of baseplate: light gray RAL7035

Battery life	1 year
Setpoint setting range	5...30 °C
Relay outputs	Change-over contact, potential-free
Relay outputs, number	1
Relay output, switching voltage	24...250 V
Dimensions (W x H x D)	120 x 90 x 26.9 mm

##### RDH100



#### Room thermostat RDH100

Mains independent, battery powered electronic room thermostat with PID output control. The required temperature is adjusted with the large setting knob on the front of the unit.

- Easy operation by large setting knob and large display
- For heating only
- Color of housing front: signal white RAL9003
- Color of baseplate: light gray RAL7035
- 2 x 1.5 V AA alkaline batteries included

Operating voltage	DC 3 V
Color	Light white

Stock no.	Product no.
S55770-T377	RDH100

**Room thermostat radio frequency set (transmitter and receiver)**

**RDH100RF/SET**

Radio frequency controller set consisting of:

RDH100RF: Electronic room thermostat with radio frequency transmitter, same controller functionality as RDH100.

Technical data:

- Transmission frequency: 433 MHz
- Dimensions (W x H x D): 90 x 120 x 26.9 mm
- Transmitter table stand
- 2 x 1.5 V AA alkaline batteries included



RCR100/433: Radio frequency receiver with operating mode indication (433 MHz),

- Switching unit with relay outputs
- Receiver override button for manual switch-on/switch-off
- Mounting adapter plate for receiver

Operating voltage

Receiver: AC 230 V, Transmitter: DC 3 V

Color

Light white

Stock no.

Product no.

S55770-T378

**RDH100RF/SET**

**Room thermostat with 24-hour time switch and large LCD**

**RDJ100..**

Mains independent, battery powered electronic room thermostat with TPI output control. The required temperature is adjusted with the large setting knob on the front of the unit.

- Easy operation by large setting knob and large display
- For heating
- 24-hour (1-day) time programming
- Color of housing front: signal white RAL9003
- Color of baseplate: light gray RAL7035

Battery life

1 year

Setpoint setting range

5...30°C

Relay outputs

Change-over contact, potential-free

Relay outputs, number

1

Relay output, switching voltage

AC 24...250 V

Dimensions (W x H x D)

120 x 90 x 26.9 mm

**Room thermostat with 24-hour time switch and large LCD**

**RDJ100**

Mains independent, time programming, battery powered electronic room thermostat with PID out control.

- With digital 24-hour time program
- Easy operation by large setting knob, large display and sliders
- Color of housing front: signal white RAL9003
- Color of baseplate: light gray RAL7035

Operating modes:

- Automatic operation with up to 2 heating periods per day
- Continuous Comfort
- Continuous Economy
- Frost Protection

Operating voltage

DC 3 V



Stock no.

Product no.

S55770-T379

**RDJ100**

## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

##### RDJ100RF/SET



#### Room thermostat radio frequency set with 24-hour time switch (transmitter and receiver)

Time programming radio frequency set consisting of room thermostat RDJ100RF (with integrated radio transmitter) and receiver unit RCR100/433. Same functionality as RDJ100.

RDJ100RF: Electronic radio frequency room temperature controller

##### Technical data:

- Transmission frequency: 433 MHz
- Dimensions (W x H x D): 90 x 120 x 26.9 mm
- Transmitter table stand
- 2 x 1.5 V AA alkaline batteries included

RCR100/433: Radio frequency receiver with operating mode indication (433 MHz)

- Switching unit with relay outputs
- Receiver override button for manual switch-on/switch-off
- Mounting adapter plate for receiver

Operating voltage

Receiver: AC 230 V, Transmitter: DC 3 V

Stock no.

Product no.

S55770-T380

**RDJ100RF/SET**



**Room thermostats with LCD**

**RDD100..**

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation and energy saving mode
- Automatic operating mode changeover as an option
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	5...35 °C
Switching differential	1 K
Relay outputs	Change-over contact, potential-free
Relay output, switching current	5 (2) A
Relay output, switching voltage	AC 24...230 V
Degree of protection	IP30

**Room thermostat with LCD, AC 230 V**

**RDD100**

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation and energy saving mode
- Automatic operating mode changeover as an option
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Data sheet	N1420
Operating voltage	AC 230 V
Dimensions (W x H x D)	85 x 106 x 21.5 mm
Color	Light white



Stock no.	Product no.
S55770-T275	<b>RDD100</b>

**Room thermostat with LCD, battery**

**RDD100.1**

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation and energy saving mode
- Automatic operating mode changeover as an option
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Data sheet	N1420
Operating voltage	DC 3 V
Voltage supply	Micro (2xAAA)
Dimensions (W x H x D)	85 x 106 x 21.5 mm
Color	Light white



Stock no.	Product no.
S55770-T276	<b>RDD100.1</b>

**Room thermostats with LCD**

**RDD100.1-XA**

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation and energy saving mode
- Automatic operating mode changeover as an option
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)



Stock no.	Product no.
S55770-T337	<b>RDD100.1-XA</b>

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## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

#### RDE100..

#### Room thermostats with auto time switch and LCD

- 2-position control with on/off output for heating
- Operating modes: Normal and energy-saving mode
- Auto time switch (individual day, 7 day or 5-2 day) and manual operation
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	5...35 °C
Switching differential	1 K
Degree of protection	IP30
Dimensions (W x H x D)	85 x 127 x 21.5 mm

#### RDE100

#### Room thermostat with auto time switch and LCD, AC 230 V



- 2-position control with on/off output for heating
- Operating modes: Normal and energy-saving mode
- Auto time switch (individual day, 7 day or 5-2 day) and manual operation
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Data sheet	N1422
Operating voltage	AC 230 V
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact Potential-free

Stock no. Product no.

S55770-T278 RDE100

#### RDE100.1

#### Room thermostat with auto time switch and LCD, battery



- 2-position control with on/off output for heating
- Operating modes: Normal and energy-saving mode
- Auto time switch (individual day, 7 day or 5-2 day) and manual operation
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Data sheet	N1422
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact Potential-free

Stock no. Product no.

S55770-T279 RDE100.1

**Room thermostat with auto time switch and LCD, battery, independent DHW**

**RDE100.1DHW**

- 2-position control with ON / OFF output for heating
- Independent ON / OFF control of DHW
- Operating modes: Auto, normal operation, energy saving and frost protection
- Auto time switch (individual day, 7 day or 5-2 day) and manual operation

Data sheet	N1423
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact Potential-free



Stock no.	Product no.
S55770-T280	<b>RDE100.1DHW</b>

**Room thermostats with auto time switch and LCD**

**RDE100.1-XA**

- 2-position control with on/off output for heating
- Operating modes: Normal and energy-saving mode
- Auto time switch (individual day, 7 day or 5-2 day) and manual operation
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact, potential-free



Stock no.	Product no.
S55770-T338	<b>RDE100.1-XA</b>

**Wireless room thermostat with LCD**

**RDD100..RF..**

Battery-powered DC 3 V thermostat, no time switch

- 2-position control with on / off control output
- Operating modes: Comfort, Economy and Protection mode
- Adjustable commissioning and control parameters
- Color of housing front: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	5...35 °C
Switching differential	1 K
Radio frequency	433 MHz
Degree of protection	IP30
Dimensions (W x H x D)	106 x 85 x 22 mm

**Wireless room thermostat with LCD**

**RDD100.1RF**

Battery-powered DC 3 V thermostat, no time switch

Data sheet	CB1N1424
Operating voltage	DC 3 V
Voltage supply	Micro (2xAAA)
Color	Light white



Stock no.	Product no.
S55770-T319	<b>RDD100.1RF</b>

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## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

RDE100..RF..

#### Wireless room thermostat with auto timer

Battery-powered DC 3 V thermostat, with time switch, optional external input

- 2-position control with on / off output for heating
- Operating modes: Comfort, Economy, Auto timer and Protection mode
- Auto time switch
- Adjustable commissioning and control parameters
- Multifunction input for external floor sensor, keycard contact, etc.
- Color of housing front: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	5..35 °C
Switching differential	1 K
Radio frequency	433 MHz
Degree of protection	IP30

RDE100.1RF

#### Wireless room thermostat with auto timer

Battery-powered DC 3 V thermostat, with time switch, optional external input



Data sheet	CB1N1425
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	230 V
Dimensions (W x H x D)	127 x 85 x 22 mm

Stock no.	Product no.
S55770-T320	<b>RDE100.1RF</b>

RDE100.1RFS

#### Wireless room thermostat with auto timer, incl. receiver

Battery-powered DC 3V thermostat with mains-powered AC 230 V receiver, with time switch, optional external input



Data sheet	CB1N1425
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	8 (2) A
Relay outputs	Change-over contact Potential-free
Dimensions (W x H x D)	127 x 85 x 22 mm

Stock no.	Product no.
S55770-T282	<b>RDE100.1RFS</b>

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**Wireless room thermostat with auto timer**

**RDE100.1RFS-XA**

Battery-powered DC 3 V thermostat, with time switch, optional external input

- 2-position control with on / off output for heating
- Operating modes: Comfort, Economy, Auto timer and Protection mode
- Auto time switch
- Adjustable commissioning and control parameters
- Multifunction input for external floor sensor, keycard contact, etc.
- Color of housing front: signal white RAL9003 (NCS S 0502-G)



Dimensions (W x H x D) 127 x 85 x 22 mm

Stock no.	Product no.
S55770-T346	<b>RDE100.1RFS-XA</b>

**Wireless accessory for RDD/E100**

**Wireless Multizone Receiver**

**RDE-MZ6**

Mains-powered AC 230 V multizone receiver

Data sheet	CB1N1428
Operating voltage	AC 230 V
Power consumption	4 VA
Relay outputs	Change-over contact Potential-free
Relay outputs, number	6
Relay output, switching voltage	230 V
Relay output, switching current	8 (2) A
Radio frequency	433 MHz
Type of fixing	DIN rail wall mounting
Degree of protection	IP30
Dimensions (W x H x D)	280 x 76 x 36.5 mm
Color	Light white



Stock no.	Product no.
S55770-T285	<b>RDE-MZ6</b>



## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

##### RAV11.1



##### Room thermostat with 24-hour time switch

- Mains-independent, electronic PID controller with 2-position output, battery-powered
- With analog 24-hour time switch
- Self-learning 2-position controller with PID control (patented)
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)
- Operating modes:
  - 24-hour mode with heating periods according to the analog time switch
  - Continuous Comfort mode
  - Continuous Economy mode
  - Standby with frost protection

Operating voltage	DC 3 V
Voltage supply	Mignon (2xAA)
Setpoint setting range	5...30 °C
Relay outputs	Normally open contact Potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	8 (3.5) A
Degree of protection	IP30
Dimensions (W x H x D)	128 x 104 x 37 mm

Stock no.	Product no.
BPZ:RAV11.1	RAV11.1

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##### RDD810



##### Flush mount touch screen room thermostat for heating (SPDT) with 2x universal input, fit for both round and square conduit boxes

- Operating modes: Comfort, Economy and Protection
- Control output: changeover contact (SPDT)
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), window contact on/off, presence detector, fault contact, presence detector
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white
- Backlit display

Operating voltage	AC 230 V
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Analog inputs, number	2
Relay outputs	Heating: contacts, floating
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Degree of protection	IP30
Dimensions (W x H x D)	82 x 82 x 47 mm

Stock no.	Product no.
S55770-T443	RDD810

### Flush-mount room thermostats with auto timer

RDE410/EH



- Operating voltage AC 230 V
- 2-position control with On/Off control output
- Input for cable temperature sensor NTC 3k (QAP1030/UFH) for the floor
- Floor temperature limitation with cable temperature sensor
- Operating modes: Comfort, Energy Saving and Frost Protection
- Minimum and maximum setpoint setting range
- Backlit white LCD
- Protection class IP31, suitable for installation in wet rooms
- Auto Timer with 8 programmable time switches

Data sheet	N1440
Operating voltage	AC 230 V
Power consumption	4 VA
Setpoint setting range	5...40 °C
Digital output, switching voltage	230 V
Digital output, switching current	16 A
Degree of protection	IP31
Dimensions (W x H x D)	86 x 86 x 50 mm

Stock no.	Product no.
S55770-T333	RDE410/EH

### Standalone touch screen room thermostat for heating application (for China frames)

RDD810/NF



- Operating modes: Comfort, Economy and Protection
- Control output: changeover contact (SPDT)
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), window contact on/off, presence detector, fault contact, presence detector
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white
- Backlit display
- Mounting on chinese mounting frames

Operating voltage	AC 230 V
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Analog inputs, number	2
Relay outputs	Heating: contacts, floating
Relay outputs, number	1
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (2) A
Type of fixing	Only on China frames
Degree of protection	IP30
Dimensions (W x H x D)	82 x 82 x 47 mm

Stock no.	Product no.
S55770-T406	RDD810/NF

### Accessories for RDD310..

Product Title	Data sheet	Stock no.	Product no.
Cable temperature sensor PVC 4 m, NTC 3k	N1854	S55720-S289	QAP1030/UFH

## Thermostats

### Standalone room thermostats Heating and/or cooling

#### RDD2.. Flush Mount Flush-mount room thermostat

##### Range overview RDD2.. Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Flush mount room thermostat for under floor heating (SPDT), fit for square conduit boxes	AC 230	White	S55770-T440	<b>RDD210</b>

#### RDD3.. Flush Mount Flush mount room thermostat for heating (SPDT), fit for square conduit boxes



##### Range overview RDD3.. Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Flush-mount room thermostat	AC 230		S55770-T296	<b>RDD310/EH</b>
Flush mount room thermostat for heating (SPDT) with no input, fit for square conduit boxes	AC 230	White	S55770-T358	<b>RDD310/MM</b>

#### RDD5.. Flush Mount Flush mount room thermostat for heating (SPDT), fit for square conduit boxes



##### Range overview RDD5..Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Room thermostats in bulk pack of 20 units, white	AC 230	White	S55770-T425	<b>RDD510/BP</b>
Flush mount room thermostat for heating (SPDT), fit for square conduit boxes in bulk pack of 20 units, silver	AC 230	Silver	S55770-T432	<b>RDD510/BP.VS</b>

#### RDF270.. Flush Mount

Operating voltage [V]	Color	Stock no.	Product no.
AC 230	White	S55770-T441	<b>RDF270</b>



**RDF280.. MB Flush Mount**

Flush mount room thermostat for VRF Room Unit with MODBUS Interface to VRF Gateway, fit for square conduit boxes

**Range overview RDF280..MB Flush Mount**

Operating voltage [V]	Color	Stock no.	Product no.
AC 230	White	S55770-T442	<b>RDF280</b>

**Electromechanical room thermostats**

**RAA..1..**

2-position controller for controlling the room temperature. The required temperature is adjusted with the setting knob on the front of the unit.

- Gas-filled diaphragm
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	8...30 °C
Switching differential	≤1 K
Type of fixing	Wall mouting with screws
Degree of protection	IP30

**Electromechanical room thermostat, public sector model**

- Heating only or cooling only
- No operating elements on the front of the unit

Data sheet	N3561
Dimensions (W x H x D)	96 x 97 x 36 mm
Color	Light white



Stock no.	Product no.
S55770-T219	<b>RAA11</b>

**Electromechanical room thermostat, basic model**

- Heating only or cooling only
- Setpoint adjustment with knob

Data sheet	N3562
Dimensions (W x H x D)	96 x 97 x 35.3 mm
Color	Light white



Stock no.	Product no.
S55770-T220	<b>RAA21</b>

## Thermostats

### Standalone room thermostats

#### Heating and/or cooling

##### RAA31



##### Electromechanical room thermostat with on/off switch

- Heating only or cooling only
- Setpoint adjustment with knob
- On / off switch

Data sheet	N3563
Dimensions (W x H x D)	96 x 97 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T221	RAA31

##### RAA31.16



##### Electromechanical room thermostat with on/off switch and LED

Same functionality as RAA31 plus mode indication (red LED, needed AC 230 V)

Data sheet	N3563
Power consumption	0.5 VA
Dimensions (W x H x D)	98 x 97 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T222	RAA31.16

##### RAA31.26



##### Electromechanical room thermostat with on/off switch and LED, auxillary switch and LED

Same functionality as RAA31 plus 2 mode indications (red LED, needed AC 230 V) and additional independent on / off switch.

Data sheet	N3563
Power consumption	0.5 VA
Dimensions (W x H x D)	99 x 110 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T223	RAA31.26

##### RAA41



##### Electromechanical room thermostat with selector heating/off/cooling, 1 output

- Heating or cooling
- Setpoint adjustment with knob
- Switch for cooling / off / heating

Data sheet	N3564
Dimensions (W x H x D)	98 x 97 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T224	RAA41

#### Accessories for RAA..1..

Product Title	Data sheet	Stock no.	Product no.
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	ARG70
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	ARG70.2

**Universal room thermostat for heating and cooling systems**

RCU.. Universal

- Electronic room temperature controller for heating and cooling operation
- PI control
- Operating mode changeover input for remote control
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	8...30 °C
Digital inputs, number	1
Digital input, contact query	3...6 mA
	DC 6...15 V
Digital input, application	Night setback
Type of fixing	Wall mounting with screw
Degree of protection	IP30
Dimensions (W x H x D)	97 x 114 x 43 mm

**Universal room thermostat for 4-pipe systems, AC 230 V, positioning signal 2 pt or PWM**

- Heating and cooling sequence
- 2nd heating sequence
- Selectable P-band (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Selectable dead zone (2 K or 5 K)
- Frost protection function

Data sheet	N3041
Operating voltage	AC 230 V
Power consumption	6 VA
Triac outputs	PWM or ON/OFF
Triac output, switching voltage	230 V
Triac output, switching current	0.02...1 A



Stock no.	Product no.
BPZ:RCU10	RCU10

**Universal room thermostat for 4-pipe systems, AC 24 V, positioning signal 2 pt or PWM**

Same functionality and technical data as RCU10

In addition:

- Optional control depending on the room or return air temperature (with sensor QAH11.1)

Data sheet	N3048
Operating voltage	AC 24 V
Power consumption	6 VA
Triac outputs	PWM or ON/OFF
Triac output, switching voltage	24 V
Triac output, switching current	0.02...1 A



Stock no.	Product no.
BPZ:RCU15	RCU15

**Accessories for RCU..**

Product Title	Data sheet	Stock no.	Product no.
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	<b>ARG70</b>
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	<b>ARG70.2</b>

**Standalone room thermostats**  
**Heating and/or cooling**

**REV..**



**Electronic room thermostat with time switch, LCD and selection slider**

Mains-independent, battery-operated room temperature controllers featuring user-friendly operation, easy-to-read display and large numbers

- Self-learning two-position controller with PID response (REV.., REV13.., REV24..)
- 3-position controller with PI response (for REV34..)
- Remote operation (REV.., REV13.., REV24, REV34..)
- Override button
- Sensor calibration and reset function
- Frost protection function and minimum limitation of setpoint
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: grey RAL7038

Operating mode selection:

- Automatic modes with time switch program
- Automatic mode with one or two heating phases (REV13..)
- Automatic mode with up to three comfort phases (REV.., REV24.., REV34..)
- Exception day mode with up to three comfort phases (REV.., REV24.., REV34..)
- Continuous comfort mode
- Continuous energy saving mode
- Frost protection

Operating voltage	DC 3 V
Battery life	2 years
Setpoint setting range	3...35 °C
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	0.1...6 (2.5) A
	For RF versions: 0.2...16 (2) A
Degree of protection	IP20

**Range overview REV..**

Product Title	Dimensions (WxHxD) [mm]	Data sheet	Stock no.	Product no.
Room thermostat with 2-point control and 24-hour time switch, batteries, only heating	130 x 94 x 30	N2201	BPZ:REV13	<b>REV13</b>
24-hour room thermostat	130x94x30	N2201	BPZ:REV13-XA	<b>REV13-XA</b>
Room thermostat with 2-point control and 7-day time switch, batteries, heating and cooling	134.5 x 94 x 30	N2205	BPZ:REV24	<b>REV24</b>
Room thermostat with 2-point control and 7-day time switch, receiver with relay outputs (RF set), batteries, heating or cooling	134.5 x 94 x 30	N2206	BPZ:REV24RF/SET	<b>REV24RF/SET</b>
Electronic room thermostat with time switch, LCD and selection slider	134.5x94x30	N2206	BPZ:REV24RF/SET-XA	<b>REV24RF/SET-XA</b>
7-day room thermostat	134.5x94x30	N2205	BPZ:REV24-XA	<b>REV24-XA</b>
Room thermostat with 3-position control and 7-day time switch, batteries, heating and cooling	134.5 x 94 x 30	N2208	BPZ:REV34-XA	<b>REV34-XA</b>

### Application examples REV..

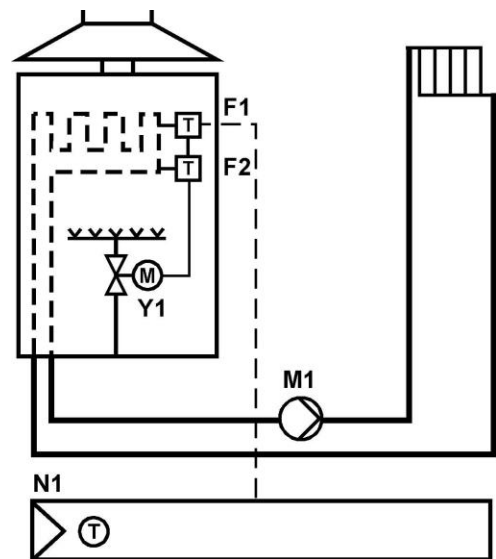
These are only a few examples of many applications that can be done with the thermostat REV...  
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the REV.. data sheet..

#### Room temperature controller with 7-day time switch, acting on on/off device

REV24

HAA001 EV2 HQ

- 7-day time switch programme
- Three different 24-hour operating modes
- Continuous normal temperature mode
- Continuous economy temperature mode
- Standby with frost protection mode
- Holiday mode
- Override mode button
- Sensor calibration
- Installer parameter setting for pump kick and cooling
- Installer parameter setting for optimum start control in the morning
- Installer parameter setting for minimum limitation of set point
- Digital user interface
- Installer choice of algorithm: PID self learning; PID 12; PID 6; or 2-point

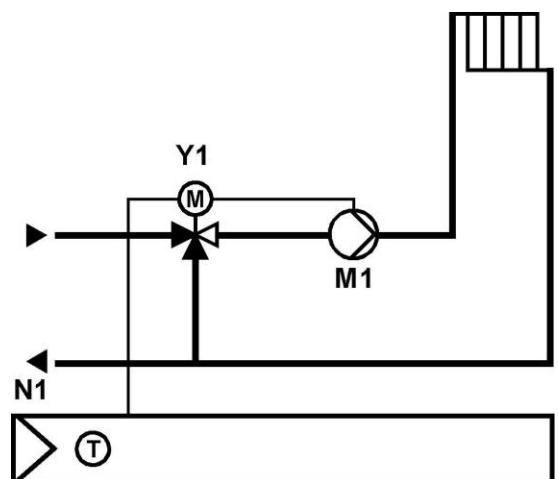


#### Room temperature controller with 7-day time switch, acting on 3-position valve actuator

REV34

H0C002 EV3 HQ

- 3-position controller with PI control
- 7-day time switch programme
- Three different 24-hour operating modes
- Continuous comfort temperature mode
- Continuous economy temperature mode
- Standby with frost protection mode
- Holiday mode
- Override mode button
- Digital user interface
- Sensor calibration
- Installer parameter setting for optimum start control in the morning
- Installer parameter setting for minimum limitation of set point
- Installer parameter setting for room size and heating capacity



5

## Thermostats

### Standalone room thermostats

#### Fan coils

##### RAB..1..

##### Electromechanical room thermostats for fan coils

Electromechanical room temperature controllers for fan coil for heating and/or cooling applications. Manual three-speed fan control. The required room temperature is adjusted with the setpoint knob on the front of the unit.

- Gas-filled diaphragm
- 2-position control
- Color of housing front and baseplate: signal white RAL9003 (NCS S 0502-G)

Setpoint setting range	8...30 °C
Switching differential	≤1 K
Switching voltage	AC 24...250 V
Switching current	0.2...6 (2) A
Degree of protection	IP30

##### RAB11



##### Electromechanical room thermostat for 2-pipe fan coils, selector heating/cooling

- Heating or cooling applications
- Selector for heating or cooling mode
- Selector for manual 3-speed fan operation
- Manual fan operation or automatic fan operation parallel with the valve can be configured inside the unit

Data sheet	N3015
Operating voltage	AC 230 V
Dimensions (W x H x D)	99 x 110 x 35.3 mm

Stock no. Product no.

S55770-T225 **RAB11**

##### RAB11.1



##### Electromechanical room thermostat for 2-pipe fan coils, selector heating/cooling/fan only

Same functionality and technical data as RAB11. Additional selector position for ventilation (heating and cooling inactive).

Data sheet	N3015
Operating voltage	AC 230 V
Dimensions (W x H x D)	99 x 110 x 35.3 mm

Stock no. Product no.

S55770-T226 **RAB11.1**

**Electromechanical room thermostat for 2-pipe fan coils, basic model**

**RAB21**

- Heating or cooling applications
- Selector for manual 3-speed fan operation
- Changeover function, heating or cooling (with external automatic aquastat)
- Manual fan operation or automatic fan operation parallel with cooling / heating mode can be configured inside the unit



Data sheet	N3016
Operating voltage	AC 230 V
Dimensions (W x H x D)	99 x 110 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T227	<b>RAB21</b>

**Electromechanical room thermostat for 4-pipe fan coils, selector heating/cooling**

**RAB31**

- Heating or cooling applications
- Selector for heating or cooling mode
- Selector for 3-speed fan operation
- Manual fan operation or automatic fan operation parallel with heating / cooling mode (depending on the selector's position) can be configured inside the unit



Data sheet	N3017
Operating voltage	AC 230 V
Dimensions (W x H x D)	99 x 110 x 35.3 mm
Color	Light white

Stock no.	Product no.
S55770-T229	<b>RAB31</b>

**Electromechanical room thermostat for 4-pipe fan coils, selector heating/cooling/fan only**

**RAB31.1**

Same functionality and technical data as RAB31. Additional selector position for ventilation (heating and cooling inactive).

Data sheet	N3017
Operating voltage	AC 230 V
Dimensions (W x H x D)	99 x 110 x 35.3 mm
Color	Light white



Stock no.	Product no.
S55770-T230	<b>RAB31.1</b>

**Fan speed switch, 3-stage**

**RAB91**

Selector for 3-speed fan operation

Data sheet	N3018
Operating voltage	AC 230 V
Dimensions (W x H x D)	96 x 97 x 36 mm



Stock no.	Product no.
S55770-T231	<b>RAB91</b>

## Thermostats

### Standalone room thermostats

#### Fan coils

RCC..

#### Electronic room thermostats for fan coils

- For heating and cooling applications
- Operating mode selector
- LEDs for indicating the operating state
- Setting knob for room temperature adjustment
- External operating mode changeover contact
- Various operating modes (normal and energy saving mode, etc.)

Setpoint setting range 8...30 °C  
Degree of protection IP30

RCC10



#### Room thermostat for 2-pipe fan coils, AC 230 V, positioning signal 2 pt, return air sensor

- Heating or cooling sequence
- Automatic heating/cooling changeover (with sensor QAH11.1)
- Operating mode changeover input for remote control
- Outputs for 3-speed fan (0 / I / II / III)
- 2-position control
- Selectable switching differential (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Input for return temperature sensor (QAH11.1)
- Frost protection mode

Data sheet	N3021
Operating voltage	AC 230 V
Relay output, switching voltage	230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A
Relay outputs	Fan: 3-position switch with normally open contacts Valve: Change-over contact
Dimensions (W x H x D)	Non floating 97 x 114 x 43 mm

Stock no. Product no.

BPZ:RCC10

RCC10



RCC20



**Room thermostat for 2-pipe fan coils, AC 230 V, positioning signal 2 pt, return air sensor, el. heater**

- Heating or cooling sequence
- Automatic heating/cooling changeover (with sensor QAH11.1)
- Operating mode changeover input for remote control
- Output for electrical heater
- 2-position control
- Selectable switching differential (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Selectable dead zone (2 K or 5 K)
- Input for return air temperature sensor (QAH11.1)
- Frost protection mode
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3022
Operating voltage	AC 230 V
Relay output, switching voltage	230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A Electric heater: 0.1...5.4 A
Relay outputs	Fan: 3-position switch with normally open contacts Valve: Normally open contact Electric heater: Normally open contact Non floating
Dimensions (W x H x D)	97 x 114 x 43 mm

Stock no.	Product no.
BPZ:RCC20	RCC20

RCC30



**Room thermostat for 4-pipe fan coils, AC 230 V, positioning signal 2pt, return air sensor**

- Heating and cooling sequence
- Operating mode changeover input for remote control
- 2-position control
- Selectable switching differential (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Input for return air temperature sensor (QAH11.1)
- Frost protection mode
- Selectable dead zone (2 K or 5 K)
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3023
Operating voltage	AC 230 V
Relay output, switching voltage	230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A
Relay outputs	Fan: 3-position switch with normally open contacts Valve: Normally open contact Non floating
Dimensions (W x H x D)	96.6 x 114.15 x 42.8 mm

Stock no.	Product no.
BPZ:RCC30	RCC30

**Accessories for RAB.. / RCC..**

Product Title	Data sheet	Stock no.	Product no.
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	<b>ARG70</b>
Changeover cable holder for QAH11..	N3009	BPZ:ARG86.3	<b>ARG86.3</b>
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	<b>ARG70.2</b>
Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, without connectors	N1840	BPZ:QAH11.1	<b>QAH11.1</b>

## Thermostats

### Standalone room thermostats

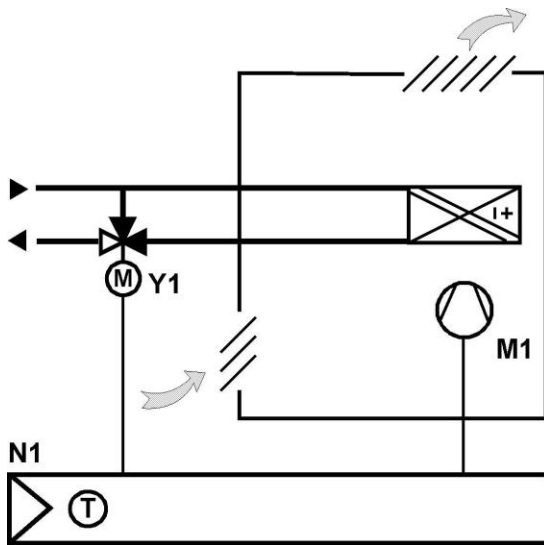
#### Fan coils

#### Application examples RAB..

These are only a few examples of many applications that can be done with the thermostat RAB...  
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RAB.. data sheet.

#### RAB11

TAAE01 AB1 HQ

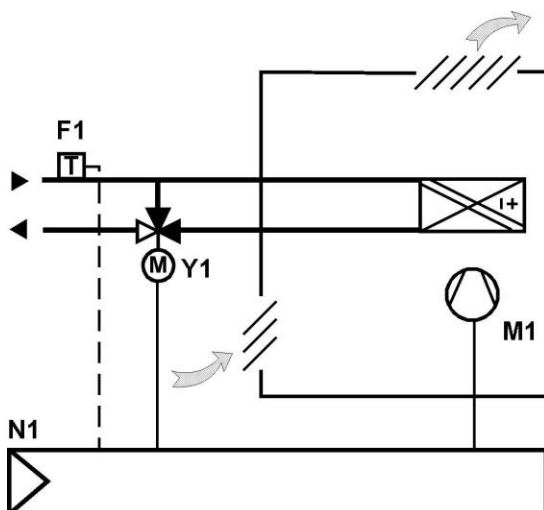


#### 2-pipe fan coil, manual heating / cooling changeover

- 2-position control algorithm for heating or cooling systems
- Setting range of setpoint knob can be limited
- Operating mode selector for heating and cooling
- 4-position fan speed selector (I/II/III/off)

#### RAB21

TAAE01 AB2 HQ



#### 2-pipe fan coil, automatic heating / cooling changeover

- 2-position control for heating or cooling systems
- Setting range of setpoint knob can be limited
- 4-position fan speed selector (I/II/III/off)
- Heating/cooling changeover (aquastat)

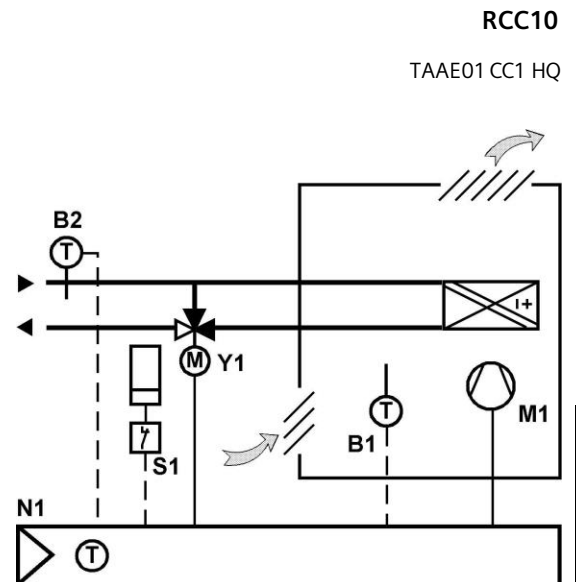
## Application examples RCC..

These are only a few examples of many applications that can be done with the thermostat RCC...

More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RCC.. data sheet.

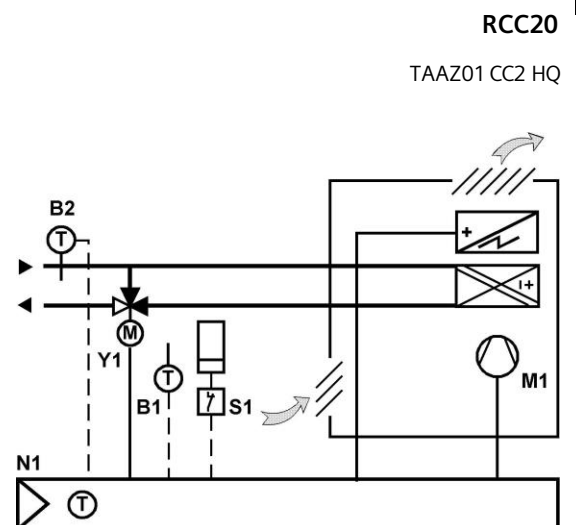
### 2-pipe fan coil, automatic heating / cooling changeover on/off output

- 2-position control algorithm for heating or cooling systems
- Output for ON/OFF valve actuator
- 4-position fan speed selector (I/II/III/standby)
- Status LED for heating, cooling and fan
- Setting range of setpoint knob can be limited
- Parameter setting by installer for: Fan control, operating mode changeover operating mode switch condition, frost protection, switching differential for heating or cooling
- Automatic heating/cooling changeover with external temperature sensor (QAH11.1)
- Operating mode changeover for remote control with external switch
- Temperature control according to integrated sensor or external temperature sensor (QAH11.1 or QAA32)



### 2-pipe fan coil, automatic heating / cooling changeover and electrical heater

- 2-position control algorithm for heating or cooling systems
- Outputs for ON/OFF valve actuator and electrical heater
- 4-position fan speed selector (I/II/III/standby)
- Status LED for heating, cooling and fan
- Setting range of setpoint knob can be limited
- Parameter setting by installer for: Fan control, operating mode changeover operating mode switch condition, frost protection, switching differential for heating or cooling, dead zone, setpoint differential, operation of electrical heater in cooling or heating mode
- Automatic heating/cooling changeover with external temperature sensor (QAH11.1)
- Operating mode changeover for remote control with external switch
- Temperature control according to integrated sensor or external temperature sensor (QAH11.1 or QAA32)



**RDG1.. Room thermostats for fan coil units, universal applications and heat pump applications**

Data sheet	N3181
Setpoint setting range	5...40 °C
Type of fixing	Wall mounting with screws
Degree of protection	IP30

**RDG100 Room thermostat, AC 230 V, for fan coil units and universal applications**



- Operating modes: Comfort, Energy Saving and Protection
- 2-position, 3-position or PWM control outputs
- Automatic or manual fan speed
- 3 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 4-pipe system with electrical heater
- 2-stage heating or cooling system

Data sheet	N3181
Operating voltage	AC 230 V
Relay outputs, number	3
Relay outputs	Fan: 1- or 3-speed
Relay output, switching voltage	230 V
Relay output, switching current	5 (4) A
Triac outputs, number	3
Triac outputs	Valve, el. heater
Triac output, switching voltage	2-position, PWM, 3-position
Triac output, switching current	230 V
Switching differential	1 A
Analog inputs, number	Heating: 0.5... 6 K; Cooling: 0.5... 6 K
Digital inputs, number	2
Dimensions (W x H x D)	1
	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T158	<b>RDG100</b>

**Room thermostat, AC 230 V, for fan coil units and heat pump applications**

**RDG110**

- Operating modes: Comfort, Energy Saving and Protection
- 2-position control outputs
- Automatic or manual fan speed
- 3 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display



Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 2-stage heating or cooling system

Data sheet	N3181
Operating voltage	AC 230 V
Relay outputs, number	5
Relay outputs	Valve, compressor or el. heater: 2 outputs (SPDT), 2-position Fan: 1- or 3-speed
Relay output, switching voltage	230 V
Relay output, switching current	Valve, compressor or el. heater: 5 (3) A Fan: 5 (4) A
Switching differential	Heating: 0.5...6 K; Cooling: 0.5...6 K
Analog inputs, number	2
Digital inputs, number	1
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T160	<b>RDG110</b>

RDG1..0T..

**Room thermostat for fan coil units and universal applications, 7-day time switch**

Data sheet	N3181
Setpoint setting range	5...40 °C
Type of fixing	Wall mounting with screws
Degree of protection	IP30

RDG100T



**Room thermostat, AC 230 V, for fan coil units and universal applications, 7-day time switch, vertical**

- Operating modes: Auto timer, Comfort, Energy Saving and Protection
- Auto Timer mode with 8 programmable timers
- 2-position, 3-position or PWM control outputs
- Automatic or manual fan speed for 1-speed or 3-speed fan
- 3 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Infrared remote control receiver
- Backlit display
- Auto timer can be disabled

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 4-pipe system with electrical heater
- 2-stage heating or cooling system

Data sheet	N3181
Operating voltage	AC 230 V
Switching differential	Heating: 0.5...6 K; Cooling: 0.5...6 K
Analog inputs, number	2
Analog input, signal	NTC 3k
Relay outputs, number	Switch
Relay outputs	3
Relay output, switching voltage	Fan: 1- or 3-speed
Relay output, switching current	230 V
Triac outputs, number	5 (4) A
Triac output, switching current	3
Triac outputs	1 A
Triac output, switching voltage	Valve, el. heater
Dimensions (W x H x D)	2-position, PWM, 3-position
	230 V
	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T159	RDG100T

RDG160T



**Room thermostat, AC 24 V, for fan coil units (3-speed or ECM fan), universal applications and heat pump applications. 7-day time switch. Outputs DC 0..10V or ON/OFF**

- Operating modes: Auto timer, Comfort, Energy Saving and Protection
- Auto Timer mode with 8 programmable timers
- 2-position or DC 0...10V control outputs
- ECM fan or 3-speed fan outputs
- Automatic or manual fan speed
- 3 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, supply air temperature sensor
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Infrared remote control receiver
- Backlit display
- Auto timer can be disabled

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 2-stage heating or cooling system

Data sheet	N3181
Operating voltage	AC/DC 24 V DC 24 V
Switching differential	Heating: 0.5...6 K; Cooling: 0.5...6 K
Analog inputs, number	2
Analog input, signal	NTC 3k Switch
Relay outputs, number	3
Relay outputs	Fan: 1- or 3-speed Valve: Normally open contact Electric heater: Normally open contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (4)A
Analog outputs	Valve, el. heater: 2 Fan: 1 (ECM)
Analog output, signal	DC 0...10 V
Analog output, current	Valve, el. heater: Max. ±1 mA Valve: 1 mA
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T343	<b>RDG160T</b>

RDF..

Room thermostat

- Electronic room temperature controller with LCD for fan coil units for compressors in DX-type equipment
- For heating and/or cooling applications
- ON/OFF
- Operating mode changeover input for remote control
- Various operating modes (normal, energy saving and stand-by)
- Outputs for 3-speed fan
- Selectable installation and control parameters
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Operating voltage	AC 230 V
Setpoint setting range	5..40 °C
Relay outputs	Fan: N.O. contacts, non-floating Valve: change-over contact, non-floating
Relay output, switching voltage	AC 230 V
Relay output, switching current	4 (2) A
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 39 mm

RDF110



Room thermostat for 2-pipe fan coils or DX-type equipment, return air temperature sensor

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Sensor input either for automatic heating / cooling changeover or return air temperature (with sensor QAH11.1)
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby
- Operating mode changeover input for remote control

Data sheet	N3057
Degree of protection	IP30
Dimensions (W x H x D)	102 x 128 x 30 mm

Stock no.	Product no.
BPZ:RDF110	RDF110

RDF110.2



Room thermostat for 2-pipe fan coils or DX-type equipment

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Manual heating/Cooling change-over
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby

Data sheet	N3057
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Stock no.	Product no.
BPZ:RDF110.2	RDF110.2



### Accessories for RDG.. / RDF..

Product Title	Data sheet	Stock no.	Product no.
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	<b>ARG70.2</b>
Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, without connectors	N1840	BPZ:QAH11.1	<b>QAH11.1</b>
Infrared Remote Control for room thermostats	N3060	S55770-T166	<b>IRA211</b>

### Touch screen room thermostat for 2-/4- pipe fan coil, universal applications or compressors in DX-type equipment

### RDF8..Flush Mount



- Operating modes: Comfort, Economy and Protection
- For heating and/or cooling applications
- 2 or 3-position control outputs
- Output for 1-speed or 3-speed fan
- 2 multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact, presence detector
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: Ivory white
- Backlit display

#### Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3174
Power consumption	6 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K
Analog inputs, number	2
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Relay outputs, number	5
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 47 mm

### Range overview RDF8..Flush Mount

Product Title	Operating voltage [V]	Stock no.	Product no.
Flush mount touch room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes	AC/DC 230	S55770-T396	<b>RDF800</b>
Touch screen room thermostat for 2-/4- pipe fan coil, universal applications or compressors in DX-type equipment (for China frames)	AC 230	S55770-T397	<b>RDF800/NF</b>

## Thermostats

### Standalone room thermostats

#### Fan coils

##### RDF6..Flush Mount



#### Flush-mount room thermostats for both round and square conduit boxes, with backlit LCD

Flush-mount room thermostat for round conduit box with LCD

- Output for 1-speed or 3-speed fan
- 2 or 3-position control outputs
- Two multifunctional inputs for keycard contact, external room / return air temperature (QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Operating modes: Comfort, Energy Saving and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: signal white (RAL 9003)
- Backlit display

Application selectable:

- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Operating voltage	AC 230 V
Switching differential	0.5...6 K
Analog inputs, number	2
Relay outputs, number	5
Type of fixing	Recessed round conduit box diameter min. 60 mm
Dimensions (W x H x D)	86 x 86 x 46 mm

##### Range overview RDF6..Flush Mount

Product Title	Color	Stock no.	Product no.
Flush mount room thermostat for 2-/4-pipe FCU with on/off valves, ECM fan, 7-day time switch, infrared remote control and 2x universal input, fit for both round and square conduit boxes	White	S55770-T434	<b>RDF660T</b>
Flush mount room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for both round and square conduit boxes		S55770-T291	<b>RDF600</b>
Flush mount room thermostat for 2-/4-pipe FCU with on/off output, time programs and 2x universal input, fit for both round and square conduit boxes, infrared remote control, 7-day time switch, backlit LCD		S55770-T292	<b>RDF600T</b>

RDF5..Flush Mount



Flush-mount room thermostats for square conduit boxes

Flush-mount thermostats

- Output for on/off valve actuator, 3-wire on/off valve
- 3-speed fan control: Automatic or manual
- Manual heating / cooling changeover or continuous Cooling only / Heating only
- Operation modes: Comfort and Protection
- Adjustable commissioning and control parameters
- Optional display of room temperature or setpoint
- Minimum and maximum setpoint limitation
- Display temperature in increments of 0.5 °C or °F
- Color of housing: signal white (RAL 9003)
- LED backlit display
- Full or partial keylock
- Internal sensor calibration
- Timer with delay off function: preset or user selection from 1 to 23 hours
- Return to previous mode or Protection (Off) mode upon power down
- Fan speed low or off in deadzone
- Fan minimum On-time
- Three standard color housings on bulk pack for project delivery
- Customization is also available by request

- LED backlit display
- Keylock function
- Display either room temperature or setpoint
- Comfort and Protection(Off) operating modes
- Automatic or manual heating/cooling changeover
- Automatic or manual 3-speed fan control
- Selectable fan operation in deadzone
- Timer with delay Off function: preset or user selection from 1 to 23 hours
- Minimum and maximum setpoint limitation
- Return to previous operating mode or Protection(Off) upon power down
- Internal sensor calibration
- Adjustable commissioning and control parameters
- Fit into 86x86 conduit boxes
- Housing available in different colors

Data sheet	A6V10889950
Operating voltage	AC 230 V
Power consumption	Max. 12 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...6 K (factory setting: 1 K)
Dimensions (W x H x D)	86 x 86 x 39 mm

Range overview RDF5..Flush Mount

Product Title	Stock no.	Product no.
Flush-mount room thermostat for 2-pipe fan coils	S55770-T382	<b>RDF510</b>
Flush mount room thermostat for 2-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units	S55770-T383	<b>RDF510/BP</b>
Flush mount room thermostat for 2-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, silver	S55770-T403	<b>RDF510/BP.VS</b>
Flush mount room thermostat for 2-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, black	S55770-T404	<b>RDF510/BP.VB</b>
Flush mount room thermostat for 2-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, gold	S55770-T405	<b>RDF510/BP.VG</b>
Flush mount room thermostat for 4-pipe fan coils	S55770-T384	<b>RDF530</b>
Flush mount room thermostat for 4-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units	S55770-T385	<b>RDF530/BP</b>

## Thermostats

### Standalone room thermostats

#### Fan coils

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#### Range overview RDF5..Flush Mount

Product Title	Stock no.	Product no.
Flush mount room thermostat for 4-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, black	S55770-T417	<b>RDF530/BP.VB</b>
Flush mount room thermostat for 4-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, gold	S55770-T424	<b>RDF530/BP.VG</b>
Flush mount room thermostat for 4-pipe FCU with on/off output, fit for square conduit boxes in bulk pack of 20 units, silver	S55770-T423	<b>RDF530/BP.VS</b>

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### Flush-mount room thermostat

### RDF..Flush Mount

Flush-mount room thermostat with LCD for 2-/4-pipe fan coil units and compressors in DX-type equipment

- For heating and/or cooling applications
- Outputs for 3-speed fan
- Selectable installation and control parameters

Setpoint setting range 5...40 °C  
Degree of protection IP30



### Range overview RDF..Flush Mount

Product Title	Operating voltage [V]	Color	Stock no.	Product no.
Flush-mount room thermostat for rectangular conduit box, for 2-/4-pipe fan coils or DX type equipment, backlit LCD	AC 230		BPZ:RDF300.02	<b>RDF300.02</b>
Flush mount room thermostat for 2-/4-pipe FCU with on/off output and 2x universal input, fit for square conduit boxes, black	AC 230	Black	S55770-T427	<b>RDF300.02/VB</b>
Flush mount room thermostat for 2-pipe fan coils	AC 230		S55770-T187	<b>RDF310.2/MM</b>
Flush mount room thermostat for 2-/4-pipe FCU with DC valves, 3-speed fan and 2x universal input, fit for square conduit boxes	AC 24		BPZ:RDF340	<b>RDF340</b>

### Accessories for RDF..

Product Title	Data sheet	Stock no.	Product no.
Mounting bracket 10 mm thick	N3009	BPZ:ARG70.3	<b>ARG70.3</b>
Hotel Key Card ARG810.1		S55770-T446	<b>ARG810.1</b>
Door Bell with DND ARG820.1		S55770-T447	<b>ARG820.1</b>
Door Bell with DND & MUR ARG830.1		S55770-T448	<b>ARG830.1</b>
Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, without connectors	N1840	BPZ:QAH11.1	<b>QAH11.1</b>
Infrared Remote Control for room thermostats	N3060	S55770-T166	<b>IRA211</b>
Room temperature sensor NTC 3 kOhm	N1747	BPZ:QAA32	<b>QAA32</b>

## Thermostats

### Standalone room thermostats

#### Variable air volumes (VAV)

##### RCU..VAV

##### Electronic room thermostat for VAV and CAV systems

- Electronic room thermostat for heating and cooling operation
- P control
- Setpoint shifting
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Power consumption	6 VA
Setpoint setting range	8...30 °C
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA
Type of fixing	Wall mounting with screw
Degree of protection	IP30
Dimensions (W x H x D)	97 x 114 x 43 mm

##### RCU50.2



##### Room thermostat for VAV and CAV systems, AC 24 V, positioning signal DC 0...10 V, manual changeover heating/cooling/off

Same functionality and technical data as RCU50

- Manual heating / cooling changeover and OFF position
- Signal inversion of output signal
- No setpoint shift
- No operating mode changeover input for remote control
- No adjustable minimum limitation for cooling output
- No frost protection

Data sheet	N3045
Operating voltage	AC 24 V

Stock no.	Product no.
BPZ:RCU50.2	<b>RCU50.2</b>

##### Accessories for RDU3.. flush mount

Product Title	Data sheet	Stock no.	Product no.
Mounting bracket 10 mm thick	N3009	BPZ:ARG70.3	<b>ARG70.3</b>

RDG400



**Room thermostat, AC 24 V, VAV heating and cooling systems**

- Output DC 0...10 V for VAV actuator and auxiliary output ON/OFF, PWM or 3-position or 3-position for VAV actuator and auxiliary output DC 0...10 V
- 3 multifunctional inputs for keycard contact, external room / return air temperature (1x, QAH11.1, QAA32), heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Operating modes: Comfort, Energy Saving and Protection
- Modulating PI control
- Control depending on the room or the return air temperature
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Minimum and maximum limitation of air flow signal
- Output signal inversion (DC 0...10 V) as an option
- Backlit display

Application selectable:

- Single-duct system
- Single-duct system with electrical heater
- Single-duct system and radiator / floor heating
- Single-duct system with heating / cooling coil

Data sheet	N3182
Operating voltage	AC 24 V
Power consumption	2 VA
Setpoint setting range	5...40 °C
Switching differential	Heating: 0.5...6 K; Cooling: 0.5...6 K
Analog inputs, number	2
Analog outputs	VAV actuator, electric heater, valve
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Digital inputs, number	1
Triac outputs	VAV actuator, valve, el. heater 2-position, PWM, 3-position
Triac outputs, number	1
Triac output, switching voltage	24 V
Triac output, switching current	1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Stock no.	Product no.
S55770-T164	<b>RDG400</b>

## Thermostats

### Standalone room thermostats

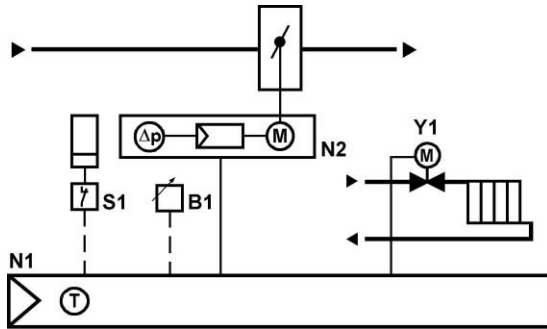
#### Application examples RDG..

#### Application examples RDG..

More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RDG.. data sheet

#### RDG400

TCCE01 DG4 HQ



#### VAV box, automatic heating/cooling changeover with radiator, mod. PI-control, DC 0...10 V for cooling

- Modulating PI control algorithm for heating and cooling systems
- Outputs for DC 0...10 V and ON/OFF, PWM, 3-position
- Setting range of setpoint knob can be limited
- Manual operating mode button
- Parameter setting by installer
- Temperature control according to integrated sensor
- Adjustable minimum limitation of cooling output (air flow)
- Operating mode changeover for remote control with external switch/sensor
- Operating voltage AC 24 V
- Backlit display



### Mounting plate 120 x 120 mm for 4 x 4" housing

ARG70

Accessories for use with room thermostats RAA.., RAB.., RCC.., RCU.., RDD.., RDE.., RDF..

Data sheet N3009  
Dimensions (W x H x D) 120 x 120 x 6 mm



Stock no. Product no.  
BPZ:ARG70 ARG70

### Changeover cable holder for QAH11..

ARG86.3

Changeover mounting kit for QAH11.. sensor for universal use as a strap-on sensor

Data sheet N3009  
Packaging unit 10 pieces  
Warranty 2 Years



Stock no. Product no.  
BPZ:ARG86.3 ARG86.3

### Cable temperature sensor PVC 4 m, NTC 3k

QAP1030/UFH

Data sheet N1854  
Measuring range, temperature -20...70 °C  
Sensing element, temperature NTC 3k  
Measurement accuracy At -20...70 °C: ±0.3 K  
Time constant 1.5 min to air  
Protection pocket Non  
Material, protection pocket None  
Cable length 4 m



Stock no. Product no.  
S55720-S289 QAP1030/UFH

### Mounting plate 112 x 130 mm for surface wiring

ARG70.2

Accessories for use with room thermostats RAA.., RAB.., RCC.., RCU.., RDD.., RDE.., RDF..

Data sheet N3009  
Dimensions (W x H x D) 112 x 130 x 10 mm



Stock no. Product no.  
BPZ:ARG70.2 ARG70.2

## Thermostats

### Standalone room thermostats

#### Accessories

##### QAH11.1



##### Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, without connectors

For installation in fan coil units as

- a return air temperature sensor
- a changeover sensor

Packing size: 10 pcs

Data sheet	N1840
Measuring range	For fixed cable
Sensing element	NTC 3k
Measuring range, temperature	-20...70 °C
Sensing element, temperature	NTC 3k
Time constant	Air v=0 m/s: 90 s
Connection cable	2-wire Ferrules
Cable length	2.5 m
Warranty	5 Years

Stock no.	Product no.
BPZ:QAH11.1	QAH11.1

##### QAA32



##### Room temperature sensor NTC 3 kOhm

Data sheet	N1747
Sensing element	NTC 3k
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC 3k
Time constant	360 s
Measurement accuracy	25 °C: ±0.3 K
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	97 × 100 × 36 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QAA32	QAA32

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### Temperature controller

RAK-TR.1..H

External scale, 1 changeover contact, immersion and strap-on thermostat in one.

Data sheet	N1205
Switching differential	6 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.1...16 (2.5) A
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 72 mm



### Range overview RAK-TR.1..H

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
15...95	PN 10, 100 mm, G ½"	700	S55700-P111	RAK-TR.1000B-H
15...95		700	S55700-P112	RAK-TR.1000S-H
15...82	PN 10, 100 mm, G ½"	700	S55700-P113	RAK-TR.1210B-H

Note to protection pocket: Brass, nickel-plated.

### Thermal reset limit thermostat

RAK-TW.1..H

Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.

Data sheet	N1202
Switching differential	6 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (2.5) A Contact 1-3: 0.1...6 (2.5) A
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 64 mm



### Range overview RAK-TW.1..H

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
15...95		700	S55700-P116	RAK-TW.1000S-H
40...120	PN 10, 100 mm, G ½"	700	S55700-P117	RAK-TW.1200B-H
40...120		700	S55700-P119	RAK-TW.1200S-H

Note to protection pocket: Brass, nickel-plated.

## Thermostats

### Capillary and clamp-on thermostats

#### Temperature

#### RAK-TW.1..H..



#### Thermal reset limit thermostat

Immersion, strap-on and remote thermostat in one

Data sheet	N1202
Switching differential	6 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact connection 1-2: 0.1...16 (2.5) A Contact connection 1-3: 0.1...6(2.5) A
Digital outputs	1-pole Potential-free Changeover contact
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 64 mm

#### Range overview RAK-TW.1..H..

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
15...95	PN 10, 100 mm, G½"	700	S55700-P115	<b>RAK-TW.1000HB</b>
40...120	PN 10, 100 mm, G½"	700	S55700-P118	<b>RAK-TW.1200HP</b>

Note to protection pocket: Brass, nickel-plated.

#### RAK-TB.1..M



#### Temperature limiter

Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.

Data sheet	N1206
Reset temperature	Min. 15 K under the switch-off point
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 0.1...16 (2.5) A Contact 11-13: 2 (0.4) A
Digital outputs	1-pin Potential-free Switchover contact
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 67 mm

#### Range overview RAK-TB.1..M

Switch-off point [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
45...60		700	S55700-P108	<b>RAK-TB.1400S-M</b>
50...70	PN 10, 100 mm, G½"	700	S55700-P109	<b>RAK-TB.1410B-M</b>
65...80		700	S55700-P110	<b>RAK-TB.1420S-M</b>

Note to protection pocket: Brass, nickel-plated.

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### Safety limit thermostat

RAK-ST..M

Internal scale, 1 changeover contact, failsafe capillary, immersion and strap-on thermostat in one, with ambient temperature compensation.

Data sheet	N1204
Reset temperature	Min. 15 K under the switch-off point
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 0.1...16 (2.5) A Contact 11-13: 2 (0.4) A
Digital outputs	1-pin Potential-free Switchover contact
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 67 mm



### Range overview RAK-ST..M

Switch-off point [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
95	PN 10, 100 mm, G ½"	700	S55700-P100	RAK-ST.010FP-M
100	PN 10, 100 mm, G ½"	700	S55700-P101	RAK-ST.020FP-M
110	PN 10, 100 mm, G ½"	700	S55700-P102	RAK-ST.030FP-M
110...130	PN 10, 100 mm, G ½"	700	S55700-P103	RAK-ST.1300P-M
90...110	PN 10, 100 mm, G ½"	700	S55700-P104	RAK-ST.1310P-M
80...100		1600	S55700-P106	RAK-ST.1430S-M

Note to protection pocket: Brass, nickel-plated.

### Safety limit thermostat

RAK-ST.1..M..

Immersion, strap-on and remote thermostat in one

Data sheet	N1204
Reset temperature	~7 K under the switch-off point
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 16 (2,5) A Contact 11-13: 2 (0,4) A
Digital outputs	1-pole Potential-free Changeover contact
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 67 mm



### Range overview RAK-ST.1..M..

Switch-off point [°C]	Protection pocket	Capillary length [mm]	Stock no.	Product no.
40...70		700	S55700-P105	RAK-ST.1385M
95...130	100 mm; G ½"; 7 mm; PN10	700	S55700-P107	RAK-ST.1600MP

Note to protection pocket: Brass, nickel-plated.

Thermostats  
 Capillary and clamp-on thermostats  
 Temperature

TKM2



Thermal reset limit thermostat for air ducts, 20...110 °C; perforated protection pocket 200mm

Data sheet	N1291
Setpoint setting range	20...110 °C
Switching differential	2 K
Digital output, switching voltage	AC 250 V
Digital output, switching current	0.2...10 (2) A
Ambient temperature head	Max. 100 °C
Digital outputs	1-pin Potential-free Changover contact
Degree of protection	IP54
Dimensions (W x H x D)	60 x 120 x 55 mm

Stock no.	Product no.
BPZ:TKM2	<b>TKM2</b>

**RAZ-TW.1..J**



**Temperature controller/ thermal reset limit thermostat**

Combination of control thermostat (TR) and thermal reset limit thermostat (TW). Internal scale (TR), internal scale (TW), 2 changeover contacts. Immersion thermostat and wall mounting.

Data sheet	N1212
Immersion length	100 mm
Reset temperature	Min. 15 Kelvin under the switch-off point
Switching differential	6 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.1...16 (4) A
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP40
Dimensions (W x H x D)	120 x 106 x 70 mm

**Range overview RAZ-TW.1..J**

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock no.	Product no.
TR: 15...95 TW: 15...95	PN 10, 100 mm, G ½" 2x	700	S55700-P140	<b>RAZ-TW.1000P-J</b>
TR: 40...120 TW: 40...120	PN 10, 100 mm, G ½" 2x	700	S55700-P141	<b>RAZ-TW.1200P-J</b>

Double protection pocket 2x inner dia.7mm, brass nickel plated.

## Thermostats

### Capillary and clamp-on thermostats

#### Temperature

#### RAZ-ST..J



#### Temperature controller/ safety limit thermostat

Combination of control thermostat (TR) and safety limit thermostat (STB). Internal scale (TR), internal scale (STB), 2 changeover contacts, failsafe capillary, STB with ambient temperature compensation. Immersion thermostat and wall mounting.

Data sheet	N1214
Immersion length	100 mm
Capillary length	700 mm
Reset temperature	Min. 20 Kelvin under the switch-off point
Switching differential	TR: 6 K STB: ±5 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	TR: 0.1...16 (4) A STB:
	Contact 1-2 0.1...16 (1) A Contact 1-4 max. 0.5 A (alarm contact)
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP40
Dimensions (W x H x D)	120 x 106 x 70 mm

#### Range overview RAZ-ST..J

Setpoint setting range [°C]	Switch-off point [°C]	Protection pocket [LW7]	Stock no.	Product no.
15...95 100	100	PN 10, 100 mm, G ½"	S55700-P136	<b>RAZ-ST.011FP-J</b>
15...95 110	110	PN 10, 100 mm, G ½"	S55700-P137	<b>RAZ-ST.030FP-J</b>
TR: 15...95 STB: 110...130	110...130	PN 10, 100 mm, G ½"	S55700-P138	<b>RAZ-ST.1500P-J</b>
15...95 90...110	90...110	PN 10, 100 mm, G ½"	S55700-P139	<b>RAZ-ST.1510P-J</b>

Double protection pocket 2x inner dia.7mm, brass nickel plated.

#### RAM-TR.2000M



#### Strap-on temperature controller, 20...90 °C, fixing spring, setpoint adjuster externally

Electromechanical temperature control (TR) with single-pole changeover microswitch:

- Set point externally adjustable
- Controlled medium: water, oil

Data sheet	N1198
Setpoint setting range	20...90 °C
Sensing element	Bimetall
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.2...16 A
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP20
Dimensions (W x H x D)	38 x 105 x 42 mm

Stock no.	Product no.
BPZ:RAM-TR.2000M	<b>RAM-TR.2000M</b>



**Strap-on temperature limitation, 20...90 °C, fixing spring, setpoint adjuster internally**

**RAM-TW.2000M**

Electromechanical temperature limitation (TW) with single-pole changeover microswitch:

- Set point internally adjustable
- Controlled medium: water, oil

Data sheet	N1198
Setpoint setting range	20...90 °C
Sensing element	Bimetall
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.2...16 A
Digital outputs	1-pin Potential-free Changeover contact
Degree of protection	IP20
Dimensions (W x H x D)	38 x 105 x 42 mm



	Stock no.	Product no.
	BPZ:RAM-TW.2000M	RAM-TW.2000M

**Protection pockets for RAK-T and RAK-S**

Packaging unit	Protection pocket	Material	PN class	Data sheet	Stock no.	Product no.
1 pc	100 mm, G½" LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB100	ALT-SB100
1 pc	150 mm, G½" LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB150	ALT-SB150
1 pc	200 mm, G½" LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB200	ALT-SB200
1 pc	280 mm, G½" LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB280	ALT-SB280
1 pc	100 mm; G½"; 7 mm	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS100	ALT-SS100
1 pc	150 mm, G½" LW7	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS150	ALT-SS150
1 pc	280 mm, G½" LW7	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS280	ALT-SS280
1 pc	450 mm, G½" LW7	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS450	ALT-SS450
1 pc	100 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF100	ALT-SSF100
1 pc	150 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF150	ALT-SSF150
1 pc	200 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF200	ALT-SSF200
1 pc	280 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF280	ALT-SSF280
1 pc	450 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF450	ALT-SSF450
1 pc	600 mm, G½" (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF600	ALT-SSF600

**Accessories for RAZ-T., RAZ-S. and RAK..**

Product Title	Material	PN class	Data sheet	Stock no.	Product no.
Mounting kit for RAK../RAZ..			N1193	BPZ:ALT-C001	ALT-C001
Protection pocket, 100 mm, MS63 nickel-plated, G½", PN10, 2xLW7	Brass, nickel-plated	PN 10	N1194	S55700-P142	ALT-DB100J
Protection pocket, 150 mm, MS63 nickel-plated, G½", PN10, 2xLW7	Brass, nickel-plated	PN 10	N1194	S55700-P143	ALT-DB150J
Protection pocket, 280 mm, MS63 nickel-plated, G½", PN10, 2xLW7	Brass, nickel-plated	PN 10	N1194	S55700-P144	ALT-DB280J
Protection pocket, 450 mm, MS63 nickel-plated, G½", PN10, 2xLW7	Brass, nickel-plated	PN 10	N1194	S55700-P145	ALT-DB450J

## Thermostats

### Capillary and clamp-on thermostats

#### Temperature

##### Accessories for RAZ-T., RAZ-S. and RAK..

Product Title	Material	PN class	Data sheet	Stock no.	Product no.
Protection pocket, 100 mm, stainless steel V4A, G½" LW15	Stainless steel V4A	PN 16	N1194	S55700-P146	<b>ALT-DS100J</b>
Protection pocket, 150 mm, stainless steel V4A, G½" LW15	Stainless steel V4A	PN 16	N1194	S55700-P147	<b>ALT-DS150J</b>
Protection pocket, 280 mm, stainless steel V4A, G½" LW15	Stainless steel V4A	PN 16	N1194	S55700-P148	<b>ALT-DS280J</b>
Protection pocket, 450 mm, stainless steel V4A, G½" LW15	Stainless steel V4A	PN 16	N1194	S55700-P149	<b>ALT-DS450J</b>

##### Accessories for RAK-T and RAK-S

Product Title	Packaging unit	Material	Data sheet	Stock no.	Product no.
Protection pocket, perforated, 200 mm	1 pc	Steel, galvanized	N1193	BPZ:ALT-AB200	<b>ALT-AB200</b>
Mounting kit for RAK../RAZ..	1 bag		N1193	BPZ:ALT-C001	<b>ALT-C001</b>
Mounting flange, adjustable depth	1 pcs.	PA66GF35	N1193	BPZ:AQM63.0	<b>AQM63.0</b>
3 capillary supports and 3 spacers for QAF.. Mounting			N1821	BPZ:AQM63.2	<b>AQM63.2</b>
Terminal housing	1 box		N1207	S55700-P131	<b>RAK-H-M</b>

### Frost detector, modulating

QAF63..J

- For fitting to the air duct
- Fully active capillary tube sensor
- With capillary tube entry



In addition to direct mounting, the frost sensor can be fitted to the air duct using the AQM63.0 snap-on mounting flange (accessory).

Data sheet	A6V10432020
Operating voltage	AC 24 V
Power consumption	5 VA
Min. active length	250 mm
Measuring range, temperature	0...15 °C
Ambient temperature, operation	-15...60 °C
Connection cable	3-wire
Analog output, signal	DC 0...10 V
Degree of protection	IP42
Dimensions (W x H x D)	96 x 136 x 67 mm

### Range overview QAF63..J

Capillary length [mm]	Stock no.	Product no.
2000	S55700-P153	QAF63.2-J
6000	S55700-P154	QAF63.6-J

### Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C

QAF65.3AR-J

Monitoring of the temperature in ventilation and air conditioning plants to prevent damage from frost. Capillary tube for fitting on air heating coils



Factory setup 5 °C

Data sheet	A6V12051788
Operating voltage	AC 250 V
Setpoint setting range	-10...15 °C
Sensing element, temperature	Liquid expansion sensor
Capillary length	3000 mm
Switching differential	2 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (4)A; Contact 1-4 (STB, Alarm contact): 0.1...16 (4) A
Digital outputs	Switchover contact
Degree of protection	IP65
Dimensions (W x H x D)	53 x 150 x 64 mm
Color	Gray

	Stock no.	Product no.
	S55700-P163	QAF65.3AR-J

## Thermostats

### Capillary and clamp-on thermostats

#### Frost protection units

##### QAF65.6AR-J



##### Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C

Monitoring of the temperature in ventilation and air conditioning plants to prevent damage from frost. Capillary tube for fitting on air heating coils

Factory setup 5 °C

Data sheet	A6V12051788
Operating voltage	AC 250 V
Setpoint setting range	-10... 15 °C
Sensing element, temperature	Liquid expansion sensor
Capillary length	6000 mm
Switching differential	2 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1... 16 (4)A; Contact 1-4 (STB, Alarm contact): 0.1... 16 (4) A
Digital outputs	Switchover contact
Degree of protection	IP65
Dimensions (W x H x D)	53 x 150 x 64 mm
Color	Gray

Stock no.

Product no.

S55700-P164

QAF65.6AR-J

**Frost detector, air side, 2-point**

QAF64..J

- Modulating and 2-position
- Fully active capillary type sensing element
- Indication of frost with red LED
- Test switch for simulation of frost
- Selector for automatic or manual reset function
- Modulating P-controller for startup
- Limit value contact for plant control



In addition to direct mounting, the frost monitor can be fitted to the air duct using the AQM63.0 snap-on mounting flange (accessory).

Data sheet	A6V10432022
Operating voltage	AC 24 V
Power consumption	6.6 VA
Min. active length	250 mm
Setpoint setting range	1...10 °C
Measuring range, temperature	0...15 °C
Ambient temperature, operation	-15...55 °C
Connection cable	6 (8)-wire
Digital output, switching voltage	DC 5 V / AC 5...250 V
Digital output, switching current	6 (4) A
Analog inputs	Control input
Analog output, signal	DC 0...10 V
Digital outputs	Potential-free Switchover contact
Degree of protection	IP42
Dimensions (W x H x D)	96 x 136 x 67 mm

**Range overview QAF64..J**

Capillary length [mm]	Stock no.	Product no.
2000	S55700-P155	QAF64.2-J
6000	S55700-P156	QAF64.6-J

**Frost monitor, 2-point, capillary tube 3000 mm, -10...+15 °C**

QAF65.3M-J

Internal scale, 1 changeover contact, capillary tube for fitting on air heating coils

Factory setup 5 °C



Data sheet	A6V11965899
Operating voltage	AC 250 V
Setpoint setting range	-10...15 °C
Sensing element, temperature	Liquid expansion sensor
Capillary length	3000 mm
Switching differential	2 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (4)A; Contact 1-4 (STB, Alarm contact): 0.1...16 (4) A
Digital outputs	Switchover contact
Degree of protection	IP65
Dimensions (W x H x D)	53 x 150 x 64 mm
Color	Gray

	Stock no.	Product no.
	S55700-P161	QAF65.3M-J

## Thermostats

### Capillary and clamp-on thermostats

#### Frost protection units

##### Accessories for QAF63.. and QAF64..

Product Title	Data sheet	Stock no.	Product no.
Mounting flange, adjustable depth	N1193	BPZ:AQM63.0	<b>AQM63.0</b>
3 capillary supports and 3 spacers for QAF.. Mounting	N1821	BPZ:AQM63.2	<b>AQM63.2</b>

### Frost monitor, 2-point

QAF81..

For temperature supervision on the air side of air heating coils in ventilation and air conditioning plants to provide protection against frost.

Data sheet	N1284
Setpoint setting range	-5...+15 °C
Min. active length	300 mm
Switching differential	2 K
Digital output, switching voltage	AC 250 V
Digital output, switching current	10 (2) A
Mounting position	Any
Digital outputs	1-pin
	Potential-free
	Switchover contact
Degree of protection	IP54
Dimensions (W x H x D)	106 x 113 x 37 mm



### Range overview QAF81.

Capillary length [mm]	Stock no.	Product no.
3000	BPZ:QAF81.3	QAF81.3
6000	BPZ:QAF81.6	QAF81.6
6000	BPZ:QAF81.6M	QAF81.6M

### Frost monitor, 2-point, capillary tube 6000 mm, -10...+15 °C

QAF65.6M-J

Internal scale, 1 changeover contact, capillary tube for fitting on air heating coils

Factory setup 5°C

Data sheet	A6V11965899
Operating voltage	AC 250 V
Setpoint setting range	-10...15 °C
Sensing element, temperature	Liquid expansion sensor
Capillary length	6000 mm
Switching differential	2 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1... 16 (4)A; Contact 1-4 (STB, Alarm contact): 0.1... 16 (4) A
Digital outputs	Switchover contact
Degree of protection	IP65
Dimensions (W x H x D)	53 x 150 x 64 mm
Color	Gray



	Stock no.	Product no.
	S55700-P162	QAF65.6M-J

### Accessories for QAF81..

Product Title	Data sheet	Stock no.	Product no.
Set of 6 capillary supports	N1284	BPZ:FK-TZ1	FK-TZ1
6 Capillary tube clamps for QAF../QAM.. mounting	N1284	BPZ:AQM63.3	AQM63.3

## Thermostats

### Capillary and clamp-on thermostats

#### Frost protection units

##### RAK-TW.5..H



##### Frost protection monitor

Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.

Perforated protection pocket must be ordered as a separate item: ALT-AB200

Data sheet	N1203
Switching differential	5 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (2.5) A Contact 1-3: 0.1...6 (2.5) A
Digital outputs	1-pin Potential-free Switching contact
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 64 mm

##### Range overview RAK-TW.5..H

Setpoint setting range [°C]	Capillary length [mm]	Stock no.	Product no.
5...65	1600	S55700-P121	RAK-TW.5000S-H
-10...50	1600	S55700-P122	RAK-TW.5010S-H

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##### RAK-TW.5..H..



##### Frost protection monitor

Immersion, strap-on and remote thermostat in one

Perforated protection pocket must be ordered as a separate item: ALT-AB200

Data sheet	N1203
Switching differential	5 K
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact connection 1-2: 0.1...16 (2.5) A Contact connection 1-3: 0.1...6 (2.5) A
Digital outputs	1-pole Potential-free Changeover contact
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 64 mm

##### Range overview RAK-TW.5..H..

Setpoint setting range [°C]	Capillary length [mm]	Stock no.	Product no.
5...65	1600	S55700-P120	RAK-TW.5000HS

##### Accessories for RAK-TW.5.. and RAK-TW.5..H..

Product Title	Data sheet	Stock no.	Product no.
Protection pocket, perforated, 200 mm	N1193	BPZ:ALT-AB200	ALT-AB200



**Room thermostat with helix sensor, TR -5..50 °C**

TRG2

For commercial and industrial applications.



Data sheet	N1329
Operating voltage	AC 250 V
Setpoint setting range	-5...50 °C
Connection cable	2-wire
Switching differential	0.7...6 K; adjustable
Digital output, switching voltage	250 V
Digital output, switching current	0.2...10 (2)A
Digital outputs	CO: 1
	Potential-free
Relay outputs	Change-over contact
Relay outputs, number	1
Mounting position	Horizontal
Degree of protection	IP54
Dimensions (W x H x D)	98 x 95 x 63 mm
Color	Gray

Stock no.

Product no.

BPZ:TRG2

TRG2

**Room thermostat with helix sensor, TR -5..50 °C, 2 switches on 2 steps 2..12 K difference**

TRG22

For commercial and industrial applications.



Note on switching interval:

Adjustable temperature difference between step 1 and step 2.

Data sheet	N1329
Operating voltage	AC 250 V
Setpoint setting range	-5...50 °C
Switching differential	2 K
Switching interval	2...12 K
Digital outputs	CO: 2
	Potential-free
Relay outputs	Change-over contact
Mounting position	Horizontal
Degree of protection	IP54
Color	Gray
Dimensions (W x H x D)	98 x 135 x 67 mm

Stock no.

Product no.

BPZ:TRG22

TRG22



# Sensors


















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# Sensors




## Overview and selection tools







### Overview sensors

Temperature								
Model		Room sensors	Duct sensors	Immersion sensors	Outside sensors		Strap-on sensors	Cable sensors
Type reference		QAA	QAM	QAE	QAC	QAC	QAD	QAP
Category:	Standard	■	■	■		■	■	■
	High Quality				■			







Humidity									
Model		Room sensors				Duct sensors			Outside sensors
Type reference		QFA	QFA..D	QFA	QFA..D	QFM	QFM	QFM..D	QFA
Category	Basic					■			
	Standard	■	■			■			
	High Quality			■	■		■	■	■
	Certified			■	■		■		



Air quality							
Model		Room sensors			Air duct sensors		
Type reference		QPA1..	QPA2..	QPA..D	QPM1..	QPM2..	QPM..D
Measured value	VOC	■			■		
	CO <sub>2</sub>	■	■		■	■	
	CO <sub>2</sub> / VOC		■	■		■	■
	CO <sub>2</sub> / T	■	■	■	■	■	■
	CO <sub>2</sub> / H / T		■	■		■	■
Display				■			■
Category	Basic	■			■		
	Standard		■	■		■	■

Fine dust				
Model		Room sensors		Air duct sensors
Type reference		QSA..		QSA..D
Measured value	PM2.5	■		■
	PM2.5 / H / T			■

Pressure							
Model		Differential pressure sensors				Absolute pressure sensors	
Medium		Air	Air	Liquids / gases	Liquids / gases	Liquids / gases	Refrigeration
Type reference		QBM3../4..	QBM2030	QBE63	QBE3x00-D	QBE2x03-P	QBE2x04-P
Category	Standard		■	■		■	■
	High Quality	■			■		
	Certified	■					

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Flow						
Model	Flow switch			Flow sensor		Air velocity sensor
Medium	Liquids	Liquids	Liquids	Liquids	Liquids	Air
Type reference	QVE1900	QVE1901	QVE1902	QVE2x00	QVE3x00	QVM62.1
Category	Basic	■	■			
	Standard			■		■
	High Quality				■	

Xtra				
Model	Solar sensors		Flue gas temperature sensors	
Type reference	QLS60		FGT-PT1000	
Medium			Air	
Measured value	Intensity of radiation		Flue gas temperature	
Category	Standard	■		■
	High Quality			



New: 5-year warranty on valves and actuators, damper actuators, and sensors.

Overview module combinations – room sensors for flush mounting

Active sensors			Measuring variables					Display	Selection tool controller range						
Basic module	+	Front module	CO <sub>2</sub>	VOC	Relative humidity	Active temp.	Passive temp.	CO <sub>2</sub> -indicator	Desigo PX	RXL	RXB	RXC	RVL4, RVP3	Synco 200	Synco 700
AQR2540Nx	+	AQR2532NNW				■			■					■	■
AQR2540Nx	+	AQR2535NNW			■	■			■					■	■
AQR2546Nx	+	AQR2530NNW	■						■					■	■
AQR2546Nx	+	AQR2532NNW	■			■			■					■	■
AQR2546Nx	+	AQR2535NNW	■		■	■ <sup>2)</sup>			■					■	■
AQR2546Nx	+	AQR2535NNWQ	■		■	■ <sup>2)</sup>		■	■					■	■
AQR2547Nx	+	AQR2530NNW		■					■					■	■
AQR2547Nx	+	AQR2532NNW		■		■			■					■	■
AQR2547Nx	+	AQR2535NNW		■	■	■ <sup>2)</sup>			■					■	■
AQR2548Nx	+	AQR2530NNW	■	■ <sup>1)</sup>					■					■	■
AQR2548Nx	+	AQR2532NNW	■	■ <sup>1)2)</sup>		■			■					■	■
AQR2548Nx	+	AQR2535NNW	■	■ <sup>1)2)</sup>	■	■ <sup>2)</sup>			■					■	■
AQR2548Nx	+	AQR2535NNWQ	■	■ <sup>1)2)</sup>	■	■ <sup>2)</sup>		■	■					■	■

For passive sensors see page 6-4

<sup>1)</sup> Here, the in-door air quality is calculated from the CO<sub>2</sub> and VOC measuring variables. VOC is not available as direct measuring variable.

<sup>2)</sup> The measuring variable is solely available as switch output.

## Sensors

### Overview and selection tools

Passive sensors			Measuring variables					Selection tool controller range						
Mounting plate	+	Front module	CO <sub>2</sub>	VOC	Relative humidity	Active temp.	Passive temp.	Desigo PX	RXL	RXB	RXC	RVL4, RVP3	Synco 200	Synco 700
AQR2500Nx	+	AQR2531ANW					LG-Ni1000	■	■	■	■	■	■	■

**Replace x with:**

- F for VDE/CEE (70x70 mm)
- G for Italian Standard 3 modular (110x64 mm)
- J for UL Standard 2" x 4" (64x110 mm)

Power supply: AC 24 V, DC 15...36 V

Signal range active sensor: DC 0...5 V, DC 2...10 V, DC 0...10 V, DC 0...20 mA, DC 4...20 mA, and DC 0...10 mA

A freely selectable switching contact is available for every measuring variable.

Communicating sensors			Measuring variables			Display	Inputs	
Base modul	+	Front module	CO <sub>2</sub>	Relative humidity	Temperature	CO <sub>2</sub> -indicator	Passive temperature NTC 10k	Two potential-free contacts
AQR2570Nx	+	AQR2532NNW			■		■	■
AQR2570Nx	+	AQR2535NNW		■	■		■	■
AQR2576Nx	+	AQR2530NNW	■				■	■
AQR2576Nx	+	AQR2532NNW	■		■		■	■
AQR2576Nx	+	AQR2535NNW	■	■	■		■	■
AQR2576Nx	+	AQR2535NNWQ	■	■	■	■	■	■

**Replace x with:**

- F for VDE/CEE (70x70 mm)
- H for British Standard (83x83 mm)
- G for Italian Standard 3 modular (110x64 mm)
- J for UL Standard 2" x 4" (64x110 mm)

The room sensors are KNX certified and can be used in conjunction with all devices capable of communicating over KNX.

Furthermore the sensors can be used with the following Siemens building automation systems:

- Desigo TRA (PL-Link)
- Synco 700 (KNX LTE-Mode)
- GAMMA (KNX S-Mode)

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**Room temperature sensor, passive**

Measuring range, temperature	0...50 °C
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 32 mm
Warranty	5 Years



**Range overview QAA2..**

Sensing element, temperature	Time constant	Measurement accuracy [K]	Stock no.	Product no.
LG-Ni1000	420 s	At 0...50 °C: ±0.8	BPZ:QAA24	<b>QAA24</b>
Pt100	420 s	At 0...50 °C: ±0.6	BPZ:QAA2010	<b>QAA2010</b>
Pt1000	420 s	At 0...50 °C: ±0.6	BPZ:QAA2012	<b>QAA2012</b>
NTC 10k	7 min	At 0...50 °C: ±0.8	BPZ:QAA2030	<b>QAA2030</b>

**Room unit with room temperature sensor and setpoint adjuster**

For Synco™ and Desigo™ PX applications

Data sheet	N1721
Sensing element	LG-Ni1000
Setpoint setting range	5...35 °C
Measuring range, temperature	0...50 °C
Sensing element, temperature	LG-Ni1000
Time constant	420 s
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years



Stock no.	Product no.
BPZ:QAA25	<b>QAA25</b>

**Room unit with room temperature sensor and setpoint adjuster 5..30 °C**

For Desigo™ PX applications

Data sheet	N1721
Time constant	420 s
Sensing element	LG-Ni1000
Setpoint setting range	5...30 °C
Measuring range, temperature	0...50 °C
Sensing element, temperature	LG-Ni1000
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years



Stock no.	Product no.
BPZ:QAA26	<b>QAA26</b>

## Sensors

### Temperature

#### Room sensors - wall mounted QAA..

##### QAA27



##### Room unit with room temperature sensor and setpoint readjuster -3...3 K

For Synco™ and Desigo™ PX applications

Data sheet	N1721
Sensing element	LG-Ni1000
Setpoint readjustment range	-3...3 K
Measuring range, temperature	0...50 °C
Sensing element, temperature	LG-Ni1000
Time constant	420 s
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QAA27	QAA27

##### QAA20..1



##### Room temperature sensors, active

Data sheet	N1749
Measuring range, temperature	0...50 °C
Time constant	7 min
Measurement accuracy	at AC 24 V in the range of -25 °C...+25 °C ±0.75 K -50 °C...+50 °C ±0.9 K
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years

##### Range overview QAA20..1

Analog output, signal	Operating voltage [V]	Display	Stock no.	Product no.
DC 0...10 V	AC 24 DC 13.5...35		BPZ:QAA2061	QAA2061
DC 0...10 V	AC 24 DC 13.5...35	LCD	BPZ:QAA2061D	QAA2061D
DC 4...20 mA	DC 13.5...35		BPZ:QAA2071	QAA2071

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**Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes**

**QAA64**

For mounting on recessed conduit boxes.  
Not suited for cooling in VAV installations.



Data sheet	N1722
Sensing element	LG-Ni1000
Measuring range, temperature	0...50 °C
Sensing element, temperature	LG-Ni1000
Time constant	390 s
Measurement accuracy	At 0...50 °C: ±0.8 K
Connection, electrical	Screw terminals
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 25 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QAA64	QAA64

**Room temperature sensor NTC 3 kOhm**

**QAA32**

Data sheet	N1747
Sensing element	NTC 3k
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC 3k
Time constant	360 s
Measurement accuracy	25 °C: ±0.3 K
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	97 x 100 x 36 mm
Warranty	5 Years



Stock no.	Product no.
BPZ:QAA32	QAA32

**Accessories for QAA32**

Product Title	Data sheet	Stock no.	Product no.
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	ARG70



## Sensors

### Temperature

#### Room sensors - flush mounted AQR25..

##### AQR253..



##### Front modules for base module

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years

##### Range overview AQR253..

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	<b>AQR2534ANW</b>
				55 x 55 x 12	S55720-S137	<b>AQR2530NNW</b>
0...50	Active			55 x 55 x 12	S55720-S136	<b>AQR2532NNW</b>
0...50	Active	0...100		55 x 55 x 12	S55720-S141	<b>AQR2535NNW</b>
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	<b>AQR2535NNWQ</b>

The matching design frame must be ordered separately.

##### Frames for front modules AQR253..

Product Title	Data sheet	Stock no.	Product no.
Frame DELTA line for front module	N1410	S55720-S158	<b>AQR2510NFW</b>
Frame DELTA azio for front module	N1410	S55720-S160	<b>AQR2510NGW</b>
Frame DELTA miro for front module	N1410	S55720-S159	<b>AQR2510NHW</b>

##### AQR2531..

##### Front modules with passiv temperature measurement

Front module with passiv sensor.

Data sheet	N1408
Measuring range, temperature	0...50 °C
Connection, electrical	Screw terminals
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years

##### Range overview AQR2531..

Sensing element, temperature	Dimensions (WxHxD) [mm]	Stock no.	Product no.
LG-Ni1000	55 x 55 x 38,5	S55720-S133	<b>AQR2531ANW</b>

##### Mounting plates for front modules AQR2531..

Product Title	Data sheet	Stock no.	Product no.
Mounting plate EU (CEE/VDE)	N1408	S55720-S161	<b>AQR2500NF</b>
Mounting plate IT (3 modular)	N1408	S55720-S163	<b>AQR2500NG</b>

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### Base modules for temperature and humidity measurement

AQR2540..

- Base module without sensor for plugging onto a front module

Data sheet	N 1410
Operating voltage	AC 24 V DC 15...36 V
Connection, electrical	Screw terminals
Analog output, signal	DC 0...10 V DC 2...10 V DC 0...5 V DC 0...20 mA DC 4...20 mA DC 0...10 mA
Digital outputs	CO: 1 Potential-free
Warranty	5 Years



### Range overview AQR2540..

Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
EU (CEE/VDE)	71 x 71 x 45	S55720-S142	AQR2540NF
IT (3 modular)	71 x 71 x 45	S55720-S144	AQR2540NG
UK (British Standard)	71 x 71 x 45	S55720-S143	AQR2540NH

### Base module with KNX for temperature and humidity measurement

AQR2570..

- Base module without sensor for plugging onto a front module
- 1 analog input to connect temperature sensors with NTC 10k sensing element to measure room, floor, or ceiling temperature
- 2 multifunctional binary inputs to connect window contacts or buttons
- Power supply via KNX bus, bus load < 5 mA
- Communication: KNX S-Mode, KNX LTE-Mode (Synco)

Data sheet	N 1411
Voltage supply	KNX bus
Analog inputs, number	1
Analog inputs	Passive temperature sensor NTC 10k
Digital inputs, number	2
Digital inputs	Potential-free contacts
Warranty	5 Years



### Range overview AQR2570..

Mechanical design	Data sheet	Stock no.	Product no.
EU (CEE/VDE)	N 1411	S55720-S203	AQR2570NF
IT (3 Modular)	N 1411	S55720-S205	AQR2570NG
UK (British Standard)	N 1411	S55720-S204	AQR2570NH
US (UL)	N 1411	S55720-S206	AQR2570NJ

## Sensors

### Temperature

#### Duct sensors QAM.. / FK-TP..

##### QAM21..



##### Duct temperature sensor, passive

Fully active, flexible probe for averaging.

Note on fixing:  
Supplied complete with mounting flange.

Data sheet  
Time constant  
Warranty

N1761  
At v = 2 m/s: 30 s  
5 Years

##### Range overview QAM21..

Probe length [mm]	Sensing element, temperature	Measuring range, temperature [°C]	Measurement accuracy [K]	Stock no.	Product no.
400	Pt100	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2110.040	<b>QAM2110.040</b>
2000	Pt1000	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2112.200	<b>QAM2112.200</b>
400	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.040	<b>QAM2120.040</b>
2000	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.200	<b>QAM2120.200</b>
6000	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.600	<b>QAM2120.600</b>
400	NTC 10k	-40...80	At -40...80 °C: ±1.2	BPZ:QAM2130.040	<b>QAM2130.040</b>
400	Pt1000	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2112.040	<b>QAM2112.040</b>

##### QAM21..1..



##### Duct temperature sensor active

Fully active, flexible probe for averaging.

Note on fixing:  
Supplied complete with mounting flange.

Power consumption  
Measuring range, temperature  
Measurement accuracy  
Time constant  
Immersion length  
Connection, electrical  
Type of fixing  
Degree of protection  
Dimensions (W x H x D)  
Warranty

≤ 1 VA  
-50...50 °C  
At -50...50 °C: ±0.9 K  
30 s at v = 2 m/s  
400 mm  
Screw terminals  
Flange  
IP54  
80 x 88 x 39 mm  
5 Years

##### Range overview QAM21..1..

Signal output temperature	Operating voltage [V]	Probe length [mm]	Data sheet	Stock no.	Product no.
Modbus RTU	AC 24 DC 13.5...35	400	A6V11610632	S55720-S466	<b>QAM2151.040/MO</b>
DC 0...10 V	AC 24 DC 13.5...35	400	N1762	BPZ:QAM2161.040	<b>QAM2161.040</b>
DC 4...20 mA	DC 13.5...35	400	N1762	BPZ:QAM2171.040	<b>QAM2171.040</b>

##### Accessories for QAM21.. and QAM21..1

Product Title	Data sheet	Stock no.	Product no.
Mounting flange, adjustable depth	N1193	BPZ:AQM63.0	<b>AQM63.0</b>
3 capillary supports and 3 spacers for QAF.. Mounting	N1821	BPZ:AQM63.2	<b>AQM63.2</b>
Accessory, sensor QAM9020, mounting flange	N1772	BPZ:AQM9020	<b>AQM9020</b>
6 Capillary tube clamps for QAF../QAM.. mounting	N1284	BPZ:AQM63.3	<b>AQM63.3</b>

### Duct temperature sensor Pt100, for high temperature

FK-TP/200

With connecting head to DIN.  
No protection pocket required.

Supplied complete with mounting flange.



Data sheet	N1778
Measuring range, temperature	-70...260 °C
Sensing element, temperature	Pt100
Sensing element	Pt100
Signal output temperature	Pt100
Measurement accuracy	At -70...260 °C: ±1.8 K
Time constant	Air v=1 m/s: 100 s
Immersion length	200 mm
Material, immersion pocket	Stainless steel
Connection, mechanical	Flange
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	60 x 80 x 83 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:FK-TP/200	FK-TP/200

### Duct temperature sensor

QAM16..020

Duct temperature sensor, probe L=200mm

Data sheet	A6V12251940
Immersion length	200 mm
Probe length	200 mm
Warranty	5 Years



### Range overview QAM16..020

Time constant [m/s]	Operating range [°C]	Stock no.	Product no.
30 s at 2	-30...70	S55720-S512	QAM1612.020
30 s at 2	-30...70	S55720-S513	QAM1630.020



## QAE1612.010



## Immersion temperature sensor

Passive sensor for acquiring the water temperature in pipes and tanks

Data sheet	A6V12166488
Sensing element	Pt1000
Measuring range, temperature	-15... 100 °C
Measurement accuracy	2 %
Immersion length	100 mm
Material, immersion pocket	Stainless steel
Dimensions (W x H x D)	56 x 72 x 152.5 mm
Warranty	5 Years

Stock no.

Product no.

S55720-S197

QAE1612.010

## QAE9120.010



## Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket

Immersion temperature sensor 100 mm LG-Ni1000.  
Multi-pack, MPQ=20pcs, without gift-box

Fixing is made by protection pocket or compression fitting. If for the nominal pressure no entry can be found in the table, no protection pocket is included as standard and the nominal pressure depends on the protection pocket used (see accessories). By using the compression fitting AQE2102 the nominal pressure is 16 bar (PN16).

Data sheet	N1781
Sensing element	LG-Ni1000
Measuring range, temperature	-30... 130 °C
Sensing element, temperature	LG-Ni1000
Measurement accuracy	At -30... 130 °C: ±1.3 K
Time constant	With protection pocket: 30 s Without protection pocket: 8 s
Immersion length	100 mm
Protection pocket	Protection pocket included; PN10
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Dimensions (W x H x D)	80 x 60 x 31 mm
Packaging unit	20pcs/pack

Stock no.

Product no.

S55720-S516

QAE9120.010

QAE21..



### Immersion temperature sensor, passive

Fixing is made by protection pocket or compression fitting. If for the nominal pressure no entry can be found in the table, no protection pocket is included as standard and the nominal pressure depends on the protection pocket used (see accessories). By using the compression fitting AQE2102 the nominal pressure is 16 bar (PN16).

Data sheet	N1781
Sensing element	Pt100
Time constant	With protection pocket: 30 s Without protection pocket: 8 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Dimensions (W x H x D)	80 x 60 x 31 mm
Warranty	5 Years

### Range overview QAE21..

Sensing element, temperature	Measuring range, temperature [°C]	Measurement accuracy [K]	Immersion length [mm]	Protection pocket	Stock no.	Product no.
Pt100	-30...130	At -30...130 °C: ±0,95	100	Not included	BPZ:QAE2111.010	<b>QAE2111.010</b>
Pt100	-30...130		100	Not included	S55720-S517	<b>QAE2115.010</b>
Pt100	-30...130		150	Not included	S55720-S518	<b>QAE2115.015</b>
Pt100	-30...130	At -30...130 °C: ±0.95	150	Not included	BPZ:QAE2111.015	<b>QAE2111.015</b>
Pt1000	-30...130	At -30...130 °C: ±0.95	100	Not included	BPZ:QAE2112.010	<b>QAE2112.010</b>
Pt1000	-30...130	At -30...130 °C: ±0.95	150	Not included	BPZ:QAE2112.015	<b>QAE2112.015</b>
LG-Ni1000	-30...130	At -30...130 °C: ±1.3	100	Protection pocket included; PN10	BPZ:QAE2120.010	<b>QAE2120.010</b>
LG-Ni1000	-30...130	At -30...130 °C: ±1.3	150	Protection pocket included; PN10	BPZ:QAE2120.015	<b>QAE2120.015</b>
LG-Ni1000	-30...130	At -30...130 °C: ±1.3	100	Not included	BPZ:QAE2121.010	<b>QAE2121.010</b>
LG-Ni1000	-30...130	At -30...130 °C: ±1,3	150	Not included	BPZ:QAE2121.015	<b>QAE2121.015</b>
NTC 10k	-30...125	At -30...125 °C: ±1.7	100	Not included	BPZ:QAE2130.010	<b>QAE2130.010</b>
NTC 10k	-30...125	At -30...125 °C: ±1.7	150	Not included	BPZ:QAE2130.015	<b>QAE2130.015</b>

## Sensors

### Temperature

#### Immersion sensors QAE.. / FT-TP..

##### QAE21..4



##### Immersion temperature sensor active

Fixing is made by protection pocket or compression fitting. No protection pocket is included as standard. The nominal pressure depends on the protection pocket used (see accessories). By using the compression fitting AQE2102 the nominal pressure is 16 bar (PN 16).

Power consumption	≤ 1 VA
Measuring range, temperature	-10...120 °C
Measurement accuracy	At 0...70 °C: ±1 K At -10...120 °C: ±1.4 K
Time constant	With protection pocket: 30 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 39 mm
Warranty	5 Years

##### Range overview QAE21..4

Signal output temperature	Operating voltage [V]	Immersion length [mm]	Data sheet	Stock no.	Product no.
Modbus RTU	AC 24 DC 13.5...35	100	A6V11610252	S55720-S465	<b>QAE2154.010/MO</b>
DC 0...10 V	AC 24 DC 13.5...35	100	N1782	BPZ:QAE2164.010	<b>QAE2164.010</b>
DC 0...10 V	AC 24 DC 13.5...35	150	N1782	BPZ:QAE2164.015	<b>QAE2164.015</b>
DC 4...20 mA	DC 13.5...35	100	N1782	BPZ:QAE2174.010	<b>QAE2174.010</b>
DC 4...20 mA	DC 13.5...35	150	N1782	BPZ:QAE2174.015	<b>QAE2174.015</b>

##### Protection pocket for QAE21..

Packaging unit	Protection pocket	Material	PN class	Data sheet	Stock no.	Product no.
1 pc	100 mm, G $\frac{1}{2}$ " LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB100	<b>ALT-SB100</b>
1 pc	150 mm, G $\frac{1}{2}$ " LW7	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB150	<b>ALT-SB150</b>
1 pc	100 mm; G $\frac{1}{2}$ "; 7 mm	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS100	<b>ALT-SS100</b>
1 pc	150 mm, G $\frac{1}{2}$ " LW7	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS150	<b>ALT-SS150</b>
1 pc	100 mm, G $\frac{1}{2}$ " (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF100	<b>ALT-SSF100</b>
1 pc	150 mm, G $\frac{1}{2}$ " (with flange) LW7	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF150	<b>ALT-SSF150</b>

##### Accessories for QAE21..

Product Title	Data sheet	Stock no.	Product no.
Compression fitting with threaded nipple $\frac{1}{2}$ "	N1781	BPZ:AQE2102	<b>AQE2102</b>



### Immersion temperature sensor Ø 6 mm with cable and fitting

QAE26.9

With connecting cable.

Data sheet	N1790
Sensing element	LG-Ni1000
Measuring range, temperature	-40...180 °C
Sensing element, temperature	LG-Ni1000
Time constant	3 s
Immersion length	25...260 mm
Material, immersion pocket	Stainless steel
Cable length	1.2 m
Connecting thread	R 1/4"
PN class	PN 40
Diameter	6 mm
Warranty	5 Years



Stock no.	Product no.
BPZ:QAE26.9	QAE26.9

### Immersion temperature sensor Ø 4 mm with cable and fitting

QAE26.9..

With connecting cable.

Other technical data identical to QAE26.9

Packaging unit QAE1020.024 100 pieces

Data sheet	N1790
Sensing element	LG-Ni1000
Sensing element, temperature	LG-Ni1000
Measurement accuracy	At -50...180 °C: ±1.75 K
Time constant	<2.5 s
Material, immersion pocket	Stainless steel
Cable length	2 m
Connecting thread	R 1/4"
PN class	PN 16
Diameter	4 mm
Warranty	5 Years



### Range overview QAE26.9..

Immersion length [mm]	Measuring range, temperature [°C]	Connection cable	Stock no.	Product no.
15...65	-50...180	Silicone	BPZ:QAE26.90	<b>QAE26.90</b>
15...125	-50...180	Silicone	BPZ:QAE26.91	<b>QAE26.91</b>
15...240	-50...180	Silicone	BPZ:QAE26.93	<b>QAE26.93</b>
15...465	-50...180	Silicone	BPZ:QAE26.95	<b>QAE26.95</b>
15...240	-5...105	PVC	BPZ:QAE1020.024	<b>QAE1020.024</b>

## Sensors

### Temperature

#### Immersion sensors QAE.. / FT-TP..

##### QAE3..



##### Immersion temperature sensor for high temperature

With connection head made of die-cast aluminium.  
No protection pocket required.

Data sheet	N1794
Sensing element	Pt100
Sensing element, temperature	Pt100
Time constant	25 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Type of fixing	Protection pocket G½ "
PN class	PN 40
Material, housing	Die-cast aluminium
Degree of protection	IP65
Dimensions (W x H x D)	69 x 92 x 81 mm
Warranty	5 Years

##### Range overview QAE3..

Measuring range, temperature [°C]	Analog output, signal	Immersion length [mm]	Operating voltage [V]	Data sheet	Stock no.	Product no.
-50...200	Passive	100		N1794	BPZ:QAE3010.010	<b>QAE3010.010</b>
-50...200	Passive	160		N1794	BPZ:QAE3010.016	<b>QAE3010.016</b>
0...200	DC 4...20 mA	100	DC 7.5...30	N1794	BPZ:QAE3075.010	<b>QAE3075.010</b>
0...200	DC 4...20 mA	160	DC 7.5...30	N1794	BPZ:QAE3075.016	<b>QAE3075.016</b>

##### FT-TP/..



##### Immersion temperature sensor Pt100, short time constant, for high temperature

With connecting head to DIN.  
No protection pocket required.

Data sheet	N1797
Sensing element	Pt100
Measuring range, temperature	-100...450 °C
Sensing element, temperature	Pt100
Time constant	Air v = 1 m/s: <100 s Water v = 0,4 m/s: <5 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
PN class	PN 40
Dimensions (W x H x D)	60 x 80 x 85 mm
Warranty	5 Years

##### Range overview FT-TP/..

Immersion length [mm]	Stock no.	Product no.
100	BPZ:FT-TP/100	<b>FT-TP/100</b>
100	S55720-S498	<b>FT-TP/100-200</b>
400	BPZ:FT-TP/400	<b>FT-TP/400</b>

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**Immersion temperature sensor**

**QAE16..010**

Passive sensor for acquiring the water temperature in pipes and tanks



Data sheet	A6V12166488
Measurement accuracy	2 %
Immersion length	100 mm
Material, immersion pocket	Stainless steel
Dimensions (W x H x D)	56 x 72 x 152.5 mm
Warranty	5 Years

**Range overview QAE16..010**

Measuring range, temperature [°C]	Time constant [s]	Stock no.	Product no.
-15...100		S55720-S197	<b>QAE1612.010</b>
-15...100	With protection pocket: 30 Without protection pocket: 8	S55720-S511	<b>QAE1630.010</b>

## Sensors

### Temperature

#### Strap-on sensors QAD..

##### QAD2..



##### Strap-on temperature sensor

Supplied complete with strap for pipe diameters from 15...140 mm.

Data sheet N1801  
Warranty 5 Years

##### Range overview QAD2..

Sensing element, temperature	Measuring range, temperature [°C]	Time constant [s]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
LG-Ni1000	-30... 130	3	60 x 67 x 43	BPZ:QAD22	<b>QAD22</b>
Pt100	-30... 130	3	60 x 67 x 43	BPZ:QAD2010	<b>QAD2010</b>
Pt1000	-30... 130	3	60 x 67 x 43	BPZ:QAD2012	<b>QAD2012</b>
NTC 10k	-30... 125	6	60 x 67 x 43	BPZ:QAD2030	<b>QAD2030</b>

##### QAD26.220



##### Strap-on temperature sensor with cable LG-Ni1000

With cable, without housing

Supplied complete with strap for pipe diameters from 10...50 mm.

Data sheet N1802  
Measuring range, temperature -35...90 °C  
Sensing element LG-Ni1000  
Time constant 10 s  
Cable length 2 m  
Warranty 5 Years

Stock no. Product no.  
BPZ:QAD26.220 **QAD26.220**

### Outside sensor, passive

QAC..

For acquiring the outside temperature and – to a lesser degree – solar radiation, the effect of wind and the temperature of the wall.

Data sheet N1811  
Warranty 5 Years



### Range overview QAC..

Measuring range, temperature [°C]	Sensing element, temperature	Measurement accuracy [K]	Time constant [s]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
-50...70	Pt100	0 °C: ±0.3	840	80 x 92 x 50	BPZ:QAC2010	<b>QAC2010</b>
-50...70	LG-Ni1000	0 °C: ±0.4	840	80 x 92 x 50	BPZ:QAC22	<b>QAC22</b>
-50...70	NTC 575	At -10...20 °C: ±1	720	80 x 92 x 50	BPZ:QAC32	<b>QAC32</b>
-40...70	NTC 10k	25 °C: ±0.46	840	80 x 92 x 50	BPZ:QAC2030	<b>QAC2030</b>
-50...70	Pt1000	0 °C: ±0.3	840	80 x 92 x 50	BPZ:QAC2012	<b>QAC2012</b>

### Outside temperature sensor active

QAC31..

Active sensor for acquiring the outside temperature. For use in heating, ventilation and air conditioning plants.

The QAC31.. may be used as an high-quality room sensor.

Data sheet N1814  
Sensing element, temperature Pt1000  
Measuring range, temperature -50...50 °C  
Time constant 20 min  
Connection, electrical Screw terminals  
Degree of protection IP65  
Warranty 5 Years



### Range overview QAC31..

Analog output, signal	Operating voltage [V]	Measurement accuracy [K]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
DC 0...10 V	AC 24 DC 13.5...35	At -50...50 °C: ±0.9	80 x 88 x 39	BPZ:QAC3161	<b>QAC3161</b>
DC 4...20 mA	DC 13.5...35	At -50...50 °C: ±0.9	80 x 88 x 39	BPZ:QAC3171	<b>QAC3171</b>

## Sensors

### Temperature

#### Window pan and flue gas sensors: QAT../FGT..

##### FGT-PT1000



##### Flue gas temperature sensor Pt1000

For measuring the flue gas temperature in flueways.

Data sheet	N1846
Measuring range, temperature	-20...400 °C
Sensing element	Pt1000
Sensing element, temperature	Pt1000
Immersion length	65 mm
Material, immersion pocket	Sensor sleeve, stainless steel
Connection cable	2-wire 1.5 m; Teflon with steel wire mesh
Cable length	1.5 m
Material	Stainless steel V4A
Dimensions (W x H x D)	150 x 80 x 30 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:FGT-PT1000	FGT-PT1000

##### QAT22



##### Window pane temperature sensor

Data sheet	N1830
Measuring range, temperature	-10...50 °C
Sensing element, temperature	LG-Ni1000
Sensing element	LG-Ni1000
Measurement accuracy	0 °C: ±0.4 K
Time constant	30 s
Connection cable	2-wire
Cable length	1.5 m
Degree of protection	IP65
Dimensions (W x H x D)	19 x 12 x 37 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QAT22	QAT22

**Cable temperature sensor (6 x 40.5 mm) for HVAC applications**

QAP..

Data sheet	N1831
Time constant	Fitted to pipe: <20 s
Protection pocket	40,5 x 6 mm
Material, protection pocket	Stainless steel
Type of fixing	Cable tie or with accessories
Degree of protection	IP65
Warranty	5 Years



**Range overview QAP..**

Cable length [m]	Sensing element, temperature	Connection cable	Measurement accuracy [K]	Measuring range, temperature [°C]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
1.5	LG-Ni1000	Silicone	At -30...130 °C: ±1.3	-30...130		BPZ:QAP21.3	<b>QAP21.3</b>
8	LG-Ni1000	Silicone	At -30...130 °C: ±1.3	-30...130		BPZ:QAP21.3/8000	<b>QAP21.3/8000</b>
1.5	Pt100	Silicone	At -30...130 °C: ±0.95	-30...130	40.5 x 6 x 6	BPZ:QAP2010.150	<b>QAP2010.150</b>
1.5	Pt1000	Silicone	At -30...130 °C: ±0.95	-30...130		BPZ:QAP2012.150	<b>QAP2012.150</b>
2	LG-Ni1000	PVC	At -30...130 °C: ±1.3	-25...95	40 x 6 x 6	BPZ:QAP22	<b>QAP22</b>
2	NTC 10k	PVC	At -25...95 °C: ±1.4	-25...95		BPZ:QAP1030.200	<b>QAP1030.200</b>

**Accessories for QAP..**

Product Title	Packaging unit	Data sheet	Stock no.	Product no.
Changeover cable holder for QAP..	Set of 10 pieces	N1831	BPZ:ARG22.1	<b>ARG22.1</b>
Aluminium bar attachment for QAP..	Set of 5 pieces	N1831	BPZ:ARG22.2	<b>ARG22.2</b>
Terminal housing	1 box	N1207	S55700-P131	<b>RAK-H-M</b>
Cable holder for protection pocket mounting		N1831	BPZ:421314160	<b>421314160</b>

**Cable temperature sensor for high-temperature applications (180°C)**

QAP21.2

For acquiring the water temperature in flat solar collectors.

Data sheet	N1833
Measuring range, temperature	-30...180 °C
Sensing element, temperature	LG-Ni1000
Sensing element	LG-Ni1000
Measurement accuracy	At -30...180 °C: ±1.65 K
Time constant	Without protection pocket: 20 s
Protection pocket	50 mm; 6 mm
Material, protection pocket	Stainless steel
Connection cable	Silicone
Cable length	1.5 m
Degree of protection	IP67
Warranty	5 Years



Stock no.	Product no.
BPZ:QAP21.2	<b>QAP21.2</b>



## Sensors

### Temperature

#### Cable sensors QAP.. / QAZ.. / QAH..

##### QAZ21.68..



##### Cable temperature sensor for use in refrigeration plants (-50 °C)

Supplied complete with 2 cable ties and sleeve coated with thermal conductive wax for fitting to pipework.

Data sheet	N1848
Measuring range, temperature	-50...80 °C
Sensing element, temperature	LG-Ni1000
Time constant	Fitted to pipework <20 s
Material, protection pocket	Stainless steel
Protection pocket	50 x 6 mm
Warranty	5 Years

##### Range overview QAZ21.68..

Cable length [m]	Packaging unit	Stock no.	Product no.
2	1 piece	BPZ:QAZ21.682/101	<b>QAZ21.682/101</b>
5	100 pieces	BPZ:QAZ21.685/101	<b>QAZ21.685/101</b>

##### QAH11..



##### Cable sensor for fan coil applications

For installation in fan coil units as

- a return air temperature sensor
- a changeover sensor

Data sheet	N1840
Measuring range	For fixed cable
Sensing element	NTC3k
Measuring range, temperature	-20...70 °C
Sensing element, temperature	NTC3k
Time constant	1.5 min at v = 0 m/s
Cable length	2.5 m
Warranty	5 Years

##### Range overview QAH11..

Connection cable	Packaging unit	Stock no.	Product no.
2-wire Ferrules	10 pieces	BPZ:QAH11.1	<b>QAH11.1</b>

##### Accessories for QAH11..

Product Title	Packaging unit	Data sheet	Stock no.	Product no.
Changeover cable holder for QAH11..	10 pieces	N3009	BPZ:ARG86.3	<b>ARG86.3</b>



### Room sensor for rel. humidity / temperature

QFA20..

For relative humidity and temperature.

Measurement range humidity	0...95 % r.h.
Measurement accuracy	23 °C: 23 % r.h., 0...95 % r.h.: ±5 % r.h.
Time constant	Humidity: 20 s Temperature: 510 s
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years



### Range overview QFA20..

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Display	Data sheet	Stock no.	Product no.
Modbus RTU	Modbus RTU	AC 24 DC 13.5...35	-40...70		A6V12046135	S55720-S508	QFA2050/MO
Modbus RTU	Modbus RTU	AC 24 DC 13.5...35	-40...70	LCD	A6V12046135	S55720-S509	QFA2050D/MO
DC 0...10 V		AC 24 DC 13.5...35			N1857	BPZ:QFA2000	QFA2000
DC 4...20 mA		DC 13.5...35			N1857	S55720-S114	QFA2001
DC 0...10 V	LG-Ni1000	AC 24 DC 13.5...35	0...50		N1857	BPZ:QFA2020	QFA2020
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70		N1857	BPZ:QFA2060	QFA2060
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	LCD	N1857	BPZ:QFA2060D	QFA2060D
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70		N1857	S55720-S115	QFA2071

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### Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V)

QFA2068

For relative humidity and temperature

Data sheet	A6V11600411
Operating voltage	AC 24 V ±20 % or DC 13.5...35 V (SELV)
Power consumption	0.4 VA
Measuring range, temperature	-15...50 °C
Measurement range humidity	0...100 % r.h.
Measurement accuracy	At 23 °C and AC/DC 24 V and at 0...95 % r.h.: ±5 % r.h.
Time constant	< 20 s
Signal output temperature	DC 0...10 V DC 4...20 mA LG-Ni1000
Signal output humidity	DC 0...10 V DC 4...20 mA
Color	White/Gray
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years



Stock no.	Product no.
S55720-S462	QFA2068

New Product

Sensors

Humidity and temperature

Room sensors QFA..

**QFA2068D**



**Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V), with digital Display**

For relative humidity and temperature

Data sheet	A6V11600411
Operating voltage	AC 24 V ±20 % or DC 13.5...35 V (SELV)
Power consumption	0.4 VA
Measuring range, temperature	-15...50 °C
Measurement range humidity	0...100 % r.h.
Measurement accuracy	At 23 °C and AC/DC 24 V and at 0...95 % r.h.: ±5 % r.h. At 23 °C and AC/DC 24 V and at 30...70 % r.h.: ±3 % r.h. At AC/DC 24 V and 23 °C: ±0.3 K At AC/DC 24 V and 15...35 °C: ±0.7 K At AC/DC 24 V and -35...+50 °C: ±1 K
Time constant	20 s
Signal output temperature	DC 0...10 V DC 4...20 mA LG-Ni1000
Signal output humidity	DC 0...10 V DC 4...20 mA
Color	White/Gray
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years

Stock no.	Product no.
S55720-S463	QFA2068D

**QFA2079**



**Room sensor for humidity (DC 4...20 mA) and temperature (DC 4...20 mA)**

For relative humidity and temperature

Data sheet	A6V11600411
Operating voltage	AC 24 V ±20 % or DC 13.5...35 V (SELV)
Power consumption	1.4 W
Measuring range, temperature	-15...50 °C
Measurement range humidity	0...100 % r.h.
Measurement accuracy	At 23 °C and AC/DC 24 V and at 0...95 % r.h.: ±5 % r.h. At 23 °C and AC/DC 24 V and at 30...70 % r.h.: ±3 % r.h. At AC/DC 24 V and 23 °C: ±0.3 K At AC/DC 24 V and 15...35 °C: ±0.7 K At AC/DC 24 V and -35...+50 °C: ±1 K
Time constant	20 s
Signal output temperature	DC 0...10 V DC 4...20 mA LG-Ni1000
Signal output humidity	DC 0...10 V DC 4...20 mA
Color	White/Gray
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years

Stock no.	Product no.
S55720-S464	QFA2079

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QFA31..



**Room sensors for rel. humidity / temperature for demanding requirements**

For relative humidity and temperature.  
Degree of protection: IP65, IP40 (measuring tip).

Data sheet	N1858
Measurement range humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature: <8.5 min
Connection, electrical	Screw terminals
Degree of protection	IP65 / IP40
Dimensions (W x H x D)	80 x 144 x 39 mm
Warranty	5 Years

**Range overview QFA31..**

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Display	Stock no.	Product no.
DC 0...10 V		AC 24 DC 13.5...35			BPZ:QFA3100	QFA3100
Modbus RTU	Modbus RTU	AC 24 DC 13.5...35	-40...70		S55720-S535	QFA3150/MO
DC 4...20 mA		DC 13.5...35			BPZ:QFA3101	QFA3101
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70		BPZ:QFA3160	QFA3160
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	LCD	BPZ:QFA3160D	QFA3160D
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70		BPZ:QFA3171	QFA3171
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70	LCD	QFA3171D	QFA3171D



## Sensors

### Humidity and temperature

#### Room sensors QFA..

##### QFA41..



#### Room sensors for rel. humidity / temperature for demanding requirements, with calibration certificate

For relative humidity and temperature.  
Degree of protection: IP65, IP40 (measuring tip).

Data sheet	N1859
Measurement range humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature: <8.5 min
Connection, electrical	Round connector
Degree of protection	IP65 / IP40
Dimensions (W x H x D)	80 x 144 x 39 mm
Warranty	5 Years

#### Range overview QFA41..

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Display	Stock no.	Product no.
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	---	BPZ:QFA4160	<b>QFA4160</b>
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	LCD	QFA4160D	<b>QFA4160D</b>
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70	---	BPZ:QFA4171	<b>QFA4171</b>
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70	LCD	QFA4171D	<b>QFA4171D</b>

#### Accessories for QFA..

Product Title	Data sheet	Stock no.	Product no.
Radiation shield for exterior wall mounting	N1858	BPZ:AQF3100	<b>AQF3100</b>
Filter cap for humidity sensor	N1858	BPZ:AQF3101	<b>AQF3101</b>
Exchangeable measuring tip	N1858	AQF3150	<b>AQF3150</b>
Exchangeable measuring tip, with calibration certificate	N1859	BPZ:AQF4150	<b>AQF4150</b>
Remote sensing cable 3 m for sensor tip	N1859	AQY2010	<b>AQY2010</b>
Service-Set		AQF3153	<b>AQF3153</b>

### Front modules for base module

AQR253..

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years



### Range overview AQR253..

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	AQR2534ANW
				55 x 55 x 12	S55720-S137	AQR2530NNW
0...50	Active			55 x 55 x 12	S55720-S136	AQR2532NNW
0...50	Active	0...100		55 x 55 x 12	S55720-S141	AQR2535NNW
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	AQR2535NNWQ

The matching design frame must be ordered separately.

### Frames for front modules AQR253..

Product Title	Color	Dimensions (W x H)	Data sheet	Stock no.	Product no.
Frame DELTA line for front module	Titanium white	80.2 x 80.2 mm	N1410	S55720-S158	AQR2510NFW
Frame DELTA azio for front module	Titanium white	80 x 120 mm / 120 x 80 mm	N1410	S55720-S160	AQR2510NGW
Frame DELTA miro for front module	Titanium white	90 x 90 mm	N1410	S55720-S159	AQR2510NHW

### Base modules for temperature and humidity measurement

AQR2540..

- Base module without sensor for plugging onto a front module

Data sheet	N1410
Operating voltage	AC 24 V DC 15...36 V
Connection, electrical	Screw terminals
Analogue output, signal	DC 0...10 V DC 2...10 V DC 0...5 V DC 0...20 mA DC 4...20 mA DC 0...10 mA
Digital outputs	CO: 1 Potential-free
Warranty	5 Years



### Range overview AQR2540..

Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
EU (CEE/VDE)	71 x 71 x 45	S55720-S142	AQR2540NF
IT (3 modular)	71 x 71 x 45	S55720-S144	AQR2540NG
UK (British Standard)	71 x 71 x 45	S55720-S143	AQR2540NH

## Sensors

### Humidity and temperature

#### Room sensors - flush mounted AQR25..

##### AQR2570..



##### Base module with KNX for temperature and humidity measurement

- Base module without sensor for plugging onto a front module
- 1 analog input to connect temperature sensors with NTC 10k sensing element to measure room, floor, or ceiling temperature
- 2 multifunctional binary inputs to connect window contacts or buttons
- Power supply via KNX bus, bus load < 5 mA
- Communication: KNX S-Mode, KNX LTE-Mode (Synco)

Data sheet	N1411
Voltage supply	KNX bus
Analog inputs, number	1
Analog inputs	Passive temperature sensor NTC 10k
Digital inputs, number	2
Digital inputs	Potential-free contacts
Warranty	5 Years

##### Range overview AQR2570..

Mechanical design	Data sheet	Stock no.	Product no.
EU (CEE/VDE)	N1411	S55720-S203	<b>AQR2570NF</b>
IT (3 Modular)	N1411	S55720-S205	<b>AQR2570NG</b>
UK (British Standard)	N1411	S55720-S204	<b>AQR2570NH</b>
US (UL)	N1411	S55720-S206	<b>AQR2570NJ</b>

**Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device**

**QFA1000**



- 2-position controller with humidity sensor
- Setpoint adjuster inside device

Data sheet	N1518
Setpoint setting range	30...90 % r.h.
Switching differential	6 % r.h.
Time constant	At v = 0.2 m/s: 5 min
Digital outputs	CO: 1 Potential-free
Connection, electrical	Screw terminals
Degree of protection	IP20
Dimensions (W x H x D)	76 x 76 x 34 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QFA1000	QFA1000

**Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment**

**QFA1001**



- 2-position controller with humidity sensor
- External setpoint adjustment

Data sheet	N1518
Setpoint setting range	30...90 % r.h.
Switching differential	6 % r.h.
Digital outputs	CO: 1 Potential-free
Connection, electrical	Screw terminals
Degree of protection	IP20
Dimensions (W x H x D)	76 x 76 x 34 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QFA1001	QFA1001



## Sensors

### Humidity and temperature

#### Duct sensors QFM..

##### QFM1660



##### Duct sensor for humidity (0...10 V) and temperature (0...10 V)

Active sensor for acquiring the air humidity and temperature in air duct

Data sheet	Q3731
Operating voltage	AC 24 V
Measurement range humidity	10...90 % r.h.
Measurement accuracy	25 °C: ±0.8 K At 20...25 % r.h., 10...90 % r.h.: ±5 % r.h.
Analog output, signal	DC 0...10 V
Signal output temperature	DC 0...10 V
Signal output humidity	DC 0...10 V
Warranty	5 Years

Stock no. Product no.

S55720-S198 **QFM1660**

##### QFM21..



##### Duct sensor for rel. humidity / temperature

For relative humidity and temperature.

Measurement range humidity	0...95 % r.h.
Measurement accuracy	Humidity at 30...70 % r.h. and 23 °C: ±3 % r.h. Temperature, at 15...35 °C: ±0.8 K Temperature, at 35...50 °C: ±1.0 K
Time constant	Humidity: <20 s Temperature in with 2 m/s moved air: <3.5 min
Immersion length	90...154 mm
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 39 mm
Warranty	5 Years

##### Range overview QFM21..

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Data sheet	Stock no.	Product no.
DC 0...10 V		AC 24 DC 13.5...35		N1864	BPZ:QFM2100	<b>QFM2100</b>
DC 4...20 mA		DC 13.5...35		N1864	BPZ:QFM2101	<b>QFM2101</b>
DC 0...10 V	LG-Ni1000	AC 24 DC 13.5...35	0...50 -35...35 -40...70	N1864	BPZ:QFM2120	<b>QFM2120</b>
Modbus RTU	Modbus RTU	AC 24 DC 13.5...35	-40...70	A6V11610635	S55720-S467	<b>QFM2150/MO</b>
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	N1864	BPZ:QFM2160	<b>QFM2160</b>
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70	N1864	BPZ:QFM2171	<b>QFM2171</b>

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### Duct sensors for rel. humidity / temperature for demanding requirements

QFM31..

For relative humidity and temperature.



Measurement range humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Immersion length	90...206 mm
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	80 x 88 x 39 mm
Warranty	5 Years

#### Range overview QFM31..

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Data sheet	Stock no.	Product no.
DC 0...10 V		AC 24 DC 13.5...35		N1882	BPZ:QFM3100	QFM3100
DC 4...20 mA		DC 13.5...35		N1882	BPZ:QFM3101	QFM3101
Modbus RTU	Modbus RTU	AC 24 DC 13.5...35	-40...70	A6V11610638	S55720-S468	QFM3150/MO
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	N1882	BPZ:QFM3160	QFM3160
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 0...70	N1882	BPZ:QFM3171	QFM3171

### Duct sensors for rel. humidity / temperature for demanding requirements

QFM31..D

For relative humidity and temperature.



Data sheet	N1882
Measurement range humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Immersion length	90...206 mm
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	80 x 88 x 39 mm
Warranty	5 Years

#### Range overview QFM31..D

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Display	Stock no.	Product no.
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	LCD	BPZ:QFM3160D	QFM3160D
DC 4...20 mA	DC 4...20 mA	DC 13,5...35	0...50 -35...35 -40...70	LCD	QFM3171D	QFM3171D

## Sensors

### Humidity and temperature

#### Duct sensors QFM..

##### QFM41..



#### Duct sensor for rel. humidity/temperature for demanding requirements, with calibration certificate

For relative humidity and temperature.

Data sheet	N1883
Measurement range humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature in with 2 m/s moved air: <3.5 min
Immersion length	90...206 mm
Connection, electrical	Round connector
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	80 x 117 x 39 mm
Warranty	5 Years

#### Range overview QFM41..

Signal output humidity	Signal output temperature	Operating voltage [V]	Measuring range, temperature [°C]	Stock no.	Product no.
DC 0...10 V	DC 0...10 V	AC 24 DC 13.5...35	0...50 -35...35 -40...70	BPZ:QFM4160	<b>QFM4160</b>
DC 4...20 mA	DC 4...20 mA	DC 13.5...35	0...50 -35...35 -40...70	BPZ:QFM4171	<b>QFM4171</b>

#### Accessories for duct sensors QFM..

Product Title	Data sheet	Stock no.	Product no.
Filter cap for humidity sensor	N1858	BPZ:AQF3101	<b>AQF3101</b>
Exchangeable measuring tip	N1858	AQF3150	<b>AQF3150</b>
Exchangeable measuring tip, with calibration certificate	N1859	BPZ:AQF4150	<b>AQF4150</b>
Service-Set		AQF3153	<b>AQF3153</b>

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**Duct hygrostat, setpoint setting range 15...95 % r.h.**

**QFM81.2**

On / off hygrostat with humidity sensor.  
 External setpoint adjustment.



Supplied complete with mounting flange.

Data sheet	N1514
Setpoint setting range	15...95 % r.h.
Switching differential	4 % r.h.
Digital outputs	CO: 1
	Potential-free
Immersion length	130...156 mm
Digital output, switching current	5 (3)A
Digital output, switching voltage	250 V
Degree of protection	IP30
Dimensions (W x H x D)	73 x 140 x 64 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QFM81.2	<b>QFM81.2</b>

**Room hygrostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device**

**QFM81.21**

On / off hygrostat with humidity sensor.  
 Setpoint adjuster inside device.



Supplied complete with mounting flange.

Data sheet	N1514
Setpoint setting range	15...95 % r.h.
Switching differential	4 % r.h.
Digital outputs	CO: 1
	Potential-free
Immersion length	130...156 mm
Digital output, switching current	5 (3)A
Digital output, switching voltage	250 V
Degree of protection	IP55
Dimensions (W x H x D)	73 x 140 x 64 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QFM81.21	<b>QFM81.21</b>



## Sensors

### Humidity and temperature Condensation monitor QXA..

#### QXA21..



#### Condensation monitor

For preventing condensation in buildings with chilled ceilings or in cooling plants.

Data sheet	A6V10741072
Operating voltage	AC 24 V DC 24 V
Power consumption	1 VA
Digital outputs	1-pin Potential-free Changeover contact
Switching point	95 ± 4 % r.h.
Connection, electrical	Screw terminals
Degree of protection	IP40
Dimensions (W x H x D)	60 x 83 x 37 mm
Warranty	5 Years

#### Range overview QXA21..

Product Title	Stock no.	Product no.
Condensation monitor	S55770-T375	<b>QXA2100</b>
Condensation monitor with remote sensor head (cable length 1 m)	S55770-T376	<b>QXA2101</b>

QPA..



**Room air quality sensor CO<sub>2</sub>/ temperature / rel. Humidity / VOC**

Note: Not suited for safety-related applications!

Data sheet	N1961
Operating voltage	AC 24 V DC 15...35 V
Analog output, signal	DC 0...5 V DC 0...10 V DC 4...20 mA
Ambient temperature, operation	0...50 °C
Connection, electrical	Screw terminals
Degree of protection	IP30
Warranty	5 Years

**Range overview QPA..**

Measuring range	Measuring range, temperature [°C]	Measurement range humidity	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...100 % VOC				90 x 100 x 36	S55720-S119	<b>QPA1000</b>
0...2000 ppm CO <sub>2</sub>				90 x 100 x 36	BPZ:QPA2000	<b>QPA2000</b>
0...2000 ppm CO <sub>2</sub>				90 x 100 x 36	BPZ:QPA2002	<b>QPA2002</b>
0...100 % VOC						
0...2000 ppm CO <sub>2</sub>			LCD	90 x 100 x 36	BPZ:QPA2002D	<b>QPA2002D</b>
0...100 % VOC						
0...2000 ppm CO <sub>2</sub>	0...50 -35...35			90 x 100 x 36	BPZ:QPA2060	<b>QPA2060</b>
0...2000 ppm CO <sub>2</sub>	0...50 -35...35		LCD	90 x 100 x 36	BPZ:QPA2060D	<b>QPA2060D</b>
CO <sub>2</sub> : 0...2000 ppm	0...50 -35...35	0...95 % r.H.		90 x 100 x 36	BPZ:QPA2062	<b>QPA2062</b>
0...2000 ppm CO <sub>2</sub>	0...50 -35...35	0...95 % r.H.	LCD	90 x 100 x 36	BPZ:QPA2062D	<b>QPA2062D</b>
0...2000 ppm CO <sub>2</sub>				90 x 100 x 36	S55720-S121	<b>QPA2080</b>
0...2000 ppm CO <sub>2</sub>			LCD	90 x 100 x 36	S55720-S122	<b>QPA2080D</b>

With the QPA2080 and QPA2080D the passive temperature element is freely selectable, enclosed in the delivery are LG-Ni1000, Pt1000, Pt100, NTC 10kOhm.

Sensors  
Air quality  
Room sensor QPA..

QPA2052/MO



Room sensor CO<sub>2</sub>/Humidity/Temperature Modbus

Room air quality sensor with Modbus communication

- Modbus RTU (RS-485)
- Maintenance-free CO<sub>2</sub> sensing element
- No recalibrations required
- DIP switches setting together with other controllers

Data sheet	A6V12046144
Operating voltage	AC 24 V
	DC 15...35 V
Measuring range	0...2000 ppm CO <sub>2</sub>
	-40...70 °C
	0...100 %
Connection, electrical	Screw terminals
Type of fixing	Screws
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Warranty	5 Years

Stock no. Product no.

S55720-S510

QPA2052/MO

QPA84



Indoor air quality controller with integrated VOC sensor for mixed gas

In ventilation plant to optimize indoor air quality and consumption of energy by means of demand-controlled ventilation.

Data sheet	N1571
Operating voltage	AC 230 V
Power consumption	0.5 VA
Measured variable	Mixed gas (VOC)
Digital outputs	NO: 1
	Non floating
Digital output, switching current	8 (6.8) A
Digital output, switching voltage	230 V
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	96 x 101 x 39 mm
Warranty	5 Years

Stock no. Product no.

BPZ:QPA84

QPA84

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QPA1..4



### Room air quality sensor CO<sub>2</sub>/ temperature (Basic)

Note: Not suited for safety-related applications!

Data sheet	A6V101099173
Operating voltage	AC 24 V DC 15...35 V
Analog output, signal	DC 0...10 V DC 4...20 mA
Degree of protection	IP30
Warranty	5 Years

### Range overview QPA1..4

Measuring range [ppm CO <sub>2</sub> ]	Measuring range, temperature [°C]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...2000		90 x 100 x 36	S55720-S453	<b>QPA1004</b>
0...2000	0...50	90 x 100 x 36	S55720-S454	<b>QPA1064</b>

## Sensors

### Air quality

#### Room sensor flush mounted AQR25..

##### AQR253..



##### Front modules for base module

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years

##### Range overview AQR253..

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	<b>AQR2534ANW</b>
				55 x 55 x 12	S55720-S137	<b>AQR2530NNW</b>
0...50	Active			55 x 55 x 12	S55720-S136	<b>AQR2532NNW</b>
0...50	Active	0...100		55 x 55 x 12	S55720-S141	<b>AQR2535NNW</b>
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	<b>AQR2535NNWQ</b>

The matching design frame must be ordered separately.

##### Frames for front modules AQR253..

Product Title	Data sheet	Stock no.	Product no.
Frame DELTA line for front module	N1410	S55720-S158	<b>AQR2510NFW</b>
Frame DELTA azio for front module	N1410	S55720-S160	<b>AQR2510NGW</b>
Frame DELTA miro for front module	N1410	S55720-S159	<b>AQR2510NHW</b>

##### AQR2547..



##### Base modules with integrated VOC measurement

- Base module with VOC sensing element to plug onto a front module

Data sheet	N1410
Operating voltage	AC 24 V DC 15...36 V
Analog output, signal	DC 0...10 V DC 2...10 V DC 0...5 V DC 0...20 mA DC 4...20 mA DC 0...10 mA
Connection, electrical	Screw terminals
Digital outputs	1-pin Potential-free Changeover contact
Warranty	5 Years

##### Range overview AQR2547..

Measuring range	Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...100 % VOC	EU (CEE/VDE)	71 x 71 x 45	S55720-S146	<b>AQR2547NF</b>

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AQR253..



Front modules for base module

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years

Range overview AQR253..

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	AQR2534ANW
				55 x 55 x 12	S55720-S137	AQR2530NNW
0...50	Active			55 x 55 x 12	S55720-S136	AQR2532NNW
0...50	Active	0...100		55 x 55 x 12	S55720-S141	AQR2535NNW
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	AQR2535NNWQ

The matching design frame must be ordered separately.

Frames for front modules AQR253..

Product Title	Data sheet	Stock no.	Product no.
Frame DELTA line for front module	N1410	S55720-S158	AQR2510NFW
Frame DELTA azio for front module	N1410	S55720-S160	AQR2510NGW
Frame DELTA miro for front module	N1410	S55720-S159	AQR2510NHW

Base modules with integrated CO<sub>2</sub> measurement

- Base module with maintenance-free CO<sub>2</sub> sensing element to plug onto a front module

Data sheet	N1410
Operating voltage	AC 24 V DC 15...36 V
Analog output, signal	DC 0...10 V DC 2...10 V DC 0...5 V DC 0...20 mA DC 4...20 mA DC 0...10 mA
Connection, electrical	Screw terminals
Digital outputs	1-pin Potential-free Changeover contact
Warranty	5 Years

AQR2546..



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Range overview AQR2546..

Measuring range [ppm CO <sub>2</sub> ]	Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...2000	EU (CEE/VDE)	71 x 71 x 45	S55720-S147	AQR2546NF
0...2000	IT (3 modular)	71 x 71 x 45	S55720-S153	AQR2546NG
0...2000	UK (British Standard)	71 x 71 x 45	S55720-S150	AQR2546NH

## Sensors

### Air quality

#### Room sensor flush mounted AQR25..

##### AQR2576..



##### Base modules with KNX for CO<sub>2</sub> measurement

- Base module with maintenance and recalibration-free CO<sub>2</sub> sensor to plug onto a front module
- 1 analog input to connect temperature sensors with NTC 10k sensing element to measure room, floor, or ceiling temperature
- 2 multifunctional binary inputs to connect window contacts or buttons
- Power supply via KNX bus, bus load < 5 mA
- Communication: KNX S-Mode, KNX LTE-Mode (Synco)

Data sheet	N1411
Voltage supply	KNX bus
Measuring range	CO <sub>2</sub> : 0...5000 ppm
Analog inputs, number	1
Analog inputs	Passive temperature sensor NTC 10k
Digital inputs, number	2
Digital inputs	Potential-free contacts
Warranty	5 Years

##### Range overview AQR2576..

Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
EU (CEE/DE)	71 x 71 x 45	S55720-S207	<b>AQR2576NF</b>
IT (3 Modular)	71 x 71 x 45	S55720-S209	<b>AQR2576NG</b>
UK (British Standard)	71 x 71 x 45	S55720-S208	<b>AQR2576NH</b>
US (UL)	64 x 110 x 45	S55720-S210	<b>AQR2576NJ</b>

##### AQR253..



##### Front modules for base module

- Front module with sensors

Data sheet	N1411
Color	Titanium white
Degree of protection	IP30
Warranty	5 Years

##### Range overview AQR253..

Measuring range, temperature [°C]	Signal output temperature	Measurement range humidity [% r.h.]	Display	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...50	Active LG-Ni1000	0...100		55 x 55 x 12	S55720-S138	<b>AQR2534ANW</b>
				55 x 55 x 12	S55720-S137	<b>AQR2530NNW</b>
0...50	Active			55 x 55 x 12	S55720-S136	<b>AQR2532NNW</b>
0...50	Active	0...100		55 x 55 x 12	S55720-S141	<b>AQR2535NNW</b>
0...50	Active	0...100	CO <sub>2</sub> indicator by LED	55 x 55 x 38	S55720-S219	<b>AQR2535NNWQ</b>

The matching design frame must be ordered separately.

##### Frames for front modules AQR253..

Product Title	Data sheet	Stock no.	Product no.
Frame DELTA line for front module	N1410	S55720-S158	<b>AQR2510NFW</b>
Frame DELTA azio for front module	N1410	S55720-S160	<b>AQR2510NGW</b>
Frame DELTA miro for front module	N1410	S55720-S159	<b>AQR2510NHW</b>

**Base modules with integrated CO<sub>2</sub> and VOC measurement**

**AQR2548..**

- Base module with maintenance-free CO<sub>2</sub>/VOC sensing element to plug onto a front module



Data sheet	N1410
Operating voltage	AC 24 V DC 15...36 V
Analog output, signal	DC 0...10 V DC 2...10 V DC 0...5 V DC 0...20 mA DC 4...20 mA DC 0...10 mA
Connection, electrical	Screw terminals
Digital outputs	CO: 1 Potential-free
Warranty	5 Years

**Range overview AQR2548..**

Measuring range	Mechanical design	Dimensions (WxHxD) [mm]	Stock no.	Product no.
0...2000 ppm CO <sub>2</sub> 0...100 % VOC	EU (CEE/VDE)	71 x 71 x 45	S55720-S148	<b>AQR2548NF</b>



## Sensors

### Air quality

#### Duct sensor QPM..

QPM..

Duct air quality sensor CO<sub>2</sub>/ temperature / rel. humidity / VOC



Note: Not suited for safety-related applications!

Data sheet	N1962
Operating voltage	AC 24 V DC 15...35 V
Power consumption	2 VA
Permissible air velocity	≤ 10 m/s
Ambient temperature, operation	-5...45 °C
Connection, electrical	Screw terminals
Analog output, signal	DC 0...10 V DC 0...5 V DC 4...20 mA
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 274 mm
Warranty	5 Years

#### Range overview QPM..

Measuring range	Measuring range, temperature [°C]	Measurement range humidity [% r.h.]	Immersion length [mm]	Display	Stock no.	Product no.
0...100% VOC			70...135		S55720-S123	<b>QPM1100</b>
0...2000 ppm CO <sub>2</sub>			70...135		BPZ:QPM2100	<b>QPM2100</b>
0...2000 ppm CO <sub>2</sub>			70...135		BPZ:QPM2102	<b>QPM2102</b>
0...100% VOC						
0...2000 ppm CO <sub>2</sub>			70...135	LCD	BPZ:QPM2102D	<b>QPM2102D</b>
0...100% VOC						
0...2000 ppm CO <sub>2</sub>	0...50 -35...35		100...165		BPZ:QPM2160	<b>QPM2160</b>
0...2000 ppm CO <sub>2</sub>	0...50 -35...35		100...165	LCD	BPZ:QPM2160D	<b>QPM2160D</b>
0...2000 ppm CO <sub>2</sub>	0...50 -35...35	0...95	100...165		BPZ:QPM2162	<b>QPM2162</b>
0...2000 ppm CO <sub>2</sub>	0...50 -35...35	0...95	100...165	LCD	BPZ:QPM2162D	<b>QPM2162D</b>
0...2000 ppm CO <sub>2</sub>			100...165		S55720-S124	<b>QPM2180</b>

The passive temperature element within the QPM2180 is freely selectable, enclosed in the delivery are LG-Ni1000, Pt1000, Pt100, NTC 10kOhm.

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**Duct air quality sensor CO<sub>2</sub>/ temperature / rel. humidity / VOC; Modbus**

QPM../MO

Note: Not suited for safety-related applications!



Data sheet	A6V11610641
Operating voltage	AC 24 V DC 15...35 V
Power consumption	2 VA
Permissible air velocity	≤ 10 m/s
Ambient temperature, operation	-5...45 °C
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 274 mm
Communication	Modbus RTU (RS-485)
Warranty	5 Years

**Range overview QPM../MO**

Measuring range	Measuring range, temperature [°C]	Measurement range humidity [% r.h.]	Immersion length [mm]	Stock no.	Product no.
0...2000 ppm CO <sub>2</sub> 0...100 % VOC			70...135	S55720-S469	QPM2102/MO
0...2000 ppm CO <sub>2</sub>	-35...50		100...165	S55720-S470	QPM2150/MO
0...2000 ppm CO <sub>2</sub>	-35...50	0...100	100...165	S55720-S471	QPM2152/MO

**Duct air quality sensor CO<sub>2</sub>/ temperature (Basic)**

QPM1..4

Note: Not suited for safety-related applications!



Data sheet	A6V101101338
Operating voltage	AC 24 V DC 15...35 V
Analog output, signal	DC 0...10 V DC 4...20 mA
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 278 mm
Warranty	5 Years

**Range overview QPM1..4**

Measuring range [ppm CO <sub>2</sub> ]	Measuring range, temperature [°C]	Immersion length [mm]	Stock no.	Product no.
0...2000		135	S55720-S455	QPM1104
0...2000	0...50	165	S55720-S456	QPM1164



## Sensors

### Air quality

#### Room sensor fine dust QSA..

##### AQS2700

##### Sensor module for replacement



Sensor module for replacement for QSA2700 or QSA2700D

Data sheet A6V11160938  
Warranty 5 Years

Stock no. S55720-S459  
Product no. **AQS2700**

##### QSA2700

##### Fine dust sensor, 0-10V & Modbus



Room sensor for detection of PM2.5 and PM10

Data sheet A6V11160938  
Operating voltage AC/DC 24 V  
DC 24 V  
Connection cable Micro USB  
Analog outputs DC 0...10 V  
Display 3-color LED service indication  
Communication Modbus RTU (RS-485)  
Degree of protection IP30  
Dimensions (W x H x D) 86 x 86 x 30 mm  
Warranty 5 Years

Stock no. S55720-S457  
Product no. **QSA2700**

##### QSA2700D

##### Fine dust sensor +display, 0-10V, Modbus



Room sensor with LCD display for detection of PM2.5 and PM10

Data sheet A6V11160938  
Operating voltage AC 24 V  
DC 24 V  
Connection cable Micro USB  
Analog outputs DC 0...10 V  
Display LCD; 2.4 "  
Communication Modbus RTU (RS-485)  
Degree of protection IP30  
Dimensions (W x H x D) 86 x 86 x 30 mm  
Warranty 5 Years

Stock no. S55720-S458  
Product no. **QSA2700D**

**Fine dust sensor duct, 0-10V/4-20mA**

**QSM2100**

Duct sensor for detection of PM2.5 and PM10



Data sheet	A6V11893002
Operating voltage	AC 24 V DC 15...35 V
Analog output, signal	DC 0...10 V
Measuring range	0... 100 % r.h.
Degree of protection	IP54
Dimensions (W x H x D)	298 x 80 x 88 mm
Warranty	5 Years

Stock no.	Product no.
S55720-S491	<b>QSM2100</b>

**PM2.5/H/T sensor duct, 0-10V/ 4-20mA**

**QSM2162**

Duct multi-sensor for detection of PM2.5, Temperature and Humidity



Data sheet	A6V11893002
Operating voltage	AC 24 V DC 15...35 V
Analog output, signal	DC 0...10 V
Measuring range	0... 100 % r.h.
Degree of protection	IP54
Dimensions (W x H x D)	328 x 80 x 88 mm
Warranty	5 Years

Stock no.	Product no.
S55720-S492	<b>QSM2162</b>

**Sensor module for replacement**

**AQS2100**

Sensor module for replacement for QSM216x



Warranty	5 Years
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Stock no.	Product no.
S55720-S493	<b>AQS2100</b>



## Sensors

### Pressure

#### Differential pressure sensor air and non-aggressive gas QBM..

##### QBM2030..



##### Differential pressure sensor, DC 0...10 V

With pressure-linear characteristic.

For use with air or nonaggressive gases, for general HVAC applications. With diaphragm sensing element and selectable pressure measuring ranges.

Supplied complete with set of 2 air duct connectors and PVC tube of 2 m.

Data sheet	N1910_01
Operating voltage	AC 24 V DC 13.5...33 V
Power consumption	0.5 VA
Analog output, signal	DC 0...10 V
Time constant	1 s
Pressure connection	Connection branch, 6.2 mm dia.
Connection, electrical	Screw terminals
Degree of protection	IP42
Dimensions (W x H x D)	92 x 94 x 49 mm
Warranty	5 Years

##### Range overview QBM2030..

Measuring range, pressure [Pa]	Stock no.	Product no.
-50...50	S55720-S244	QBM2030-1U
-100...100		
0...100		
0...200	S55720-S245	QBM2030-5
0...250		
0...500		
0...1000	S55720-S246	QBM2030-30
0...1500		
0...3000		

Note on max. permissible pressure: overpressure on one side.

##### QBM3460-3



##### Air duct differential pressure sensor, 0...300 Pa for VAV

For use with air or nonaggressive gases

Data sheet	N1925
Operating voltage	AC 24 V DC 13.5...33 V
Power consumption	0.24 VA
Analog output, signal	DC 0...10 V
Sensing element	Pressure diaphragm
Response time	<20 ms
Pressure connection	Connecting branchØ 6.2 mm
Connection, electrical	Spring terminals
Measuring range, pressure	0...300 Pa
Degree of protection	IP54
Dimensions (W x H x D)	188 x 79 x 114 mm
Warranty	5 Years

Stock no.	Product no.
S55720-S118	QBM3460-3



## Differential pressure sensor air and non-aggressive gas QBM..

QBM3..



## Air duct differential pressure sensor

For use with air or nonaggressive gases, for extremely demanding accuracy and high requirements. With diaphragm sensing element.

Available with switchable pressure-linear or extracting-the-root characteristic and digital display. With extracting-the-root characteristic, the pressure measuring range is adjustable.

CE-, UL listed.

Supplied complete with PVC connecting tube of 2 m.

Data sheet	N1916
Response time	<20 ms
Pressure connection	Connection branch, 6.2 mm dia.
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	101 x 86 x 49 mm
Warranty	5 Years

## Range overview QBM3..

Measuring range, pressure [Pa]	Analog output, signal	Operating voltage [V]	Display	Stock no.	Product no.
0...100	DC 0...10 V	AC 24 DC 13.5...33		S55720-S234	QBM3020-1
0...100	DC 4...20 mA			S55720-S443	QBM3120-1
0...100	DC 0...10 V	AC 24 DC 13.5...33	LCD	S55720-S239	QBM3020-1D
0...100	DC 4...20 mA		LCD	S55720-S448	QBM3120-1D
-50...50	DC 0...10 V	AC 24 DC 13.5...33		S55720-S233	QBM3020-1U
-50...50	DC 4...20 mA			S55720-S442	QBM3120-1U
0...300	DC 0...10 V	AC 24 DC 13.5...33		S55720-S235	QBM3020-3
0...300	DC 4...20 mA			S55720-S444	QBM3120-3
0...300	DC 0...10 V	AC 24 DC 13.5...33	LCD	S55720-S240	QBM3020-3D
0...300	DC 4...20 mA		LCD	S55720-S449	QBM3120-3D
0...500	DC 0...10 V	AC 24 DC 13.5...33		S55720-S236	QBM3020-5
0...500	DC 4...20 mA			S55720-S445	QBM3120-5
0...500	DC 0...10 V	AC 24 DC 13.5...33	LCD	S55720-S241	QBM3020-5D
0...500	DC 4...20 mA		LCD	S55720-S450	QBM3120-5D
0...1000	DC 0...10 V	AC 24 DC 13.5...33		S55720-S237	QBM3020-10
0...1000	DC 4...20 mA			S55720-S446	QBM3120-10
0...1000	DC 0...10 V	AC 24 DC 13.5...33	LCD	S55720-S242	QBM3020-10D
0...1000	DC 4...20 mA		LCD	S55720-S451	QBM3120-10D
0...2500	DC 0...10 V	AC 24 DC 13.5...33		S55720-S238	QBM3020-25
0...2500	DC 4...20 mA			S55720-S447	QBM3120-25
0...2500	DC 0...10 V	AC 24 DC 13.5...33	LCD	S55720-S243	QBM3020-25D
0...2500	DC 4...20 mA	DC 8...33	LCD	S55720-S452	QBM3120-25D

## Sensors

### Pressure

#### Differential pressure sensor air and non-aggressive gas QBM..

##### QBM3700..



##### Modus differential pressure sensor with I/O extension

Differential pressure sensor with I/O extension, designed for Modus (RTU) communication networks, 2 AI, 2 AO

Data sheet	A6V11684000
Operating voltage	AC/DC 24 V ±15 %
Power consumption	<2 VA
Analog output, signal	DC 0...10 V
Analog outputs, number	2
Analog inputs, number	2
Degree of protection	IP54 (Housing)
Dimensions (W x H x D)	146 x 81.9 x 60 mm
Communication	Modbus RTU (RS-485)
Warranty	5 Years

##### Range overview QBM3700..

Measuring range, pressure [Pa]	Stock no.	Product no.
0...500	S55720-S487	QBM3700-5/MO
0...1250	S55720-S485	QBM3700-13/MO
0...2500	S55720-S486	QBM3700-25/MO

## Differential pressure sensor air and non-aggressive gas QBM..

## Air duct differential pressure sensor with calibration certificate

QBM400..



Technical data and accessories identical to QBM3...  
With plug-in connection.

Data sheet	N1919_01
Mounting position	Membrane vertical, pressure connection nipples at the bottom
Degree of protection	IP54
Dimensions (W x H x D)	186 x 86 x 49 mm
Warranty	5 Years

## Range overview QBM400..

Measuring range, pressure [Pa]	Stock no.	Product no.
0...100	S55720-S247	QBM4000-1
0...300	S55720-S248	QBM4000-3
0...1000	S55720-S249	QBM4000-10
0...2500	S55720-S250	QBM4000-25

Note on max. permissible pressure: overpressure on one side.

## Sensors

### Pressure

#### Differential pressure sensor air and non-aggressive gas QBM..

##### QBM410..



##### Air duct differential pressure sensor, DC 4...20 mA, with calibration certificate

For use with air and nonaggressive gases. For extremely demanding accuracy and high requirements. With diaphragm sensing element.

CE-, UL listed.

Supplied complete with PVC connecting tube of 2 m.

Accessories for QBM41 are identical to those for QBM3...

Data sheet	N1919_01
Operating voltage	DC 8...33 V
Analog output, signal	DC 4...20 mA
Pressure connection	Connecting branch, 6.2 mm dia.
Connection, electrical	Screw terminals
Mounting position	Membrane vertical, pressure connection nipples at the bottom
Degree of protection	IP54
Dimensions (W x H x D)	186 x 86 x 49 mm
Warranty	5 Years

##### Range overview QBM410..

Measuring range, pressure [Pa]	Display	Stock no.	Product no.
-50...50	no	S55720-S251	<b>QBM4100-1U</b>
0... 100	LCD	S55720-S252	<b>QBM4100-1D</b>

Note on max. permissible pressure: overpressure on one side.

##### Accessories for QBM..

Product Title	Data sheet	Stock no.	Product no.
Mounting bracket for differential pressure sensor for air	N 1590	BPZ:AQB2000	<b>AQB2000</b>
Top hat rail adapter for differential pressure sensor for air	N 1590	BPZ:AQB21.2	<b>AQB21.2</b>
Air duct probe for simple, quick and airtight mounting	N 1589	BPZ:FK-PZ1	<b>FK-PZ1</b>
Air duct probe for accurate measurements	N 1589	BPZ:FK-PZ2	<b>FK-PZ2</b>
Air duct probe for differential pressure sensor, fixed length	N 1589	BPZ:FK-PZ3	<b>FK-PZ3</b>

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QBM81..

## Differential pressure monitor

Used as a flow switch or filter monitor in air ducts.

Supplied complete with set of 2 air duct connectors (plastic) and 2 m long PVC tube.



Data sheet	N1552
Digital outputs	1-pin Potential-free Switchover contact
Permissible operating pressure	7500 Pa
Ambient temperature, operation	-30...85 °C
Mounting position	Diaphragm vertical, pressure connection pointing downward
Digital output, switching voltage	DC 24 V / AC 24...250 V
Digital output, switching current	0.01...5 (3) A
Pressure connection	Connection branch, 6.2 mm dia.
Degree of protection	IP54
Dimensions (Ø x L)	81 x 90 mm
Warranty	5 Years

## Range overview QBM81..

Measuring range, pressure [Pa]	Stock no.	Product no.
20...300	BPZ:QBM81-3	QBM81-3
50...500	BPZ:QBM81-5	QBM81-5
100...1000	BPZ:QBM81-10	QBM81-10
500...2000	S55720-S125	QBM81-20
1000...5000	S55720-S126	QBM81-50

## Accessories for QBM81..

Product Title	Data sheet	Stock no.	Product no.
Air duct probe for simple, quick and airtight mounting	N1589	BPZ:FK-PZ1	FK-PZ1
Air duct probe for accurate measurements	N1589	BPZ:FK-PZ2	FK-PZ2
Air duct probe for differential pressure sensor, fixed length	N1589	BPZ:FK-PZ3	FK-PZ3

## Sensors

### Pressure

#### Pressure sensors for liquids and gases QBE..

##### QBE2003-P..



##### Pressure sensor for neutral and slightly aggressive liquids and gases (0...10 V)

With threaded connection G $\frac{1}{2}$ " and plug DIN EN 175301-803A.

Suited for use with oil-containing media.

Data sheet	A6V10432494
Time constant	<2 ms
Pressure connection	External thread G $\frac{1}{2}$ "
Connection, electrical	Plug-in connection
Medium temperature	-15... 125 °C
Connecting thread	G $\frac{1}{2}$ "
Max. permissible pressure	2.5 x scale end value (FS)
Mounting position	Any
Degree of protection	IP65
Dimensions (Ø x L)	24 x 101 mm
Warranty	5 Years

##### Range overview QBE2003-P..

Analog output, signal [V]	Operating voltage [V]	Measuring range, pressure	Max. overpressure	Stock no.	Product no.
DC 0...10	AC 24 DC 12...33	0... 1 bar 0... 100 kPa	2.5 x scale end value of measuring range	S55720-S290	<b>QBE2003-P1</b>
DC 0...10	AC 24 DC 12...33	0... 1.6 bar 0... 160 kPa	2.5 x scale end value of measuring range	S55720-S291	<b>QBE2003-P1.6</b>
DC 0...10	AC 24 DC 12...33	0... 2.5 bar 0... 250 kPa	2.5 x scale end value of measuring range	S55720-S292	<b>QBE2003-P2.5</b>
DC 0...10	AC 24 DC 12...33	0... 4 bar 0... 400 kPa	2.5 x scale end value of measuring range	S55720-S293	<b>QBE2003-P4</b>
DC 0...10	AC 24 DC 12...33	0... 6 bar 0... 600 kPa	2.5 x scale end value of measuring range	S55720-S294	<b>QBE2003-P6</b>
DC 0...10	AC 24 DC 12...33	0... 10 bar 0... 1 MPa	2.5 x scale end value of measuring range	S55720-S295	<b>QBE2003-P10</b>
DC 0...10	AC 24 DC 12...33	0... 16 bar 0... 1.6 MPa	2.5 x scale end value of measuring range	S55720-S296	<b>QBE2003-P16</b>
DC 0...10	AC 24 DC 12...33	0... 25 bar 0... 2.5 MPa	2.5 x scale end value of measuring range	S55720-S297	<b>QBE2003-P25</b>
DC 0...10	AC 24 DC 12...33	0... 40 bar 0... 4 MPa	2.5 x scale end value of measuring range	S55720-S298	<b>QBE2003-P40</b>
DC 0...10	AC 24 DC 12...33	0... 60 bar 0... 6 MPa	2.5 x scale end value of measuring range	S55720-S299	<b>QBE2003-P60</b>

**Pressure sensor for neutral and slightly aggressive liquids and gases (4...20 mA)**

QBE2103-P..

With threaded connection G $\frac{1}{2}$ " and plug DIN EN175301-803A.

Suited for use with oil-containing media.

Data sheet	A6V10432494
Time constant	<2 ms
Pressure connection	External thread G $\frac{1}{2}$ "
Connection, electrical	Plug-in connection
Medium temperature	-15...125 °C
Connecting thread	G $\frac{1}{2}$ "
Max. permissible pressure	2.5 x scale end value (FS)
Mounting position	Any
Degree of protection	IP65
Dimensions (Ø x L)	24 x 101 mm
Warranty	5 Years

**Range overview QBE2103-P..**

Analog output, signal [mA]	Operating voltage [V]	Measuring range, pressure	Stock no.	Product no.
DC 4...20	DC 7...33	0...1 bar 0...100 kPa	S55720-S300	QBE2103-P1
DC 4...20	DC 7...33	0...1.6 bar 0...160 kPa	S55720-S301	QBE2103-P1.6
DC 4...20	DC 7...33	0...2.5 bar 0...250 kPa	S55720-S302	QBE2103-P2.5
DC 4...20	DC 7...33	0...4 bar 0...400 kPa	S55720-S303	QBE2103-P4
DC 4...20	DC 7...33	0...6 bar 0...600 kPa	S55720-S304	QBE2103-P6
DC 4...20	DC 7...33	0...10 bar 0...1 MPa	S55720-S305	QBE2103-P10
DC 4...20	DC 7...33	0...16 bar 0...1.6 MPa	S55720-S306	QBE2103-P16
DC 4...20	DC 7...33	0...25 bar 0...2.5 MPa	S55720-S307	QBE2103-P25
DC 4...20	DC 7...33	0...40 bar 0...4 MPa	S55720-S308	QBE2103-P40
DC 4...20	DC 7...33	0...60 bar 0...6 MPa	S55720-S309	QBE2103-P60

**Accessories for QBE200.-P.. and QBE210.-P..**

Product Title	Data sheet	Stock no.	Product no.
Mounting bracket for pressure sensor QBE2x03..	A6V10434028	S55720-S318	AQB2004

## Sensors

### Pressure

#### Pressure sensors for liquids and gases QBE..

##### QBE61.3-DP..



##### Differential pressure sensor for liquids and gases

For slightly aggressive liquids and gases, highly resistant to overpressure. Suitable for use with hot water and chilled water.

With threaded connections G $\frac{1}{2}$ " and wall mounting bracket.

Not suitable for use with ammonia or freones.

For a smaller measuring range see QBE63-DP...

Note on max. permissible pressure: overpressure on one side.

Data sheet	N1923
Operating voltage	AC 24 V DC 18...33 V
Analog output, signal	DC 0...10 V
Pressure connection	External thread G $\frac{1}{2}$ "
Connection, electrical	Screw-free terminals
Medium temperature	-15...80 °C
PN class	PN 40
Mounting position	Any
Degree of protection	IP54
Dimensions (W x H x D)	126 x 135 x 60 mm
Warranty	5 Years

##### Range overview QBE61.3-DP..

Measuring range, pressure [bar]	Max. permissible pressure [bar]	Max. overpressure [bar]	Stock no.	Product no.
0...2	12	-12...12	BPZ:QBE61.3-DP2	<b>QBE61.3-DP2</b>
0...5	20	-20...20	BPZ:QBE61.3-DP5	<b>QBE61.3-DP5</b>
0...10	20	-20...20	BPZ:QBE61.3-DP10	<b>QBE61.3-DP10</b>
0...				



**Differential pressure sensors for liquids and gas (DC 0...10 V)**

QBE63-DP..

For slightly aggressive liquids and gases, highly resistant to overpressure. With threaded connections G1/8"

Supplied complete with mounting bracket.

Not suitable for use with ammonia or freones.

Data sheet	N1920
Operating voltage	AC 24 V DC 20...30 V
Analog output, signal	DC 0...10 V
Pressure connection	Internal thread G 1/8 "
Connection, electrical	Screw terminals
Medium temperature	-10...80 °C
Mounting position	any
Degree of protection	IP65
Dimensions (Ø x L)	65 x 94 mm
Warranty	5 Years

**Range overview QBE63-DP..**

Measuring range, pressure [kPa]	Max. permissible pressure [bar]	Stock no.	Product no.
0...10	10	BPZ:QBE63-DP01	<b>QBE63-DP01</b>
0...20	10	BPZ:QBE63-DP02	<b>QBE63-DP02</b>
0...50	20	BPZ:QBE63-DP05	<b>QBE63-DP05</b>
0...100	20	BPZ:QBE63-DP1	<b>QBE63-DP1</b>

Note on max. permissible pressure: pressure on one side.

## Sensors

### Pressure

#### Pressure sensors for liquids and gases QBE..

##### QBE3000..



##### Differential pressure sensors for liquids and gas (0...10 V)

For slightly aggressive liquids and gases. With threaded connections G1/8". Including mounting bracket and 2 screwed fittings for copper pipe, 6 mm dia.

Not suitable for use with ammonia or freones.

Data sheet	N1922
Operating voltage	AC 24 V DC 18...33 V
Analog output, signal	DC 0...10 V
Pressure connection	Internal thread G 1/8"
Connection, electrical	Plug-in connection
Medium temperature	-15...80 °C
Degree of protection	IP65
Warranty	5 Years

##### Range overview QBE3000..

Measuring range, pressure	Max. permissible pressure [bar]	Stock no.	Product no.
0... 1 bar 0... 100 kPa	25	S55720-S173	QBE3000-D1
0... 1.6 bar 0... 160 kPa	25	S55720-S174	QBE3000-D1.6
0... 2.5 bar 0... 250 kPa	25	S55720-S175	QBE3000-D2.5
0... 4 bar 0... 400 kPa	25	S55720-S176	QBE3000-D4
0... 6 bar 0... 600 kPa	25	S55720-S186	QBE3000-D6
0... 10 bar 0... 1 MPa	50	S55720-S177	QBE3000-D10
0... 16 bar 0... 1.6 MPa	50	S55720-S178	QBE3000-D16

Note on max. permissible pressure: pressure on both sides.

## Pressure sensors for liquids and gases QBE..

**Differential pressure sensors for liquids and gas (4...20 mA)**

QBE3100..

For slightly aggressive liquids and gases. With threaded connections G1/8".  
Including mounting bracket and 2 screwed fittings for copper pipe, 6 mm dia.

Not suitable for use with ammonia or freones.



Data sheet	N1922
Operating voltage	DC 11...33 V
Analog output, signal	DC 4...20 mA
Pressure connection	Internal thread G 1/8"
Connection, electrical	Plug-in connection
Medium temperature	-15...80 °C
Degree of protection	IP65
Warranty	5 Years

**Range overview QBE3100..**

Measuring range, pressure	Max. permissible pressure [bar]	Stock no.	Product no.
0... 1 bar 0... 100 kPa	25	S55720-S179	QBE3100-D1
0... 1.6 bar 0... 160 kPa	25	S55720-S180	QBE3100-D1.6
0... 2.5 bar 0... 250 kPa	25	S55720-S181	QBE3100-D2.5
0... 4 bar 0... 400 kPa	25	S55720-S182	QBE3100-D4
0... 6 bar 0... 600 kPa	25	S55720-S187	QBE3100-D6
0... 10 bar 0... 1 MPa	50	S55720-S183	QBE3100-D10
0... 16 bar 0... 1.6 MPa	50	S55720-S184	QBE3100-D16

Note on max. permissible pressure: pressure on both sides.

**Accessories for QBE63-DP.. and QBE3..**

Product Title	Data sheet	Stock no.	Product no.
Connection kit to mount QBE63../64.., QBE3..	N1922	S55720-S117	AQB2002

## Sensors

### Pressure

#### Pressure sensors refrigerant QBE..

##### QBE2004-P..U



##### Pressure sensor for refrigerants (0...10 V)

With internally threaded pressure connection UNF7/16-20.

For use with all media, including ammonia.

Data sheet	A6V10434676
Current consumption	<4 mA
Time constant	<2 ms
Pressure connection	Internal thread UNF7/16-20
Connection cable	3-wire
Cable length	1.5 m
Connection, electrical	Cable
Medium temperature	-40... 135 °C
Max. permissible pressure	3 x scale end value (FS)
Mounting position	Any
Degree of protection	IP67
Dimensions (Ø x L)	24 x 68 mm
Warranty	5 Years

##### Range overview QBE2004-P..

Analog output, signal [V]	Operating voltage [V]	Measuring range, pressure	Stock no.	Product no.
DC 0...10	AC 24	-1...9 bar	S55720-S310	QBE2004-P10U
	DC 16...33	-100...900 kPa		
DC 0...10	AC 24	-1...24 bar	S55720-S311	QBE2004-P25U
	DC 16...33	-100...2400 kPa		
DC 0...10	AC 24	-1...29 bar	S55720-S312	QBE2004-P30U
	DC 16...33	-100...2900 kPa		
DC 0...10	AC 24	-1...59 bar	S55720-S313	QBE2004-P60U
	DC 16...33	-100...5900 kPa		

**Pressure sensors for refrigerants (4...20 mA)**

QBE2104-P..U

With internally threaded pressure connection UNF7/16-20.

For use with all media, including ammonia.

Data sheet	A6V10434676
Time constant	<2 ms
Pressure connection	Internal thread UNF7/16-20
Connection cable	2-wire
Cable length	1.5 m
Connection, electrical	Cable
Medium temperature	-40...135 °C
Max. permissible pressure	3 x scale end value (FS)
Mounting position	Any
Degree of protection	IP67
Dimensions (Ø x L)	24 x 68 mm
Warranty	5 Years



**Range overview QBE2104-P..**

Analog output, signal [mA]	Operating voltage [V]	Measuring range, pressure	Max. overpressure [bar]	Stock no.	Product no.
DC 4...20	DC 8...33	-1...9 bar -100...900 kPa		S55720-S314	QBE2104-P10U
DC 4...20	DC 8...33	-1...24 bar -100...2400 kPa		S55720-S315	QBE2104-P25U
DC 4...20	DC 8...33	-1...29 bar -100...2900 kPa	87	S55720-S316	QBE2104-P30U
DC 4...20	DC 8...33	-1...59 bar -100...5900 kPa		S55720-S317	QBE2104-P60U

**Accessories for QBE200..-P..U and QBE210..-P..U**

Product Title	Data sheet	Stock no.	Product no.
Connection set, thread 1/2" for pressure sensor for refrigerant	N1907	BPZ:FT-PZ1	FT-PZ1

## Sensors

### Flow

#### Flow sensors QVE..

##### QVE2000.0..



##### Flow sensor for liquids in DN 10...25 pipes (plastic fitting, DC 0...10V)

For continuous flow measurement and monitoring of liquids such as hot water, heating water, or standard water-glycol mixes in HVAC plants

Data sheet	N1597
Operating voltage	DC 11.5...33 V
Connection cable	2 m, with 3 pin plug M12x1
Analog outputs	DC 0...10 V
Medium temperature	-15...125 °C
Ambient temperature, operation	-15...85 °C
Degree of protection	IP65
Warranty	5 Years

##### Range overview QVE2000.0..

Nominal size, piping	Connect. thread	Measuring range [l/min]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
DN 10	G 1/2"	1.8...32	81 x 41 x 13	S55720-S189	<b>QVE2000.010</b>
DN 15	G 3/4"	3.5...50	87 x 43 x 19	S55720-S190	<b>QVE2000.015</b>
DN 20	G 1"	5.0...85	105 x 45 x 25	S55720-S191	<b>QVE2000.020</b>
Dn 25	G 1 1/4"	9.0...150	120 x 47 x 32	S55720-S192	<b>QVE2000.025</b>

##### QVE2100.0..



##### Flow sensor for liquids in DN 10...25 pipes (plastic fitting, DC 4...20 mA)

For continuous flow measurement and monitoring of liquids such as hot water, heating water, or standard water-glycol mixes in HVAC plants

Data sheet	N1597
Operating voltage	DC 18...33 V
Connection cable	2 m, with 3 pin plug M12x1
Analog outputs	DC 4...20 mA
Medium temperature	-15...125 °C
Ambient temperature, operation	-15...85 °C
Degree of protection	IP65
Warranty	5 Years

##### Range overview QVE2100.0..

Nominal size, piping	Connect. thread	Measuring range [l/min]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
DN 10	G 1/2"	1.8...32	81 x 41 x 13	S55720-S193	<b>QVE2100.010</b>
DN 15	G 3/4"	3.5...50	87 x 43 x 19	S55720-S194	<b>QVE2100.015</b>
DN 20	G 1"	5.0...85	105 x 45 x 25	S55720-S195	<b>QVE2100.020</b>
DN 25	G 1 1/4"	9.0...150	120 x 47 x 32	S55720-S196	<b>QVE2100.025</b>

### Flow sensor for liquids in DN 10...25 pipes (red brass fitting, DC 0...10V)

QVE3000.0..

For continuous flow measurement and monitoring of liquids such as hot water, heating water, or standard water-glycol mixes in HVAC plants

Data sheet	N1598
Operating voltage	DC 11.5...33 V
Connection cable	2 m, with 3 pin plug M12x1
Analog outputs	DC 0...10 V
Medium temperature	-15...125 °C
Ambient temperature, operation	-15...85 °C
Degree of protection	IP65
Warranty	5 Years



#### Range overview QVE3000.0..

Nominal size, piping	Connect. thread	Measuring range [l/min]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
DN 10	G 3/4"	1.8...32	65 x 57 x 19	S55720-S211	QVE3000.010
DN 15	G 3/4"	3.5...50	75 x 59 x 19	S55720-S212	QVE3000.015
DN 20	G 1"	5.0...85	86 x 65 x 25	S55720-S213	QVE3000.020
DN 25	G 1 1/4"	9.0...150	109 x 71 x 32	S55720-S214	QVE3000.025

### Flow sensor for liquids in DN 10...25 pipes (red brass fitting, DC 4...20 mA)

QVE3100.0..

For continuous flow measurement and monitoring of liquids such as hot water, heating water, or standard water-glycol mixes in HVAC plants

Data sheet	N1598
Operating voltage	DC 18...33 V
Connection cable	2 m, with 3 pin plug M12x1
Analog outputs	DC 4...20 mA
Medium temperature	-15...125 °C
Ambient temperature, operation	-15...85 °C
Degree of protection	IP65
Warranty	5 Years



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#### Range overview QVE3100.0..

Nominal size, piping	Connect. thread	Measuring range [l/min]	Dimensions (WxHxD) [mm]	Stock no.	Product no.
DN 10	G 3/4"	1.8...32	65 x 57 x 19	S55720-S215	QVE3100.010
DN 15	G 3/4"	3.5...50	75 x 59 x 19	S55720-S216	QVE3100.015
DN 20	G 1"	5.0...85	86 x 65 x 25	S55720-S217	QVE3100.020
DN 25	G 1 1/4"	9.0...150	109 x 71 x 32	S55720-S218	QVE3100.025

## Sensors

### Flow

#### Flow switch QVE..

##### QVE1900



##### Flow switch for use in hydraulic systems, PN10, DN32...200

For monitoring operation of systems using liquids or gases.

Data sheet	N1592
Digital output, switching voltage	250 VAC
Digital output, switching current	15 (8) A
Connection, electrical	Screw terminals
Nominal size, piping	DN32 - DN200
Connecting thread	R 1"
Digital outputs	1-pin
	Potential-free
	Changeover contact
Medium temperature	-20...120 °C
PN class	PN 10
Ambient temperature, operation	-20...85 °C
Material, valve body	Brass
Degree of protection	IP65
Dimensions (W x H x D)	108 x 70 x 132 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QVE1900	QVE1900

##### QVE1901



##### Flow switch for use in hydraulic systems, PN25, DN20...200

For monitoring operation of systems using liquids or gases.

Maximum switching capacity AC 26 VA, DC 20 W

Data sheet	N1594
Digital output, switching voltage	230 VAC, 48 VDC
Digital output, switching current	1 A
Connection, electrical	Screw terminals
Type of fixing	Thread G ½ "
Nominal size, piping	DN20 - DN200
Connecting thread	G ½ "
Digital outputs	Potential-free
Medium temperature	-20...110 °C
PN class	PN 25
Ambient temperature, operation	-20...80 °C
Material, valve body	Brass
Degree of protection	IP65
Dimensions (W x H x D)	120 x 38 x 92 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QVE1901	QVE1901



QVE1902.0..



### Flow switch for liquids in piping DN 10...25

For monitoring the flow of liquid medium in HVAC plants

Maximum switching capacity AC 26 VA, DC 20 W

Data sheet	N1596
Digital output, switching voltage	AC 230 V, DC 48 V
Digital output, switching current	1 A
Type of fixing	Thread
Digital outputs	1-pin Potential-free reed contact
Medium temperature	-20...100 °C
Ambient temperature, operation	0...70 °C
Degree of protection	IP65
Warranty	5 Years

### Range overview QVE1902.0..

Connect. thread	Nominal size, piping	Connect. thread [""]	Qmax [l/min]	Stock no.	Product no.
G 3/8"	DN 10	G3/8	20	S55720-S199	QVE1902.010
G 1/2"	DN 15	G1/2	30	S55720-S200	QVE1902.015
G 3/4"	DN 20	G3/4	80	S55720-S201	QVE1902.020
G 1"	DN 25	G1	130	S55720-S202	QVE1902.025

### Communicative Air Flow Pressure Sensor (250 Pa / 1"WC)

DXA.S04P1

The sensor is used to measure airflow for room pressurization and fume hood application:

- Differential Pressure (velocity) is measured by a diaphragm type transducer
- Communicates with the controller over a dedicated RS-485 digital bus (SCOM)
- Maintenance-free sensor with auto zero feature to calibrate sensor



Operating voltage	AC 24V (+20%, -15%)
Degree of protection	IP20
Dimensions (W x H x D)	118 x 47.2 x 103.6 mm

Stock no.	Product no.
S55376-C139	DXA.S04P1

## QVM62.1



## Duct sensor for air velocity

For measuring air velocities or volumetric flow in air ducts. Suited for primary plant (presetting the volumetric flow).

Sensor detached, ready wired, including pipe extension for different immersion lengths and mounting flange.

Data sheet	N1932
Operating voltage	AC 24 V
	DC 24 V
Power consumption	5 VA
Measuring range	0...10 m/s
	0...15 m/s
	0...5 m/s
Measurement accuracy	At 20 °C, 45 % r.h., 1013 hPa: ±0.65 m/s
Connection, electrical	Screw terminals
Cable length	1 m
Immersion length	30...300 mm
Analog output, signal	DC 4...20 mA
	DC 0...10 V
Degree of protection	IP42
Dimensions (W x H x D)	86 x 43 x 117 mm
Warranty	5 Years

Stock no.

Product no.

BPZ:QVM62.1

QVM62.1

**Solar sensor**

**QLS60**

- For measuring the solar radiation intensity.



Data sheet	N1943
Operating voltage	AC 24 V DC 18...30 V
Power consumption	2.5 VA
Measuring range	0...1000 W/m <sup>2</sup>
Time constant	2 s
Connection, electrical	Screw terminals
Analog output, signal	DC 0...10 V DC 4...20 mA
Degree of protection	IP65
Dimensions (W x H x D)	51 x 92 x 46 mm
Warranty	5 Years

Stock no.	Product no.
BPZ:QLS60	QLS60



# Valves and actuators



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# Valves and actuators

## Overview and selection tools

									Recommended media														
		2-port valve	3-port valve	6-port valve	PN class	Type of connection	Silicon-free grease	Closed circuits	Open circuits	Permissible medium temperature [°C]	Chilled water	Cooling water <sup>1)</sup>	Drinking water	Low-temperature hot water	High-temperature hot water	Water glycol mixture	Saturated steam	Superheated steam	Heat transfer oil	Media containing mineral oils	Refrigerants	Refrigerants (ammonia)	
Int. Valves	EVG..	■			16	ET		■		1...120	■			■									
	EXG..		■		16	ET		■		1...120	■			■									
	EVF..	■			16	F		■		1...120	■			■									
	EXF..		■		16	F		■		1...120	■			■									
PICVs	VPD../VPE..	■			10	ET		■		1...90	■			■		■							
	VQI46../VQP46..	■			25	ET/IT		■		1...90	■			■		■							
	VPI46../VPP46..	■			25	ET/IT		■		1...120	■			■		■							
	VPF43../VFP44..	■			16	F	■	■		1...120	■			■		■							
	VPF53../VFP54..	■			25	F	■	■		1...120	■			■		■							
	VDN../VEN../VUN..	■			10	ET		■		1...120	■			■		■							
Globe valves	VD1..CLC	■			10	ET		■		1...110	■			■		■							
	VVP45..	■			16	ET		■		1...110	■			■		■							
	VXP45..		■		16	ET		■		1...110	■			■		■							
	VMP45..		■		16	ET		■		1...110	■			■		■							
	VVP47..	■			16	ET		■		1...110	■			■		■							
	VXP47..		■		16	ET		■		1...110	■			■		■							
	VMP47..		■		16	ET		■		1...110	■			■		■							
	VVG41..	■			16	ET	■	■	■	-25...150	■	■		■		■		■					
	VXG41..		■		16	ET	■	■	■	-25...150	■	■		■		■		■					
	VXG41..01 <sup>4)</sup>		■		16	ET	■	■	■	-25...150	■	■	■	■		■		■					
	VVG44..	■			16	ET	■	■		1...120	■			■		■							
	VXG44..		■		16	ET	■	■		1...120	■			■		■							
	VVG549..	■			25	ET		■		1...130	■	■		■		■							
	VVI46../I2	■			16	IT		■		1...110	■			■		■							
	VXI46../I2		■		16	IT		■		1...110	■			■		■							
	VVF22..	■			6	F	■	■	■	-10...130	■			■		■							
	VXF22..		■		6	F	■	■	■	-10...130	■			■		■							
	VVF32..	■			10	F	■	■	■	-10...150	■			■		■							
	VXF32..		■		10	F	■	■	■	-10...150	■			■		■							
	VVF42..	■			16	F	■	■	■	-10...150	■			■		■							
	VXF42..		■		16	F	■	■	■	-10...150	■			■		■							
	VVF43..	■			16	F	■	■	■	-20...220	■	■		■		■		■	■				
	VXF43..		■		16	F	■	■	■	-20...220	■	■	■	■		■		■	■				
VVF53..	■			25	F	■	■	■	-20...220	■	■		■		■		■	■					
VXF53..		■		25	F	■	■	■	-20...220	■	■		■		■		■	■					
VVF63..	■			40	F	■	■	■	-25...220	■	■		■		■		■	■					
VXF63..		■		40	F	■	■	■	-25...220	■	■		■		■		■	■					
Control ball valves	VET61..	■			40	ET	■	■		-10...120	■			■		■							
	VBG61..		■		40	ET	■	■		-10...120	■			■		■							
	VAI61..	■			40	IT	■	■		-10...120	■			■		■							
	VBI61..		■		40	IT	■	■		-10...120	■			■		■							
	VWG41..			■	16	ET/IT	■	■		1...90	■			■		■							
	Magnetic valves	MXG461..	■	■		16	ET		■		1...130	■			■		■						
MXG461..P		■	■		16	ET		■		1...130	■			■		■			■	■			
MXG461B..		■	■		16	ET		■		-20...130	■	■	■	■		■							
MXG461S..		■	■		16	ET		■		1...130	■	■	■	■		■							
MXG462S..		■	■		16	ET		■		-20...130	■	■	■	■		■							
MXF461..		■	■		16	F		■		1...130	■			■		■							
MXF461..P		■	■		16	F		■		1...130	■			■		■			■	■			
M3P..FY		■	■		16	F		■		1...120	■			■		■							
M3P..FYP		■	■		16	F		■		1...120	■			■		■			■	■			
MVF461H..	■			16	F		■		1...180	■			■		■		■	■					
Rotary valves	VBF21..		■		6	F		■		1...120				■		■							
	VKF41..	■			16	F		■		-10...120	■			■		■							
	VKF46..	■			16	F		■	■	-10...120	■	■		■		■							
	VET60..	■			40	ET	■	■		-10...120	■			■		■							
	VBG60..		■		40	ET	■	■		-10...120	■			■		■							
	VAI60..	■			40	IT	■	■		-10...120	■			■		■							
	VBI60..		■		40	IT	■	■		-10...120	■			■		■							
Refrigerant valves	M2FP03GX				32	-		■		-40...100											■	■	
	M3FK..LX..		■		32	S		■		-40...120												■	
	M3FB..LX..		■		PS 43	S		■		-40...120												■	
	MVL661..	■			PS 45	S		■		-40...120												■	
	MVS661..N	■			63	W/S		■		-40...120												■	■

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# Valves and actuators Overview and selection tools



New: 5-year warranty on valves and actuators, damper actuators, and sensors.

Generation				Distribution			Consumption / Use								
District heating	Boiler plants	Chiller plants	Cooling towers <sup>1)</sup>	Domestic hot water <sup>2)</sup>	Heating groups	Air handling units	Floor heating	Radiators	Chilled ceilings	Heated and chilled ceilings	VAV <sup>3)</sup>	Fan coil units	Zone control		
														EVG..	Int. Valves
														EXG..	
														EVF..	
														EXF..	
														VPD../VPE..	PICVs
														VQI46../VQP46..	
														VPI46../VPP46..	
														VPF43../VPP44..	
														VPF53../VPP54..	Globe valves
														VDN../VEN../VUN..	
														VD1..CLC	
														VVP45..	
														VXP45..	
														VMP45..	
														VVP47..	
														VXP47..	
														VMP47..	
														VVG41..	
														VXG41..	
														VXG41..01 <sup>4)</sup>	
														VVG44..	
														VXG44..	
														VVG549..	
														VVI46../2	
														VXI46../2	
														VVF22..	
														VXF22..	
														VVF32..	
														VXF32..	
														VVF42..	
														VXF42..	
														VVF43..	
														VXF43..	
														VVF53..	
														VXF53..	
														VVF63..	
														VXF63..	
														VET61..	Control ball valves
														VBG61..	
														VAI61..	
														VBI61..	
														VWG41..	Magnetic valves
														MXG461..	
														MXG461..P	
														MXG461B..	
														MXG461S..	
														MXG462S..	
														MXF461..	
														MXF461..P	
														M3P..FY	
														M3P..FYP	
														MVF461H..	
														VBF21..	Rotary valves
														VKF41..	
														VKF46..	
														VET60..	
														VBG60..	
														VAI60..	
														VBI60..	
														M2FP03GX	Refrigerant valves
														M3FK..LX..	
														M3FB..LX..	
														MVL661..	
														MVS661..N	

Recommendation:  
water treatment according to VDI 2035



- <sup>1)</sup> Open circuits;
- <sup>2)</sup> Not for drinking water circuit (open circuit);
- <sup>3)</sup> Variable air volume;
- <sup>4)</sup> Sealed bypass;
- <sup>5)</sup> As zone valve for floor heating systems

IT = internally threaded connection,  
ET = externally threaded connection,  
F = flanged connection,  
S = soldered connection,  
W = welded connection













## Valves and actuators

### Overview and selection tools

Intelligent Valves							
<b>Typical applications</b> – Heating groups – Air handling units	<b>Valve type</b>	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Interface</b>	
	EVG4U10E.. DN15-50	AC/DC 24 V		0...10 V, 2...10 V, 4...20 mA		Modbus RTU over RS485 BACnet over UDP/IP Ethernet to building operator	
	EVF4U20E.. DN65-125	AC/DC 24 V		0...10 V, 2...10 V, 4...20 mA		Modbus RTU over RS485 BACnet over UDP/IP Ethernet to building operator	
<b>PN 16</b> Data sheet	1...120°C A6V11444716	DN	$k_{vs}$ [m <sup>3</sup> /h]	$\dot{V}_{min}$ [m <sup>3</sup> /h]	$\dot{V}_{100}$ [m <sup>3</sup> /h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
	EVG4U10E015	15	4	0.45	1.5	1400	600
	EVG4U10E020	20	5	0.9	3	1400	600
	EVG4U10E025	25	10	1.35	4.5	1400	600
	EVG4U10E032	32	11	2.1	7	1000	600
	EVG4U10E040	40	26	3.45	11.5	800	600
	EVG4U10E050	50	30	5.4	18	600	600
	EVF4U20E065	65	55	9	30	1600	600
	EVF4U20E080	80	80	14.5	48	1600	600
	EVF4U20E100	100	113	22.5	75	1600	600
	EVF4U20E125	125	142	36	120	1600	600
<b>Typical applications</b> – Heating groups – Air handling units	<b>Valve type</b>	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Interface</b>	
	EXG4U10E.. DN15-50	AC/DC 24 V		0...10 V, 2...10 V, 4...20 mA		Modbus RTU over RS485 BACnet over UDP/IP Ethernet to building operator	
	EXF4U20E.. DN65-100	AC/DC 24 V		0...10 V, 2...10 V, 4...20 mA		Modbus RTU over RS485 BACnet over UDP/IP Ethernet to building operator	
<b>PN 16</b> 1...120°C		DN	$k_{vs}$ [m <sup>3</sup> /h]	$\dot{V}_{min}$ [m <sup>3</sup> /h]	$\dot{V}_{100}$ [m <sup>3</sup> /h]	$\Delta p_{max}$ [kPa]	
	EXG4U10E015	15	3.7	0.36	1.2	200	
	EXG4U10E020	20	4	0.6	2	200	
	EXG4U10E025	25	8	0.96	3.2	200	
	EXG4U10E032	32	10	1.5	5	200	
	EXG4U10E040	40	18	2.4	8	200	
	EXG4U10E050	50	26	3.6	12	200	
	EXF4U20E065	65	55	6	20	150	
	EXF4U20E080	80	80	9.6	32	75	
	EXF4U20E100	100	113	15	50	125	



ON/OFF applications											
<b>Typical applications</b> – Radiators – Chilled ceilings – Fan coil units	<b>Actuators</b>		<b>Data sheet</b>				4.5 mm		5 mm		
	STA.. SUE21P		N4884 A6V11780777				100 N 		100 N 		
	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>						
	AC 230 V		2-position		210		12		STA23 STA73		SUE21P –
AC/DC 24 V		2-position/PDM		270		–					
<b>PN 25</b>	1...90 °C	Without pressure testing points	With pressure testing points	DN	G [inch]	$\dot{V}_{min}$ [l/h]	$\dot{V}_{100}$ [l/h]	$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]
Data sheet	A6V11877580										
 	VQP46.10L0.5		VQP46.10L0.5Q	10	½	30	520	30	600	30	600
	VQP46.15L0.5		VQP46.15L0.5Q	15	¾	30	520	28	600	28	600
	VQP46.15F1.3		VQP46.15F1.3Q	15	¾	300	1300	28	600	28	600
	VQP46.20F1.5		VQP46.20F1.5Q	20	1	320	1500	35	600	35	600
	VQP46.25F1.8		VQP46.25F1.8Q	25	1 ¼	620	1800	31	600	31	600
<b>PN 25</b>	1...90 °C	Without pressure testing points	With pressure testing points	DN	Rp [inch]	$\dot{V}_{min}$ [l/h]	$\dot{V}_{100}$ [l/h]	$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]
Data sheet	A6V11877580										
 	VQI46.15L0.5		VQI46.15L0.5Q	15	½	30	520	28	600	28	600
	VQI46.15F1.3		VQI46.15F1.3Q	15	½	300	1300	28	600	28	600
	VQI46.20F1.5		VQI46.20F1.5Q	20	¾	320	1500	35	600	35	600
	VQI46.25F1.8		VQI46.25F1.8Q	25	1	620	1800	31	600	31	600

Radiator applications														
<b>Typical applications</b> – Radiators	<b>Actuators</b>		<b>Data sheet</b>				4.5 mm		2.5 mm					
	RTN.. STA.. SSA..31/81/61.. SSA..HF SSA118..		N2111 N4884 A6V11858276 A6V11858278 A6V11858280											
	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>									
	AC 230 V		2-position		210		–		STA23 –		– SSA331.00 SSA131.00			
	AC 24 V		3-position		67.5		–		–		–			
	AC/DC 24 V		0...10 V		270 <sup>2)</sup>		–		STA63 STA73		–			
			2-position/PDM		270		–		–		–			
			0...10 V		25		–		–		SSA161.05 SSA151.05HF SSA161.05HF SSA161E.05HF <sup>1)</sup> SSA118.09HKN			
			4...20 mA		25		–		–		–			
			0...10 V		25		–		–		–			
			0...10 V		25		–		–		–			
			KNX S-/KNX PL-Link		50		–		–		–			
						RTN51 RTN71 RTN81		– – –		– – –				
<b>PN 10</b>	1...90 °C	DIN	DN	Rp/R [inch]	$\dot{V}$ [l/h]	$\dot{V}_{nom}$ <sup>3)</sup> [l/h]		$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{min}$ [kPa]	$\Delta p_{max}$ [kPa]			
Data sheet	N2185													
 	VPD110A-... <sup>3)</sup>		10	Rp/R ¾	25...318	45	90	145	6 <sup>4)</sup>	200	8 <sup>4)</sup>	200	10 <sup>4)</sup>	200
	VPD115A-...		15	Rp/R ½	25...318	45	90	145	6 <sup>4)</sup>	200	8 <sup>4)</sup>	200	10 <sup>4)</sup>	200
	VPD110B-200		10	Rp/R ¾	95...483	200	20	200	20	200	20	200	20	200
	VPD115B-200		15	Rp/R ½	95...483	200	20	200	20	200	20	200	20	200
	VPE110A-...		10	Rp/R ¾	25...318	45	90	145	6 <sup>4)</sup>	200	8 <sup>4)</sup>	200	10 <sup>4)</sup>	200
VPE115A-...		15	Rp/R ½	25...318	45	90	145	6 <sup>4)</sup>	200	8 <sup>4)</sup>	200	10 <sup>4)</sup>	200	
VPE110B-200		10	Rp/R ¾	95...483	200	20	200	20	200	20	200	20	200	
VPE115B-200		15	Rp/R ½	95...483	200	20	200	20	200	20	200	20	200	

<sup>1)</sup> Equal percentage valve characteristic

<sup>2)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm;






<sup>3)</sup> .. = insert  $\dot{V}_{nom}$   $\dot{V}_{nom}$  = factory setting = volumetric flow at 0.5 mm stroke or setting mark 3 of the presetting;

<sup>4)</sup>  $\Delta p_{min}$  is valid for  $\dot{V}_{nom}$  45/90/145 l/h;

VPP46.../VPI46...:  $\Delta p_{min}$  is for the  $\dot{V}_{100}$ . For lower flows please consult the data sheet.

# Valves and actuators

## Overview and selection tools

Threaded PICVs														
<b>Typical applications</b> – Heating groups – Air handling units – Chilled ceilings – VAV – Fan coil units – Zone control	<b>Actuators</b>		<b>Data sheet</b>					4.5 mm	2.5 / 5 mm	15 mm				
	STA.. SSA..31/81/61.. SSA..HF SSA118.. SAY..P.. SUA21/3 SUA21/3P SUE21P		N4884 A6V11858276 A6V11858278 A6V11858280 A6V10628469 A6V10446174 A6V11780780 A6V11780777					100 N	100 N	200 N				
														
	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>									
					STA	SSA	SAY							
	AC 230 V		3-position		–	67.5/135	30	–	SSA331.00	SAY31P03				
			2-position		210	–	–	STA23	–					
	AC 24 V		0...10 V		270 <sup>1)</sup>	–	30	STA63	–					
	AC/DC 24 V		3-position		–	67.5/135	30	–	SSA131.00	SAY81P03				
			2-position/PDM		270	–	–	STA73	–					
		0...10 V		–	25/50	30	–	SSA161.05	SAY61P03					
		Modbus		–	–	30	–	–	SAY61P03/MO					
		4...20 mA		–	25/50	–	–	SSA151.05HF	–					
		0...10 V		–	25/50	–	–	SSA161.05HF	–					
		0...10 V		–	25/50	–	–	SSA161E.05HF <sup>1)</sup>	–					
		KNX S-/KNX PL-Link		–	50/100	–	–	SSA118.09HKN	–					
<b>PN 25</b>	1...120 °C	Without pressure-testing points	With pressure-testing points	DN	G [inch]	V <sub>min</sub> [l/h]	V <sub>100</sub> [l/h]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet		N4855												
		VPP46.10L0.2	VPP46.10L0.2Q	10	½	30	200	16	600	16	600	–	–	
		VPP46.10L0.4	VPP46.10L0.4Q	10	½	65	333	16	600	–	–	–	–	
		VPP46.15L0.2	VPP46.15L0.2Q	15	¾	30	200	19	600	19	600	–	–	
		VPP46.15L0.6	VPP46.15L0.6Q	15	¾	100	575	19	600	19	600	–	–	
		VPP46.20F1.4	VPP46.20F1.4Q	20	1	200	1190	22	600	–	–	–	–	
		VPP46.25F1.8	VPP46.25F1.8Q	25	1 ¼	204	1470	39	600	–	–	–	–	
		VPP46.32F4	VPP46.32F4Q	32	1 ½	450	3270	28	600	–	–	–	–	
		VPP46.32F4	VPP46.32F4Q	32	1 ½	550	4001	–	–	28	600	–	–	
<b>PN 25</b>	1...120 °C	Without pressure-testing points	With pressure-testing points	DN	Rp [inch]	V <sub>min</sub> [l/h]	V <sub>100</sub> [l/h]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>min</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet		N4855												
		VPI46.15L0.2	VPI46.15L0.2Q	15	½	30	200	19	600	19	600	–	–	
		VPI46.15L0.6	VPI46.15L0.6Q	15	½	100	575	19	600	19	600	–	–	
		VPI46.20F1.4	VPI46.20F1.4Q	20	¾	200	1190	22	600	–	–	–	–	
		VPI46.20F1.4	VPI46.20F1.4Q	20	¾	220	1330	–	–	22	600	–	–	
		VPI46.25F1.8	VPI46.25F1.8Q	25	1 ¼	204	1470	39	600	–	–	–	–	
		VPI46.25F1.8	VPI46.25F1.8Q	25	1 ¼	250	1800	–	–	39	600	–	–	
		VPI46.32F4	VPI46.32F4Q	32	1 ½	450	3270	28	600	–	–	–	–	
		VPI46.32F4	VPI46.32F4Q	32	1 ½	550	4001	–	–	28	600	–	–	
–	VPI46.40F9.5Q	40	1 ½	1370	9500	–	–	–	–	25	600	–		
–	VPI46.50F12Q	50	2	1400	11500	–	–	–	–	36	600	–		








<sup>1)</sup> Equal percentage valve characteristic

<sup>2)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm;

<sup>3)</sup> .. = insert V<sub>nom</sub> V<sub>nom</sub> = factory setting = volumetric flow at 0.5 mm stroke or setting mark 3 of the presetting;

<sup>4)</sup> Δp<sub>min</sub> is valid for V<sub>nom</sub> 45/90/145 l/h;

VPP46../VPI46...: Δp<sub>min</sub> is for the V<sub>100</sub>. For lower flows please consult the data sheet.

Flanged PICVs									
<b>Typical applications</b> – District heating – Heating groups – Air handling units	<b>Actuators</b>	<b>Data sheet</b>				20 mm	20 / 40 mm	40 mm	
	SAX..P..	N4509				500 N	1100 N	1100 N	
	SQV91P..	N4833							
	SAV..P..	N4510							
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>			<b>Spring return function [s]</b>			
	AC 230 V	3-position	SAX	SQV	SAV				
		3-position	30	–	120	–	SAX31P03	–	SAV31P00
		3-position	–	40/80	–	30	–	SQV91P40 <sup>1)</sup>	–
	AC/DC 24 V	3-position	–	40/80	–	30	–	SQV91P30 <sup>2)</sup>	–
		3-position	30	–	120	–	SAX81P03	–	SAV81P00
3-position		–	40/80	–	30	–	SQV91P40 <sup>1)</sup>	–	
3-position		–	40/80	–	30	–	SQV91P30 <sup>2)</sup>	–	
0...10 V, 4...20 mA		30	–	120	–	SAX61P03	–	SAV61P00	
0...10 V, 4...20 mA		–	40/80	–	30	–	SQV91P40 <sup>1)</sup>	–	
0...10 V, 4...20 mA		–	40/80	–	30	–	SQV91P30 <sup>2)</sup>	–	
Modbus	30	–	120	–	SAX61P03/MO	–	SAV61P00/MO		
<b>PN 16</b>	1...120 °C								
<b>Data sheet</b>	A6V11466366	DN	$V_{min}$ [m <sup>3</sup> /h]	$V_{100}$ [m <sup>3</sup> /h]	$\Delta p_{min}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	
 	VPF44.50F15	50	2.9	15.9	21.4	700/600	700/600	–	
	VPF44.50F25	50	4.2	26.2	52.6	700/600	700/600	–	
	VPF44.65F25	65	4	28	22	700/600	700/600	–	
	VPF44.65F35	65	5.1	35.8	42.6	700/600	700/600	–	
	VPF44.80F35	80	5.5	36.7	18	700/600	700/600	–	
	VPF44.80F45	80	7.2	47.9	36.4	700/600	700/600	–	
	VPF44.100F70	100	12.1	68	35	–	600	600	
	VPF44.100F90	100	14.8	90	75	–	600	600	
	VPF43.125F110	125	18.5	110	35	–	600	600	
	VPF43.125F135	125	23	135	53	–	600	600	
	VPF43.150F160	150	25.6	148	35	–	600	600	
	VPF43.150F200	150	32	195	65	–	600	600	
	VPF43.200F210 <sup>3)</sup>	200	95	210	32	–	600	600	
	VPF43.200F280 <sup>3)</sup>	200	130	280	78	–	600	600	
<b>PN 25</b>	1...120 °C								
<b>Data sheet</b>	N4316	DN	$V_{min}$ [m <sup>3</sup> /h]	$V_{100}$ [m <sup>3</sup> /h]	$\Delta p_{min}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	$\Delta p_s/\Delta p_{max}$ [kPa]	
 	VPF54.50F16	50	2.3	15	20	600	600	–	
	VPF54.50F25	50	4.3	25	50	600	600	–	
	VPF54.65F24	65	4.4	24	25	600	600	–	
	VPF54.65F35	65	6	35	55	600	600	–	
	VPF54.80F35	80	5.3	34	25	600	600	–	
	VPF54.80F45	80	7	43	50	600	600	–	
	VPF54.100F70	100	12.1	68	35	–	600	600	
	VPF54.100F90	100	14.8	90	75	–	600	600	
	VPF53.125F110	125	18.5	110	35	–	600	600	
	VPF53.125F135	125	23	135	53	–	600	600	
	VPF53.150F160	150	25.6	148	35	–	600	600	
	VPF53.150F200	150	32	195	65	–	600	600	
	VPF53.200F210 <sup>3)</sup>	200	95	210	32	–	600	600	
	VPF53.200F280 <sup>3)</sup>	200	130	280	78	–	600	600	

<sup>1)</sup> Fail-safe function: valve closed

<sup>2)</sup> Fail-safe function: valve open






<sup>3)</sup> max. medium temperature 110 °C







VPF43../VPF53...:  $\Delta p_{min}$  is for the  $V_{100}$ . For lower flows please consult the data sheet.





## Valves and actuators

### Overview and selection tools

Threaded globe valves						
<b>Typical applications</b> – Radiators	<b>Actuators</b> RTN..	<b>Data sheet</b> N2111				
			<b>RTN51/RTN51G</b>	<b>RTN71</b>	<b>RTN81</b>	
<b>Typical applications</b> – Radiators	<b>Actuators</b> STA.. SSA..31/81/61.. SSA..HF SSA118..	<b>Data sheet</b> N4884 A6V11858276 A6V11858278 A6V11858280	4.5 mm 100 N 	2.5 mm 100 N 	4.5 mm 90 N 	
			<b>STA23</b>	<b>SSA331.00</b>	<b>STA73HD <sup>1)</sup></b>	
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>			
	AC 230 V	2-position	210	–	–	
		3-position	67.5	–	<b>SSA331.00</b>	–
	AC 24 V	3-position	67.5	–	<b>SSA131.00</b>	–
		0...10 V	270 <sup>2)</sup>	<b>STA63</b>	–	–
	AC/DC 24 V	2-position/PDM	270	<b>STA73</b>	–	<b>STA73HD <sup>1)</sup></b>
		0...10 V	25	–	<b>SSA161.05</b>	–
		4...20 mA	25	–	<b>SSA151.05HF</b>	–
		0...10 V	25	–	<b>SSA161.05HF</b>	–
		0...10 V	25	–	<b>SSA161E.05HF <sup>3)</sup></b>	–
		KNX S-/KNX PL-Link	50	–	<b>SSA118.09HKN</b>	–
	Normally Open/Normally Closed (for radiator valves)			<b>NC</b>	–	<b>NC</b>

PN 10	1...120 °C	DIN	NF	DN	Rp/R [inch]	k <sub>v</sub> [m <sup>3</sup> /h]	Δp <sub>max</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>max</sub> [kPa]
		N2105	N2106	10	Rp/R 3/8	0.09...0.63	60	60	60
		<b>VDN110</b>	<b>VDN210</b>	10	Rp/R 3/8	0.09...0.63	60	60	60
		<b>VDN115</b>	<b>VDN215</b>	15	Rp/R 1/2	0.10...0.89	60	60	60
		<b>VDN120</b>	<b>VDN220</b>	20	Rp/R 3/4	0.31...1.41	60	60	60
				10	Rp/R 3/8	0.09...0.63	60	60	60
		<b>VEN110</b>	<b>VEN210</b>	10	Rp/R 3/8	0.09...0.63	60	60	60
		<b>VEN115</b>	<b>VEN215</b>	15	Rp/R 1/2	0.10...0.89	60	60	60
		<b>VEN120</b>	<b>VEN220</b>	20	Rp/R 3/4	0.31...1.41	60	60	60
		–	<b>VUN210</b>	10	Rp/R 3/8	0.14...0.60	60	60	60
		–	<b>VUN215</b>	15	Rp/R 1/2	0.13...0.77	60	60	60

Presettings for radiator valves VEN... VDN... VUN..									
k <sub>v</sub> values [m <sup>3</sup> /h] at the different preadjusted positions (XP=2K)									
Control range with electromotoric and electrothermic actuators SSA... STA..		■	■	■	■	■	■	■	–
Control range with thermostatic head RTN..		■	■	■	■	■	■	■	■
Reference numbers for preadjustment		1	2	3	4	5	N	N (k <sub>vs</sub> )	
VDN110/VDN210/VEN110/VEN210		0.072	0.17	0.24	0.28	0.37	0.43	0.63	
VDN115/VDN215/VEN115/VEN215		0.07	0.17	0.28	0.36	0.45	0.50	0.89	
VDN120/VDN220/VEN120/VEN220		0.22	0.35	0.44	0.52	0.60	0.71	1.41	
VUN210		0.14	0.26	0.34	0.39	0.40	0.43	0.60	
VUN215		0.13	0.22	0.30	0.39	0.45	0.50	0.77	





<sup>1)</sup> Optimized for floor heating systems

<sup>2)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm

<sup>3)</sup> Equal percentage valve characteristic

k<sub>v</sub> = nominal flow rate of cold water (5...30 °C) through the valve at the respective stroke and a differential pressure of 100 kPa (1 bar)  
The selected k<sub>v</sub> values of the radiator valves can be easily and precisely set on the valve head in 5 steps + N (fully open)

### Threaded globe valves

Typical applications	Actuators	Data sheet	4.5 mm 100 N	2.5 mm 100 N			
– Chilled ceilings	STA..	N4884					
	SSA..31/81/61..	A6V11858276					
	SSA..HF	A6V11858278					
	SSA118..	A6V11858280					
	Operating voltage	Positioning signal			Positioning time [s]		
	AC 230 V	2-position			210	STA23	–
		3-position			67.5	–	SSA331.00
	AC 24 V	3-position			67.5	–	SSA131.00
		0...10 V			270 <sup>2)</sup>	STA63	–
	AC/DC 24 V	2-position/PDM			270	STA73	–
0...10 V		25	–	SSA161.05			
4...20 mA		25	–	SSA151.05HF			
0...10 V		25	–	SSA161.05HF			
0...10 V		25	–	SSA161E.05HF <sup>1)</sup>			
	KNX S-/KNX PL-Link	50	–	SSA118.09HKN			
	Normally Open/Normally Closed (for radiator valves)		NC	–			
PN 10	1...110 °C						
Data sheet	N2103	DN	Rp/R [inch]	k <sub>v</sub> [l/h]	Δp <sub>max</sub> [kPa]	Δp <sub>max</sub> [kPa]	
 	VD115CLC	15	Rp/R ½	0.25...1.9	150	150	
	VD120CLC	20	Rp/R ¾	0.25...2.6	150	150	
	VD125CLC	25	Rp/R 1	0.25...2.6	150	150	

### Union nuts for threaded valves <sup>3)</sup>

	Type			R, Rp [inch]	Material	
	Set of 2	Set of 3	G [inch]			
 	ALG132	ALG133	G ½B	R ¾ (Outer thread)	Brass	
	ALG142	ALG143	G ¾B	R ½ (Outer thread)	Brass	
	ALG122	ALG123	G ¾B	Rp ¾	Malleable cast iron	
	ALG152	ALG153	G 1B	Rp ½	Malleable cast iron	
	ALG152B	ALG153B	G 1B	Rp ½	Brass	
	ALG202	ALG203	G 1¼B	Rp ¾	Malleable cast iron	
	ALG202B	ALG203B	G 1¼B	Rp ¾	Brass	
	ALG252	ALG253	G 1½B	Rp 1	Malleable cast iron	
	ALG252B	ALG253B	G 1½B	Rp 1	Brass	
	ALG322	ALG323	G 2B	Rp 1¼	Malleable cast iron	
	ALG322B	ALG323B	G 2B	Rp 1¼	Brass	
	ALG402	ALG403	G 2¼B	Rp 1½	Malleable cast iron	
	ALG402B	ALG403B	G 2¼B	Rp 1½	Brass	
	ALG502	ALG503	G 2¾B	Rp 2	Malleable cast iron	
	ALG502B	ALG503B	G 2¾B	Rp 2	Brass	
	Type			Ø d [mm]	Material	
	Set of 2					
	ALS152			G ¾B	21.3	Steel, weldable
	ALS202			G 1B	26.8	Steel, weldable
ALS252			G 1¼B	33.7	Steel, weldable	

<sup>1)</sup> Equal percentage valve characteristic


















<sup>2)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm

<sup>3)</sup> Valve side: cylindrical thread G according to ISO 228-1, pipe side: ALG.. with cylindrical Rp- or tapered R-thread according to ISO 7-1, pipe side: ALS.. with welded connection



## Valves and actuators





### Overview and selection tools

Threaded globe valves												
<b>Typical applications</b> – Floor heating – Chilled ceilings – VAV – Fan coil units – Zone control	<b>Actuators</b>	<b>Data sheet</b>			5.5 mm							
	SSB..	N4891			200 N		200 N					
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>	<b>Auxiliary switch</b>								
	AC 230 V	3-position	150	SSB..1.1	SSB31		SSB31.1					
	AC 24 V	3-position	150	✓	SSB81		SSB81.1					
AC/DC 24 V	0...10 V	75	–	SSB61		–						
<b>PN 16</b>	1...110 °C	DN	G [inch]	k <sub>vs</sub> [m <sup>3</sup> /h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]		
<b>Data sheet</b>	N4845											
		VVP45.10-.. <sup>1)</sup>	10	G ½B	0.25 / 0.4 / 0.63 / 1 / 1.6	725	400	725	400	725	400	
			VVP45.15-2.5	15	G ¾B	2.5	350	350	350	350	350	350
			VVP45.20-4	20	G 1B	4	350	350	350	350	350	350
			VVP45.25-6.3	25	G 1¼B	6.3	300	300	300	300	300	300
		VXP45.10-..	10	G ½B	0.25 / 0.4 / 0.63 / 1 / 1.6	–	400	–	400	–	400	
			VXP45.15-2.5	15	G ¾B	2.5	–	350	–	350	–	350
			VXP45.20-4	20	G 1B	4	–	350	–	350	–	350
			VXP45.25-6.3	25	G 1¼B	6.3	–	300	–	300	–	300
		VMP45.10-..	10	G ½B	0.25 / 0.4 / 0.63 / 1	–	400	–	400	–	400	
			VMP45.10-1.6	10	G ½B	1.6	–	400	–	400	–	400
			VMP45.15-2.5	15	G ¾B	2.5	–	350	–	350	–	350
			VMP45.20-4	20	G 1B	4	–	350	–	350	–	350
<b>Typical applications</b> – Chilled ceilings – VAV – Fan coil units	<b>Actuators</b>	<b>Data sheet</b>			4.5 mm		2.5 mm					
	STP.. SFP.. SSP..	N4884 N4865 N4864			100 N		135 N		160 N			
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>	<b>Spring return function [s]</b>								
	AC 230 V	2-position	210	–	STP23		–		–			
		2-position	10	30-50	–		SFP21/18		–			
	3-position	150	–	–		–		SSP31				
AC 24 V	2-position	10	30-50	–		SFP71/18		–				
	3-position	43	–	–		–		SSP81.04				
	3-position	150	–	–		–		SSP81				
	0...10 V	270 <sup>2)</sup>	–	STP63		–		–				
AC/DC 24 V	2-position/PDM	270	–	STP73		–		–				
	0...10 V	34	–	–		–		SSP61				
<b>PN 16</b>	1...110 °C	DN	G [inch]	k <sub>vs</sub> [m <sup>3</sup> /h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]		
<b>Data sheet</b>	N4847											
		VVP47.10-.. <sup>1)</sup>	10	G ½B	0.25 / 0.4	700	400	1000	400	1000	400	
			VVP47.10-..	10	G ½B	0.63 / 1	250	250	500	400	500	400
			VVP47.10-1.6	10	G ½B	1.6	150	150	300	300	300	300
			VVP47.15-2.5	15	G ¾B	2.5	150	150	300	300	300	300
		VXP47.10-..	10	G ½B	0.25 / 0.4	–	400	–	400	–	400	
			VXP47.10-..	10	G ½B	0.63 / 1	–	250	–	400	–	400
			VXP47.10-1.6	10	G ½B	1.6	–	150	–	300	–	300
			VXP47.15-2.5	15	G ¾B	2.5	–	150	–	300	–	300
		VMP47.10-..	10	G ½B	0.25 / 0.4	–	400	–	400	–	400	
			VMP47.10-..	10	G ½B	0.63 / 1	–	250	–	400	–	400
			VMP47.10-1.6	10	G ½B	1.6	–	150	–	300	–	300
			VMP47.15-2.5	15	G ¾B	2.5	–	150	–	300	–	300

VVP45..N with Serto compression fittings, k<sub>vs</sub> = 2.5 / 4 / 6.3 m<sup>3</sup>/h  
 VVP45..S, VMP45..S with Conex® compression fittings, k<sub>vs</sub> = 0.63 / 1 / 1.6 / 2.5 m<sup>3</sup>/h  
 VVP47..S, VMP47..S with Conex® compression fittings, k<sub>vs</sub> = 0.63 / 1 / 1.6 / 2.5 m<sup>3</sup>/h

<sup>1)</sup> .. = k<sub>vs</sub> value

<sup>2)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm

Threaded globe valves														
<b>Typical applications</b> – Floor heating – Fan coil units – Zone control	<b>Actuators</b>		<b>Data sheet</b>				2.5 mm		4.5 mm		2.5 mm			
	SFA..		N4863				200 N	170 N	100 N	160 N				
	SUA21/3		A6V10446174											
	STA..		N4884											
	SSA31.04 <sup>1)</sup>		N4860											
	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>	<b>Spring return function [s]</b>								
	AC 230 V		2-position		10	30-50	SFA21/18		-		-			
			2-position		210	-	-		-		STA23			
		2-position/SPST <sup>2)</sup>		10	-	-		SUA21/3		-				
		3-position/SPDT <sup>2)</sup>		43	-	-		-		SSA31.04				
AC 24 V		2-position		10	30-50	SFA71/18		-		-				
0...10 V		0...10 V		270 <sup>3)</sup>	-	-		-		STA63				
AC/DC 24 V		2-position/PDM		270	-	-		-		STA73				
<b>PN 16</b>		1...110 °C		DN	Rp [inch]	k <sub>vs</sub> [m <sup>3</sup> /h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	
<b>Data sheet</b>		N4842												
		VVI46.15/2		15	Rp 1/2	2	300	300	400	400	200	200	300	300
		VVI46.20/2		20	Rp 3/4	3.5	300	300	400	400	200	200	300	300
		VVI46.25/2		25	Rp 1	5	250	250	250	250	150	150	230	230
		VXI46.15/2 <sup>4)</sup>		15	Rp 1/2	2	-	300	-	400	-	200	-	300
		VXI46.20/2 <sup>4)</sup>		20	Rp 3/4	3.5	-	300	-	400	-	200	-	300
		VXI46.25/2 <sup>4)</sup>		25	Rp 1	5	-	250	-	250	-	150	-	230
		VXI46.25T <sup>5)</sup>		25	Rp 1	5	-	200	-	200	-	140	-	-

Thermal actuators and connecting cables for combinable range, STx..3..														
Color		White										Black		
Equipped with		-		Function module DC 0...10 V		Auxiliary switch for STA		Auxiliary switch for STP		LED		-		
Positioning signal		2-position (On/Off)		DC 0...10 V		2-position (On/Off)		2-position (On/Off)		2-position (On/Off)		2-position (On/Off)		
		[STA..., NC]		[STA..., NC]		[STA..., NC]		[STA..., NC]		[STA..., NC]		[STA..., NC]		
		[STP..., NO]		-		-		[STP..., NO]		[STP..., NO]		[STP..., NO]		
Standard PVC cables	1 m					ASA23U10		ASP23U10						
	2 m	ASY23L20	ASY6AL20	ASY6PL20						ASY23L20LD				
	3 m											ASY23L30B		
	5 m	ASY23L50											ASY23L50B	
	7 m	ASY23L70												
	10 m	ASY23L100												
	15 m	ASY23L150												
Halogen-free cables	2 m	ASY23L20HF	ASY6AL20HF	ASY6PL20HF										
	5 m	ASY23L50HF												
	10 m	ASY23L100HF												
Actuator														
STA73/00		■	■			■				■				
STA23/00		■				■								
STP73/00		■		■				■			■			
STP23/00		■						■						
STA73PR/00 <sup>6)</sup>		■				■				■				
STP73PR/00 <sup>6)</sup>		■						■			■			
STA73MP/00 <sup>7)</sup>		■	■			■				■				
STA23MP/00 <sup>7)</sup>		■				■								
STA73B/00													■	
STA23B/00													■	

<sup>1)</sup> Not suited for radiator valves

<sup>2)</sup> SPST = single-pole single-throw, SPDT = single-pole double-throw

<sup>3)</sup> In control mode (warm-up time) min. running time approx. 30 s/mm

<sup>4)</sup> 70% k<sub>vs</sub> in bypass, leakage rate in bypass 2...5% of k<sub>vs</sub> value

<sup>5)</sup> 100% k<sub>vs</sub> in bypass, leakage rate in bypass 0.05% of k<sub>vs</sub> value. For noiseless operation, the value of 100 kPa should not be exceeded.








<sup>6)</sup> Actuators ideal for parallel running. Pulse duration modulation (PDM) in connection with Siemens room controllers of the Desigo™ range and room thermostats.

<sup>7)</sup> Multipack with 50 actuators (OEM) NC: normally closed, NO: normally open



## Valves and actuators

### Overview and selection tools

Threaded globe valves													
<b>Typical applications</b> – District heating – Boiler plants – Chiller plants – Domestic hot water – Heating groups – Air handling units	<b>Actuators</b>		<b>Data sheet</b>					Spring return function [s]	20 mm				
	SAX..		N4501						800 N	1000 N	2800 N		
	SKD..		N4561										
	SKB..		N4564										
	<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>								
	AC 230 V		3-position		SAX	SKD	SKB		SKD	SKB			
			3-position								SAX31.00	SKD32.50	SKB32.50
			3-position								–	SKD32.51	SKB32.51
			3-position								SAX31.03	–	–
			3-position								–	SKD32.21	–
AC 24 V <sup>1)</sup>		3-position							SAX81.00	SKD82.50	SKB82.50		
		3-position							–	SKD82.51	SKB82.51		
		3-position							SAX81.03	–	–		
		0...10 V, 4...20 mA							–	SKD60	SKB60		
		0...10 V, 4...20 mA							–	SKD62	SKB62		
AC/DC 24 V		0...10 V, 4...20 mA							SAX61.03	–	–		
		Modbus							SAX61.03/MO	SKD62/MO	SKB62/MO		
<b>PN 16</b>	-25...150 °C <sup>2)</sup>				DN	G [inch]	k <sub>vs</sub> [m <sup>3</sup> /h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]
Data sheet	N4363		N4463										
	VVG41.11..12		–	–	15	G 1B	0.63 / 1	1600	800	1600	800	1600	800
	VVG41.13		–	VXG41.1301	15	G 1B	1.6	1600	800	1600	800	1600	800
	VVG41.14		–	VXG41.1401	15	G 1B	2.5	1600	800	1600	800	1600	800
	VVG41.15		–	VXG41.1501	15	G 1B	4	1600	800	1600	800	1600	800
	VVG41.20		–	VXG41.2001	20	G 1¼B	6.3	1600	800	1600	800	1600	800
	VVG41.25		–	VXG41.2501	25	G 1½B	10	1550	800	1600	800	1600	800
	VVG41.32		–	VXG41.3201	32	G 2B	16	875	800	1275	800	1600	800
	VVG41.40		–	VXG41.4001	40	G 2¼B	25	525	525	775	775	1600	800
	VVG41.50		–	VXG41.5001	50	G 2¾B	40	300	300	450	450	1225	800











<sup>1)</sup> SAX81...: AC/DC 24 V

<sup>2)</sup> SAX... max. 130 °C

VXG41.. valves contain only materials in contact with drinking water that comply with the UBA Positive List dated April 23, 2013, Categories B+C











Threaded globe valves												
<b>Typical applications</b> – Boiler plants – Domestic hot water – Heating groups – Air handling units	<b>Actuators</b>		<b>Data sheet</b>		<b>Spring return function [s]</b>	5.5 mm						
	SAS..		N4581			400N	400N	400N				
	<b>Operating voltage</b>		<b>Positioning signal</b>			<b>Positioning time [s]</b>						
	AC 230 V		3-position			120	–					
			3-position			30	–	SAS31.00	–	–		
			3-position			120	28	SAS31.03	–	–		
			3-position			30	14	–	SAS31.50	–		
			3-position			30	–	–	SAS31.53	–		
	AC/DC 24 V		0...10 V,			30	–	SAS61.03	–	–		
			4...20 mA,			30	14	–	–	–	SAS61.33	
		0...1000 Ω		30	14	–	SAS61.53	–				
		3-position		120	–	SAS81.00	–	–				
		3-position		30	–	SAS81.03	–	–				
		3-position		30	14	–	–	–	SAS81.33			
		Modbus		30	14 (SSA61.33/MO)	SAS61.03/MO	SAS61.33/MO	–				
<b>PN 16</b>	1...120 °C			DN	G [inch]	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
Data sheet	N4364											
	VVG44.15-... <sup>1)</sup>											
	VVG44.15-...			15	G 1B	0.25 / 0.4 / 0.63	1600	400	1600	400	1600	400
	VVG44.15-...			15	G 1B	1 / 1.6	725	400	725	400	725	400
	VVG44.15-...			15	G 1B	2.5 / 4	400	400	400	400	400	400
	VVG44.20-6.3			20	G 1½B	6.3	750	400	750	400	750	400
	VVG44.25-10			25	G 1½B	10	400	400	400	400	400	400
	VVG44.32-16			32	G 2B	16	250	250	250	250	250	250
	VVG44.40-25			40	G 2½B	25	125	125	125	125	125	125
<b>Typical applications</b> – Boiler plants – Heating groups – Air handling units												
<b>Actuators</b>		<b>Data sheet</b>								5.5 mm		
SSC..		N4895										
<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>		<b>Spring return function [s]</b>						
AC 230 V		3-position		150		–		SSC31				
AC 24 V		3-position		150		–		SSC81				
AC/DC 24 V		0...10 V		30		–		SSC61				
		0...10 V		30		30		SSC61.5				
<b>PN 16</b>	1...110 °C			DN	G [inch]	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
Data sheet	N4845											
	VVP45.20-4											
	VVP45.25-6.3			25	G 1½B	6.3	4	350	300	350	300	350
	VVP45.25-10			25	G 1½B	10	300	300	300	300	300	300
	VVP45.32-16			32	G 2B	16	175	175	175	175	175	175
	VVP45.40-25			40	G 2½B	25	75	75	75	75	75	75
<b>Typical applications</b> – District heating – Boiler plants												
<b>Actuators</b>		<b>Data sheet</b>								5.5 mm		
SAT..		N4584										
<b>Operating voltage</b>		<b>Positioning signal</b>		<b>Positioning time [s]</b>		<b>Spring return function [s]</b>						
AC 230 V		3-position		8		–		SAT31.008				
		3-position		15		8		–				
AC/DC 24 V		0...10 V,		8		–		SAT61.008				
		4...20 mA,		15		8		–				
		0...1000 Ω		15		8		SAT61.51				
		Modbus		15		–		SAT61.008/MO				
								SAT61.51/MO				
<b>PN 25</b>	1...130 °C			DN	G [inch]	$k_{vs}$	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
Data sheet	N4380											
	VVG549.15-... <sup>1)</sup>			15	G ¾B	0.25 / 0.4 / 0.63	2500	1200	2500	1200	2500	1200
	VVG549.15-...			15	G ¾B	1 / 1.6 / 2.5	2000	1200	2000	1200	2000	1200
	VVG549.20-4K			20	G 1B	4	1600	1200	1600	1200	1600	1200
	VVG549.25-6.3K			25	G 1½B	6.3	1600	1200	1600	1200	1600	1200

<sup>1)</sup> .. = insert  $k_{vs}$  value



# Valves and actuators

## Overview and selection tools



### Flanged globe valves

Typical applications	Actuators	Data sheet						Spring return function [s]	20 mm					40 mm				
		Data sheet							800 N	1000 N	2800 N	1600 N	2800 N					
		Positioning time [s]		SA..		SKD			SKB/C		SKD		SKB/C					
- District heating	SAX..	N4501																
- Boiler plants	SKD..	N4561																
- Chiller plants	SKB..	N4564																
- Domestic hot water	SKC..	N4566																
- Heating groups	SAV..	CE1N4503																
- Air handling units	Operating voltage	Positioning signal		Positioning time [s]														
AC 230 V	3-position	3-position		SA..	SKD	SKB/C	SKD		SKB/C	SAX31.00	SKD32.50	SKB32.50	SAV31.00	SKC32.60				
		3-position		SA..	SKD	SKB/C	SKD		SKB/C	-	SKD32.51	SKB32.51	-	SKC32.61				
		3-position		SA..	SKD	SKB/C	SKD		SKB/C	SAX31.03	-	-	-	-				
		3-position		SA..	SKD	SKB/C	SKD		SKB/C	-	SKD32.21	-	-	-				
		3-position		SA..	SKD	SKB/C	SKD		SKB/C	-	-	-	-	-				
	AC 24 V <sup>1)</sup>	3-position	3-position		SA..	SKD	SKB/C		SKD	SKB/C	SAX81.00	SKD82.50	SKB82.50	SAV81.00	SKC82.60			
			3-position		SA..	SKD	SKB/C		SKD	SKB/C	-	SKD82.51	SKB82.51	-	SKC82.61			
			3-position		SA..	SKD	SKB/C		SKD	SKB/C	SAX81.03	-	-	-	-			
	AC/DC 24 V	0...10 V, 4...20 mA	0...10 V, 4...20 mA		SA..	SKD	SKB/C		SKD	SKB/C	-	SKD60	SKB60	-	SKC60			
			0...10 V, 4...20 mA		SA..	SKD	SKB/C		SKD	SKB/C	-	SKD62	SKB62	-	SKC62			
0...10 V, 4...20 mA			SA..	SKD	SKB/C	SKD	SKB/C		SAX61.03	-	-	-	-					
	Modbus	30		30	120	15	10/20		SAX61.03/MO	SKD62/MO	SKB62/MO	SAV61.00/MO	SKC62/MO					



  

PN 6	-10...130°C	Data sheet	N4401	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
		VVF22.25-.. <sup>2)</sup>	VXF22.25-..	25	2.5/4/6.3/10	600	300	600	300	600	300	-	-	-	-
		VVF22.40-..	VXF22.40-..	40	16/25	550	300	600	300	600	300	600	300	600	300
		VVF22.50-40	VXF22.50-40	50	40	350	300	450	300	600	300	600	300	-	-
		VVF22.65-63	VXF22.65-63	65	63	200	150	250	200	600	300	450	300	-	-
		VVF22.80-100	VXF22.80-100	80	100	125	75	175	125	450	300	250	225	-	-
		VVF22.100-160	VXF22.100-160	100	160	-	-	-	-	-	-	160	125	300	250



  

PN 10	-10...150°C <sup>3)</sup>	Data sheet	N4402	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
		VVF32.15-.. <sup>2)</sup>	VXF32.15-..	15	1.6/2.5/4	1000	400	1000	400	1000	400	-	-	-	-
		VVF32.25-..	VXF32.25-..	25	6.3/10	1000	400	1000	400	1000	400	-	-	-	-
		VVF32.40-..	VXF32.40-..	40	16/25	550	400	750	400	1000	400	1000	400	-	-
		VVF32.50-40	VXF32.50-40	50	40	350	300	450	400	1000	400	750	400	-	-
		VVF32.65-63	VXF32.65-63	65	63	200	150	250	200	700	400	450	400	-	-
		VVF32.80-100	VXF32.80-100	80	100	125	75	175	125	450	400	250	225	-	-
		VVF32.100-160	VXF32.100-160	100	160	-	-	-	-	-	-	160	125	300	250
		VVF32.125-250	VXF32.125-250	125	250	-	-	-	-	-	-	125	90	190	160
		VVF32.150-400	VXF32.150-400	150	400	-	-	-	-	-	-	80	60	125	100

PN 16	-10...150°C <sup>3)</sup>	Data sheet	N4403	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
		VVF42.15-.. <sup>2)</sup>	VXF42.15-..	15	1.6/2.5/4	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.20-6.3	VXF42.20-6.3	20	6.3	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.25-..	VXF42.25-..	25	6.3/10	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.32-16	VXF42.32-16	32	16	900	400	1200	400	1600	400	-	-	-	-
		VVF42.40-..	VXF42.40-..	40	16/25	550	400	750	400	1600	400	1250	400	-	-
		VVF42.50-..	VXF42.50-..	50	31.5/40	350	300	450	400	1200	400	750	400	-	-
		VVF42.65-..	VXF42.65-..	65	50/63	200	150	250	200	700	400	450	400	-	-
		VVF42.80-..	VXF42.80-..	80	80/100	125	75	175	125	450	400	250	225	-	-
		VVF42.100-..	VXF42.100-..	100	125/160	-	-	-	-	-	-	160	125	300	250
		VVF42.125-..	VXF42.125-..	125	200/250	-	-	-	-	-	-	125	90	190	160
		VVF42.150-..	VXF42.150-..	150	315/400	-	-	-	-	-	-	80	60	125	100
		VVF42.50-40K	-	50	40	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.65-63K	-	65	63	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.80-100K	-	80	100	1600	400	1600	400	1600	400	-	-	-	-
		VVF42.100-160K	-	100	160	-	-	-	-	-	-	1600	400	1600	400
		VVF42.125-250K	-	125	250	-	-	-	-	-	-	1600	400	1600	400
		VVF42.150-360K	-	150	360	-	-	-	-	-	-	1400	400	1600	400

PN 16	-20...220°C	Data sheet	N4404	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]
		VVF43.65-50	VXF43.65-50	65	50	-	-	-	-	-	-	450	400	700	650
		VVF43.65-63	VXF43.65-63	65	63	-	-	-	-	-	-	450	400	700	650
		VVF43.80-80	VXF43.80-80	80	80	-	-	-	-	-	-	250	225	450	400
		VVF43.80-100	VXF43.80-100	80	100	-	-	-	-	-	-	250	225	450	400
		VVF43.100-125	VXF43.100-125	100	125	-	-	-	-	-	-	160	125	300	250
		VVF43.100-160	VXF43.100-160	100	160	-	-	-	-	-	-	160	125	300	250
		VVF43.125-200	VXF43.125-200	125	200	-	-	-	-	-	-	125	90	190	160
		VVF43.125-250	VXF43.125-250	125	250	-	-	-	-	-	-	125	90	190	160
		VVF43.150-315	VXF43.150-315	150	315	-	-	-	-	-	-	80	60	125	100
		VVF43.150-400	VXF43.150-400	150	400	-	-	-	-	-	-	80	60	125	100
		VVF43.65-63K	-	65	63	-	-	-	-	-	-	-	-	1600	800
		VVF43.80-100K	-	80	100	-	-	-	-	-	-	-	-	1600	800
		VVF43.100-150K	-	100	150	-	-	-	-	-	-	-	-	1600	800
		VVF43.125-220K	-	125	220	-	-	-	-	-	-	-	-	1600	800
		VVF43.150-315K	-	150	315	-	-	-	-	-	-	-	-	1600	800
		VVF43.200-450K	-	200	450	-	-	-	-	-	-	-	-	1200	800
		VVF43.250-630K	-	250	630	-	-	-	-	-	-	-	-	1000	800

<sup>1)</sup> SAX81..: AC/DC 24 V      <sup>2)</sup> .. = insert  $k_{vs}$  value

<sup>3)</sup> SAX.. max. 130°C; VVF43.., VXF43..: For DN 15...50 and  $k_{vs}$  values  $\leq 40$  m³/h see V..F53..

Flanged globe valves																
Typical applications	Actuators	Data sheet					Spring return function [s]	20 mm					40 mm			
		Data sheet	Positioning signal			Positioning time [s]		800 N	1000 N	2800 N	1600 N	2800 N				
– District heating – Boiler plants – Chiller plants – Domestic hot water – Heating groups – Air handling units	SAX..		N4501				SA..	SKD	SKB/C	SKD	SKB/C	SAX31.00	SKD32.50	SKB32.50	SAV31.00	SKC32.60
	SKD..	N4561				SKD										
	SKB..	N4564				30	–	–	–	–	–	–	–	–	–	
	SKC..	N4566				–	30	–	8	–	–	SKD32.21	–	–	–	
	SAV..	CE1N4503				–	–	–	–	–	–	–	–	–	–	
	Operating voltage	Positioning signal	Positioning time [s]													
	AC 230 V	3-position	120	120	120	–	–	–	–	–	–	–	–	–	–	
		3-position	–	120	120	8	10/18	–	–	–	–	–	–	–	–	
		3-position	30	–	–	–	–	–	–	–	–	–	–	–	–	
		3-position	–	30	–	8	–	–	–	–	–	–	–	–	–	
	AC 24 V	3-position	120	120	120	–	–	–	–	–	–	–	–	–	–	
		3-position	–	120	120	8	10/18	–	–	–	–	–	–	–	–	
		3-position	30	–	–	–	–	–	–	–	–	–	–	–	–	
		3-position	–	30	–	–	–	–	–	–	–	–	–	–	–	
	AC/DC 24 V	0...10 V, 4...20 mA	–	30	120	–	–	–	–	–	–	–	–	–	–	
0...10 V, 4...20 mA		–	30	120	15	10/20	–	–	–	–	–	–	–	–		
0...10 V, 4...20 mA		30	–	–	–	–	–	–	–	–	–	–	–	–		
0...10 V, 4...20 mA		120	–	–	–	–	–	–	–	–	–	–	–	–		
Modbus	30	30	120	15	10/20	SAX61.03/MO	SKD62/MO	SKB62/MO	SAV61.00/MO	SKC62/MO						
PN 25	-20...220°C <sup>2)</sup>			DN	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet	N4405		N4405													
		VVF53.15-.. <sup>3)</sup>			15	0.16/0.2/0.25/ 0.32/0.4/0.5/0.63	2500	1200	2500	1200	2500	1200	–	–	–	–
		VVF53.15-..			15	0.8/1/1.25/2/3.2	2500	1200	2500	1200	2500	1200	–	–	–	–
		VVF53.15-..			15	1.6/2.5/4	2500	1200	2500	1200	2500	1200	–	–	–	–
		VVF53.20-6.3			20	6.3	2500	1200	2500	1200	2500	1200	–	–	–	–
		VVF53.25-..			25	5/8	1600	1200	2100	1200	2500	1200	–	–	–	–
		VVF53.25-..			25	6.3/10	1600	1200	2100	1200	2500	1200	–	–	–	–
		VVF53.32-16			32	16	900	750	1200	1100	2500	1200	–	–	–	–
		VVF53.40-..			40	12.5/20	550	500	750	650	2000	1200	–	–	–	–
		VVF53.40-..			40	16/25	550	500	750	650	2000	1200	1250	1150	–	–
		VVF53.50-31.5			50	31.5	350	300	450	400	1200	1150	750	700	–	–
		VVF53.50-40			50	40	350	300	450	400	1200	1150	750	700	–	–
		VVF53.65-63			65	63	–	–	–	–	–	–	450	400	700	650
		VVF53.80-100			80	100	–	–	–	–	–	–	250	225	450	400
		VVF53.100-160			100	160	–	–	–	–	–	–	160	125	300	250
		VVF53.125-250			125	250	–	–	–	–	–	–	125	90	190	160
		VVF53.150-400			150	400	–	–	–	–	–	–	80	60	125	100
		VVF53.50-40K			50	36	–	–	2500	1250	2500	1250	–	–	–	–
		VVF53.65-63K			65	63	–	–	–	–	–	–	–	–	2500	1250
		VVF53.80-100K			80	100	–	–	–	–	–	–	–	–	2500	1250
		VVF53.100-150K			100	150	–	–	–	–	–	–	–	–	2500	1250
		VVF53.125-220K			125	220	–	–	–	–	–	–	–	–	2500	1250
		VVF53.150-315K			150	315	–	–	–	–	–	–	–	–	2500	1250
		VVF53.200-450K			200	450	–	–	–	–	–	–	–	–	1200	800
		VVF53.250-630K			250	630	–	–	–	–	–	–	–	–	1200	800
PN 40	-25...220°C			DN	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet	A6V11459527															
		VVF63.15-0.2			15	0.2	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-0.32			15	0.32	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-0.5			15	0.5	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-0.8			15	0.8	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-1.25			15	1.25	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-2			15	2	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.15-3.2			15	3.2	–	–	4000	2000	4000	2000	–	–	–	–
		VVF63.20-6.3			20	5	–	–	3500	2000	4000	2000	–	–	–	–
		VVF63.25-5			25	5	–	–	2100	2000	4000	2000	–	–	–	–
		VVF63.25-8			25	8	–	–	2100	2000	4000	2000	–	–	–	–
		VVF63.32-16			32	15	–	–	1200	1100	3200	2000	–	–	–	–
		VVF63.40-12.5			40	12.5	–	–	750	650	2000	1800	–	–	–	–
		VVF63.40-20			40	20	–	–	750	650	2000	1800	–	–	–	–
		VVF63.50-31.5			50	31.5	–	–	450	400	1200	1150	–	–	–	–
		VVF63.65-50			65	50	–	–	–	–	–	–	–	–	700	650
		VVF63.80-80			80	80	–	–	–	–	–	–	–	–	450	400
		VVF63.100-125			100	125	–	–	–	–	–	–	–	–	300	250
		VVF63.125-200			125	200	–	–	–	–	–	–	–	–	175	160
		VVF63.150-315			150	315	–	–	–	–	–	–	–	–	125	100

<sup>1)</sup> SAX81...: AC/DC 24 V








<sup>2)</sup> SAX.. max. 130 °C

<sup>3)</sup> .. = insert k<sub>vs</sub> value

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## Valves and actuators

### Overview and selection tools







Flanged globe valves											
Typical applications	Actuators	Data sheet		Positioning time [s]		Spring return function [s]	20 mm		40 mm		
							1000 N	2800 N	2800 N		
<ul style="list-style-type: none"> <li>- District heating</li> <li>- Boiler plants</li> <li>- Chiller plants</li> <li>- Domestic hot water</li> <li>- Heating groups</li> <li>- Air handling units</li> </ul>	SKD..	N4561									
	SKB..	N4564									
	SAV..	CE1N4503									
	SKC..	N4566									
	Operating voltage	Positioning signal	Positioning time [s]		SKD	SKB/C	SKD	SKB/C	SKD32.50	SKB32.50	SKC32.60
	AC 230 V	3-position	120	120							
		3-position	120	120	-	8	10/18				
		3-position	30	-	-	8	-				
	AC 24 V	3-position	120	120	120	-	-	SKD82.50	SKB82.50	SKC82.60	
		3-position	120	120	-	8	10/18	SKD82.51	SKB82.51	SKC82.61	
	0...10 V, 4...20 mA	30	120	120	-	-	SKD60	SKB60	SKC60		
	0...10 V, 4...20 mA	30	120	-	15	10/20	SKD62	SKB62	SKC62		
	Modbus	30	120	120	15	10/20	SKD62/MO	SKB62/MO	SKC62/MO		
<b>PN 40</b>	-25...220°C		DN	k <sub>v</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet	A6V11459527										
		VVF63.50-40K	50	36	-	1500	4000	2000	-	-	
		VVF63.65-63K	65	63	-	-	-	-	4000	2000	
		VVF63.80-100K	80	100	-	-	-	-	4000	2000	
		VVF63.100-150K	100	150	-	-	-	-	4000	2000	
		VVF63.125-220K	125	220	-	-	-	-	4000	2000	
		VVF63.150-315K	150	315	-	-	-	-	4000	2000	
<b>PN 40</b>	-25...220°C		DN	k <sub>v</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	
Data sheet	A6V11459527										
		VXF63.15-1.6	15	1.6	2000	200	2000	200	-	-	
		VXF63.15-2.5	15	2.5	2000	200	2000	200	-	-	
		VXF63.15-4	15	4	2000	200	2000	200	-	-	
		VXF63.20-6.3	20	6.3	2000	200	2000	200	-	-	
		VXF63.25-6.3	25	6.3	2000	200	2000	200	-	-	
		VXF63.25-10	25	10	2000	200	2000	200	-	-	
		VXF63.32-16	32	16	1100	200	2000	200	-	-	
		VXF63.40-16	40	16	650	200	2000	200	-	-	
		VXF63.40-25	40	25	650	200	2000	200	-	-	
		VXF63.50-31.5	50	31.5	400	200	1150	200	-	-	
		VXF63.65-50	65	50	-	-	-	-	650	200	
		VXF63.80-80	80	80	-	-	-	-	400	200	
		VXF63.100-125	100	125	-	-	-	-	250	150	
		VXF63.125-200	125	200	-	-	-	-	160	100	
		VXF63.150-315	150	315	-	-	-	-	100	70	

Control ball valves																			
Typical applications	Actuators	Data sheet	Spring return function [s]	2 Nm				5 Nm				7 Nm				10 Nm GLB 8 Nm GLD			
				Positioning time [s]				Positioning time [s]				Positioning time [s]				Positioning time [s]			
		Operating voltage	Positioning signal	G..D	G..B	GMA													
- Domestic hot water - Heating groups - Air handling units - Chilled ceilings - VAV - Fan coil units - Zone control	GQD..9A	N4659																	
	GSD..9A	A6V10636056																	
	GDB..9E	A6V10636150																	
	GDB111.9E/KN	A6V10725318																	
	GMA..9E	N4658																	
	GLB..9E	A6V10636203																	
	GLD..9E	A6V11171770																	
	AC 100...240 V	2/3-position		-	150	-	-	-	GDB341.9E				-	GLB341.9E					
	AC 24 V	KNX S-/LTE-Mode, KNX PL-Link		-	150	-	-	-	GDB111.9E/ KN				-	GLB111.9E/ KN					
				Modbus	-	150	-	-	-	GDB111.9E/ MO				-	GLB111.9E/ MO				
AC/DC 24 V	3-position	30	-	90	15	GQD131.9A				-	GMA131.9E				-				
	2/3-position	-	150	-	-	-	GDB141.9E				-	GLB141.9E							
	0...10 V	30	-	90	15	GQD161.9A				-	GMA161.9E				-				
	0/2...10 V	30	150	-	-	GSD161.9A				GDB161.9E				-	GLB161.9E				
	0/2...10 V	30	-	-	-	-					-	GLD161.9E							
	Modbus	30	-	-	-	-					-	GLD161.9E/ MO							
	Modbus	-	150	90	-	-	GDB161.9E/ MO				GMA161.9E/ MO				GLB161.9E/ MO				
PN 40	-10...120 °C			DN	G [inch]	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]					
Data sheet	N4211		N4211																
	VAG61.15-.. <sup>1)</sup>			15	G 1 B	1.6/2.5/4/6.3	1400	350	1400	350	1400	350	1400	350					
	VAG61.15-..			15	G 1 B	1	1400	350	1400	350	1400	350	1400	350					
	VAG61.20-..			20	G 1 ¼ B	4/6.3	1400	350	1400	350	1400	350	1400	350					
	VAG61.20-10			20	G 1 ¼ B	10	1400	350	1400	350	1400	350	1400	350					
	VAG61.25-10			25	G 1 ½ B	10	1400	350	1400	350	1400	350	1400	350					
	VAG61.25-..			25	G 1 ½ B	6.3/16	1400	350	1400	350	1400	350	1400	350					
	VAG61.32-10			32	G 2 B	10	-	-	-	-	1000	350	1000	350					
	VAG61.32-16			32	G 2 B	16	-	-	-	-	1000	350	1000	350					
	VAG61.32-25			32	G 2 B	25	-	-	-	-	1000	350	1000	350					
	VAG61.40-16			40	G 2 ¼ B	16	-	-	-	-	800	350	800	350					
	VAG61.40-25			40	G 2 ¼ B	25	-	-	-	-	800	350	800	350					
	VAG61.40-40			40	G 2 ¼ B	40	-	-	-	-	800	350	800	350					
	VAG61.50-25			50	G 2 ¾ B	25	-	-	-	-	600	350	600	350					
	VAG61.50-40			50	G 2 ¾ B	40	-	-	-	-	600	350	600	350					
	VAG61.50-63			50	G 2 ¾ B	63	-	-	-	-	600	350	600	350					
PN 40	-10...120 °C			DN	Rp [inch]	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]					
Data sheet	N4211		N4211																
	VAI61.15-.. <sup>1)</sup>			15	Rp ½	0.25/0.4/ 0.63/1.0	1400	350	1400	350	1400	350	-	350					
	VAI61.15-.. <sup>1)</sup>			15	Rp ½	1.6/2.5/4/6.3	1400	350	1400	350	1400	350	1400	350					
	VAI61.15-..			15	Rp ½	1/10	1400	350	1400	350	1400	350	1400	350					
	VAI61.20-..			20	Rp ¾	4/6.3	1400	350	1400	350	1400	350	1400	350					
	VAI61.20-10			20	Rp ¾	10	1400	350	1400	350	1400	350	1400	350					
	VAI61.25-10			25	Rp 1	10	1400	350	1400	350	1400	350	1400	350					
	VAI61.25-..			25	Rp 1	6.3/16	1400	350	1400	350	1400	350	1400	350					
	VAI61.32-10			32	Rp 1 ¼	10	-	-	-	-	1000	350	1000	350					
	VAI61.32-16			32	Rp 1 ¼	16	-	-	-	-	1000	350	1000	350					
	VAI61.32-25			32	Rp 1 ¼	25	-	-	-	-	1000	350	1000	350					
	VAI61.40-16			40	Rp 1 ½	16	-	-	-	-	800	350	800	350					
	VAI61.40-25			40	Rp 1 ½	25	-	-	-	-	800	350	800	350					
	VAI61.40-40			40	Rp 1 ½	40	-	-	-	-	800	350	800	350					
	VAI61.50-25			50	Rp 2	25	-	-	-	-	600	350	600	350					
	VAI61.50-40			50	Rp 2	40	-	-	-	-	600	350	600	350					
	VAI61.50-63			50	Rp 2	63	-	-	-	-	600	350	600	350					



<sup>1)</sup> .. = insert k<sub>vs</sub> value  
 VBG61.. / VBI61...: For noiseless operation, the Δp<sub>max</sub>-value of 200 kPa should not be exceeded

# Valves and actuators

## Overview and selection tools

6-port control ball valves																		
Typical applications			Actuators		Data sheet		2 Nm	5 Nm	5 Nm	5 Nm								
– Heated and chilled ceilings   			GSD..9A		A6V10636056		 –	 GDB341.9E	 –	 –								
			GDB..9E		A6V10636150													
			GDB111.9E/KN		A6V10725318													
			Operating voltage	Positioning signal	Positioning time [s]													
			AC 100...240 V	2-position	–	150												
			AC 230 V	2-position	90	–					GSD341.9A		–		–		–	
			AC 24 V	KNX S-/LTE-Mode, KNX PL-Link	–	150					–		–		GDB111.9E/KN		–	
			AC/DC 24 V	2-position	30	150					GSD141.9A		GDB141.9E		–		–	
				0/2... 10 V	30	150					GSD161.9A		–		–		GDB161.9E	
				Modbus	–	150					–		–		GDB111.9E/MO		GDB161.9E/MO	
PN 16	5...90 °C	DN	$k_{vs}$ left [m³/h]	$k_{vs}$ right [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]						
Data sheet	A6V10564480																	
VWG41.10-0.25-0.4	10	0.25	0.4	–	200	–	200	–	200	–	200							
VWG41.10-0.25-0.65	10	0.25	0.65	–	200	–	200	–	200	–	200							
VWG41.10-0.25-1.0	10	0.25	1	–	200	–	200	–	200	–	200							
VWG41.10-0.25-1.3	10	0.25	1.3	–	200	–	200	–	200	–	200							
VWG41.10-0.25-1.6	10	0.25	1.6	–	200	–	200	–	200	–	200							
VWG41.10-0.25-1.9	10	0.25	1.9	–	200	–	200	–	200	–	200							
VWG41.10-0.4-0.4	10	0.4	0.4	–	200	–	200	–	200	–	200							
VWG41.10-0.4-0.65	10	0.4	0.65	–	200	–	200	–	200	–	200							
VWG41.10-0.4-1.0	10	0.4	1	–	200	–	200	–	200	–	200							
VWG41.10-0.4-1.3	10	0.4	1.3	–	200	–	200	–	200	–	200							
VWG41.10-0.4-1.6	10	0.4	1.6	–	200	–	200	–	200	–	200							
VWG41.10-0.4-1.9	10	0.4	1.9	–	200	–	200	–	200	–	200							
VWG41.10-0.65-0.65	10	0.65	0.65	–	200	–	200	–	200	–	200							
VWG41.10-0.65-1.0	10	0.65	1	–	200	–	200	–	200	–	200							
VWG41.10-0.65-1.3	10	0.65	1.3	–	200	–	200	–	200	–	200							
VWG41.10-0.65-1.6	10	0.65	1.6	–	200	–	200	–	200	–	200							
VWG41.10-0.65-1.9	10	0.65	1.9	–	200	–	200	–	200	–	200							
VWG41.10-1.0-1.0	10	1	1	–	200	–	200	–	200	–	200							
VWG41.10-1.0-1.3	10	1	1.3	–	200	–	200	–	200	–	200							
VWG41.10-1.0-1.6	10	1	1.6	–	200	–	200	–	200	–	200							
VWG41.10-1.0-1.9	10	1	1.9	–	200	–	200	–	200	–	200							
VWG41.10-1.3-1.3	10	1.3	1.3	–	200	–	200	–	200	–	200							
VWG41.10-1.3-1.6	10	1.3	1.6	–	200	–	200	–	200	–	200							
VWG41.10-1.3-1.9	10	1.3	1.9	–	200	–	200	–	200	–	200							
VWG41.10-1.6-1.6	10	1.6	1.6	–	200	–	200	–	200	–	200							
VWG41.10-1.6-1.9	10	1.6	1.9	–	200	–	200	–	200	–	200							
VWG41.10-1.9-1.9	10	1.9	1.9	–	200	–	200	–	200	–	200							
VWG41.20-0.25-2.5	20	0.25	2.5	–	–	–	200	–	200	–	200							
VWG41.20-0.25-3.45	20	0.25	3.45	–	–	–	200	–	200	–	200							
VWG41.20-0.25-4.25	20	0.25	4.25	–	–	–	200	–	200	–	200							
VWG41.20-0.4-2.5	20	0.4	2.5	–	–	–	200	–	200	–	200							
VWG41.20-0.4-3.45	20	0.4	3.45	–	–	–	200	–	200	–	200							
VWG41.20-0.4-4.25	20	0.4	4.25	–	–	–	200	–	200	–	200							
VWG41.20-0.65-2.5	20	0.65	2.5	–	–	–	200	–	200	–	200							
VWG41.20-0.65-3.45	20	0.65	3.45	–	–	–	200	–	200	–	200							
VWG41.20-0.65-4.25	20	0.65	4.25	–	–	–	200	–	200	–	200							
VWG41.20-1.0-2.5	20	1	2.5	–	–	–	200	–	200	–	200							
VWG41.20-1.0-3.45	20	1	3.45	–	–	–	200	–	200	–	200							
VWG41.20-1.0-4.25	20	1	4.25	–	–	–	200	–	200	–	200							
VWG41.20-1.3-2.5	20	1.3	2.5	–	–	–	200	–	200	–	200							
VWG41.20-1.3-3.45	20	1.3	3.45	–	–	–	200	–	200	–	200							
VWG41.20-1.3-4.25	20	1.3	4.25	–	–	–	200	–	200	–	200							
VWG41.20-1.6-2.5	20	1.6	2.5	–	–	–	200	–	200	–	200							
VWG41.20-1.6-3.45	20	1.6	3.45	–	–	–	200	–	200	–	200							
VWG41.20-1.6-4.25	20	1.6	4.25	–	–	–	200	–	200	–	200							
VWG41.20-2.5-2.5	20	2.5	2.5	–	–	–	200	–	200	–	200							
VWG41.20-2.5-3.45	20	2.5	3.45	–	–	–	200	–	200	–	200							
VWG41.20-2.5-4.25	20	2.5	4.25	–	–	–	200	–	200	–	200							
VWG41.20-3.45-3.45	20	3.45	3.45	–	–	–	200	–	200	–	200							
VWG41.20-4.25-4.25	20	4.25	4.25	–	–	–	200	–	200	–	200							































### Fittings for 6-port control ball valves

	Type	Description
	ALN15.152B	Fittings set made of brass for media temperatures up to 90°C, consisting of 2x cap nuts
	ALN15.202B	2x inserts with external threading per ISO 228-1 2x flat seals
	ALG13.152B	Fittings set made of brass for media temperatures up to 90°C, consisting of
	ALG15.152B	2x cap nuts with sleeves and insert per ISO 7-1
	ALG15.202B	2x flat seals
	ALG15.252B	

### Magnetic valves

Typical applications	Valve type	Operating voltage	Positioning signal	Type suffix
- District heating	MXF461..	AC/DC 24 V	0...10 V, 2...10 V, 4...20 mA	P <sup>1)</sup>
- Boiler plants	M3P..FY..	AC 24 V	0...10 V, 4...20 mA	P <sup>1)</sup>
- Chiller plants	MVF461H..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	-
- Domestic hot water	MXG461..	AC/DC 24 V	0...10 V, 2...10 V, 4...20 mA	P <sup>1)</sup>
- Heating groups	MXG461B..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	-
- Air handling units	MXG461S..	AC/DC 24 V	0...10 V, 2...10 V, 4...20 mA	-
	MXG462S..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	-

PN 16	1...130 °C	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	Note		
Data sheet	N4455					To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.		
	MXF461.15-.. <sup>2)</sup>	15	0,6 / 1,5 / 3	300	300			
	MXF461.20-5.0	20	5	300	300			
	MXF461.25-8.0	25	8	300	300			
	MXF461.32-12	32	12	300	300			
	MXF461.40-20	40	20	300	300			
	MXF461.50-30	50	30	300	300			
	MXF461.65-50	65	50	300	300			
	1...120 °C							
	N4454							
	M3P80FY	80	80	300	300			
	M3P100FY	100	130	200	200			
PN 16	1...180 °C	DN	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]			
Data sheet	N4361							
	MVF461H15-.. <sup>2)</sup>	15	0,6 / 1,5 / 3	1000	1000			
	MVF461H20-5	20	5	1000	1000			
	MVF461H25-8	25	8	1000	1000			
	MVF461H32-12	32	12	1000	1000			
	MVF461H40-20	40	20	1000	1000			
	MVF461H50-30	50	30	1000	1000			
PN 16	1...130 °C	DN	G [inch]	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]		
Data sheet	N4455							
	MXG461.15-.. <sup>2)</sup>	15	G 1B	0,6 / 1,5 / 3	300	300		
	MXG461.20-5.0	20	G 1¼B	5	300	300		
	MXG461.25-8.0	25	G 1½B	8	300	300		
	MXG461.32-12	32	G 2B	12	300	300		
	MXG461.40-20	40	G 2¼B	20	300	300		
	MXG461.50-30	50	G 2¾B	30	300	300		
PN 16	-20...130 °C	DN	G [inch]	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]		
Data sheet	N4461							
	MXG461B15-.. <sup>2)</sup>	15	G 1B	0,6 / 1,5 / 3	1000	1000		
	MXG461B20-5	20	G 1¼B	5	800	800		
	MXG461B25-8	25	G 1½B	8	700	700		
	MXG461B32-12	32	G 2B	12	600	600		
	MXG461B40-20	40	G 2¼B	20	600	600		
	MXG461B50-30	50	G 2¾B	30	600	600		
PN 16	1...130 °C	-20...130 °C	DN	G [inch]	$k_{vs}$ [m³/h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	Note
Data sheet	N4465	N4466						To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear. <sup>3)</sup>
	MXG461S15-1.5	-	15	G 1B	1,5	300	300	
	MXG461S20-5.0	-	20	G 1¼B	5	300	300	
	MXG461S25-8.0	-	25	G 1½B	8	300	300	
	MXG461S32-12	-	32	G 2B	12	300	300	
	MXG462S40-20	-	40	G 2¼B	20	600	600	
	-		50	G 2¾B	30	600	600	

<sup>1)</sup> P = media containing mineral oil





<sup>2)</sup> .. = insert  $k_{vs}$  value

<sup>3)</sup> Parts that are in contact with medium in stainless steel

MXG461B.. valves contain only materials in contact with drinking water that comply with the UBA Positive List dated April 23, 2013, Categories B+C

## Valves and actuators

### Overview and selection tools

Slipper valves						
<b>Typical applications</b> – Boiler plants – Heating groups	<b>Actuators</b>	<b>Data sheet</b>			10 Nm	10 Nm
	SAL..	N4502				
	<b>Operating voltage</b>	<b>Positioning signal</b>		<b>Positioning time [s]</b>		
	AC 230 V	3-position		120	SAL31.00T10	SAL31.00T10
		3-position		30	SAL31.03T10	SAL31.03T10
	AC/DC 24 V	3-position		120	SAL81.00T10	SAL81.00T10
		3-position		30	SAL81.03T10	SAL81.03T10
		0...10 V, 4...20 mA		120	SAL61.00T10	SAL61.00T10
0...10 V, 4...20 mA		30	SAL61.03T10	SAL61.03T10	SAL61.03T10	
<b>Mounting set</b>				<b>ASK32N</b>	<b>ASK31N</b>	
<b>PN 6</b>	1...120 °C					
<b>Data sheet</b>	N4241	DN	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	
 	VBF21.40	40	25	30	–	
	VBF21.50	50	40	30	–	
	VBF21.65	65	63	–	30	
	VBF21.80	80	100	–	30	
	VBF21.100	100	160	–	30	
	VBF21.125	125	550	–	30	
	VBF21.150	150	820	–	30	



Butterfly valves												
<b>Typical applications</b> – Boiler plants – Chiller plants – Heating groups	<b>Actuators</b>	<b>Data sheet</b>			Rotation angle 90°							
	SAL..	N4502			10 Nm		40 Nm					
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>									
	AC 230 V	3-position	120		SAL31.00T10		SAL31.00T40					
		3-position	125		-		-					
		3-position	30		SAL31.03T10		-					
	AC/DC 24 V	3-position	120		SAL81.00T10		SAL81.00T40					
		3-position	30		SAL81.03T10		-					
		0...10 V, 4...20 mA	120		SAL61.00T10		SAL61.00T40					
	0...10 V, 4...20 mA	30		SAL61.03T10		-						
<b>Mounting set</b>				ASK33N		ASK33N						
<b>PN 16</b>	-10...120 °C			DN	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]		Δp <sub>s</sub> [kPa]				
<b>Data sheet</b>	N4131					500		500				
	VKF41.40	40	50	500		-						
	VKF41.50	50	80	500		-						
	VKF41.65	65	200	500		-						
	VKF41.80	80	400	500		-						
	VKF41.100	100	760	500		-						
	VKF41.125	125	1000	300		-						
	VKF41.150	150	2100	250		400						
	VKF41.200	200	4000	125		300						
<b>Typical applications</b> – Boiler plants – Chiller plants – Cooling towers – Domestic hot water – Heating groups	<b>Actuators</b>	<b>Data sheet</b>			Rotation angle 90°							
	SAL..	N4502			20 Nm	40 Nm	40 Nm		100 Nm	400 Nm	1200 Nm	
	SQL36..	N4505										
	<b>Operating voltage</b>	<b>Positioning signal</b>	<b>Positioning time [s]</b>		-		-		SQL36E65	-	-	
	AC 230 V	3-position	6 <sup>1)</sup>		-		-		-	SQL36E110	-	
		3-position	12 <sup>1)</sup>		-		-		-	-	-	
		3-position	24 <sup>1)</sup>		-		-		-	-	SQL36E160	
	AC/DC 24 V	3-position	25		-		-		SQL36E50F04	SQL36E50F05	-	
		3-position	120		SAL31.00T20	SAL31.00T40	-		-	-	-	
		3-position	120		SAL81.00T20	SAL81.00T40	-		-	-	-	
0...10 V, 4...20 mA	120		SAL61.00T20	SAL61.00T40	-		-	-	-			
<b>PN 16</b>	-10...120 °C			DN	k <sub>vs</sub> [m³/h]	Δp <sub>s</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>s</sub> [kPa]		
<b>Data sheet</b>	N4136					1600	-	1600	-	-	-	
	VKF46.40	40	50	1600	-	1600	-	-	-	-		
	VKF46.50	50	85	1600	-	1600	-	-	-	-		
	VKF46.65	65	215	1600	-	1600	-	-	-	-		
	VKF46.80	80	420	-	1600	-	1600	-	-	-		
	VKF46.100	100	800	-	1200	-	1600	-	-	-		
	VKF46.125	125	1010	-	800	-	1000	-	-	-		
	VKF46.150	150	2100	-	-	-	-	1600	-	-		
	VKF46.200	200	4000	-	-	-	-	1000	-	-		
	VKF46.250	250	6400	-	-	-	-	-	1000	-		
	VKF46.300	300	8500	-	-	-	-	-	1000	-		
	VKF46.350	350	11500	-	-	-	-	-	600	-		
	VKF46.400	400	14500	-	-	-	-	-	300	-		
	VKF46.450	450	20500	-	-	-	-	-	-	300		
VKF46.500	500	21000	-	-	-	-	-	-	300			
VKF46.600	600	29300	-	-	-	-	-	-	300			

<sup>1)</sup> With auxiliary module SEZ31.1 variable positioning time: SQL36E65: 30...180 s, SQL36E110: 60...360 s, SQL36E160: 120...720 s

**Recommended maximum flow velocity:**

VKF41...: < 4 m/s for water, see data sheet for details

VKF46...: 4.5 m/s for water, 60 m/s for gas

## Valves and actuators

### Overview and selection tools

Changeover and open/close ball valves													
<b>Typical applications</b> – Boiler plants – Chiller plants – Domestic hot water – Heating groups	<b>Actuators</b> GDB..9E GQD..9A GSD..9A GMA..9E GLB..9E	<b>Data sheet</b> A6V10636150 N4659 N4655 N4658 A6V10636203	<b>Spring return function [s]</b>	2 Nm	5 Nm	7 Nm	10 Nm						
	<b>Operating voltage</b> AC 230 V AC 100...240 V AC/DC 24 V	<b>Positioning signal</b> 2-position 2/3-position 2-position 2-position 2/3-position		<b>Positioning time [s]</b> GQD/GSD GMA G..B									
					GQD321.9A	–	GMA321.9E	–					
					GSD341.9A	–	–	–					
					–	GDB341.9E	–	GLB341.9E					
					GQD121.9A	–	GMA121.9E	–					
					GSD141.9A	–	–	–					
					–	GDB141.9E	–	GLB141.9E					
<b>PN 40</b> Data sheet	-10...120°C N4213	DN	G [inch]	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	
	VAG60.15-9 VAG60.20-17 VAG60.25-22 VAG60.32-35 VAG60.40-68 VAG60.50-96	15 20 25 32 40 50	G 1B G 1 ¼B G 1 ½B G 2B G 2 ¼B G 2 ¾B	9 17 22 35 68 96	1400 1400 1400 – – –	350 350 350 – – –	1400 1400 1400 – – –	350 350 350 – – –	1400 1400 1400 1000 800 600	350 350 350 350 350 350	1400 1400 1400 1000 800 600	350 350 350 350 350 350	
<b>PN 40</b> Data sheet	-10...120°C N4213	DN	G [inch]	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]					
	VBG60.15-8T VBG60.20-13T VBG60.25-13T VBG60.32-25T VBG60.40-49T VBG60.50-73T	15 20 25 32 40 50	G 1B G 1 ¼B G 1 ½B G 2B G 2 ¼B G 2 ¾B	8 13 13 25 49 73	350 350 350 – – –	350 350 350 – – –	350 350 350 350 350 350	350 350 350 350 350 350					
<b>PN 40</b> Data sheet	-10...120°C N4213	DN	Rp [inch]	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	
	VAI60.15-15 VAI60.20-22 VAI60.25-22 VAI60.32-35 VAI60.40-68 VAI60.50-96	15 20 25 32 40 50	Rp ½ Rp ¾ Rp 1 Rp 1 ¼ Rp 1 ½ Rp 2	15 22 22 35 68 96	1400 1400 1400 – – –	350 350 350 – – –	1400 1400 1400 – – –	350 350 350 – – –	1400 1400 1400 1000 800 600	350 350 350 350 350 350	1400 1400 1400 1000 800 600	350 350 350 350 350 350	
<b>PN 40</b> Data sheet	-10...120°C N4213	DN	Rp [inch]	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]					
	VBI60.15-12T VBI60.20-16T VBI60.25-16T VBI60.32-25T VBI60.40-49T VBI60.50-73T	15 20 25 32 40 50	Rp ½ Rp ¾ Rp 1 Rp 1 ¼ Rp 1 ½ Rp 2	12 16 16 25 49 73	350 350 350 – – –	350 350 350 – – –	350 350 350 350 350 350	350 350 350 350 350 350					
<b>PN 40</b> Data sheet	-10...120°C N4213	DN	Rp [inch]	$k_{vs}$ [m <sup>3</sup> /h]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]					
	VBI60.15-5L VBI60.20-9L VBI60.25-9L VBI60.32-13L VBI60.40-25L VBI60.50-37L	15 20 25 32 40 50	Rp ½ Rp ¾ Rp 1 Rp 1 ¼ Rp 1 ½ Rp 2	5 9 9 13 25 37	350 350 350 – – –	350 350 350 – – –	350 350 350 350 350 350	350 350 350 350 350 350					

Refrigerant valves									
Typical applications		Valve	Operating voltage	Positioning signal			Auxiliary functions		
– Chiller plants		M2FP03GX	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs			–		
		MVL661.. <sup>1)</sup>	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA			Minimum stroke setting		
		MVS661..N <sup>1)</sup>	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA			Minimum stroke setting		
		M3FB..LX..	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs			–		
		M3FK..LX..	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs			–		
PN 32	-40...100 °C					$k_{vs}$		$\Delta p_{max}$	
Data sheet	N4731					[m <sup>3</sup> /h]		[kPa]	
	M2FP03GX		Pilot valve			0.3		1800	
PS 45	-40...120 °C	DN	Connection	Inner Ø		$k_{vs}$	$k_{vs}$ reduced	$\Delta p_{max}$	
Data sheet	N4714			[inch]		[m <sup>3</sup> /h]	[m <sup>3</sup> /h]	[kPa]	
	MVL661.15-0.4	15	Sleeve	5/8		0.4	0.25	2500	
	MVL661.15-1.0	15	Sleeve	5/8		1	0.63	2500	
	MVL661.20-2.5	20	Sleeve	7/8		2,5	1.6	2500	
	MVL661.25-6.3	25	Sleeve	1 1/8		6.3	4	2500	
	MVL661.32-10	32	Sleeve	1 3/8		10	6.3	1600	
	MVL661.32-12	32	Sleeve	1 3/8		12	7.6	200	
PN 63	-40...120 °C	DN	Connection	Inner Ø	Outer Ø	$k_{vs}$	$k_{vs}$ reduced	$\Delta p_{max}$	
Data sheet	N4717			[mm]	[mm]	[m <sup>3</sup> /h]	[m <sup>3</sup> /h]	[kPa]	
	MVS661.25-016N	25	Weldable, solderable	22.4	33.7	0.16	0.1	2500	
	MVS661.25-0.4N	25	Weldable, solderable	22.4	33.7	0.4	0.25	2500	
	MVS661.25-1.0N	25	Weldable, solderable	22.4	33.7	1	0.63	2500	
	MVS661.25-2.5N	25	Weldable, solderable	22.4	33.7	2.5	1.6	2500	
	MVS661.25-6.3N	25	Weldable, solderable	22.4	33.7	6.3	4	2500	
PN 32	-40...120 °C	DN	Connection	Inner Ø		$k_{vs}$		Liquid $\Delta p_{max}$	Gas $\Delta p_{max}$
Data sheet	N4722			[inch]		[m <sup>3</sup> /h]		[kPa]	[kPa]
	M3FK15LX06	15	Sleeve	5/8		0.6		200	800
	M3FK15LX15	15	Sleeve	5/8		1.5		200	800
	M3FK15LX	15	Sleeve	5/8		3		200	800
	M3FK20LX	20	Sleeve	7/8		5		200	800
	M3FK25LX	25	Sleeve	1 1/8		8		200	800
	M3FK32LX	32	Sleeve	1 3/8		12		200	800
	M3FK40LX	40	Sleeve	1 5/8		20		200	800
	M3FK50LX	50	Sleeve	2 1/8		30		200	800
PS 43	-40...120 °C	DN	Connection	Inner Ø		$k_{vs}$		$\Delta p_{max}$	
Data sheet	N4721			[inch]		[m <sup>3</sup> /h]		[kPa]	
	M3FB15LX06/A	15	Sleeve	5/8		0.6		2200	
	M3FB15LX15/A	15	Sleeve	5/8		1.5		2200	
	M3FB15LX/A	15	Sleeve	5/8		3		2200	
	M3FB20LX/A	20	Sleeve	7/8		5		1800	
	M3FB25LX/A	25	Sleeve	1 1/8		8		1200	
	M3FB32LX	32	Sleeve	1 3/8		12		800	

<sup>1)</sup> Also available as ATEX Zone 2



## Valves and actuators

### Overview and selection tools

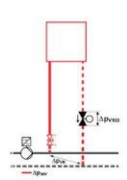
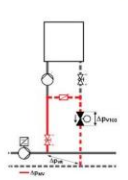
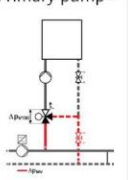
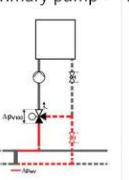
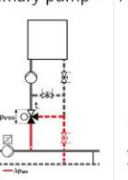
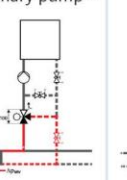
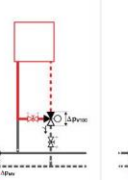
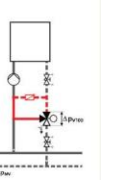
#### Definitions

Abbr.	Term	Unit	Definition
$\Delta p$	Differential pressure	kPa	Pressure differential between plant sections.
$\Delta p_{\max}$	Maximum differential pressure	kPa	Maximum permissible differential pressure across the valve's control path (when mixing), valid for the entire actuating range of the motorized valve.
$\Delta p_{\max V}$	Maximum differential pressure	kPa	Maximum permissible differential pressure across the valve's control path (when distributing), valid for the entire actuating range of the motorized valve.
$\Delta p_{\min}$	Minimum differential pressure	kPa	Minimum differential pressure required, so that the differential pressure regulator works reliably with combi valves. $\Delta p_{\min}$ depends on presetting position, see data sheet for details.
$\Delta p_{V0}$		kPa	Maximum differential pressure across the valve's closed control path.
$\Delta p_{V100}$	Differential pressure at nominal flow rate	kPa	Differential pressure across the fully open valve and the valve's control path by a volumetric flow $\dot{V}_{100}$ .
$\Delta p_s$	Closing pressure	kPa	For 2-port valves, maximum permissible differential pressure at which the motorized valve will close securely against the pressure (close off pressure). Only valid for 2-port valves.
$\Delta p_{MV}$		kPa	Differential pressure across the variable flow path. Often $\Delta p_{MV}$ is not known, in which case typical values can be used.
$\Delta p_{VR}$		kPa	Differential pressure between flow and return.
$\Delta T$	Temperature spread	K	Temperature differential between flow and return.
DN	Nominal size		Characteristic for matching parts of the piping system.
$H_0$	Shutoff head	m	The head generated by a pump at closed valve, at a given speed and a given pump medium.
$H_{100}$	Valve fully open		Stroke of fully open valve.
kPa	Unit of pressure	kPa	100 kPa = 1 bar = 10 mWC.
mWC	Meter water column	m	
$k_V$	Nominal flow	m <sup>3</sup> /h	Amount of cold water (5...30 °C) passing through the valve at the respective stroke and at a differential pressure of 100 kPa (1 bar).
$k_{VS}$	Nominal flow rate	m <sup>3</sup> /h	Nominal flow rate of cold water (5...30 °C) through the fully open valve ( $H_{100}$ ) at a differential pressure of 100 kPa (1 bar).
	Spring return function		Shutoff in the event of a power failure.
PN	PN class		Characteristic relating to the combination of mechanical and dimensional properties of a component in the piping system.
PS	PS class		Maximum allowable pressure.
$P_V$	Valve authority		Ratio of differential pressure across fully open valve ( $H_{100}$ ) and differential pressure across valve and variable flow path. To ensure control, a minimum valve authority of 0.25 is required. $P_V \geq 0.5$ is recommended for good controllability.
$\dot{Q}_{100}$	Rated capacity	kW	Plant's design capacity.
$\dot{V}_{100}$	Volumetric flow	m <sup>3</sup> /h	Volumetric flow with valve fully open ( $H_{100}$ ).
$\dot{V}_{\min}$	Minimum volumetric flow	m <sup>3</sup> /h	Smallest presettable volumetric flow through the fully open combi valve ( $H_{100}$ ).
c	Specific heat capacity	kJ/kgK	
$\rho$	Specific density	kg/m <sup>3</sup>	

#### Symbols

	3-port valve, control path with equal-percentage valve characteristic, bypass with linear valve characteristic.
	3-port valve, control path with equal-percentage valve characteristic, bypass with linear valve characteristic with 70% of the kVS value. This compensates for the flow resistance of the heat exchanger, so that the total volumetric flow $\dot{V}_{100}$ remains as constant as possible.
	2-port valve, control path with equal-percentage valve characteristic.
	2-port valve or 6-port control ball valve in the respective control path with linear valve characteristic.
	3-port, control path and bypass with linear valve characteristic. Bypass with 70% of the kvs value. This compensates for the flow resistance of the heat exchanger, so that the total flow amount $\dot{V}_{100}$ remains as constant as possible.
	3-port valve, control path and bypass with linear valve characteristic.
	3-port valve, control path and bypass with equal-percentage valve characteristic.

### Valve sizing and actuator selection

Basic hydronic circuit									
1	Determine the type of hydronic circuit	Throttling circuit	Injection circuit with 2-port valve	Mixing circuit		Mixing circuit with fixed premixing		Diverting circuit	Injection circuit with 3-port valve
For valve sizing relevant variable flow path				Primary pump ✓ 	Primary pump ✗ 	Primary pump ✓ 	Primary pump ✗ 		

### HVAC plants and consumers

Heating									
Surface/floor heating	–	■	–	–	■	■	–	–	outdated
Heating plant (primary)	–	■	■	■	■	■	–	–	outdated
Zone control, heating	–	■	–	–	–	–	–	–	outdated
Heating groups	–	■	■	■	■	■	–	–	–
Generation of heat energy	–	–	–	■	–	■	–	–	–
Heat exchanger water-water	■	uncommon	uncommon	–	–	–	–	–	uncommon
Ventilation and air conditioning plants									
Air handling unit	■	■	■	■	–	–	–	–	outdated
Fan coil unit	■	–	–	–	–	–	–	–	outdated
Cooling coil	dehumidifying	■	–	–	–	–	–	–	uncommon
Reheating coil	■	■	uncommon	uncommon	uncommon	uncommon	–	–	outdated
Preheating coil	–	■	uncommon	uncommon	uncommon	uncommon	–	–	outdated
VAV	■	–	–	–	–	–	–	–	outdated
Zone control	■	–	–	–	–	–	–	–	outdated
Chiller plants									
Surface/floor cooling	–	■	–	–	–	–	–	–	outdated
Generation of cooling energy	–	–	–	■	–	■	–	–	–
Cooling towers	■	–	–	–	–	–	–	–	outdated
Zone control, cooling	–	■	–	–	–	–	–	–	outdated
District heating and cooling									
District heating, primary	■	uncommon	–	uncommon	–	uncommon	–	–	–
District heating, secondary	■	■	–	uncommon	–	uncommon	–	–	–
District cooling, primary	■	uncommon	–	uncommon	–	uncommon	–	–	–
District cooling, secondary	■	■	–	uncommon	–	uncommon	–	–	–
Hot water									
Hot water directly	–	■	–	■	–	–	–	–	–
Header									
Differential pressure header	pressurized	low-pressure	pressureless	low-pressure	pressureless	–	–	–	pressurized
Volumetric flow	variable	–	–	variable	–	–	–	–	constant



# Valves and actuators

## Overview and selection tools

### Valve sizing and selection: $k_{VS}$ valves and actuators

1	Determine the type of hydronic circuit	Throttling circuit 	Injection circuit with 2-port valve 	Mixing circuit 	Mixing circuit with fixed premixing 	Diverting circuit 	Injection circuit with 3-port valve 
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Determine volumetric flow $\dot{V}$									
2	$\Delta p_{VR}$ or $\Delta p_{MV}$ typical range	10...200 kPa	$\Delta p_{VR}$ 10...200 kPa	2...5 kPa	5...15 kPa	$\Delta p_{MV}$ 2...5 kPa	5...15 kPa	10...50 kPa	2...5 kPa
	typical value	Use effective $\Delta p_{VR}$ value		3 kPa	8 kPa	3 kPa	8 kPa	eff. value $\Delta p_{MV}$	3 kPa
3	Determine $\Delta p_{V100}$	$\Delta p_{V100} \geq \frac{\Delta p_{VR}}{2}$ ( $P_V \geq 0.5$ )		$\Delta p_{V100} \geq \Delta p_{MV}$ ( $P_V \geq 0.5$ )					
4	Calculate $\dot{V}_{100}$	Water without anti-freeze $\dot{V}_{100} = \frac{\dot{Q}_{100}}{1.163 \cdot \Delta T}$			Water with anti-freeze $\dot{V}_{100} = \frac{\dot{Q}_{100} \cdot 3600}{c \cdot \rho \cdot \Delta T}$				
5	Determine $k_{VS}$ value	$k_V = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100 \text{ kPa}}}} \Rightarrow k_{VS} \geq 0.85 \cdot k_V \text{ value}$							
6	Check resulting $\Delta p_{V100}$	$\Delta p_{V100} = 100 \cdot \left( \frac{\dot{V}_{100}}{k_{VS}} \right)^2$							

Selection of valve and actuator								
7	Select suitable valve series	1. Type of valve (2-port, 3-port, 3-port with bypass) 2. Connections (flanged, threaded, soldered)			3. PN class	5. Max. / min. medium temperature		
					4. Nominal size DN	6. Medium		
8	Check valve authority $P_V$	$P_V = \frac{\Delta p_{V100}}{\Delta p_{VR}} \geq 0.25...0.8$			$P_V = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} \geq 0.25...0.8$			
9	Select actuator	1. Operating voltage	2. Positioning signal	3. Positioning time	4. Power fail reset function	5. Auxiliary functions		
10	Check working range	1. Differential pressure $\Delta p_{max} > \Delta p_{V0}$		2. Closing pressure $\Delta p_s > H_0$				
11	Selection	Valve and suitable actuator						

### Valve sizing and selection: Intelligent Valves, PICVs and actuators

1	Determine the type of hydronic circuit	Throttle circuit or injection system with 2-port valve 
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Determine volumetric flow $\dot{V}$				
2	Determine $\dot{Q}_{100}$			
3	Determine $\Delta T$			
4	Calculate $\dot{V}$			
	Water without anti-freeze $\dot{V}_{100} = \frac{\dot{Q}_{100}}{1.163 \cdot \Delta T}$	Water with anti-freeze $\dot{V}_{100} = \frac{\dot{Q}_{100} \cdot 3600}{c \cdot \rho \cdot \Delta T}$		
Select valve and actuator				
5	Select suitable valve			
	1. Type of valve (with / without P/T plugs) 4. Connection (flanged, threaded)	2. PN class 5. Nominal size DN	3. Max. / min. medium temperature 6. Medium	
6	Determine presetting	Determine presetting using the volumetric flow / dial table in data sheet of the respective PICV		
7	Select actuator for PICV	1. Operating voltage 2. Positioning signal 3. Positioning time 4. Auxiliary functions		
8	Check working range	1. $\Delta p < \Delta p_{max}$ – maximum permissible differential pressure across the valve's control path, valid for the entire actuating range of the motorized valve 2. $\Delta p > \Delta p_{min}$ – minimum differential pressure required across the valve's control path, so that the differential pressure regulator works reliably		

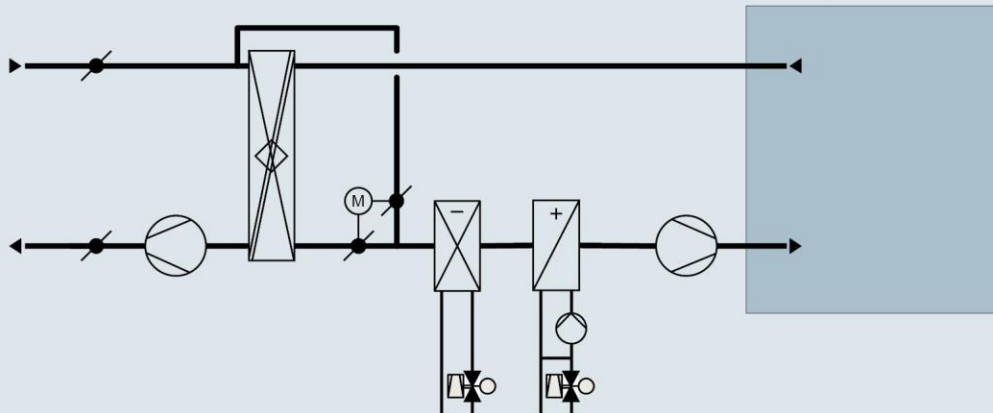
Or just use the Acvatix slide ruler, the online tool for simple valve sizing, to find the right valve with actuator.



Or just install the Combi Valve Sizer on your smartphone to find the right PICV with actuator.



Air handling unit with cooling coil (cooling/de-humidification) and reheating coil, with PICVs



Plant data	Cooling coil	Heating coil
Cooling/heating power $\dot{Q}_{100}$	75 kW	65 kW
Supply temperature producer $\theta_{\text{Producer}}$	6 °C	55 °C
Temperatures Supply/Return $\theta_{\text{Supply}} / \theta_{\text{Return}}$	6/12 °C	50/35 °C
Temperature difference	6 K	20 K
Medium	Water	Water
Differential pressure $\Delta p_{MV}$ without balancing valve	57 kPa	12 kPa
Shutoff head pump $H_0$ (resp. $\Delta p_{v0}$ )	18 mWC (180 kPa)	18 mWC (180 kPa)
Positioning signal	0...10 V	0...10 V

	Cooling coil	Reheating coil
<b>1 Determine Volumetric flow <math>\dot{V}_{100}</math></b>		
$\dot{V}_{100} = \frac{\dot{Q}_{100}}{1.163 \cdot \Delta T}$ decisive temperature difference Constant 1.163: with density $\rho = 1000 \text{ kg/m}^3$ , 3600 s/h and specific heat capacity $c = 4.187 \text{ kJ/kg} \cdot \text{K}$	$\dot{V}_{100} = \frac{75 \text{ kW}}{1.163 \cdot 6 \text{ K}} = 10.75 \text{ m}^3/\text{h}$ $\theta_{\text{Return cooling coil}} - \theta_{\text{Producer}} = (12 - 6) \text{ °C} = 6 \text{ K}$	$\dot{V}_{100} = \frac{65 \text{ kW}}{1.163 \cdot 20 \text{ K}} = 2.79 \text{ m}^3/\text{h}$ $\theta_{\text{Producer}} - \theta_{\text{Return heating coil}} = (55 - 35) \text{ °C} = 20 \text{ K}$
Hydronic circuit  — $\Delta p_{MV}$ Differential pressure across variable flow path	Throttling circuit  	Injection circuit with 2-port valve  
Distribution setup	Pressurized with variable volumetric flow (primary pump controlled)	

## Valves and actuators

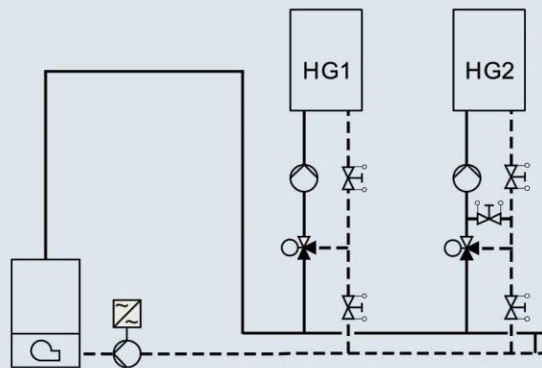
### Overview and selection tools

	Cooling coil	Reheating coil																											
<b>2 Determine minimally required differential pressure <math>\Delta p_{\min}</math> (from Data sheet)</b>																													
Cooling coil VPF43.50F16	<b>VPF43.50F16</b>																			<b>16 m<sup>3</sup>/h nominal</b>									
	$\dot{V}$ [m <sup>3</sup> /h]					2.5	3.2	3.8	4.5	5.3	6	6.8	7.5	8.3	9	9.8	10.5	11.3	12	12.8	13.5	14.3	15						
	Dial	Min.	0.2	0.4	0.6	0.8	1	1.2	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6	3.8	4							
$\Delta p_{\min}$ [kPa]				6.5	6.5	6.5	6.8	7.1	7.4	7.7	8.0	8.8	9.6	10.4	11.2	12.0	13.5	15.2	16.8	18.5	20								
Reheating coil VPP46.32F4Q	<b>VPP46.32F4, VPP46.32F4Q, VPI46.32F4, VPI46.32F4Q</b>																			<b>4000 l/h nominal</b>									
	$\dot{V}$ [l/h]					550	800	910	1110	1320	1520	1720	1930	2130	2330	2530	2740	2940	3140	3350	3550	3750	4001						
	Dial	Min.	0.2	0.4	0.5	0.6	0.8	1	1.2	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6	3.8	Max.						
$\Delta p_{\min}$ [kPa]					17.9	18	18.1	18.2	18.3	18.5	18.7	18.9	19.2	19.6	20.1	20.7	21.4	22.3	23.4	24.6	26	28							
$\Delta p_{\min}$	$\Delta p_{\min} = 11.5$ kPa											$\Delta p_{\min} = 21$ kPa																	
Presetting	Dial = 2.85											Dial = 2.85																	
Total resistance $\Delta p_{VR}$ for primary pump	$\Delta p_{VR} = \Delta p_{MV} + \Delta p_{\min} = 57$ kPa + 11.5 kPa $\Delta p_{VR} = 68.5$ kPa (6.8 mWC)											$\Delta p_{VR} = \Delta p_{MV} + \Delta p_{\min} = 12$ kPa + 21 kPa $\Delta p_{VR} = 33$ kPa (3.3 mWC)																	
<b>3 Select suitable valve type</b>																													
Type of valve	PICV (with linear characteristic)											PICV (with linear characteristic)																	
Connection type	Flange											External thread																	
Nominal pressure level PN	PN 16											PN 16																	
Selected valve	VPF43.50F16 (with measuring points)/ piping size DN 50											VPP46.32F4Q (with measuring points)/ piping size DN 32																	
<b>4 Select valve actuator</b>																													
Actuator type	SAX.. with 20 mm stroke											SSA.. with 5 mm stroke																	
Operating voltage	AC 24 V											AC 24 V																	
Positioning signal	0...10 V											0...10 V																	
Positioning time	30 s											34 s																	
Spring return function	no											no																	
Additional functions	none											none																	
Select actuator	SAX61P03, with selectable characteristic → equal percentage <i>fits well to cooling coil transfer characteristic</i>											SSA161E.05HF → with equal percentage characteristic <i>fits well to reheating coil transfer characteristic</i>																	
<b>Selection</b>																													
PICV	VPF43.50F16 (with measuring points)											VPP46.32F4Q (with measuring points)																	
Valve actuator	SAX61P03											SSA161E.05HF																	

7



Heating plant with low-pressure distribution, with  $k_{VS}$ -valves (3-port)



Plant data	Heating group 1	Heating group 2
Heating group power $\dot{Q}_{100}$	90 kW	60 kW
Supply temperature producer $\theta_{\text{Producer}}$	55 °C	55 °C
Temperatures Supply/Return $\theta_{\text{Supply}} / \theta_{\text{Return}}$	50/40 °C	35/28 °C
Temperature spread	see below	see below
Medium	Water	Water
Differential pressure $\Delta p_{MV}$	see below	see below
Shutoff head pump $H_0$ (resp. $\Delta p_{v0}$ )	4.5 mWC (45 kPa)	4.5 mWC (45 kPa)
Positioning signal	3-position	3-position

	Heating group 1	Heating group 2
<b>1 Determine Volumetric flow <math>\dot{V}_{100}</math></b>		
$\dot{V}_{100} = \frac{\dot{Q}_{100}}{1.163 \cdot \Delta T}$ decisive temperature difference Constant 1.163: with density $\rho = 1000 \text{ kg/m}^3$ , 3600 s/h and specific heat capacity $c = 4.187 \text{ kJ/kg} \cdot \text{K}$	$\dot{V}_{100} = \frac{90 \text{ kW}}{1.163 \cdot 15 \text{ K}} = 5.16 \text{ m}^3/\text{h}$ $\theta_{\text{Producer}} - \theta_{\text{Return HG 1}} = (55 - 40) \text{ °C} = 15 \text{ K}$	$\dot{V}_{100} = \frac{60 \text{ kW}}{1.163 \cdot 27 \text{ K}} = 1.91 \text{ m}^3/\text{h}$ $\theta_{\text{Producer}} - \theta_{\text{Return HG 2}} = (55 - 28) \text{ °C} = 27 \text{ K}$

<b>2 Determine Differential pressure <math>\Delta p_{v100}</math></b>		
Hydronic circuit	Mixing circuit with pump	Mixing circuit with fixed pre-mixing with pump
— $\Delta p_{MV}$ Differential pressure across variable flow path		
Distribution setup		low pressure
$\Delta p_{MV}$ typical range		2...5 kPa
typical value		3 kPa
$\Delta p_{v100}$		$\Delta p_{v100} \geq \Delta p_{MV}$ (resp. $P_v \geq 0.5$ )
Desired differential pressure		$\Delta p_{v100} \geq 3 \text{ kPa}$



## Valves and actuators

### Overview and selection tools

	Heating group 1	Heating group 2
<b>3 Determine desired flow <math>k_v</math></b>		
$k_v = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100 \text{ kPa}}}}$	$k_v = \frac{5.16 \text{ m}^3/\text{h}}{\sqrt{\frac{3 \text{ kPa}}{100 \text{ kPa}}}} = 29.8 \text{ m}^3/\text{h}$	$k_v = \frac{1.91 \text{ m}^3/\text{h}}{\sqrt{\frac{3 \text{ kPa}}{100 \text{ kPa}}}} = 11.0 \text{ m}^3/\text{h}$
<b>4 Select valve nominal flow rate <math>k_{VS}</math> and determine resulting differential pressure <math>\Delta p_{V100 \text{ res}}</math></b>		
$k_{VS} \geq 0.85 \cdot k_v\text{-value}$	$k_{VS} \geq 0.85 \cdot 29.8 \text{ m}^3/\text{h} = 25.3 \text{ m}^3/\text{h}$ selected: $k_{VS} = 25 \text{ m}^3/\text{h}$	$k_{VS} \geq 0.85 \cdot 11.0 \text{ m}^3/\text{h} = 9.4 \text{ m}^3/\text{h}$ selected: $k_{VS} = 10 \text{ m}^3/\text{h}$
resulting $\Delta p_{V100 \text{ res}}$ $\Delta p_{V100 \text{ res}} = 100 \text{ kPa} \cdot \left(\frac{\dot{V}_{100}}{k_{VS}}\right)^2$	$\Delta p_{V100 \text{ res}} = 100 \text{ kPa} \cdot \left(\frac{5.16 \text{ m}^3/\text{h}}{25 \text{ m}^3/\text{h}}\right)^2$ $\Delta p_{V100 \text{ res}} = 4.3 \text{ kPa}$	$\Delta p_{V100 \text{ res}} = 100 \text{ kPa} \cdot \left(\frac{1.91 \text{ m}^3/\text{h}}{10 \text{ m}^3/\text{h}}\right)^2$ $\Delta p_{V100 \text{ res}} = 3.6 \text{ kPa}$
<b>5 Check valve authority <math>P_V</math> (control stability)</b>		
$P_V = \frac{\Delta p_{V100 \text{ res}}}{\Delta p_{V100 \text{ res}} + \Delta p_{MV}}$ and $0.3 < P_V < 0.6$	$P_V = \frac{4.3 \text{ kPa}}{4.3 \text{ kPa} + 3 \text{ kPa}}$ $P_V = 0.59$	$P_V = \frac{3.6 \text{ kPa}}{3.6 \text{ kPa} + 3 \text{ kPa}}$ $P_V = 0.55$
<b>6 Select suitable valve type</b>		
Type of valve	3-port valve	3-port valve
Connection type	External thread	External thread
Nominal pressure level PN	PN 16	PN 16
Possible valve type(s)	VXG44.., VXG41..	VXG44.., VXG41..
Selected valve	VXG44.40-25 with $k_{VS} = 25 \text{ m}^3/\text{h}$ piping size DN 40 with linear characteristic	VXG44.25-10 with $k_{VS} = 10 \text{ m}^3/\text{h}$ piping size DN 25 with linear characteristic
<b>7 Check valve working range</b>		
Medium	VXG44 suitable for water	VXG44 suitable for water
Medium temperature	40 °C > 1 °C min. medium temperature 50 °C < 120 °C max. medium temperature	28 °C > 1 °C min. medium temperature 35 °C < 120 °C max. medium temperature
<b>8 Select actuator</b>		
Actuator type	SAS.. with 5.5 mm stroke	
Operating voltage	AC 230 V	
Positioning signal	3-point (open – 0 – close)	
Positioning time	30...120 s	
Spring return function	No	
Additional functions	Auxiliary switches, potentiometer, feedback signal available or included	
Selected actuator	SAS31.00	SAS31.00
<b>9 Check actuator working range</b>		
Differential pressure $\Delta p_{\text{max}} \geq \Delta p_{v0} (H_0)$	$\Delta p_{\text{max}} = 125 \text{ kPa} \geq 45 \text{ kPa}$	$\Delta p_{\text{max}} = 400 \text{ kPa} \geq 45 \text{ kPa}$
Closing pressure $\Delta p_s \geq \Delta p_{v0} (H_0)$	Not with 3-port valves	
Selected actuator	SAS31.00 positioning time 120 s, no spring return function, no additional functions, AC 230 V	
<b>Selection</b>		
Valve	VXG44.40-25 with $k_{VS} = 25 \text{ m}^3/\text{h}$	VXG44.25-10 with $k_{VS} = 10 \text{ m}^3/\text{h}$
Actuator	SAS31.00	SAS31.00

Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Thermostatic head

### Thermostatic actuators

RTN..

Thermostatic actuators for controlling the room temperature. Setpoint adjustment with knob. Versions with shutoff and frost protection position.

Limit stops for minimum and maximum values or setpoint locking.

Mounts directly on Siemens radiator valves VDN../VEN../VUN../VPD../VPE..



Adapter for third-party valves, see overview AV..

The radiator valves can be closed with the thermostatic actuators RTN51.. and RTN71..

Data sheet N2111  
 Warranty 5 Years

### Range overview RTN..

Product Title	Design	Setpoint setting range [°C]	Surface treatment	Stock no.	Product no.
Thermostatic actuator, RAL 9016, matt	Frost protection position Closing position	12...28	RAL 9016, matt	BPZ:RTN51	<b>RTN51</b>
Thermostatic actuator, RAL 9016, glossy	Frost protection position Closing position	12...28	RAL 9016, glossy	BPZ:RTN51G	<b>RTN51G</b>
Thermostatic actuator with remote sensor	Remote sensor Frost protection position Closing position	12...28	RAL 9016, matt	BPZ:RTN71	<b>RTN71</b>
Thermostatic actuator with remote adjuster	Remote sensor Frost protection position	8...28	RAL 9016, matt	BPZ:RTN81	<b>RTN81</b>

Actuators for globe and pressure independent control valves (PICV)

Electrothermal

STA..3



Electrothermal actuators with/ without connecting cable for radiator, small, and zone valves

Electrothermal actuators, stem opened in a deenergized state, with or without connection cable for:

- Radiator valves VDN.., VEN.., VUN..
- MCV MiniCombiValves VPD.., VPE..
- Small valves VD1..CLC..
- Zone valves V..I46..
- Combi valves VPP46.., VPI46..
- Valves of other manufacturers

Actuators without connecting cable can be equipped with:

- Connecting cable up to 15 m, halogen-free up to 10 m
- Connecting cable with LED operation indicator
- Connecting cable with auxiliary switch or DC0... 10V module

The given positioning time refers to the maximum stroke of 4.5 mm.

Data sheet	N4884
Stroke	4.5 mm
Degree of protection	IP54
Mounting position	Any, 360°
Power consumption	2.5 W
Warranty	5 Years

Range overview STA..3

Operating voltage [V]	Positioning time [s]	Positioning signal	Cable length	Stock no.	Product no.
AC 230	210	2-position		S55174-A118	STA23B/00
AC 230	210	2-position		S55174-A114	STA23MP/00
AC 24	270	2-position		S55174-A117	STA73B/00
DC 24		PDM			
AC 24	270	2-position		S55174-A113	STA73MP/00
DC 24		PDM			

The given positioning time is related to the maximum stroke of 4.5 mm.

/00 = without cable

xxB = color black

xxMP = multi pack 50 pce

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Connection cable for STA..3

Positioning signal	Auxiliary switch	Display	Color	Cable length [m]	Material	Stock no.	Product no.
2-position	0		White	2	PVC	S55174-A123	ASY23L20
2-position	0		White	5	PVC	S55174-A126	ASY23L50
2-position	0		White	10	PVC	S55174-A129	ASY23L100
2-position	0		White	15	PVC	S55174-A130	ASY23L150
2-position	0		White	2	Halogen-free	S55174-A134	ASY23L20HF
2-position	0		White	5	Halogen-free	S55174-A135	ASY23L50HF
2-position	0		White	10	Halogen-free	S55174-A136	ASY23L100HF
DC 0... 10V	0		White	2	PVC	S55174-A137	ASY6AL20
DC 0... 10V	0		White	2	Halogen-free	S55174-A147	ASY6AL20HF
2-position	1		White	1	PVC	S55174-A153	ASA23U10
2-position	0	LED	White	2	PVC	S55174-A157	ASY23L20LD
2-position	0		Black	3	PVC	S55174-A131	ASY23L30B
2-position	0		Black	5	PVC	S55174-A132	ASY23L50B

Valves and actuators

## Actuators for globe and pressure independent control valves (PICV)

### Electrothermal

#### Accessories for STA..3

Product Title	Data sheet	Stock no.	Product no.
Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	BPZ:AL100	<b>AL100</b>
Standard adapter, M30x1,5	N4884	S55174-A169	<b>AV305</b>
Theft protection	N4884	S55174-A168	<b>AL431</b>

#### Connection cable for STP..3

Positioning signal	Auxiliary switch	Display	Color	Cable length [m]	Material	Stock no.	Product no.
2-position	0		White	2	PVC	S55174-A123	<b>ASY23L20</b>
2-position	0		White	5	PVC	S55174-A126	<b>ASY23L50</b>
2-position	0		White	10	PVC	S55174-A129	<b>ASY23L100</b>
2-position	0		White	15	PVC	S55174-A130	<b>ASY23L150</b>
2-position	0		White	2	Halogen-free	S55174-A134	<b>ASY23L20HF</b>
2-position	0		White	5	Halogen-free	S55174-A135	<b>ASY23L50HF</b>
2-position	0		White	10	Halogen-free	S55174-A136	<b>ASY23L100HF</b>
DC 0...10 V	0		White	2	PVC	S55174-A140	<b>ASY6PL20</b>
DC 0...10 V	0		White	2	Halogen-free	S55174-A150	<b>ASY6PL20HF</b>
2-position	1		White	1	PVC	S55174-A155	<b>ASP23U10</b>
2-position	0	LED	White	2	PVC	S55174-A157	<b>ASY23L20LD</b>
2-position	0		Black	3	PVC	S55174-A131	<b>ASY23L30B</b>
2-position	0		Black	5	PVC	S55174-A132	<b>ASY23L50B</b>

#### Accessories for STP..3

Product Title	Data sheet	Stock no.	Product no.
Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	BPZ:AL100	<b>AL100</b>
Standard adapter, M30x1,5	N4884	S55174-A169	<b>AV305</b>
Theft protection	N4884	S55174-A168	<b>AL431</b>

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SSA..

Electromotoric actuators 100 N for valves with 1.2...6.5 mm stroke



For pressure independent combi valves (PICV), radiator valves, MiniCombi valves (MCV) and small globe valves.

Electromotoric actuators for modulating control in radiator, chilled ceiling, VAV and fan coil unit applications. With automatic stroke adaption, force-dependent switching off in the end position, LED position indication, feedback signal, and manual operation. Suited for use with Siemens PICV VPP46../VPI46.., Siemens radiator valves VDN../VEN../VUN.., Siemens MiniCombi valves VPD../VPE.., Siemens small valves VD1..CLC and on radiator valves with M30 x 1.5 connection without adapter (Heimeier, Cazzaniga, Oventrop M30x1.5, Honeywell-Braukmann, MNG, Junkers, Beulco new). Further valves of other manufacturers on request.

For fitting to the valve: Cap nut M30 x 1.5  
1.2 mm minimal stroke required for self calibration

Data sheet	CE1N4893, A6V11858278, A6V11858276
Stroke	1.2 mm 6.5 mm
Positioning force	100 N
Degree of protection	IP54
Medium temperature	1... 110°C
Mounting position	360°
Warranty	5 Years

Range overview SSA..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 230	3-position	6	1	1.5	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	0.8	1	1.5	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	0.8	0	1.5	S55180-A106	<b>SSA131.00</b>
AC 24	4...20 mA	2.5	0	1.5	S55180-A110	<b>SSA151.05HF</b>
DC 24						
AC 24	DC 0...10 V	2.5	0	1.5	S55180-A107	<b>SSA161.05</b>
DC 24						
AC 24	DC 0...10 V	2.5	0	1.5	S55180-A108	<b>SSA161.05HF</b>
DC 24						
AC 24	DC 0...10 V	2.5	0	1.5	S55180-A109	<b>SSA161E.05HF</b>
DC 24						
AC 230	3-position	7	0	1.5	S55180-A105	<b>SSA331.00</b>

Positioning time for 2.5 mm stroke.

Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Radiator valve actuator Zigbee

SSA911.01ZB

- Battery-powered radiator valve actuator
- Communication with SIEMENS Smart Home
- Zigbee wireless protocol
- Display with user interface
- Integrated temperature sensor
- Local temperature control algorithm
- 2x AA alkaline batteries
- M30 x 1.5 valve connection

Data sheet	A6V12789814
Positioning force	90 N
Stroke	5 mm
Communication	Zigbee
Degree of protection	IP20
Medium temperature	20...70 °C
Ambient humidity, operation	65 % r.h.
Dimensions (W x H x D)	55 x 68 x 86 mm
Operating voltage	3.0 V
Warranty	2 Years

Stock no.	Product no.
S55181-A103	SSA911.01ZB

### Electromotoric actuators 100 N for valves with 1.2..6.5 mm stroke

SSA..KN

For pressure independent combi valves (PICV), radiator valves, MiniCombi valves (MCV) and small globe valves.

Electromotoric actuators with KNX S-Mode communication for radiator, chilled ceiling, VAV and fan coil unit applications. With automatic stroke adaptation, force-dependent switching off in the end position, LED position indication, and manual operation. Suited for use with Siemens PICV VPP46../VPI46., Siemens radiator valves VDN../VEN../VUN., Siemens MiniCombi valves VPD../VPE., Siemens small valves VD1..CLC and on radiator valves with M30 x 1.5 connection without adapter (Heimeier, Cazzaniga, Oventrop M30x1.5, Honeywell-Braukmann, MNG, Junkers, Beulco new). Further valves of other manufacturers on request.



For fitting to the valve: Cap nut M30 x 1.5

Data sheet	A6V11858280
Positioning force	100 N
Stroke	1.2 mm 6.5 mm
Positioning time	50/100 s
Communication	KNX-TP
Degree of protection	IP54
Medium temperature	1...110 °C
Ambient humidity, operation	5...85 % r.h.
Dimensions (W x H x D)	88.6 x 83.4 x 51.4 mm
Mounting position	360°
Warranty	5 Years

### Range overview SSA..KN

Operating voltage [V]	Auxiliary switch	Cable length [m]	Stock no.	Product no.
DC 21...30 24	0	1.5	S55180-A111	SSA118.09HKN

**New Product**

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SSA31.04



Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 230 V, 3P, SPDT

For V..I46.. zone valves

Electromotoric actuators for 3-position or SPDT control of zone valves V..I46.. with internally threaded connections. For 3-position or SPDT (open/close) control of heating systems, domestic hot water storage tank charging as well as terminal units and zones. The actuators have automatic stroke adaption, force-dependent switching off in the end positions, position indication, manual control and 1.5 m connecting cable.

Not suitable for radiator valves (soft seal).

For fitting to the valve: Cap nut M30 x 1.5

Data sheet	N4860
Positioning force	160 N
Stroke	2.5 mm
Power consumption	6 VA
Positioning time	43 s
Cable length	1.5 m
Positioning signal	3-position SPDT
Degree of protection	IP40
Medium temperature	1... 110 °C
Ambient humidity, operation	5...85 % r.h.
Mounting position	Upright to 90° inclined
Operating voltage	AC 230 V
Auxiliary switch	0
Warranty	5 Years

Stock no.	Product no.
BPZ:SSA31.04	<b>SSA31.04</b>

Accessories for SSA31.04

Product Title	Data sheet	Stock no.	Product no.
Retaining screw for cable connector		BPZ:ASY98	<b>ASY98</b>



## Valves and actuators

# Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 135 N for small valves V..P47..

SFP21../SFP71..

For small valves VVP47.., VXP47.. and VMP47..



Together with VVP47.., VXP47.. and VMP47.., they offer high-quality on/off control. Versions for AC 24 V and AC 230 V available. For on/off control of terminal units and heating and cooling zones. The actuators offer a low noise level, have a manual lever, power fail reset function (NC valve closed) and 1.8 m connecting cable. 1 auxiliary switch is available as an accessory item. The combination with a 3-port valve is suited for applications requiring tight shutoff in both valve end positions.

For fitting to the valve: Cap nut M30 x 1.5

Data sheet	N4865
Positioning force	135 N
Stroke	2.5 mm
Positioning time	10 s
Degree of protection	IP30
Mounting position	Upright to 85° inclined
Positioning signal	2-position
Warranty	5 Years

### Range overview SFP21../SFP71..

Operating voltage [V]	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 230	9.8	Optional	1.8	BPZ:SFP21/18	<b>SFP21/18</b>
AC 24	9.8	Optional	1.8	BPZ:SFP71/18	<b>SFP71/18</b>

Auxiliary switch: Changeover contact AC 250 V, 3 A res., 2 A ind., adjustable switching point 50 %.

### Accessories for SFP21../SFP71..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SFA21.../ SFA71.../ SFP21.../ SFP71...	N4863	BPZ:ASC2.1/18	<b>ASC2.1/18</b>



Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SUA..



Electromotive actuator 170N for zone valves, 100N for on/off PICVtive

Electromotive actuator without spring return SUA21/3 for VVI46..and VXI46..zone valves, SUA21/3P for VQI46.. and VQP46.. on/off PICVtive. Primarily used in heating, ventilation and air conditioning systems for water-based control of hot water and cold water.

- Heating and cooling zones
- Control valves for fan coil units
- Zone valve for floor heating via heating distributors (manifolds)
- Chilled ceiling units
- On/off control for domestic hot water boilers
- Shut off valve for wall mounted boiler applications

For fitting to the valve: plastic union nut M30 x 1.5

Positioning force	150 N
Stroke	2.5 mm
Degree of protection	IP40
Medium temperature	1... 110 °C
Mounting position	Upright to 85 ° horizontal, do not suspend
Warranty	5 Years

Range overview SUA..

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 230	2-position (SPST)	6 VA at 50 Hz	0	No	0.8	S55176-A104	<b>SUA21/3</b>
AC 230	2-position (SPST)	6 VA at 50 Hz		No	0.8	S55176-A105	<b>SUA21/3P</b>

SUE..



Electromotoric actuator 100 N for combi valves

For fitting to the valve: plastic union nut M30 x 1.5

Positioning force	100 N
Stroke	5 mm
Nominal stroke	5 mm
Degree of protection	IP40
Medium temperature	1... 110 °C
Mounting position	Upright to 90°, horizontal; do not suspend
Warranty	5 Years

Range overview SUE..

Operating voltage [V]	Positioning signal	Power consumption	Spring return function	Cable length [m]	Stock no.	Product no.
AC 230	2-position (SPST)	6V VA at 50 Hz	No	0.8	S55176-A106	<b>SUE21P</b>

## Valves and actuators

# Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 160 N for valves with 2.5 mm stroke

SSP..

- For small valves VVP47..., VXP47.. and VMP47..
- For retrofitting the small valves 2W..., 3W.. and 4W.. with adapter AL100.



Electromotoric actuators for modulating or 3-position control of small valves for terminal units and heating and cooling zones. With position indication, manual control, automatic stroke adaption, force-dependent switching off in the end positions and plug-in type connecting cable.

For fitting to the valve: Cap nut M30 x 1.5.  
SSP81..., SSP61.. are CE, C-tick, UL and cUL listed.

Data sheet	N4864
Positioning force	160 N
Stroke	2.5 mm, max. 5.5 mm
Degree of protection	IP40
Medium temperature	1...110 °C
Mounting position	Upright to 90° inclined
Warranty	5 Years

### Range overview SSP..

Operating voltage [V]	Power consumption [VA]	Auxiliary switch	Positioning signal	Positioning time [s]	Cable length [m]	Stock no.	Product no.
AC 230	6	0	3-position	150	1.5	BPZ:SSP31	<b>SSP31</b>
AC/DC 24	2.5	0	DC 0...10 V	34	1.5	BPZ:SSP61	<b>SSP61</b>
AC 24	0.8	0	3-position	150	1.5	BPZ:SSP81	<b>SSP81</b>
AC 24	0.8	0	3-position	43	1.5	BPZ:SSP81.04	<b>SSP81.04</b>

Positioning time for 2.5 mm stroke.

### Accessories for SSP..

Product Title	Stock no.	Product no.
Retrofit adapter for installed 2W..., 3W..., 4W... valves	BPZ:AL100	<b>AL100</b>
Connecting cable, 2.5 m, 3-position, AC 230 V	BPZ:ASY3L25	<b>ASY3L25</b>
Connecting cable, 4.5 m, 3-position, AC 230 V	BPZ:ASY3L45	<b>ASY3L45</b>
Connecting cable, 2.5 m, DC 0...10 V, AC/DC 24 V	BPZ:ASY6L25	<b>ASY6L25</b>
Connecting cable, 4.5 m, DC 0...10 V, AC/DC 24 V	BPZ:ASY6L45	<b>ASY6L45</b>
Connecting cable, 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	BPZ:ASY6L45HF	<b>ASY6L45HF</b>
Connecting cable, 2.5 m, 3-position, AC 24 V	BPZ:ASY8L25	<b>ASY8L25</b>
Connecting cable, 4.5 m, 3-position, AC 24 V	BPZ:ASY8L45	<b>ASY8L45</b>
Connecting cable, 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	BPZ:ASY8L45HF	<b>ASY8L45HF</b>
Retaining screw for cable connector	BPZ:ASY98	<b>ASY98</b>
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..	BPZ:ASY99	<b>ASY99</b>
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	BPZ:ASY100	<b>ASY100</b>

## Valves and actuators

### Actuators for globe and pressure independent control valves (PICV)

#### Electromotoric

##### SFA21.. / SFA71..



##### Electromotoric actuators 200 N for small valves V..I46..

For VVI46.. and VXI46.. zone valves, AC 24 V and AC 230 V versions.

Electromotoric actuators for on/off control of zone. For on/off control of terminal units and heating and cooling zones. The actuators are equipped with a manual lever, spring return facility (NO valve closed) and 1.8 m connecting cable. 1 auxiliary switch is available as an accessory item.

For fitting to the valve: Cap nut M30 x 1.5

Data sheet	N4863
Positioning force	200 N
Positioning signal	2-position
Positioning time	10 s
Stroke	2.5 mm
Degree of protection	IP30
Medium temperature	1...110 °C
Mounting position	Upright to 85° inclined
Warranty	5 Years

##### Range overview SFA21.. / SFA71..

Operating voltage [V]	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 230	12	Optional	1.8	BPZ:SFA21/18	<b>SFA21/18</b>
AC 24	12	Optional	1.8	BPZ:SFA71/18	<b>SFA71/18</b>

Auxiliary switch: Changeover contact AC 250 V, 3 A res., 2 A ind., adjustable switching point 50 %.

##### Accessories for SFA21.. / SFA71..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SFA21.../ SFA71.../ SFP21.../ SFP71...	N4863	BPZ:ASC2.1/18	<b>ASC2.1/18</b>

# Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 200 N for valves with 5.5 mm stroke

SSB..

For small valves V..P45..

Electromotoric actuators for modulating or 3-position control of small valves for terminal units and chilled ceilings. With position indication, manual control and plug-in type connecting cable 1.5 m. Automatic stroke adaption and force-dependent switching off in the end position.



For fitting to the valve: Cap nut G $\frac{3}{4}$ "  
SSB61.., SSB81.. are CE, C-tick, UL and cUL listed.

Data sheet	N4891
Positioning force	200 N
Stroke	5.5 mm
Degree of protection	IP40
Medium temperature	1...110 °C
Ambient humidity, operation	5...85 % r.h.
Mounting position	Upright to 90° inclined
Warranty	5 Years

### Range overview SSB..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 230	3-position	6	0	1.5	BPZ:SSB31	<b>SSB31</b>
AC 230	3-position	6	1	1.5	BPZ:SSB31.1	<b>SSB31.1</b>
AC 24 DC 24	DC 0...10 V	2.5	0	1.5	BPZ:SSB61	<b>SSB61</b>
AC 24	3-position	0.8	0	1.5	BPZ:SSB81	<b>SSB81</b>
AC 24	3-position	0.8	1	1.5	BPZ:SSB81.1	<b>SSB81.1</b>

Auxiliary switch: Changeover contact AC 250 V, 1 A res., 0.5 A ind., adjustable switching point 0...100 %.

### Accessories for SSB..

Product Title	Stock no.	Product no.
Connecting cable, 2.5 m, 3-position, AC 230 V	BPZ:ASY3L25	<b>ASY3L25</b>
Connecting cable, 4.5 m, 3-position, AC 230 V	BPZ:ASY3L45	<b>ASY3L45</b>
Connecting cable, 2.5 m, DC 0...10 V, AC/DC 24 V	BPZ:ASY6L25	<b>ASY6L25</b>
Connecting cable, 4.5 m, DC 0...10 V, AC/DC 24 V	BPZ:ASY6L45	<b>ASY6L45</b>
Connecting cable, 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	BPZ:ASY6L45HF	<b>ASY6L45HF</b>
Connecting cable, 2.5 m, 3-position, AC 24 V	BPZ:ASY8L25	<b>ASY8L25</b>
Connecting cable, 4.5 m, 3-position, AC 24 V	BPZ:ASY8L45	<b>ASY8L45</b>
Connecting cable, 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	BPZ:ASY8L45HF	<b>ASY8L45HF</b>
Retaining screw for cable connector	BPZ:ASY98	<b>ASY98</b>
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..	BPZ:ASY99	<b>ASY99</b>
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	BPZ:ASY100	<b>ASY100</b>

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## Valves and actuators

### Actuators for globe and pressure independent control valves (PICV)

#### Electromotoric

#### SSC..



#### Electromotoric actuator, 300 N, for valves with 5.5 mm stroke

Manual control with automatic reset to control mode. Overload-proof through force-dependent switching off in the end position. With plastic housing and cap nut for fitting on threaded valves with 5.5 mm stroke.

Data sheet	N4895
Positioning force	300 N
Stroke	5.5 mm
Degree of protection	IP40
Medium temperature	1...110 °C
Mounting position	Upright to horizontal
Warranty	5 Years

#### Range overview SSC..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Spring return function	Stock no.	Product no.
AC 230	3-position	6	0	No	BPZ:SSC31	<b>SSC31</b>
AC/DC 24	DC 0...10 V	2	0	No	BPZ:SSC61	<b>SSC61</b>
AC/DC 24	DC 0...10 V	2	0	Yes (15 s)	BPZ:SSC61.5	<b>SSC61.5</b>
AC 24	3-position	0.8	0	No	BPZ:SSC81	<b>SSC81</b>

SSC61.5: Power consumption when connecting power for the first time 3 VA.

#### Accessories for SSC..

Product Title	Data sheet	Stock no.	Product no.
Adapter to upgrade older Landis&Gyr valves	N4573	BPZ:ASK30	<b>ASK30</b>

# Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 400 N for valves with 5.5 mm stroke

SAS..

Electromotoric actuator for the operation of Siemens 2-port and 3-port valves, types VVG44.., VXG44.. and VVG549.. with 5.5 mm stroke as control and shut-off valves in heating, ventilation and air conditioning systems. With manual adjuster and position indicator, status indication per LED. Optional functions with auxiliary switches.



SA..81.., SA..61.. are UL listed.

Data sheet	N4581
Positioning force	400 N
Stroke	5.5 mm
Degree of protection	IP54
Medium temperature	1... 130 °C
Mounting position	Upright to horizontal
Position feedback	DC 0... 10 V (SA..6..)
Warranty	5 Years

### Range overview SAS..

Operating voltage [V]	Power consumption [VA]	Auxiliary switch	Positioning signal	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 230	2.8	0	3-position	120	No	S55158-A106	<b>SAS31.00</b>
AC 230	3.5	0	3-position	30	No	S55158-A107	<b>SAS31.03</b>
AC 230	3.5	0	3-position	120	Yes (28 s)	S55158-A108	<b>SAS31.50</b>
AC 230	5.5	0	3-position	30	Yes (14 s)	S55158-A109	<b>SAS31.53</b>
AC/DC 24	5.3	0	DC 0... 10 V DC 4... 20 mA 0... 1000 Ohm	30	No	S55158-A100	<b>SAS61.03</b>
AC/DC 24	6.0	0	Modbus RTU	30		S55158-A121	<b>SAS61.03/MO</b>
AC/DC 24	5.9	0	DC 0... 10 V DC 4... 20 mA 0... 1000 Ohm	30	Yes (14 s)	S55158-A101	<b>SAS61.33</b>
AC/DC 24	5.9		Modbus RTU	30	Yes (14 s)	S55158-A122	<b>SAS61.33/MO</b>
AC/DC 24	5.8	0	DC 0... 10 V DC 4... 20 mA 0... 1000 Ohm	30	Yes (14 s)	S55158-A102	<b>SAS61.53</b>
AC/DC 24	2.2	0	3-position	120	No	S55158-A103	<b>SAS81.00</b>
AC/DC 24	2.5	0	3-position	30	No	S55158-A104	<b>SAS81.03</b>
AC/DC 24	3.4	0	3-position	30	Yes (14 s)	S55158-A105	<b>SAS81.33</b>

### Accessories for SAS..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Adapter to upgrade older Landis&Gyr valves	N4573	BPZ:ASK30	<b>ASK30</b>
Weathershild for SAS../SAT../SAK..		S55845-Z155	<b>ASK39.2</b>

7

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SAT..

Electromotoric actuators 300 N for valves with 5.5 mm stroke



Electromotoric actuators for the operation of Siemens 2-port valves VVG549.., kvs value 0.25-6.3 m³/h with 5.5 mm stroke as control valve in district heating applications. With manual adjuster and position indicator, status indication per LED. Optional functions with auxiliary switches.

SA..61.. are UL listed.

Data sheet	N4584
Positioning force	300 N
Stroke	5.5 mm
Degree of protection	IP54
Medium temperature	1...150 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SA..6..)
Warranty	5 Years

Range overview SAT..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 230	3-position	5.0	8	No	S55158-A119	<b>SAT31.008</b>
AC 230	3-position	5.5	15	Yes (8 s)	S55158-A120	<b>SAT31.51</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	7.1	8	No	S55158-A117	<b>SAT61.008</b>
AC/DC 24	Modbus RTU	7.1	8	No	S55158-A123	<b>SAT61.008/MO</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	6.4	15	Yes (8 s)	S55158-A118	<b>SAT61.51</b>
AC/DC 24	Modbus RTU	6.4	15	Yes (8 s)	S55158-A124	<b>SAT61.51/MO</b>

Accessories for SAT..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Adapter to upgrade older Landis&Gyr valves	N4573	BPZ:ASK30	<b>ASK30</b>
Weathershild for SAS../SAT../SAK..		S55845-Z155	<b>ASK39.2</b>



Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators for seat valves

SBX..

For operation with Siemens 2-port and 3-port valves, types VVF47.., VXF47.. with 20 mm stroke as control valves in heating, ventilation and air conditioning systems

Data sheet	N4519
Positioning force	700 N
Nominal stroke	20 mm
Positioning time	120 s
Degree of protection	IP54
Ambient temperature, operation	-10...55 °C
Medium temperature	1...95 °C
Mounting position	Upright to horizontal
Warranty	5 Years

For customers in Asia / Australia



### Range overview SBX..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Stock no.	Product no.
AC 24	4...20 mA	5	S55160-A108	<b>SBX151.00</b>
AC 230	3-position	9	S55160-A102	<b>SBX31</b>
AC 24	DC 0...10 V	5	S55160-A100	<b>SBX61</b>
AC 24	3-position	4	S55160-A101	<b>SBX81</b>

### Accessories for SBX..

Product Title	Data sheet	Stock no.	Product no.
Function module 4...20 mA for SBX61, SBV61	N4519	S55845-Z120	<b>AZX420</b>

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SAX..

Electromotoric actuators 800 N for valve with 20 mm stroke



Electromotoric actuator for the operation of Siemens 2-port and 3-port valves, types VVF.., VVG.., VXF.. and VXG.. with 20 mm stroke as control and safety shut-off valves in heating, ventilation and air conditioning systems.

With manual adjuster and position indicator, status indication per LED.

Optional functions with auxiliary switches, potentiometer, functional module and stem heater.

Data sheet	N4501
Positioning force	800 N
Stroke	20 mm
Degree of protection	IP54
Ambient temperature, operation	-5...55 °C
Medium temperature	-25...130 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SA..6..)
Spring return function	No
Warranty	5 Years

Range overview SAX..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Positioning time [s]	Cable length [m]	Stock no.	Product no.
AC 230	3-position	3.5	Optional	120		S55150-A105	<b>SAX31.00</b>
AC 230	3-position	6	Optional	30		S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	8	Optional	30		S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	8.7	Optional	30	0.9	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	3.5	Optional	120		S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	5	Optional	30		S55150-A103	<b>SAX81.03</b>

Accessories for SAX..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	<b>ASZ7.5/1000</b>
Funtion module for SA..61.., sequence control/changeover of acting direction	N4501	S55845-Z107	<b>AZX61.1</b>
Stem heating element for media <0 °C	N4501	S55845-Z108	<b>ASZ6.6</b>
Weathershield for SAX../SAL..	N4501	S55845-Z109	<b>ASK39.1</b>

Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 500 N for Combi valves VPF44../VPF54..

SAX..P..

Electromotoric actuator for the operation of Siemens Combi valves, types VPF44../VPF54.. with 20 mm stroke as control valves in ventilation, air conditioning, district heating and cooling systems. With manual adjuster and position indicator, status indication per LED. With manual adjuster and position indicator, status indication per LED. Optional functions with auxiliary switches, potentiometer, functional module and stem heater.



SA..81P.., SA..61P.. are UL listed.

Data sheet	N4509
Positioning force	500 N
Stroke	20 mm
Degree of protection	IP54
Ambient temperature, operation	5...55 °C
Medium temperature	1...100 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SAX6..)
Warranty	5 Years

### Range overview SAX..P..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Positioning time [s]	Stock no.	Product no.
AC 230	3-position	8	Optional	30	S55150-A118	<b>SAX31P03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	8	Optional	30	S55150-A114	<b>SAX61P03</b>
AC/DC 24	Modbus RTU	8	Optional	30	S55150-A143	<b>SAX61P03/MO</b>
AC/DC 24	3-position	5	Optional	30	S55150-A116	<b>SAX81P03</b>

### Accessories for SAX..P

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	<b>ASZ7.5/1000</b>
Function module for SA..61..., sequence control/changeover of acting direction	N4501	S55845-Z107	<b>AZX61.1</b>
Weathershield for SAX../SAL..	N4501	S55845-Z109	<b>ASK39.1</b>

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SAY..P..



Electromotoric actuators 200 N for Combi valves VPI46 with a 15 mm stroke

Electromotoric actuator for the operation of Siemens Combi valves, types VPI46.40F9.5Q and VPI46.50F12Q with 15 mm stroke as control valves in ventilation, air conditioning, district heating and cooling systems. With manual adjuster and position indicator, status indication per LED. Optional functions with auxiliary switches, potentiometer, functional module and stem heater.

Data sheet	A6V10628469
Positioning force	200 N
Stroke	15 mm
Spring return function	No
Degree of protection	IP54
Ambient temperature, operation	5...55 °C
Medium temperature	1...120 °C
Mounting position	Upright to horizontal
Warranty	5 Years

Range overview SAY..P..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Positioning time [s]	Stock no.	Product no.
AC 230	3-position	6	Optional	30	S55150-A132	<b>SAY31P03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	8	Optional	30	S55150-A133	<b>SAY61P03</b>
AC/DC 24	Modbus RTU	8	0	30	S55150-A145	<b>SAY61P03/MO</b>
AC/DC 24	3-position	5	Optional	30	S55150-A134	<b>SAY81P03</b>

Accessories for SAY..P..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Function module for SA..61..., sequence control/changeover of acting direction	N4501	S55845-Z107	<b>AZX61.1</b>



## Valves and actuators

# Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 1600 N for valves with 20/40 mm stroke

SAV..

Electromotoric actuator for the operation of Siemens 2-port and 3-port valves, types VVF.. and VXF.. with 20/40 mm stroke as control and safety shut-off valves in heating, ventilation and air conditioning systems.

With manual adjuster and position indicator, status indication per LED.

Optional functions with auxiliary switches, potentiometer, functional module and stem heater.



Data sheet	N4503
Positioning force	1600 N
Stroke	40 mm
Degree of protection	IP54
Ambient temperature, operation	-5...55 °C
Medium temperature	-25...130 °C (150 °C)
Mounting position	Upright to horizontal, up to 150 °C with horizontal mounting position
Position feedback	DC 0...10 V (SA..6..)
Warranty	5 Years

### Range overview SAV..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Spring return function	Positioning time [s]	Cable length [m]	Stock no.	Product no.
AC 230	3-position	6.5	Optional	No	120		S55150-A112	SAV31.00
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	9.5	Optional	No	120		S55150-A110	SAV61.00
AC/DC 24	Modbus RTU	9.5	Optional	No	120	0.9	S55150-A141	SAV61.00/MO
AC/DC 24	3-position	7	Optional	No	120		S55150-A111	SAV81.00

### Accessories for SAV..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	ASC10.51
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	ASZ7.5/1000
Function module for SA..61.., sequence control/changeover of acting direction	N4501	S55845-Z107	AZX61.1
Stem heating element for media < 0 °C	N4501	S55845-Z108	ASZ6.6
Weathershield for SAX../SAL..	N4501	S55845-Z109	ASK39.1

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SAV..P..



Electromotoric actuators 1100 N for Combi valves  
VPF44../VPF54../VPF43../VPF53..

Electromotoric actuators for the operation of Siemens combi valves of types VPF44../VPF54../VPF43../VPF53.. with 40 mm stroke as control and safety shut-off valves in ventilation, air conditioning, district heating and refrigerating systems. With manual adjuster and position indicator, status indication per LED. Optional functions with auxiliary switches, potentiometer and functional module.

SA..61P.., SA..81P.. are UL listed.

Data sheet	N4510
Positioning force	1100 N
Stroke	40 mm
Spring return function	No
Degree of protection	IP54
Ambient temperature, operation	5...55 °C
Medium temperature	1...120 °C
Mounting position	Upright to horizontal
Warranty	5 Years

Range overview SAV..P..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Positioning time [s]	Stock no.	Product no.
AC 230	3-position	6.5	Optional	120	S55150-A121	<b>SAV31P00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	9.5	Optional	120	S55150-A119	<b>SAV61P00</b>
AC/DC 24	Modbus RTU	9.5	0	120	S55150-A144	<b>SAV61P00/MO</b>
AC/DC 24	3-position	7	Optional	120	S55150-A120	<b>SAV81P00</b>

Accessories for SAV..P

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	<b>ASZ7.5/1000</b>
Function module for SA..61.., sequence control/changeover of acting direction	N4501	S55845-Z107	<b>AZX61.1</b>
Weathershield for SAX../SAL..	N4501	S55845-Z109	<b>ASK39.1</b>

# Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 1100 N for Combi valves VPF43../53.. and VPF44../VPF54..

SQV..P..



Electromotoric actuators for the operation of Siemens Combi valves, types VPF43../53.. and VPF44../VPF54.. with 20/40 mm stroke as control valves in ventilation, air conditioning, district heating and cooling systems. With manual adjuster and position indicator, status indication per LED and with selectable positioning time (20 mm: 40, 60, 90 or 120 s, 40 mm: 80, 120, 180 or 240 s). Optional functions with auxiliary switches, potentiometer and AC 230 V power module.

Actuators SQV..P.. are UL-listed

Data sheet	N4833
Positioning force	1100 N
Stroke	20 mm 40 mm 43 mm
Positioning time	20 mm: 40 s 40 mm: 80 s
Degree of protection	IP66
Ambient temperature, operation	0...55 °C
Medium temperature	1...120 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V
Warranty	5 Years

#### Range overview SQV..P..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Spring return function	Stock no.	Product no.
AC 24 DC 24	3-position DC 0...10 V DC 4...20 mA	20	Optional	Yes (30 s) Stem retracted	S55150-A130	<b>SQV91P30</b>
AC 24 DC 24	3-position DC 0...10 V DC 4...20 mA	20	Optional	Yes (30 s) Stem extended	S55150-A131	<b>SQV91P40</b>

#### Accessories for SQV..P

Product Title	Data sheet	Stock no.	Product no.
Double auxiliary switch for SQV..P..	N4833	S55845-Z137	<b>ASC10.42</b>
Potentiometer 0...1000 Ohm for SQV..P..	N4833	S55845-Z136	<b>ASZ7.6/1000</b>
AC 230 V adapter for SQV..P..	N4833	S55845-Z138	<b>ASP1.1</b>

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

SBV..



Electromotoric actuators for seat valves

For operation with Siemens 2-port and 3-port valves, types VVF47.., VXF47.. with 40 mm stroke as control valves in heating, ventilation and air conditioning systems

Data sheet	N4519
Positioning force	1600 N
Stroke	40 mm
Positioning time	180 s
Degree of protection	IP54
Ambient temperature, operation	-10...55 °C
Medium temperature	1...95 °C
Mounting position	Upright to horizontal
Warranty	5 Years

For customers in Asia / Australia

Range overview SBV..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Stock no.	Product no.
AC 24	4...20 mA	7	S55160-A109	<b>SBV151.00</b>
AC 230	3-position	9	S55160-A105	<b>SBV31</b>
AC 24	DC 0...10 V	7	S55160-A103	<b>SBV61</b>
AC 24	3-position	7	S55160-A104	<b>SBV81</b>

Accessories for SBV..

Product Title	Data sheet	Stock no.	Product no.
Function module 4...20 mA for SBX61, SBV61	N4519	S55845-Z120	<b>AZX420</b>



Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electromotoric

### Electromotoric actuators 1600 N for PICV valves VPF44../VPF54../VPF43../VPF53..

SBV..P

Electromotoric actuator for the operation of Siemens PICV valves, types VPF44.., VPF43.., VPF54.. and VPF53.. with 40 mm stroke as control valves in ventilation, air conditioning, district heating and cooling systems.

Data sheet	A6V12232112
Positioning force	1600 N
Stroke	40 mm
Positioning time	180 s
Degree of protection	IP 54
Ambient humidity, operation	5...95 % r.h.
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SB..61P)
Warranty	5 Years

For customers in Asia / Australia

### Range overview SBV..P

Operating voltage [V]	Positioning signal	Stock no.	Product no.
AC 230	3-position	S55160-A113	<b>SBV31P</b>
AC 24	0...10 V	S55160-A114	<b>SBV61P</b>
AC 24	3-position	S55160-A115	<b>SBV81P</b>

### Accessories for SBV..P

Product Title	Data sheet	Stock no.	Product no.
Function module 4...20 mA for SBX61, SBV61	N4519	S55845-Z120	<b>AZX420</b>

Actuators for globe and pressure independent control valves (PICV)

Electromotoric

**SBX..P**

**Electromotoric actuators 700 N for PICV valves VPF44../VPF54..**

Electromotoric actuator for the operation of Siemens PICV, types VPF44../VPF54.. with 20 mm stroke as control valves in ventilation, air conditioning, district heating and cooling systems.

Data sheet	A6V12232112
Positioning force	700 N
Stroke	20 mm
Positioning time	120 s
Degree of protection	IP 54
Ambient humidity, operation	5...95 % r.h.
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SB..61P)
Warranty	5 Years

For customers in Asia / Australia

**Range overview SBX..P**

Operating voltage [V]	Positioning signal	Power consumption [VA]	Stock no.	Product no.
AC 230	3-position	9 VA / 9	S55160-A110	<b>SBX31P</b>
AC 24	0...10 V	5 VA / 7	S55160-A111	<b>SBX61P</b>
AC 24	3-position	4 VA / 7	S55160-A112	<b>SBX81P</b>

**Accessories for SBX..P**

Product Title	Data sheet	Stock no.	Product no.
Function module 4...20 mA for SBX61, SBV61	N4519	S55845-Z120	<b>AZX420</b>



## Valves and actuators

# Actuators for globe and pressure independent control valves (PICV) Electrohydraulic

### Electrohydraulic actuators 1000 N for valves with 20 mm stroke

SKD32../SKD82..

Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.

SKD..U are UL listed. Control devices MK..5.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4561
Positioning force	1000 N
Stroke	20 mm
Degree of protection	IP54
Medium temperature	-25...150 °C
Ambient temperature, operation	-15...50 °C
Mounting position	Upright to horizontal
Warranty	5 Years



### Range overview SKD32../SKD82..

Operating voltage [V]	Power consumption [VA]	Positioning signal	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 230	16	3-position	Open 30 Close 10	Yes (8 s)	BPZ:SKD32.21	SKD32.21
AC 230	11	3-position	120	No	BPZ:SKD32.50	SKD32.50
AC 230	17	3-position	120	Yes (8 s)	BPZ:SKD32.51	SKD32.51
AC 24	9	3-position	120	No	BPZ:SKD82.50	SKD82.50
AC 24	9	3-position	120	No	BPZ:SKD82.50U	SKD82.50U
AC 24	14	3-position	120	Yes (8 s)	BPZ:SKD82.51	SKD82.51
AC 19.2...28.2 24	14	3-position	120	Yes (8 s)	BPZ:SKD82.51U	SKD82.51U

Actuators for globe and pressure independent control valves (PICV)

Electrohydraulic

SKD60/SKD62..



Electrohydraulic actuators 1000 N for valves with 20 mm stroke

Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional function with one auxiliary switch. With manual control.

SKD..U, SKD..UA are UL listed. Control devices MK..5.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4561
Positioning force	1000 N
Stroke	20 mm
Position feedback	DC 0...10 V DC 4...20 mA
Degree of protection	IP54
Medium temperature	-25...150 °C
Ambient temperature, operation	-15...50 °C
Mounting position	Upright to horizontal
Warranty	5 Years

Range overview SKD60/SKD62..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	10	Open:30 Close:15	No	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	10	Open 30 Close:15	No	BPZ:SKD60U	<b>SKD60U</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	14	Open:30 Close:15	Yes (15 s)	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	14	Open 30 Close 15	Yes	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	14	Open:30 Close:15	Yes (15 s)	BPZ:SKD62U	<b>SKD62U</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	14	Open:30 Close:15	Yes (15 s)	BPZ:SKD62UA	<b>SKD62UA</b>

Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.

Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electrohydraulic

### Electrohydraulic actuators 2800 N for valves with 20 mm stroke

SKB32../SKB82..

Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.



SKB82..U are UL listed. Control devices MK..6.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4564
Positioning force	2800 N
Stroke	20 mm
Degree of protection	IP54
Medium temperature	-25...220 °C
Ambient temperature, operation	-15...<55 °C
Mounting position	Upright to horizontal
Warranty	5 Years

### Range overview SKB32../SKB82..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 230	3-position	10	120	No	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	16	120	Yes ( 10 s)	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	3-position	8	120	No	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	12	120	Yes ( 10 s)	BPZ:SKB82.51	<b>SKB82.51</b>
AC 24	3-position	8	120	No	BPZ:SKB82.50U	<b>SKB82.50U</b>
AC 19.2...28.2 24	3-position	12	120	Yes ( 10 s)	BPZ:SKB82.51U	<b>SKB82.51U</b>

**SKB60/62..**



**Electrohydraulic actuators 2800 N for valves with 20 mm stroke**

Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional function with one auxiliary switch. With manual control.

SKB..U, SKB..UA are UL listed. Control devices MK..6.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4564
Stroke	20 mm
Position feedback	DC 0...10 V DC 4...20 mA
Degree of protection	IP54
Medium temperature	-25...220 °C
Ambient temperature, operation	-15...<55 °C
Mounting position	Upright to horizontal
Warranty	5 Years

**Range overview SKB60/SKB62..**

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	10	Open:120 Close:10	No	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	14	Open:120 Close:10	Yes (10 s)	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	14	Open 120 Close 10	Yes	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	14	Open:120 Close:10	Yes (10 s)	BPZ:SKB62U	<b>SKB62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	14	Open:120 Close:10	Yes (10 s)	BPZ:SKB62UA	<b>SKB62UA</b>

Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.



Valves and actuators

## Actuators for globe and pressure independent control valves (PICV) Electrohydraulic

### Electrohydraulic actuators 2800 N for valves with 40 mm stroke

SKC32../SKC82..

Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 40 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.



SKC..U are UL listed. Control devices MK..6.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4566
Positioning force	2800 N
Stroke	40 mm
Degree of protection	IP54
Medium temperature	-25...220 °C
Ambient temperature, operation	-15...<55 °C
Mounting position	Upright to horizontal
Warranty	5 Years

### Range overview SKC32../SKC82..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 230	3-position	18	120	No	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	24	120	Yes (18 s)	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24	3-position	15	120	No	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	19	120	Yes (18 s)	BPZ:SKC82.61	<b>SKC82.61</b>
AC 24	3-position	15	120	No	BPZ:SKC82.60U	<b>SKC82.60U</b>
AC 19.2...31.2 24	3-position	19	120	Yes (18 s)	BPZ:SKC82.61U	<b>SKC82.61U</b>

Actuators for globe and pressure independent control valves (PICV)

Electrohydraulic

SKC60/SKC62..

Electrohydraulic actuators 2800 N for valves with 40 mm stroke



Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 40 mm stroke. Optional function with one auxiliary switch. With manual control.

SKC..U, SKC..UA are UL listed. Control devices MK..6.. are control devices with safety shut-off function per DIN EN 14597.

Data sheet	N4566
Stroke	40 mm
Position feedback	DC 0...10 V DC 4...20 mA
Degree of protection	IP54
Medium temperature	-25...220 °C
Ambient temperature, operation	-15...<55 °C
Mounting position	Upright to horizontal
Warranty	5 Years

Range overview SKC60/SKC62..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock no.	Product no.
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	17	Open:120 Close:20	No	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	21	Open:120 Close:20	Yes (20 s)	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	21	Open 120 Close 20	Yes	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	21	Open:120 Close:20	Yes (20 s)	BPZ:SKC62U	<b>SKC62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	21	Open:120 Close:20	Yes (20 s)	BPZ:SKC62UA	<b>SKC62UA</b>

Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.

Accessories for SKD../SKB../SKC..

Product Title	Data sheet	Stock no.	Product no.
Auxiliary switch for SKB6../SKC6../SKD6..	N4566	BPZ:ASC1.6	<b>ASC1.6</b>
Double auxiliary switch for SKB/ C/ D32../82..	N4561	BPZ:ASC9.3	<b>ASC9.3</b>
Stroke inverter for SKD..	N4561	BPZ:ASK50	<b>ASK50</b>
Stroke inverter for SKB..	N4564	BPZ:ASK51	<b>ASK51</b>
Potentiometer 0... 1000 Ohm for SKB/ C/ D32../82..	N4564	BPZ:ASZ7.3	<b>ASZ7.3</b>
Stem heating element for media < 0 °C	N4501	S55845-Z108	<b>ASZ6.6</b>

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# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port flanged valves

### 2-port valves with flanged connections, PN6

VVF22..

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	N4401
Stroke	to DN80: 20 mm DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-10...130 °C
Valve characteristic	Equal percentage
Rangeability	DN 25: >50 DN 40...100: >100
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN40: CrNi steel / bronze
PN class	PN 6
Warranty	5 Years

### Range overview VVF22..

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	kvs	Stock no.	Product no.
$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$		[m³/h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
300	600			300	600	300	600			25	2.5	S55200-V100	VVF22.25-2.5
300	600			300	600	300	600			25	4	S55200-V101	VVF22.25-4
300	600			300	600	300	600			25	6.3	S55200-V102	VVF22.25-6.3
300	600			300	600	300	600			25	10	S55200-V103	VVF22.25-10
300	550	300	600	300	600	300	600			40	16	S55200-V104	VVF22.40-16
300	550	300	600	300	600	300	600			40	25	S55200-V105	VVF22.40-25
300	350	300	600	300	450	300	600			50	40	S55200-V106	VVF22.50-40
150	200	300	450	200	250	300	600			65	63	S55200-V107	VVF22.65-63
75	125	225	250	125	175	300	450			80	100	S55200-V108	VVF22.80-100
		125	160					250	300	100	160	S55200-V109	VVF22.100-160

For media <0 °C, stem heating element ASZ6.6 is required.

### Replacement sealing glands for VVF22..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

### Combinable actuator for VVF22..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	120	No	N4503	S55150-A112	SAV31.00
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	SAV61.00
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	SAV61.00/MO



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF22..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port flanged valves

VVF32..



### 2-port valves with flanged connections, PN 10

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4402
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-10...150 °C
Valve characteristic	Equal percentage kvs 250/400 linear
Rangeability	DN 15 .. 25: >50 DN 40...150: >100
Permissible operating pressure	1000 kPa
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN50: CrNi steel / bronze
PN class	PN 10
Warranty	5 Years

### Range overview VVF32..

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	kvs	Stock no.	Product no.
$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400	1000			400	1000	400	1000			15	1.6	S55202-V100	VVF32.15-1.6
400	1000			400	1000	400	1000			15	2.5	S55202-V101	VVF32.15-2.5
400	1000			400	1000	400	1000			15	4	S55202-V102	VVF32.15-4
400	1000			400	1000	400	1000			25	6.3	S55202-V103	VVF32.25-6.3
400	1000			400	1000	400	1000			25	10	S55202-V104	VVF32.25-10
400	550	400	1000	400	750	400	1000			40	16	S55202-V105	VVF32.40-16
400	550	400	1000	400	750	400	1000			40	25	S55202-V106	VVF32.40-25
300	350	400	750	400	450	400	1000			50	40	S55202-V107	VVF32.50-40
150	200	400	450	200	250	400	700			65	63	S55202-V108	VVF32.65-63
75	125	225	250	125	175	400	450			80	100	S55202-V109	VVF32.80-100
		125	160					250	300	100	160	S55202-V110	VVF32.100-160
		90	125					160	190	125	250	S55202-V111	VVF32.125-250
		60	80					100	125	150	400	S55202-V112	VVF32.150-400

For media < 0° C, stem heating element ASZ 6.6 is required.

### Replacement sealing glands for VVF32..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

### Combinable actuator for VVF32..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	120	No	N4503	S55150-A112	SAV31.00



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF32..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port flanged valves

### 2-port valves with flanged connections, PN 16

VVF42..

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	N4403
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-10... 150 °C
Valve characteristic	Equal percentage k <sub>vs</sub> 250/400 linear
Rangeability	DN 15...25: >50 DN 32...150: >100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN50: CrNi steel / bronze
PN class	PN 16
Warranty	5 Years

### Range overview VVF42..

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	k <sub>vs</sub>	Stock no.	Product no.
Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400	1600			400	1600	400	1600			15	1.6	S55204-V100	VVF42.15-1.6
400	1600			400	1600	400	1600			15	2.5	S55204-V101	VVF42.15-2.5
400	1600			400	1600	400	1600			15	4	S55204-V102	VVF42.15-4
400	1600			400	1600	400	1600			20	6.3	S55204-V103	VVF42.20-6.3
400	1600			400	1600	400	1600			25	6.3	S55204-V104	VVF42.25-6.3
400	1600			400	1600	400	1600			25	10	S55204-V105	VVF42.25-10
400	900			400	1200	400	1600			32	16	S55204-V106	VVF42.32-16
400	550	400	1250	400	750	400	1600			40	16	S55204-V107	VVF42.40-16
400	550	400	1250	400	750	400	1600			40	25	S55204-V108	VVF42.40-25
300	350	400	750	400	450	400	1200			50	31.5	S55204-V109	VVF42.50-31.5
300	350	400	750	400	450	400	1200			50	40	S55204-V110	VVF42.50-40
150	200	400	450	200	250	400	700			65	50	S55204-V111	VVF42.65-50
150	200	400	450	200	250	400	700			65	63	S55204-V112	VVF42.65-63
75	125	225	250	125	175	400	450			80	80	S55204-V113	VVF42.80-80
75	125	225	250	125	175	400	450			80	100	S55204-V114	VVF42.80-100
		125	160					250	300	100	125	S55204-V115	VVF42.100-125
		125	160					250	300	100	160	S55204-V116	VVF42.100-160
		90	125					160	190	125	200	S55204-V117	VVF42.125-200
		90	125					160	190	125	250	S55204-V118	VVF42.125-250
		60	80					100	125	150	315	S55204-V119	VVF42.150-315
		60	80					100	125	150	400	S55204-V120	VVF42.150-400

For media < 0° C, stem heating element ASZ 6.6 is required.

### Replacement sealing glands for VVF42..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF42..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)  
 2-port flanged valves**

**Combinable actuator for VVF42..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

#### VVF42..C



#### 2-port valves with flanged connections, PN 16

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	A6V10794157
Stroke	to DN 80: 20 mm from DN 100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-10... 150 °C
Valve characteristic	Equal percentage k <sub>vis</sub> 250/400 linear
Rangeability	to DN 40: >50 from DN 50: >100
Permissible operating pressure	1600 kPa
Material, inside set	≤ DN 25: CrNi steel / brass ≥ DN 32: CrNi steel / CrNi steel
PN class	PN 16
Warranty	5 Years

For customers in Asia / Australia

#### Range overview VVF42..C

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	k <sub>vis</sub>	Stock no.	Product no.
Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400	1600			400	1600	400	1600			25	6.3	S55204-V148	<b>VVF42.25-6.3C</b>
400	1600			400	1600	400	1600			25	10	S55204-V149	<b>VVF42.25-10C</b>
400	900			400	1200	400	1600			32	16	S55204-V150	<b>VVF42.32-16C</b>
400	550	400	1250	400	750	400	1600			40	16	S55204-V151	<b>VVF42.40-16C</b>
400	550	400	1250	400	750	400	1600			40	25	S55204-V152	<b>VVF42.40-25C</b>
300	350	400	750	400	450	400	1200			50	31.5	S55204-V153	<b>VVF42.50-31.5C</b>
300	350	400	750	400	450	400	1200			50	40	S55204-V154	<b>VVF42.50-40C</b>
150	200	400	450	200	250	400	700			65	50	S55204-V155	<b>VVF42.65-50C</b>
150	200	400	450	200	250	400	700			65	63	S55204-V156	<b>VVF42.65-63C</b>
75	125	225	250	125	175	400	450			80	80	S55204-V157	<b>VVF42.80-80C</b>
75	125	225	250	125	175	400	450			80	100	S55204-V158	<b>VVF42.80-100C</b>
		125	160					250	300	100	125	S55204-V159	<b>VVF42.100-125C</b>
		125	160					250	300	100	160	S55204-V160	<b>VVF42.100-160C</b>
		90	125					160	190	125	200	S55204-V161	<b>VVF42.125-200C</b>
		90	125					160	190	125	250	S55204-V162	<b>VVF42.125-250C</b>
		60	80					100	125	150	315	S55204-V163	<b>VVF42.150-315C</b>
		60	80					100	125	150	400	S55204-V164	<b>VVF42.150-400C</b>

#### Replacement sealing glands for VVF42..C

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	<b>428488060</b>
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	<b>467956290</b>

#### Combinable actuator for VVF42..C

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>



Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**2-port flanged valves**

**Combinable actuator for VVF42..C**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF42..C

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port flanged valves

VVF42..K



### 2-port valves pressure compensated with flanged connections, PN 16

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4403
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-5... 150 °C
Valve characteristic	Equal percentage k <sub>vs</sub> 250/360 linear
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	≥ DN 50: CrNi steel / bronze
PN class	PN 16
Warranty	5 Years

### Range overview VVF42..K

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	k <sub>vs</sub>	Stock no.	Product no.
Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400	1600	400	1600	400	1600	400	1600			50	40	S55204-V121	VVF42.50-40K
400	1600	400	1600	400	1600	400	1600			65	63	S55204-V122	VVF42.65-63K
400	1600	400	1600	400	1600	400	1600			80	100	S55204-V123	VVF42.80-100K
		400	1600					400	1600	100	160	S55204-V124	VVF42.100-160K
		400	1600					400	1600	125	250	S55204-V125	VVF42.125-250K
		400	1400					400	1600	150	360	S55204-V126	VVF42.150-360K

For media < 0° C, stem heating element ASZ6.6 is required.

### Replacement sealing glands for VVF42..K

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060

### Combinable actuator for VVF42..K

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	120	No	N4503	S55150-A112	SAV31.00
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	SAV61.00
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	SAV61.00/MO
AC/DC 24	3-position	120	No	N4503	S55150-A111	SAV81.00
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	SKD32.50
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	SKD32.51

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF42..K

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port flanged valves

### 2-port valves pressure compensated with flanged connections, PN 16

VVF42..KC



- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	A6V10794157
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Medium temperature	-10... 150 °C
Valve characteristic	Equal percentage
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel / CrNi Steel
PN class	PN 16
Warranty	5 Years
For customers in Asia / Australia	

### Range overview VVF42..KC

SAX.. $\Delta p_{\max}$ [kPa]	SAX.. $\Delta p_s$ [kPa]	SAV.. $\Delta p_{\max}$ [kPa]	SAV.. $\Delta p_s$ [kPa]	SKD.. $\Delta p_{\max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	SKB.. $\Delta p_{\max}$ [kPa]	SKB.. $\Delta p_s$ [kPa]	SKC.. $\Delta p_{\max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	kvs [m <sup>3</sup> /h]	Stock no.	Product no.
800	1600			800	1600	800	1600			65	63	S55204-V182	VVF42.65KC
800	1600			800	1600	800	1600			80	100	S55204-V183	VVF42.80KC
		500	1600					800	1600	100	160	S55204-V184	VVF42.100KC
		500	1600					800	1600	125	220	S55204-V185	VVF42.125KC
		500	1400					800	1600	150	315	S55204-V186	VVF42.150KC

### Replacement sealing glands for VVF42..KC

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

### Combinable actuator for VVF42..KC

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	SKD32.50
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	SKD32.51
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	SKD60
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	SKD62
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	SKD62/MO

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF42..KC

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port flanged valves

### 2-port seat valve PN16 with flanged connections

VVF43..

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits



Data sheet	N4404
Stroke	40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-20...220 °C
Valve characteristic	Equal percentage $k_{vs}$ 250/400 linear
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Stainless steel
PN class	PN 16
Absolute pressure p1 steam	1600 kPa abs
Warranty	5 Years

### Range overview VVF43..

SAV.. $\Delta p_{max}$ [kPa]	SAV.. $\Delta p_s$ [kPa]	SKC.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
400	450	650	700	65	50	S55206-V100	VVF43.65-50
400	450	650	700	65	63	S55206-V101	VVF43.65-63
225	250	400	450	80	80	S55206-V102	VVF43.80-80
225	250	400	450	80	100	S55206-V103	VVF43.80-100
125	160	250	300	100	125	S55206-V104	VVF43.100-125
125	160	250	300	100	160	S55206-V105	VVF43.100-160
90	125	160	175	125	200	S55206-V106	VVF43.125-200
90	125	160	175	125	250	S55206-V107	VVF43.125-250
60	80	100	125	150	315	S55206-V108	VVF43.150-315
60	80	100	125	150	400	S55206-V109	VVF43.150-400

### Replacement sealing glands for VVF43..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5		BPZ:7424200000	7424200000
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	7428400610

### Combinable actuator for VVF43..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4503	S55150-A112	SAV31.00
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	SAV61.00
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	SAV61.00/MO
AC/DC 24	3-position	120	No	N4503	S55150-A111	SAV81.00
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	SKC32.60
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	SKC32.61
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	SKC60



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF43..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>



## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port flanged valves

### 2-port seat valve PN16 with flanged connections, pressure compensated

VVF43..K

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits



Data sheet	N4404
Stroke	40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-5...220 °C
Valve characteristic	Equal percentage $k_{vs}$ 250/360 linear
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	CrNi steel
PN class	PN 16
Absolute pressure p1 steam	1600 kPa abs
Warranty	5 Years

### Range overview VVF43..K

SKC.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
800	1600	65	63	S55206-V110	VVF43.65-63K
800	1600	80	100	S55206-V111	VVF43.80-100K
800	1600	100	150	S55206-V120	VVF43.100-150K
800	1600	125	220	S55206-V121	VVF43.125-220K
800	1600	150	315	S55206-V122	VVF43.150-315K
800	1200	200	450	S55206-V123	VVF43.200-450K
800	1000	250	630	S55206-V124	VVF43.250-630K

### Replacement sealing glands for VVF43..K

Product Title	Data sheet	Stock no.	Product no.
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5		BPZ:7424200000	7424200000
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	7428400610
Sealing gland complete, stem diameter 14 mm, sealing material PTFE, up to 220 °C		BPZ:467956300	467956300

### Combinable actuator for VVF43..K

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	SKC32.60
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	SKC32.61
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	SKC60
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	SKC62
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	SKC62/MO
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	SKC62UA
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	SKC82.60
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	SKC82.61

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

#### VVF47..

#### 2-port seat valves PN16, flanged connections VVF47..



For use in heating, ventilating and air conditioning systems as a control valve for closed circuits

Data sheet	N4419
Leakage rate	0...0.1% of Kvs value
Medium temperature	1...95 °C
Valve characteristic	Equal percentage, Kvs 250/315 Linear
Rangeability	DN 50...150: > 50
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi/bronze
PN class	PN 16
Warranty	5 Years

For customers in Asia / Australia

#### Range overview VVF47..

SBX.. $\Delta p_{max}$ [kPa]	SBX.. $\Delta p_s$ [kPa]	SBV.. $\Delta p_{max}$ [kPa]	SBV.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
300	300			50	40	S55220-V106	<b>VVF47.50</b>
175	175	300	400	65	63	S55220-V107	<b>VVF47.65</b>
100	100	250	250	80	100	S55220-V108	<b>VVF47.80</b>
		300	400	100	160	S55220-V109	<b>VVF47.100</b>
		300	400	125	250	S55220-V110	<b>VVF47.125</b>
		300	400	150	315	S55220-V111	<b>VVF47.150</b>

#### Combinable actuator for VVF47..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	180	N4519	S55160-A105	<b>SBV31</b>
AC 230	3-position	120	N4519	S55160-A102	<b>SBX31</b>
AC 24	DC 0...10 V	180	N4519	S55160-A103	<b>SBV61</b>
AC 24	DC 0...10 V	120	N4519	S55160-A100	<b>SBX61</b>
AC 24	3-position	180	N4519	S55160-A104	<b>SBV81</b>
AC 24	3-position	120	N4519	S55160-A101	<b>SBX81</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port flanged valves

VVF53..



### 2-port seat valve PN25 with flanged connections

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated and superheated steam in open and closed circuits

When using valves of the V..F43.., V..F53.. lines with a stem heating element and a medium temperature of below -5 °C, the stem sealing gland must be replaced.

Data sheet	N4405
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-20...220 °C
Valve characteristic	Equal percentage $k_{vs}$ 250/400 linear
Rangeability	DN 15, $k_{vs} \leq 1,25 \text{ m}^3/\text{h}$ : >50 DN 15...150: >100
Permissible operating pressure	2500 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Stainless steel
PN class	PN 16 / PN 25
Absolute pressure p1 steam	1600 kPa abs
Warranty	5 Years

### Range overview VVF53..

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	$k_{vs}$	Stock no.	Product no.
$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
1200	2500			1200	2500	1200	2500			15	0.16	S55208-V100	VVF53.15-0.16
1200	2500			1200	2500	1200	2500			15	0.2	S55208-V101	VVF53.15-0.2
1200	2500			1200	2500	1200	2500			15	0.25	S55208-V102	VVF53.15-0.25
1200	2500			1200	2500	1200	2500			15	0.32	S55208-V103	VVF53.15-0.32
1200	2500			1200	2500	1200	2500			15	0.4	S55208-V104	VVF53.15-0.4
1200	2500			1200	2500	1200	2500			15	0.5	S55208-V105	VVF53.15-0.5
1200	2500			1200	2500	1200	2500			15	0.63	S55208-V106	VVF53.15-0.63
1200	2500			1200	2500	1200	2500			15	0.8	S55208-V107	VVF53.15-0.8
1200	2500			1200	2500	1200	2500			15	1	S55208-V108	VVF53.15-1
1200	2500			1200	2500	1200	2500			15	1.25	S55208-V109	VVF53.15-1.25
1200	2500			1200	2500	1200	2500			15	1.6	S55208-V110	VVF53.15-1.6
1200	2500			1200	2500	1200	2500			15	2	S55208-V111	VVF53.15-2
1200	2500			1200	2500	1200	2500			15	2.5	S55208-V112	VVF53.15-2.5
1200	2500			1200	2500	1200	2500			15	3.2	S55208-V113	VVF53.15-3.2
1200	2500			1200	2500	1200	2500			15	4	S55208-V114	VVF53.15-4
1200	2500			1200	2500	1200	2500			20	6.3	S55208-V116	VVF53.20-6.3
1200	1600			1200	2100	1200	2500			25	10	S55208-V120	VVF53.25-10
1200	1600			1200	2100	1200	2500			25	5	S55208-V117	VVF53.25-5
1200	1600			1200	2100	1200	2500			25	6.3	S55208-V118	VVF53.25-6.3
1200	1600			1200	2100	1200	2500			25	8	S55208-V119	VVF53.25-8
750	900			1100	1200	1200	2500			32	16	S55208-V122	VVF53.32-16
500	550	1150	1250	650	750	1200	2000			40	12.5	S55208-V123	VVF53.40-12.5
500	550	1150	1250	650	750	1200	2000			40	16	S55208-V124	VVF53.40-16
500	550	1150	1250	650	750	1200	2000			40	20	S55208-V125	VVF53.40-20
500	550	1150	1250	650	750	1200	2000			40	25	S55208-V126	VVF53.40-25
300	350	700	750	400	450	1150	1200			50	31.5	S55208-V127	VVF53.50-31.5
300	350	700	750	400	450	1150	1200			50	40	S55208-V128	VVF53.50-40
		400	450					650	700	65	63	S55208-V129	VVF53.65-63
		225	250					400	450	80	100	S55208-V130	VVF53.80-100



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Range overview VVF53..

SAX..	SAX..	SAV..	SAV..	SKD..	SKD..	SKB..	SKB..	SKC..	SKC..	DN	k <sub>vs</sub>	Stock no.	Product no.
Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
		125	160					250	300	100	160	S55208-V131	<b>VVF53.100-160</b>
		90	125					160	175	125	250	S55208-V132	<b>VVF53.125-250</b>
		60	80					100	125	150	400	S55208-V133	<b>VVF53.150-400</b>

##### Replacement sealing glands for VVF53..

Product Title	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM	BPZ:428488060	<b>428488060</b>
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5	BPZ:7424200000	<b>7424200000</b>
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM	S55845-Z150	<b>7428400610</b>

##### Combinable actuator for VVF53..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)  
 2-port flanged valves**

**Combinable actuator for VVF53..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes (10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### VVF53..K



##### 2-port seat valve PN25 with flanged connections, pressure compensated

- With flanged connections to ISO 7005.
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits.

Data sheet	N4405
Stroke	DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-5...220 °C
Valve characteristic	Equal percentage $k_{vs}$ 220/315 linear
Rangeability	> 100
Permissible operating pressure	2500 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	CrNi steel
PN class	PN 25
Absolute pressure p1 steam	1600 kPa abs
Warranty	5 Years

##### Range overview VVF53..K

SKD.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	SKB.. $\Delta p_{max}$ [kPa]	SKB.. $\Delta p_s$ [kPa]	SKC.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
1250	2500	1250	2500			50	40	S55208-V134	<b>VVF53.50-40K</b>
				1250	2500	65	63	S55208-V135	<b>VVF53.65-63K</b>
				1250	2500	80	100	S55208-V136	<b>VVF53.80-100K</b>
				1250	2500	100	150	S55208-V158	<b>VVF53.100-150K</b>
				1250	2500	125	220	S55208-V159	<b>VVF53.125-220K</b>
				1250	2500	150	315	S55208-V160	<b>VVF53.150-315K</b>
				800	1200	200	450	S55208-V161	<b>VVF53.200-450K</b>
				800	1000	250	630	S55208-V162	<b>VVF53.250-630K</b>

##### Replacement sealing glands for VVF53..K

Product Title	Stock no.	Product no.
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5	BPZ:7424200000	<b>7424200000</b>
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM	S55845-Z150	<b>7428400610</b>
Sealing gland complete, stem diameter 14 mm, sealing material PTFE, up to 220 °C	BPZ:467956300	<b>467956300</b>

##### Combinable actuator for VVF53..K

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**2-port flanged valves**

**Combinable actuator for VVF53..K**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes (10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

**Globe and pressure independent control valve (PICV)**

**2-port flanged valves**

VVF63..

**2-port valves, PN 40, with flanged connections**



- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated and superheated steam in open and closed circuits

Data sheet	A6V11459527
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of kvs
Medium temperature	-20...220 °C
Valve characteristic	Equal percentage
Rangeability	Fluids - DN 15...40: > 50 Fluids - DN 50...150: > 100 Steam: > 50
Permissible operating pressure	4000 kPa
Material, inside set	Stainless steel
PN class	PN 40
Warranty	5 Years

**Range overview VVF63..**

SKD.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	SKB.. $\Delta p_{max}$ [kPa]	SKB.. $\Delta p_s$ [kPa]	SKC.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	kvs [m³/h]	Stock no.	Product no.
2000	4000	2000	4000			15	0.2	S55210-V100	VVF63.15-0.2
2000	4000	2000	4000			15	0.32	S55210-V101	VVF63.15-0.32
2000	4000	2000	4000			15	0.5	S55210-V102	VVF63.15-0.5
2000	4000	2000	4000			15	0.8	S55210-V103	VVF63.15-0.8
2000	4000	2000	4000			15	1.25	S55210-V104	VVF63.15-1.25
2000	4000	2000	4000			15	2	S55210-V105	VVF63.15-2
2000	4000	2000	4000			15	3.2	S55210-V106	VVF63.15-3.2
2000	3500	2000	4000			20	5	S55210-V107	VVF63.20-6.3
2000	2100	2000	4000			25	5	S55210-V108	VVF63.25-5
2000	2100	2000	4000			25	8	S55210-V109	VVF63.25-8
1100	1200	2000	3200			32	15	S55210-V110	VVF63.32-16
650	750	1800	2000			40	12.5	S55210-V111	VVF63.40-12.5
650	750	1800	2000			40	20	S55210-V112	VVF63.40-20
400	450	1150	1200			50	31.5	S55210-V113	VVF63.50-31.5
				650	700	65	50	S55210-V114	VVF63.65-50
				400	450	80	80	S55210-V115	VVF63.80-80
				250	300	100	125	S55210-V116	VVF63.100-125
				160	175	125	200	S55210-V117	VVF63.125-200
				100	125	150	315	S55210-V118	VVF63.150-315

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## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port flanged valves

### 2-port seat valve PN40 with flanged connections, pressure compensated

VVF63..K

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated and superheated steam in open and closed circuits



Data sheet	A6V11459527
Stroke	DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-5...220 °C
Valve characteristic	Equal percentage
Rangeability	DN 50...100: > 100 DN 125...150: > 50
Permissible operating pressure	4000 kPa
Material, inside set	Stainless steel
PN class	PN 40
Warranty	5 Years

### Range overview VVF63..K

SKD.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	SKB.. $\Delta p_{max}$ [kPa]	SKB.. $\Delta p_s$ [kPa]	SKC.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
1500	4000	2000	4000			50	36	S55210-V119	VVF63.50-40K
				2000	4000	65	63	S55210-V120	VVF63.65-63K
				2000	4000	80	100	S55210-V121	VVF63.80-100K
				2000	4000	100	150	S55210-V122	VVF63.100-150K
				2000	4000	125	220	S55210-V123	VVF63.125-220K
				2000	4000	150	315	S55210-V124	VVF63.150-315K

### Accessories for VVF63..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290
Stem heating element for media < 0 °C	N4501	S55845-Z108	ASZ6.6

### Replacement sealing glands for VVF63..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	7428400610
Sealing gland complete, stem diameter 14 mm, sealing material FEPM, up to 220 °C		S55846-Z114	ALV14F32S
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

### Combinable actuator for VVF63..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	SKD32.50
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	SKD32.51
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	SKD60
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	SKD62

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port flanged valves

##### Combinable actuator for VVF63..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62U	<b>SKD62U</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50U	<b>SKD82.50U</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 19.2...28.2 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51U	<b>SKD82.51U</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62U	<b>SKB62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50U	<b>SKB82.50U</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 19.2...28.2 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51U	<b>SKB82.51U</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62U	<b>SKC62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60U	<b>SKC82.60U</b>
AC 19.2...31.2 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61U	<b>SKC82.61U</b>

# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port flanged valves

### Modulating control valves with magnetic actuator, PN16, flanged

MVF461H..

2-port valves PN 16 with magnetic actuator for modulating control of high-temperature hot water or steam.

With positioning control, position feedback signal, spring return function and manual control.



Data sheet	N4361
PN class	PN 16
Operating voltage	AC 24 V DC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	< 2 s
Spring return function	A-> AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	Water < 120 °C: 1600 kPa Water > 120 °C: 1300 kPa Saturated steam: 900 kPa
Leakage rate	< 0.05% of $k_{vs}$ value
Absolute pressure p1 steam	900 kPa abs
Medium temperature	1...180 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	CrNi steel
Warranty	5 Years

Scope of delivery: 1 blanking flange, 1 seal, screws, spring washers and nuts.

### Range overview MVF461H..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
1000	1000	0.6	15	BPZ:MVF461H15-0.6	MVF461H15-0.6
1000	1000	1.5	15	BPZ:MVF461H15-1.5	MVF461H15-1.5
1000	1000	3	15	BPZ:MVF461H15-3	MVF461H15-3
1000	1000	5	20	BPZ:MVF461H20-5	MVF461H20-5
1000	1000	8	25	BPZ:MVF461H25-8	MVF461H25-8
1000	1000	12	32	BPZ:MVF461H32-12	MVF461H32-12
1000	1000	20	40	BPZ:MVF461H40-20	MVF461H40-20
1000	1000	30	50	BPZ:MVF461H50-30	MVF461H50-30

MVF.. valves with magnetic actuators are UL-listed.

### Accessories for MVF461..

Product Title	Data sheet	Stock no.	Product no.
Replacement electronic for MXG461B.., MVF461H.. and MXG462S..		BPZ:ASE12	ASE12



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### VDN1..



##### 2-port valves PN10, to DIN

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.  
Permissible media: water (to VDI 2035), water with anti-freeze

The valves can be combined with Siemens actuators RTN../SSA../STA..

Data sheet	N2105
Stroke	>1.2 mm
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

##### Range overview VDN1..

kv relation of Xp	Connect. thread	$\Delta p_{max}$ [kPa]	DN	Stock no.	Product no.
0.072...0.43 m <sup>3</sup> /h / 2 K 0.057...0.33 m <sup>3</sup> /h / 1.5 K 0.037...0.22 m <sup>3</sup> /h / 1 K	Rp/R 3/8"	60	10	BPZ:VDN110	<b>VDN110</b>
0.073...0.5 m <sup>3</sup> /h / 2 K; 0.058...0.4 m <sup>3</sup> /h / 1.5 K; 0.038...0.27 m <sup>3</sup> /h / 1 K	Rp/R 1/2"	60	15	BPZ:VDN115	<b>VDN115</b>
0.22...0.7 m <sup>3</sup> /h / 2 K; 0.17...0.55 m <sup>3</sup> /h / 1.5 K; 0.11...0.36 m <sup>3</sup> /h / 1 K	Rp/R 3/4"	60	20	BPZ:VDN120	<b>VDN120</b>

##### VEN1..



##### Angle valves PN10, to DIN

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.  
Permissible media: water (to VDI 2035), water with anti-freeze

The valves can be combined with Siemens actuators RTN../SSA../STA..

Data sheet	N2105
Stroke	>1.2 mm
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

##### Range overview VEN1..

kv relation of Xp	Connect. thread	$\Delta p_{max}$ [kPa]	DN	Stock no.	Product no.
0.072...0.43 m <sup>3</sup> /h / 2 K; 0.057...0.33 m <sup>3</sup> /h / 1.5 K; 0.037...0.22 m <sup>3</sup> /h / 1 K	Rp/R 3/8"	60	10	BPZ:VEN110	<b>VEN110</b>
0.073...0.5 m <sup>3</sup> /h / 2 K; 0.058...0.4 m <sup>3</sup> /h / 1.5 K; 0.038...0.27 m <sup>3</sup> /h / 1 K	Rp/R 1/2"	60	15	BPZ:VEN115	<b>VEN115</b>
0.22...0.7 m <sup>3</sup> /h / 2 K; 0.17...0.55 m <sup>3</sup> /h / 1.5 K; 0.11...0.36 m <sup>3</sup> /h / 1 K	Rp/R 3/4"	60	20	BPZ:VEN120	<b>VEN120</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**2-port threaded valves**

**Combinable actuator for VDN1../VEN1..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Cable length [m]	Data sheet	Stock no.	Product no.
				N2111	BPZ:RTN51	<b>RTN51</b>
				N4211	BPZ:RTN51G	<b>RTN51G</b>
				N2111	BPZ:RTN71	<b>RTN71</b>
				N2111	BPZ:RTN81	<b>RTN81</b>
DC 21...30 24		50/100	1.5	A6V11858280	S55180-A111	<b>SSA118.09HKN</b>
AC 230	3-position	150	1.5	N4893	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	150	1.5	N4893	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	67.5	1.5	A6V11858276	S55180-A106	<b>SSA131.00</b>
AC 24 DC 24	4...20 mA	25	1.5	A6V11858278	S55180-A110	<b>SSA151.05HF</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858276	S55180-A107	<b>SSA161.05</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A108	<b>SSA161.05HF</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A109	<b>SSA161E.05HF</b>
AC 230	3-position	67.5	1.5	A6V11858276	S55180-A105	<b>SSA331.00</b>
AC 230	2-position	210		N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210		N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270		N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270		N4884	S55174-A113	<b>STA73MP/00</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV) 2-port threaded valves

#### VDN2..



#### 2-port seat valves PN10, to NF

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.  
Permissible media: water (to VDI 2035), water with anti-freeze

The valves can be combined with Siemens actuators RTN../SSA../STA..

Data sheet	N2106
Stroke	>1.2 mm
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

#### Range overview VDN2..

kv relation of Xp	Connect. thread	$\Delta p_{max}$ [kPa]	DN	$K_{vs}$ [m³/h]	Stock no.	Product no.
0.072...0.43 m³/h / 2 K 0.057...0.33 m³/h / 1.5 K 0.037...0.22 m³/h / 1 K	Rp/R 3/8"	60	10	0.63	BPZ:VDN210	<b>VDN210</b>
0.073...0.50 m³/h / 2 K 0.058...0.40 m³/h / 1.5 K 0.038...0.27 m³/h / 1 K	Rp/R 1/2"	60	15	0.89	BPZ:VDN215	<b>VDN215</b>
0.22...0.7 m³/h / 2 K; 0.17...0.55 m³/h / 1.5 K; 0.11...0.36 m³/h / 1 K	Rp/R 3/4"	60	20	1.41	BPZ:VDN220	<b>VDN220</b>

#### VEN2..



#### Angle valves PN10, to NF

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.  
Permissible media: water (to VDI 2035), water with anti-freeze

The valves can be combined with Siemens actuators RTN../SSA../STA..

Data sheet	N2106
Stroke	>1.2 mm
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

#### Range overview VEN2..

kv relation of Xp	Connect. thread	$\Delta p_{max}$ [kPa]	DN	$K_{vs}$ [m³/h]	Stock no.	Product no.
0.072...0.43 m³/h / 2 K 0.057...0.33 m³/h / 1.5 K 0.037...0.22 m³/h / 1 K	Rp/R 3/8"	60	10	0.63	BPZ:VEN210	<b>VEN210</b>
0.073...0.5 m³/h / 2 K; 0.058...0.4 m³/h / 1.5 K; 0.038...0.27 m³/h / 1 K	Rp/R 1/2"	60	15	0.89	BPZ:VEN215	<b>VEN215</b>
0.22...0.7 m³/h / 2 K; 0.17...0.55 m³/h / 1.5 K; 0.11...0.36 m³/h / 1 K	Rp/R 3/4"	60	20	1.41	BPZ:VEN220	<b>VEN220</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV) 2-port threaded valves

#### Reverse angle valves PN10, to NF

VUN2..

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.  
Permissible media: water (to VDI 2035), water with anti-freeze

The valves can be combined with Siemens actuators RTN../SSA.../STA..



Data sheet	N2106
Stroke	>1.2 mm
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

#### Range overview VUN2..

kv relation of Xp	Connect. thread	$\Delta p_{max}$ [kPa]	DN	$kvs$ [m³/h]	Stock no.	Product no.
0.14...0.43 m³/h/ 2 K; 0.12...0.37 m³/h/ 1.5 K; 0.08...0.24 m³/h/ 1 K	Rp/R 3/8"	60	10	0.6	BPZ:VUN210	<b>VUN210</b>
0.13...0.5 m³/h/ 2 K; 0.11...0.43 m³/h/ 1.5 K; 0.07...0.28 m³/h/ 1 K	Rp/R 1/2"	60	15	0.77	BPZ:VUN215	<b>VUN215</b>

#### Combinable actuator for VDN2../VEN2../VUN2..

Operating voltage [V]	Positioning signal	Positioning time [s]	Cable length [m]	Data sheet	Stock no.	Product no.
				N2111	BPZ:RTN51	<b>RTN51</b>
				N4211	BPZ:RTN51G	<b>RTN51G</b>
				N2111	BPZ:RTN71	<b>RTN71</b>
				N2111	BPZ:RTN81	<b>RTN81</b>
DC 21...30 24		50/100	1.5	A6V11858280	S55180-A111	<b>SSA118.09HKN</b>
AC 230	3-position	150	1.5	N4893	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	150	1.5	N4893	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	67.5	1.5	A6V11858276	S55180-A106	<b>SSA131.00</b>
AC 24 DC 24	4...20 mA	25	1.5	A6V11858278	S55180-A110	<b>SSA151.05HF</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858276	S55180-A107	<b>SSA161.05</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A108	<b>SSA161.05HF</b>
AC 24 DC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A109	<b>SSA161E.05HF</b>
AC 230	3-position	67.5	1.5	A6V11858276	S55180-A105	<b>SSA331.00</b>
AC 230	2-position	210		N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210		N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270		N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270		N4884	S55174-A113	<b>STA73MP/00</b>

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**New Product**

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### ATN4

##### Manual knob, white, for VDN../VEN../VUN../VPD../VPE..



For manual adjustment of valve.

The manual knobs are suited for use with all types of valves of the VDN../VEN../VUN../VPD... and VPE.. ranges.

ATN4 package contains 50 pieces

Data sheet

N2100

Warranty

2 Years

Stock no.

Product no.

BPZ:ATN4

**ATN4**

ATN4 package contains 50 pieces

##### AVN1..-1..

##### Compression fittings for copper and soft steel pipes



For connecting copper or soft steel pipes to valves of the VDN../VEN../VUN.. ranges and lockshield valves of the ADN../AEN... ranges

Data sheet

N2100

Warranty

2 Years

##### Range overview AVN1..-1..

Pipe diameter

Stock no.

Product no.

[mm]

15

BPZ:AVN15-15

**AVN15-15**

##### AVN15A..

##### Compression fittings plastic pipes with aluminum foil



For connecting plastic pipes to valves of the VDN../VEN../VUN.. ranges and lockshield valves of the ADN../AEN... ranges

Data sheet

N2100

Warranty

5 Years

##### Range overview AVN15A..

Pipe diameter

Stock no.

Product no.

[mm]

16

BPZ:AVN15A16

**AVN15A16**



## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port threaded valves

### Two-port seat lockshield valves

ADN..

Lockshield valves with throttling function for hydraulic balancing and shut-off function when removing / replacing radiator.

Adjustable flow capacity

Data sheet	N2107
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
PN class	PN 10
Valve design	Throughput
Warranty	5 Years



#### Range overview ADN..

K <sub>v</sub> [m <sup>3</sup> /h]	Con- nect. thread	Δp <sub>max</sub> [kPa]	DN	k <sub>vs</sub> [m <sup>3</sup> /h]	Stock no.	Product no.
0...1.8	Rp/R 3/8"	60	10	0...1.8	BPZ:ADN10	<b>ADN10</b>
0...2.5	Rp/R 1/2"	60	15	0...2.5	BPZ:ADN15	<b>ADN15</b>
0...3	Rp/R 3/4"	60	20	0...3	BPZ:ADN20	<b>ADN20</b>

### Angle lockshield valves

AEN..

Lockshield valves with throttling function for hydraulic balancing and shut-off function when removing / replacing radiator.

Adjustable flow capacity

Data sheet	N2107
Medium	Water with anti-freeze
Medium temperature	1...120 °C
Permissible operating pressure	1000 kPa
PN class	PN 10
Valve design	Angle
Warranty	5 Years



#### Range overview AEN..

K <sub>v</sub> [m <sup>3</sup> /h]	Con- nect. thread	Δp <sub>max</sub> [kPa]	DN	k <sub>vs</sub> [m <sup>3</sup> /h]	Stock no.	Product no.
0...1.8	Rp/R 3/8"	60	10	0...1.8	BPZ:AEN10	<b>AEN10</b>
0...2.5	Rp/R 1/2"	60	15	0...2.5	BPZ:AEN15	<b>AEN15</b>
0...3	Rp/R 3/4"	60	20	0...3	BPZ:AEN20	<b>AEN20</b>

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## Valves and actuators

### Globe and pressure independent control valve (PICV) 2-port threaded valves

#### VD1..CLC..



#### 2-port small valves PN10, DIN, 2.5 mm stroke

Small valves with higher  $k_v$ -values, for use in ventilation and air conditioning systems for water-side control of chilled ceilings and terminal units in closed circuits. Adjustable flow capacity.  
Permissible media: water (to VDI 2035), water with anti-freeze.

The valves can be combined with Siemens actuators SSA.../STA..

Data sheet	N2103
Stroke	2.5 mm
Medium temperature	1...110 °C
Permissible operating pressure	1000 kPa
PN class	PN 10
$\Delta P_{v100}$	5...20 kPa
Warranty	5 Years

#### Range overview VD1..CLC..

$K_v$ [m³/h]	Con- nect. thread	$\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m³/h]	Stock no.	Product no.
0.25...1.9	Rp/R ½"	150	15	1.9	BPZ:VD115CLC	<b>VD115CLC</b>
0.25...2.6	Rp/R ¾"	150	20	2.6	BPZ:VD120CLC	<b>VD120CLC</b>
0.25...2.6	Rp/R 1"	150	25	2.6	BPZ:VD125CLC	<b>VD125CLC</b>

#### Combinable actuator for VD1..CLC..

Operating voltage [V]	Positioning signal	Positioning time [s]	Cable length [m]	Data sheet	Stock no.	Product no.
DC 21...30 24		50/100	1.5	A6V11858280	S55180-A111	<b>SSA118.09HKN</b>
AC 230	3-position	150	1.5	N4893	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	150	1.5	N4893	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	67.5	1.5	A6V11858276	S55180-A106	<b>SSA131.00</b>
AC 24	4...20 mA	25	1.5	A6V11858278	S55180-A110	<b>SSA151.05HF</b>
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858276	S55180-A107	<b>SSA161.05</b>
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A108	<b>SSA161.05HF</b>
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A109	<b>SSA161E.05HF</b>
DC 24						
AC 230	3-position	67.5	1.5	A6V11858276	S55180-A105	<b>SSA331.00</b>
AC 230	2-position	210		N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210		N4884	S55174-A114	<b>STA23MP/00</b>
AC 24	2-position	270		N4884	S55174-A117	<b>STA73B/00</b>
DC 24	PDM					
AC 24	2-position	270		N4884	S55174-A113	<b>STA73MP/00</b>
DC 24	PDM					

## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port threaded valves

### 2-port seat valves, PN16

VVP45..

2-port valves with threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.



V..P45.. valves are only used as mixing or 2-port valves, not as diverting valves.

V..P45..S are suitable for Conex® compression fittings.

VVP45..S and VMP45..S for  $k_{vs}$  values 0.63, 1, 1.6, 2.5 m<sup>3</sup>/h, datasheet N4854.

Data sheet	N4845
Stroke	5.5 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Medium temperature	1...110 °C
Valve characteristic	Throughport up to $k_{vs}$ 6.3: equal-percentage Throughport from $k_{vs}$ 10: linear
Rangeability	From $k_{vs}>6.3$ : >100 To $k_{vs}=6.3$ : >50
Permissible operating pressure	1600 kPa
PN class	PN 16
Material, inside set	CrNi steel / Rg5 / brass
Warranty	5 Years

### Range overview VVP45..

Con-nect. thread	SSB.. $\Delta p_{max}$ [kPa]	SSB.. $\Delta p_s$ [kPa]	SSC.. $\Delta p_s$ [kPa]	SSC.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G ½" B	400	725			10	0.25	BPZ:VVP45.10-0.25	VVP45.10-0.25
G ½" B	400	725			10	0.4	BPZ:VVP45.10-0.4	VVP45.10-0.4
G ½" B	400	725			10	0.63	BPZ:VVP45.10-0.63	VVP45.10-0.63
G ½" B	400	725			10	1	BPZ:VVP45.10-1	VVP45.10-1
G ½" B	400	725			10	1.6	BPZ:VVP45.10-1.6	VVP45.10-1.6
G ¾" B	350	350			15	2.5	BPZ:VVP45.15-2.5	VVP45.15-2.5
G 1" B	350	350	350	350	20	4	BPZ:VVP45.20-4	VVP45.20-4
G 1¼" B	300	300	300	300	25	6.3	BPZ:VVP45.25-6.3	VVP45.25-6.3
G 1½" B			300	300	25	10	BPZ:VVP45.25-10	VVP45.25-10
G 2" B			175	175	32	16	BPZ:VVP45.32-16	VVP45.32-16
G 2¼" B			75	75	40	25	BPZ:VVP45.40-25	VVP45.40-25

### Combinable actuator for VVP45..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	150	N4891	BPZ:SSB31	SSB31
AC 24 DC 24	DC 0...10 V	75	N4891	BPZ:SSB61	SSB61
AC 24	3-position	150	N4891	BPZ:SSB81	SSB81
AC 230	3-position	150	N4895	BPZ:SSC31	SSC31
AC/DC 24	DC 0...10 V	30	N4895	BPZ:SSC61	SSC61
AC/DC 24	DC 0...10 V	30	N4895	BPZ:SSC61.5	SSC61.5
AC 24	3-position	150	N4895	BPZ:SSC81	SSC81

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## Valves and actuators

### Globe and pressure independent control valve (PICV) 2-port threaded valves

#### VVP45..N



#### Threaded 2-port seat valves, PN16

In ventilation and air-conditioning systems for water-side terminal unit control in closed circuits, e.g. induction units, fan coil units, small reheaters and small re-coolers, for use in

- 2-pipe systems with one heat exchanger for heating and cooling
  - 4-pipe systems with two separate heat exchangers for heating and cooling
- With threaded connections to ISO 228-1.

For low temperature hot water, chilled water, water with anti-freeze.

Data sheet	N4840
Stroke	5.5 mm
Leakage rate	0...0.1 % of $k_{vs}$ value
Medium	Water Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Equal percentage
Rangeability	> 50
Permissible operating pressure	1600 kPa
Material, inside set	CrNi steel, brass
PN class	PN 16
Warranty	5 Years

#### Range overview VVP45..N

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
400	550	15	2.5	BPZ:VVP45.15-2.5N	<b>VVP45.15-2.5N</b>
400	550	20	4	BPZ:VVP45.20-4N	<b>VVP45.20-4N</b>
400	500	25	6.3	BPZ:VVP45.25-6.3N	<b>VVP45.25-6.3N</b>

#### Combinable actuator for VVP45..N

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	150	N4895	BPZ:SSC31	<b>SSC31</b>
AC/DC 24	DC 0...10 V	30	N4895	BPZ:SSC61	<b>SSC61</b>
AC/DC 24	DC 0...10 V	30	N4895	BPZ:SSC61.5	<b>SSC61.5</b>
AC 24	3-position	150	N4895	BPZ:SSC81	<b>SSC81</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 2-port threaded valves

### 2-port valves, PN16

VVP47..

2-port valves with threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.

VXP47.. and VMP47.. 3-port valves are only used as mixing valves.  
They are also suitable for SERTO® compression fittings.



Data sheet	N4847
Stroke	2.5 mm
Leakage rate	0...0.05 % of $k_{vs}$ value
Medium	Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Throughport: linear Bypass: linear
Permissible operating pressure	1600 kPa
PN class	PN 16
Material, inside set	CrNi steel, brass
Warranty	5 Years

### Range overview VVP47..

STP.. $\Delta p_{max}$ [kPa]	STP.. $\Delta p_s$ [kPa]	SFP../SSP.. $\Delta p_{max}$ [kPa]	SFP../SSP.. $\Delta p_s$ [kPa]	Con- nect. thread	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
400	700	400	1000	G 1/2" B	10	0.25	BPZ:VVP47.10-0.25	VVP47.10-0.25
400	700	400	1000	G 1/2" B	10	0.4	BPZ:VVP47.10-0.4	VVP47.10-0.4
250	250	400	500	G 1/2" B	10	0.63	BPZ:VVP47.10-0.63	VVP47.10-0.63
250	250	400	500	G 1/2" B	10	1	BPZ:VVP47.10-1	VVP47.10-1
150	150	300	300	G 1/2" B	10	1.6	BPZ:VVP47.10-1.6	VVP47.10-1.6
150	150	300	300	G 3/4" B	15	2.5	BPZ:VVP47.15-2.5	VVP47.15-2.5
100	100	175	175	G 1" B	20	4	BPZ:VVP47.20-4	VVP47.20-4
250	250	400	500	G 1/2" B	10	1	BPZ:VVP47.10-1S	VVP47.10-1S
150	150	300	300	G 1/2" B	10	1.6	BPZ:VVP47.10-1.6S	VVP47.10-1.6S

VVP47..S for Conex compression fittings.

### Combinable actuator for VVP47..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	2-position	10	N4865	BPZ:SFP21/18	SFP21/18
AC 24	2-position	10	N4865	BPZ:SFP71/18	SFP71/18
AC 230	3-position	150	N4864	BPZ:SSP31	SSP31
AC/DC 24	DC 0...10 V	34	N4864	BPZ:SSP61	SSP61
AC 24	3-position	150	N4864	BPZ:SSP81	SSP81

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### VVI46../2



##### 2-port zone valves, internally threaded, PN16, on/off characteristic

2-port valves, internally threaded connections, for the control of zones or terminal units. Suitable media: water (to VDI 2035), water with anti-freeze.

Stroke	2.5 mm
Leakage rate	0...0.05% of rated valve capacity
Medium	Water Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Non-linear (on/off)
Permissible operating pressure	1600 kPa
Material, valve body	Hot-pressed brass
Material, inside set	Stainless steel, brass
PN class	PN 16
Warranty	5 Years

##### Range overview VVI46..

Con-nect. thread	STA.. $\Delta p_{max}$ [kPa]	STA.. $\Delta p_s$ [kPa]	SFA.. $\Delta p_{max}$ [kPa]	SFA.. $\Delta p_s$ [kPa]	SUA21.. $\Delta p_{max}$ [kPa]	SUA21.. $\Delta p_s$ [kPa]	SSA 31.04 $\Delta p_s$ [kPa]	SSA 31.04 $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	200	200	300	300	400	400	300	300	15	2.15	S55249-V106	<b>VVI46.15/2</b>
Rp 3/4"	200	200	300	300	400	400	300	300	20	3.5	S55249-V107	<b>VVI46.20/2</b>
Rp 1"	150	150	250	250	250	250	300	300	25	5	S55249-V108	<b>VVI46.25/2</b>

To ensure noiseless operation,  $\Delta p_{max}$  should not exceed 100 kPa.

##### Combinable actuator for VVI46..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	2-position	10	N4863	BPZ:SFA21/18	<b>SFA21/18</b>
AC 24	2-position	10	N4863	BPZ:SFA71/18	<b>SFA71/18</b>
AC 230	3-position SPDT	43	N4860	BPZ:SSA31.04	<b>SSA31.04</b>
AC 230	2-position (SPST)	50 Hz:10 60 Hz:8.3	A6V10446174	S55176-A104	<b>SUA21/3</b>
AC 230	2-position	210	N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210	N4884	S55174-A114	<b>STA23MP/00</b>
AC 24	2-position	270	N4884	S55174-A117	<b>STA73B/00</b>
DC 24	PDM				

# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port threaded valves

### 2-port seat valves PN16 with internally threaded connections

**CVVI41..**

- With internally threaded connections Rp.. to ISO 7-1
- For chilled water, low pressure hot water and saturated steam in open and closed circuits



Data sheet	N4362
Stroke	20 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Medium temperature	-25...150 °C
Valve characteristic	Equal-percentage
Rangeability	DN 15: >50 DN 20...50: >100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CC491K (Rg5)
Material, inside set	CrNi Steel/ Rg 5 brass
PN class	PN 16
Absolute pressure p1 steam	150 kPa abs
Warranty	5 Years
For customers in Asia / Australia	

### Range overview CVVI41..

Con-nect. thread	SAX.. $\Delta p_{max}$ [kPa]	SAX.. $\Delta p_s$ [kPa]	SKD.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	400	1600	400	1600	15	2.5	BPZ:CVVI41.15-2.5	CVVI41.15-2.5
Rp 1/2"	400	1600	400	1600	15	4	BPZ:CVVI41.15-4	CVVI41.15-4
Rp 3/4"	400	1600	400	1600	20	6.3	BPZ:CVVI41.20-6.3	CVVI41.20-6.3
Rp 1"	400	1550	400	1600	25	10	BPZ:CVVI41.25-10	CVVI41.25-10
Rp 1 1/4"	400	875	400	1275	32	16	BPZ:CVVI41.32-16	CVVI41.32-16
Rp 1 1/2"	400	525	400	775	40	25	BPZ:CVVI41.40-25	CVVI41.40-25
Rp 2"	300	300	400	450	50	40	BPZ:CVVI41.50-40	CVVI41.50-40

### Replacement sealing glands for CVVI41..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM, up to 150 °C		BPZ:428488740	428488740

### Combinable actuator for CVVI41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	SKD32.50
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	SKD32.51
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	SKD60
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	SKD62

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### Combinable actuator for CMVI41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>



## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port threaded valves

### 2-port seat valves PN16 with externally threaded connections

VVG41..

- With threaded connections to ISO 228/1
- For cooling, chilled, low and high temperature water, brine and saturated and superheated steam in open and closed circuits



Data sheet	N4363
Stroke	20 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Medium temperature	-25... 150 °C
Valve characteristic	Equal percentage
Rangeability	DN 15: >50 DN 20...50: >100
Permissible operating pressure	1600 kPa
Material, inside set	CrNi steel
PN class	PN 16
Absolute pressure p1 steam	300 kPa abs
Warranty	5 Years

### Range overview VVG41..

Con-nect. thread	SAX.. $\Delta p_{max}$ [kPa]	SAX.. $\Delta p_s$ [kPa]	SKD.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_s$ [kPa]	SKB.. $\Delta p_{max}$ [kPa]	SKB.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1" B	800	1600	800	1600	800	1600	15	0.63	BPZ:VVG41.11	VVG41.11
G 1" B	800	1600	800	1600	800	1600	15	1	BPZ:VVG41.12	VVG41.12
G 1" B	800	1600	800	1600	800	1600	15	1.6	BPZ:VVG41.13	VVG41.13
G 1" B	800	1600	800	1600	800	1600	15	2.5	BPZ:VVG41.14	VVG41.14
G 1" B	800	1600	800	1600	800	1600	15	4	BPZ:VVG41.15	VVG41.15
G 1¼" B	800	1600	800	1600	800	1600	20	6.3	BPZ:VVG41.20	VVG41.20
G 1½" B	800	1550	800	1600	800	1600	25	10	BPZ:VVG41.25	VVG41.25
G 2" B	800	875	800	1275	800	1600	32	16	BPZ:VVG41.32	VVG41.32
G 2¼" B	525	525	775	775	800	1600	40	25	BPZ:VVG41.40	VVG41.40
G 2¾" B	300	300	450	450	800	1225	50	40	BPZ:VVG41.50	VVG41.50

ALG..2 fittings must be ordered as individual items and will be delivered separately.

### Replacement sealing glands for VVG41..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM, up to 150 °C		BPZ:428488740	428488740

### Accessories for VVG41..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..2	ALG..2

### Combinable actuator for VVG41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### Combinable actuator for VVG41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>

# Valves and actuators

## Globe and pressure independent control valve (PICV) 2-port threaded valves

### 2-port seat valves PN16 with externally threaded connections

VVG44..

- With threaded connections to ISO 228/1
- For chilled water and low-temperature hot water in closed circuits



Data sheet	N4364
Stroke	5.5 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Medium temperature	1...120 °C
Valve characteristic	Linear
Rangeability	From DN 20: >100 DN 15: >50...100
Permissible operating pressure	1600 kPa
Material, inside set	CrNi steel / Rg5, brass
PN class	PN 16
Warranty	5 Years

### Range overview VVG44..

DN	Con-nect. thread	SAS.. $\Delta p_s$ [kPa]	SAS.. $\Delta p_{max}$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
15	G 1" B	1600	400	0.25	BPZ:VVG44.15-0.25	VVG44.15-0.25
15	G 1" B	1600	400	0.4	BPZ:VVG44.15-0.4	VVG44.15-0.4
15	G 1" B	1600	400	0.63	BPZ:VVG44.15-0.63	VVG44.15-0.63
15	G 1" B	725	400	1	BPZ:VVG44.15-1	VVG44.15-1
15	G 1" B	725	400	1.6	BPZ:VVG44.15-1.6	VVG44.15-1.6
15	G 1" B	400	400	2.5	BPZ:VVG44.15-2.5	VVG44.15-2.5
15	G 1" B	400	400	4	BPZ:VVG44.15-4	VVG44.15-4
20	G 1¼" B	750	400	6.3	BPZ:VVG44.20-6.3	VVG44.20-6.3
25	G 1½" B	400	400	10	BPZ:VVG44.25-10	VVG44.25-10
32	G 2" B	250	250	16	BPZ:VVG44.32-16	VVG44.32-16
40	G 2¼" B	125	125	25	BPZ:VVG44.40-25	VVG44.40-25

Fittings ALG..2 must be ordered as separate items and are also supplied as such.

### Accessories for VVG44..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..2	ALG..2

### Combinable actuator for VVG44..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4581	S55158-A106	SAS31.00
AC 230	3-position	30	No	N4581	S55158-A107	SAS31.03
AC 230	3-position	120	Yes (28 s)	N4581	S55158-A108	SAS31.50
AC 230	3-position	30	Yes (14 s)	N4581	S55158-A109	SAS31.53
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	No	N4581	S55158-A100	SAS61.03
AC/DC 24	Modbus RTU	30		N4581	S55158-A121	SAS61.03/MO
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	Yes (14 s)	N4581	S55158-A101	SAS61.33
AC/DC 24	Modbus RTU	30	Yes (14 s)	N4581	S55158-A122	SAS61.33/MO
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	Yes (14 s)	N4581	S55158-A102	SAS61.53

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### Combinable actuator for VVG44..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	3-position	120	No	N4581	S55158-A103	<b>SAS81.00</b>
AC/DC 24	3-position	30	No	N4581	S55158-A104	<b>SAS81.03</b>
AC/DC 24	3-position	30	Yes (14 s)	N4581	S55158-A105	<b>SAS81.33</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port threaded valves

### 2-port seat valves, externally threaded, PN25

VVG549..

- With threaded connections to ISO 228/1
- For chilled water and low-temperature hot water in closed circuits, especially for district heat applications

Data sheet	CA1Q4380
Medium temperature	1...150 °C
PN class	PN 25
Warranty	5 Years



### Range overview VVG549..

Con-nect. thread	SAT.. $\Delta p_s$ [kPa]	SAT.. $\Delta p_{max}$ [kPa]	SAS.. $\Delta p_s$ [kPa]	SAS.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 3/4" B	2500	1200	2500	1200	15	0.25	BPZ:VVG549.15-0.25	VVG549.15-0.25
G 3/4" B	2500	1200	2500	1200	15	0.4	BPZ:VVG549.15-0.4	VVG549.15-0.4
G 3/4" B	2500	1200	2500	1200	15	0.63	BPZ:VVG549.15-0.63	VVG549.15-0.63
G 3/4" B	1500	1200	2000	1200	15	1	BPZ:VVG549.15-1	VVG549.15-1
G 3/4" B	1500	1200	2000	1200	15	1.6	BPZ:VVG549.15-1.6	VVG549.15-1.6
G 3/4" B	1500	1200	2000	1200	15	2.5	BPZ:VVG549.15-2.5	VVG549.15-2.5
G 1" B	1600	1200	1600	1200	20	4	BPZ:VVG549.20-4K	VVG549.20-4K
G 1 1/4" B	1600	1200	1600	1200	25	6.3	BPZ:VVG549.25-6.3K	VVG549.25-6.3K

### Accessories for VVG549..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..2	ALG..2
Fittings, pipeside with welding connection		BPZ:ALS..	ALS..

### Combinable actuator for VVG549..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	8	No	N4584	S55158-A119	SAT31.008
AC 230	3-position	15	Yes (8 s)	N4584	S55158-A120	SAT31.51
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	8	No	N4584	S55158-A117	SAT61.008
AC/DC 24	Modbus RTU	8	No	N4584	S55158-A123	SAT61.008/MO
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	15	Yes (8 s)	N4584	S55158-A118	SAT61.51
AC/DC 24	Modbus RTU	15	Yes (8 s)	N4584	S55158-A124	SAT61.51/MO
AC 230	3-position	120	No	N4581	S55158-A106	SAS31.00
AC 230	3-position	30	No	N4581	S55158-A107	SAS31.03
AC 230	3-position	120	Yes (28 s)	N4581	S55158-A108	SAS31.50
AC 230	3-position	30	Yes (14 s)	N4581	S55158-A109	SAS31.53
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	No	N4581	S55158-A100	SAS61.03
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	Yes (14 s)	N4581	S55158-A101	SAS61.33
AC/DC 24	DC 0...10V DC 4...20 mA 0...1000 Ohm	30	Yes (14 s)	N4581	S55158-A102	SAS61.53

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 2-port threaded valves

##### Combinable actuator for VVG549..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	3-position	120	No	N4581	S55158-A103	<b>SAS81.00</b>
AC/DC 24	3-position	30	No	N4581	S55158-A104	<b>SAS81.03</b>
AC/DC 24	3-position	30	Yes (14 s)	N4581	S55158-A105	<b>SAS81.33</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV) 2-port threaded valves

### Fittings, pipe-side with threaded connection

ALG..2

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.

Each fitting set ALG..2 consists of 2 cap nuts, 2 insert nuts and 2 flat seals.



Warranty 2 Years

### Range overview ALG..2

Connecting thread, valve side	Connecting thread, pipe side ["]	Material	Stock no.	Product no.
G 3/4 "	Rp 3/8	Malleable cast iron, phosphated	BPZ:ALG122	ALG122
G 1/2 "	R 3/8	Brass	BPZ:ALG132	ALG132
G 3/4 "	R 1/2	Brass	BPZ:ALG142	ALG142
G 1 "	Rp 1/2	Malleable cast iron, phosphated	BPZ:ALG152	ALG152
G 1 1/4 "	Rp 3/4	Malleable cast iron, phosphated	BPZ:ALG202	ALG202
G 1 1/2 "	Rp 1	Malleable cast iron, phosphated	BPZ:ALG252	ALG252
G 2 "	Rp 1 1/4	Malleable cast iron, phosphated	BPZ:ALG322	ALG322
G 2 1/4 "	Rp 1 1/2	Malleable cast iron, phosphated	BPZ:ALG402	ALG402
G 2 3/4 "	Rp 2	Malleable cast iron, phosphated	BPZ:ALG502	ALG502
G 1 "	Rp 1/2	Brass	S55846-Z100	ALG152B
G 1 1/4 "	Rp 3/4	Brass	S55846-Z102	ALG202B
G 1 1/2 "	Rp 1	Brass	S55846-Z104	ALG252B
G 2 "	Rp 1 1/4	Brass	S55846-Z106	ALG322B
G 2 1/4 "	Rp 1 1/2	Brass	S55846-Z108	ALG402B
G 2 3/4 "	Rp 2	Brass	S55846-Z110	ALG502B

ALG132 and ALG142: pipe connecting thread externally threaded.

For the VMP45.. and VMP47.. valves, 2 sets of 2 fittings must be ordered

### Fittings, pipeside with welding connection

ALS..

Cylindric thread to ISO 228-1 on valve side. Welded connection on the pipe side.

Each ALS.. set consists of 2 cap nuts, 2 inserts and 2 flat seals.

Warranty 5 Years



### Fittings with weldable connections: Set of 2

Pipe diameter [mm]	Connecting thread, valve side ["]	Stock no.	Product no.
21.3	G 3/4	BPZ:ALS152	ALS152
26.8	G 1	BPZ:ALS202	ALS202
33.7	G 1 1/4	BPZ:ALS252	ALS252

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**Globe and pressure independent control valve (PICV)  
3-port flanged valves**

VXF22..

**3-port valves with flanged connections, PN 6**



- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4401
Stroke	to DN80: 20 mm DN 100: 40 mm
Leakage rate	0...0.02% of the kvs value
Leakage rate bypass	0.5...2 % of the kvs-value
Medium temperature	-10... 130 °C
Valve characteristic	Through-port: equal percentage Through-port: kvs 250/400 linear Bypass: linear
Rangeability	DN 25: >50 DN 40...100: >100
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN50: CrNi steel / bronze
PN class	PN 6
Warranty	5 Years

**Range overview VXF22..**

SAX..	SAV..	SKD..	SKB..	SKC..	DN	kvs [m³/h]	Stock no.	Product no.
$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]				
300		300	300		25	2.5	S55200-V110	VXF22.25-2.5
300		300	300		25	4	S55200-V111	VXF22.25-4
300		300	300		25	6.3	S55200-V112	VXF22.25-6.3
300		300	300		25	10	S55200-V113	VXF22.25-10
300	300	300	300		40	16	S55200-V114	VXF22.40-16
300	300	300	300		40	25	S55200-V115	VXF22.40-25
300	300	300	300		50	40	S55200-V116	VXF22.50-40
150	300	200	300		65	63	S55200-V117	VXF22.65-63
75	225	125	300		80	100	S55200-V118	VXF22.80-100
	125			250	100	160	S55200-V119	VXF22.100-160

$\Delta p_{max}$ -ratings are valid for mixing applications.

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**Replacement sealing glands for VXF22..**

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

**Combinable actuator for VXF22..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10 V DC 4...20 mA 0... 1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	120	No	N4503	S55150-A112	SAV31.00



Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF22..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

VXF32..

#### 3-port valves with flanged connections, PN10



- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4402
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Leakage rate bypass	0.5...2 % of the kvs-value
Medium temperature	-10... 150 °C
Valve characteristic	Through-port: equal percentage Through-port: kvs 250/400 linear Bypass: linear
Rangeability	DN 15 .. 25: >50 DN 40...150: >100
Permissible operating pressure	1000 kPa
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN50: CrNi steel / bronze
PN class	PN 10
Warranty	5 Years

#### Range overview VXF32..

SAX..	SAV..	SKD..	SKB..	SKC..	DN	kvs	Stock no.	Product no.
$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400		400	400		15	1.6	S55202-V113	VXF32.15-1.6
400		400	400		15	2.5	S55202-V114	VXF32.15-2.5
400		400	400		15	4	S55202-V115	VXF32.15-4
400		400	400		25	6.3	S55202-V116	VXF32.25-6.3
400		400	400		25	10	S55202-V117	VXF32.25-10
400	400	400	400		40	16	S55202-V118	VXF32.40-16
400	400	400	400		40	25	S55202-V119	VXF32.40-25
300	400	400	400		50	40	S55202-V120	VXF32.50-40
150	400	200	400		65	63	S55202-V121	VXF32.65-63
75	225	125	400		80	100	S55202-V122	VXF32.80-100
	125			250	100	160	S55202-V123	VXF32.100-160
	90			160	125	250	S55202-V124	VXF32.125-250
	60			100	150	400	S55202-V125	VXF32.150-400

$\Delta p_{max}$ -ratings are valid for mixing applications.

#### Replacement sealing glands for VXF32..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

#### Combinable actuator for VXF32..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF32..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

**Globe and pressure independent control valve (PICV)  
3-port flanged valves**

VXF42..

**3-port valves with flanged connections, PN 16**



- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4403
Stroke	to DN80: 20 mm from DN100: 40 mm
Leakage rate	0...0.02% of the kvs value
Leakage rate bypass	0.5...2 % of the kvs-value
Medium temperature	-10... 150 °C
Valve characteristic	Through-port: equal percentage Through-port: kvs 250/400 linear Bypass: linear
Rangeability	DN 15...25: >50 DN 32...150: >100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	≤ DN40: CrNi steel / brass ≥ DN50: CrNi steel / bronze
PN class	PN 16
Warranty	5 Years

**Range overview VXF42..**

SAX..	SAV..	SKD..	SKB..	SKC..	DN	kvs [m³/h]	Stock no.	Product no.
$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]				
400		400	400		15	1.6	S55204-V127	VXF42.15-1.6
400		400	400		15	2.5	S55204-V128	VXF42.15-2.5
400		400	400		15	4	S55204-V129	VXF42.15-4
400		400	400		20	6.3	S55204-V130	VXF42.20-6.3
400		400	400		25	6.3	S55204-V131	VXF42.25-6.3
400		400	400		25	10	S55204-V132	VXF42.25-10
400		400	400		32	16	S55204-V133	VXF42.32-16
400	400	400	400		40	16	S55204-V134	VXF42.40-16
400	400	400	400		40	25	S55204-V135	VXF42.40-25
300	400	400	400		50	31.5	S55204-V136	VXF42.50-31.5
300	400	400	400		50	40	S55204-V137	VXF42.50-40
150	400	200	400		65	50	S55204-V138	VXF42.65-50
150	400	200	400		65	63	S55204-V139	VXF42.65-63
75	225	125	400		80	80	S55204-V140	VXF42.80-80
75	225	125	400		80	100	S55204-V141	VXF42.80-100
	125			250	100	125	S55204-V142	VXF42.100-125
	125			250	100	160	S55204-V143	VXF42.100-160
	90			160	125	200	S55204-V144	VXF42.125-200
	90			160	125	250	S55204-V145	VXF42.125-250
	60			100	150	315	S55204-V146	VXF42.150-315
	60			100	150	400	S55204-V147	VXF42.150-400

$\Delta p_{max}$ -ratings are valid for mixing applications.

**Replacement sealing glands for VXF42..**

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF42..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### Combinable actuator for VXF42..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 3-port flanged valves

### 3-port valves with flanged connections, PN 16

VXF42..C

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	A6V10794157
Stroke	to DN 80: 20 mm from DN 100: 40 mm
Leakage rate	0...0.02% of the kvs value
Leakage rate bypass	0.5...2 % of the kvs-value
Medium temperature	-10...150 °C
Valve characteristic	Through-port: equal percentage Through-port: kvs 250/400 linear Bypass: linear
Rangeability	to DN 40: >50 from DN 50: >100
Permissible operating pressure	1600 kPa
Material, inside set	≤ DN 25: CrNi steel / brass ≥ DN 32: CrNi steel / CrNi steel
PN class	PN 16
Warranty	5 Years
For customers in Asia / Australia	

### Range overview VXF42..C

SAX..	SAV..	SKD..	SKB..	SKC..	DN	kvs	Stock no.	Product no.
$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$		[m <sup>3</sup> /h]		
[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
400		400	400		25	6.3	S55204-V165	VXF42.25-6.3C
400		400	400		25	10	S55204-V166	VXF42.25-10C
400		400	400		32	16	S55204-V167	VXF42.32-16C
400	400	400	400		40	16	S55204-V168	VXF42.40-16C
400	400	400	400		40	25	S55204-V169	VXF42.40-25C
300	400	400	400		50	31.5	S55204-V170	VXF42.50-31.5C
300	400	400	400		50	40	S55204-V171	VXF42.50-40C
150	400	200	400		65	50	S55204-V172	VXF42.65-50C
150	400	200	400		65	63	S55204-V173	VXF42.65-63C
75	225	125	400		80	80	S55204-V174	VXF42.80-80C
75	225	125	400		80	100	S55204-V175	VXF42.80-100C
	125			250	100	125	S55204-V176	VXF42.100-125C
	125			250	100	160	S55204-V177	VXF42.100-160C
	90			160	125	200	S55204-V178	VXF42.125-200C
	90			160	125	250	S55204-V179	VXF42.125-250C
	60			100	150	315	S55204-V180	VXF42.150-315C
	60			100	150	400	S55204-V181	VXF42.150-400C

### Replacement sealing glands for VXF42..C

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	467956290

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### Combinable actuator for VXF42..C

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>



Valves and actuators  
**Globe and pressure independent control valve (PICV)  
 3-port flanged valves**

**Combinable actuator for VXF42..C**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### VXF43..



##### 3-port seat valves PN16 with flanged connections

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils in open and closed circuits

When using valves of the V..F43.., V..F53.. lines with a stem heating element and a medium temperature of below -5 °C, the stem sealing gland must be replaced.

Data sheet	N4404
Stroke	40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Leakage rate bypass	0.5...2 % of $k_{vs}$ value
Medium temperature	-20...220 °C
Valve characteristic	Through-port: equal percentage Through-port: $k_{vs}$ 250/400 linear Bypass: linear
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Stainless steel
PN class	PN 16
Warranty	5 Years

##### Range overview VXF43..

SAV.. $\Delta p_{max}$ [kPa]	SKC.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
400	650	65	50	S55206-V125	<b>VXF43.65-50</b>
400	650	65	63	S55206-V115	<b>VXF43.65-63</b>
225	400	80	80	S55206-V126	<b>VXF43.80-80</b>
225	400	80	100	S55206-V116	<b>VXF43.80-100</b>
125	250	100	125	S55206-V127	<b>VXF43.100-125</b>
125	250	100	160	S55206-V117	<b>VXF43.100-160</b>
90	160	125	200	S55206-V128	<b>VXF43.125-200</b>
90	160	125	250	S55206-V118	<b>VXF43.125-250</b>
60	100	150	315	S55206-V129	<b>VXF43.150-315</b>
60	100	150	400	S55206-V119	<b>VXF43.150-400</b>

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##### Replacement sealing glands for VXF43..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	<b>428488060</b>
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5		BPZ:7424200000	<b>7424200000</b>
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	<b>7428400610</b>

##### Combinable actuator for VXF43..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF43..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

**Bypass extension for VXF43..**

Product Title	Data sheet	Stock no.	Product no.
Bypass extension, flanged connections, DN65	N4404	S55845-Z114	<b>ALF41B65</b>
Bypass extension, flanged connections, DN80	N4404	S55845-Z115	<b>ALF41B80</b>
Bypass extension, flanged connections, DN 100	N4404	S55845-Z116	<b>ALF41B100</b>
Bypass extension, flanged connections, DN 125	N4404	S55845-Z117	<b>ALF41B125</b>
Bypass extension, flanged connections, DN 150	N4404	S55845-Z118	<b>ALF41B150</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### VXF47..



##### 3-port seat valves PN16, flanged connections VXF47..

For use in heating, ventilating and air conditioning systems as a control valve for closed circuits

Data sheet	N4419
Leakage rate	0...0.1% of Kvs value
Leakage rate bypass	0.5...2% of Kvs value
Medium temperature	1...95 °C
Valve characteristic	Throughport: equal percentage, Kvs 250/315 Linear Bypass: linear
Rangeability	DN 50... 150: > 50
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi Steel/Bronze
PN class	PN 16
Warranty	5 Years

For customers in Asia / Australia

##### Range overview VXF47..

SBX.. $\Delta p_{max}$ [kPa]	SBV.. $\Delta p_{max}$ [kPa]	DN	Kvs [m³/h]	Stock no.	Product no.
300		50	40	S55220-V100	<b>VXF47.50</b>
175	300	65	63	S55220-V101	<b>VXF47.65</b>
100	250	80	100	S55220-V102	<b>VXF47.80</b>
	200	100	160	S55220-V103	<b>VXF47.100</b>
	100	125	250	S55220-V104	<b>VXF47.125</b>
	75	150	315	S55220-V105	<b>VXF47.150</b>

##### Combinable actuator for VXF47..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	180	N4519	S55160-A105	<b>SBV31</b>
AC 230	3-position	120	N4519	S55160-A102	<b>SBX31</b>
AC 24	DC 0...10 V	180	N4519	S55160-A103	<b>SBV61</b>
AC 24	DC 0...10 V	120	N4519	S55160-A100	<b>SBX61</b>
AC 24	3-position	180	N4519	S55160-A104	<b>SBV81</b>
AC 24	3-position	120	N4519	S55160-A101	<b>SBX81</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 3-port flanged valves

VXF53..



### 3-port seat valves PN25 with flanged connections

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils in open and closed circuits

When using valves of the V..F43.., V..F53.. lines with a stem heating element and a medium temperature of below -5 °C, the stem sealing gland must be replaced.

Data sheet	N4405
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Leakage rate bypass	0.5...2 % of $k_{vs}$ value; SAX...: 0.05 % of $k_{vs}$ value
Medium temperature	-20...220 °C
Valve characteristic	Through-port: equal percentage Through-port: $k_{vs}$ 250/400 linear Bypass: linear
Rangeability	>100
Permissible operating pressure	2500 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Stainless steel
PN class	PN 16 / PN 25
Warranty	5 Years

### Range overview VXF53..

SAX..	SAV..	SKD..	SKB..	SKC..	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]				
1200		1200	1200		15	1.6	S55208-V140	VXF53.15-1.6
1200		1200	1200		15	2.5	S55208-V141	VXF53.15-2.5
1200		1200	1200		15	4	S55208-V142	VXF53.15-4
1200		1200	1200		20	6.3	S55208-V144	VXF53.20-6.3
1200		1200	1200		25	6.3	S55208-V145	VXF53.25-6.3
1200		1200	1200		25	10	S55208-V146	VXF53.25-10
750		1100	1200		32	16	S55208-V148	VXF53.32-16
500	1150	650	1200		40	16	S55208-V149	VXF53.40-16
500	1150	650	1200		40	25	S55208-V150	VXF53.40-25
300	700	400	1150		50	40	S55208-V152	VXF53.50-40
	400			650	65	63	S55208-V153	VXF53.65-63
	225			400	80	100	S55208-V154	VXF53.80-100
	125			250	100	160	S55208-V155	VXF53.100-160
	90			160	125	250	S55208-V156	VXF53.125-250
	60			100	150	400	S55208-V157	VXF53.150-400

### Accessories for VXF53..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	428488060
Stem connection washer for SKB/SKC actuators, stem diameter 10 mm, set of 5		BPZ:7424200000	7424200000
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	7428400610

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### Combinable actuator for VXF53..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	120	No	N4503	S55150-A112	<b>SAV31.00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	No	N4503	S55150-A110	<b>SAV61.00</b>
AC/DC 24	Modbus RTU	120	No	N4503	S55150-A141	<b>SAV61.00/MO</b>
AC/DC 24	3-position	120	No	N4503	S55150-A111	<b>SAV81.00</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>

Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF53..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>

**Bypass extension for VXF53..**

Product Title	Data sheet	Stock no.	Product no.
Bypass extension, flanged connections, DN 15	N4404	S55845-Z110	<b>ALF41B15</b>
Bypass extension, flanged connections, DN 25	N4404	S55845-Z111	<b>ALF41B25</b>
Bypass extension, flanged connections, DN 40	N4404	S55845-Z112	<b>ALF41B40</b>
Bypass extension, flanged connections, DN 50	N4404	S55845-Z113	<b>ALF41B50</b>

**Globe and pressure independent control valve (PICV)  
3-port flanged valves**

**VXF63..**

**3-port valves, PN40, with flanged connections**



- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils in open and closed circuits

Data sheet	A6V11459527
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium temperature	-25...220 °C
Valve characteristic	Equal percentage
Rangeability	>100
Permissible operating pressure	4000 kPa
Material, inside set	Stainless steel
PN class	PN 40
Warranty	5 Years

**Range overview VXF63..**

SKD..	SKB..	SKC..	DN	$k_{vs}$ [m³/h]	Stock no.	Product no.
$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_{max}$ [kPa]				
200	200		15	1.6	S55210-V131	<b>VXF63.15-1.6</b>
200	200		15	2.5	S55210-V132	<b>VXF63.15-2.5</b>
200	200		15	4	S55210-V133	<b>VXF63.15-4</b>
200	200		20	6.3	S55210-V134	<b>VXF63.20-6.3</b>
200	200		25	10	S55210-V136	<b>VXF63.25-10</b>
200	200		25	6.3	S55210-V135	<b>VXF63.25-6.3</b>
200	200		32	16	S55210-V137	<b>VXF63.32-16</b>
200	200		40	16	S55210-V138	<b>VXF63.40-16</b>
200	200		40	25	S55210-V139	<b>VXF63.40-25</b>
200	200		50	31.5	S55210-V140	<b>VXF63.50-31.5</b>
		200	65	50	S55210-V141	<b>VXF63.65-50</b>
		200	80	80	S55210-V142	<b>VXF63.80-80</b>
		150	100	125	S55210-V143	<b>VXF63.100-125</b>
		100	125	200	S55210-V144	<b>VXF63.125-200</b>
		70	150	315	S55210-V145	<b>VXF63.150-315</b>

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**Accessories for VXF63..**

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	<b>428488060</b>
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	<b>467956290</b>
Stem heating element for media <0 °C	N4501	S55845-Z108	<b>ASZ6.6</b>

**Replacement sealing glands for VXF63..**

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM		BPZ:428488060	<b>428488060</b>
Replacement sealing gland, stem diameter 10 mm, sealing material FEPM		S55845-Z150	<b>7428400610</b>
Sealing gland complete, stem diameter 14 mm, sealing material FEPM, up to 220 °C		S55846-Z114	<b>ALV14F32S</b>
Sealing gland complete, stem diameter 14 mm, sealing material EPDM, up to 150 °C		BPZ:467956290	<b>467956290</b>



Valves and actuators  
**Globe and pressure independent control valve (PICV)**  
**3-port flanged valves**

**Combinable actuator for VXF63..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62U	<b>SKD62U</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50U	<b>SKD82.50U</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 19.2...28.2 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51U	<b>SKD82.51U</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62U	<b>SKB62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50U	<b>SKB82.50U</b>
AC 230	3-position	120	No	N4566	BPZ:SKC32.60	<b>SKC32.60</b>
AC 19.2...28.2 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51U	<b>SKB82.51U</b>
AC 230	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	<b>SKC32.61</b>
AC 24 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	No	N4566	BPZ:SKC60	<b>SKC60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62	<b>SKC62</b>
AC 24	Modbus RTU	Open 120 Close 20	Yes	N4566	S55195-A128	<b>SKC62/MO</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### Combinable actuator for VXF63..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62U	<b>SKC62U</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:20	Yes (20 s)	N4566	BPZ:SKC62UA	<b>SKC62UA</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60	<b>SKC82.60</b>
AC 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61	<b>SKC82.61</b>
AC 24	3-position	120	No	N4566	BPZ:SKC82.60U	<b>SKC82.60U</b>
AC 19.2...31.2 24	3-position	120	Yes (18 s)	N4566	BPZ:SKC82.61U	<b>SKC82.61U</b>

# Valves and actuators

## Globe and pressure independent control valve (PICV)

### 3-port flanged valves

#### Modulating control valves with magnetic actuator, PN16, flanged

MXF461..

Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of chilled or low-temperature hot water systems in closed circuits. With positioning control, position feedback signal, spring return function and manual control.

When used as a 2 port valve, inlet B (2) must be closed off with the Z155/.. blanking flange.

MXF461..P valves for media containing mineral oils (data sheet N4455)

MXF461.. valves are UL listed



#### CAUTION!

Use valve only as a mixing or 2-port valve, not as a diverting valve.

Data sheet	N4455
PN class	PN 16
Operating voltage	AC / DC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4...20 mA
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1000 kPa
Leakage rate	< 0.02 % of $k_{vs}$ value
Leakage rate bypass	< 0.2 % of $k_{vs}$ value
Medium temperature	1...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel/brass
Warranty	5 Years

Scope of delivery: 1 blanking flange, 1 seal, screws, spring washers and nuts.

#### Range overview MXF461..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
300	300	0.6	15	BPZ:MXF461.15-0.6	<b>MXF461.15-0.6</b>
300	300	1.5	15	BPZ:MXF461.15-1.5	<b>MXF461.15-1.5</b>
300	300	3	15	BPZ:MXF461.15-3.0	<b>MXF461.15-3.0</b>
300	300	5	20	BPZ:MXF461.20-5.0	<b>MXF461.20-5.0</b>
300	300	8	25	BPZ:MXF461.25-8.0	<b>MXF461.25-8.0</b>
300	300	12	32	BPZ:MXF461.32-12	<b>MXF461.32-12</b>
300	300	20	40	BPZ:MXF461.40-20	<b>MXF461.40-20</b>
300	300	30	50	BPZ:MXF461.50-30	<b>MXF461.50-30</b>
300	300	50	65	BPZ:MXF461.65-50	<b>MXF461.65-50</b>

$\Delta p_s$  for use as 2-port valve.

#### Accessories for MXF461..

Product Title	Data sheet	Stock no.	Product no.
Replacement electronic for MXG461.., MXF461.. and MXG461S.., DN15...32	N4455	BPZ:ASE1	<b>ASE1</b>
Replacement electronic for MXG461.., MXF461.., DN40...65	N4455	BPZ:ASE2	<b>ASE2</b>
Signal converter DC 0...20 V Phs to DC 0...10 V	N5143	BPZ:SEZ91.6	<b>SEZ91.6</b>



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port flanged valves

##### Blanking flanges for MXF461..

Product Title	Stock no.	Product no.
Blanking flange, DN15	BPZ:Z155/15F	Z155/15F
Blanking flange, DN20	BPZ:Z155/20F	Z155/20F
Blanking flange, DN25	BPZ:Z155/25F	Z155/25F
Blanking flange, DN32	BPZ:Z155/32F	Z155/32F
Blanking flange, DN40	BPZ:Z155/40	Z155/40
Blanking flange, DN50	BPZ:Z155/50	Z155/50
Blanking flange, DN65	BPZ:Z155/65	Z155/65

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## 3-port flanged valves

### Modulating control valves with magnetic actuator, PN16, flanged

Mixing and 2-port valves with magnetic actuator for modulating control of chilled or low-pressure hot water systems with closed circuits. Flanged connections, with positioning control, position feedback signal, spring return function, manual control.

When used as a 2 port valve, inlet B (2) must be closed off with the Z155/.. blanking flange.  
M3P..FYP for media containing mineral oils (data sheet N4454)

#### CAUTION!

Valve may only be used as a mixing or 2-port valve, not as a diverting valve.



Data sheet	N4454
PN class	PN 16
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 4...20 mA
Positioning time	Close: <2 s
Spring return function	1->3 closed
Position feedback	DC 0...10 V
Degree of protection	IP31
Ambient temperature, operation	2...50 °C
Mounting position	Upright to horizontal
Leakage rate	< 0.05 % of $k_{vs}$ value
Leakage rate bypass	ca. 2 % of $k_{vs}$ value
Medium temperature	1... 120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJL-HB215
Material, inside set	CrNi steel/brass
Warranty	5 Years

Scope of delivery: 1 blanking flange, 1 seal, screws, spring washers and nuts.

### Range overview M3P..FY

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
300	300	80	80	BPZ:M3P80FY	<b>M3P80FY</b>
200	200	130	100	BPZ:M3P100FY	<b>M3P100FY</b>

$\Delta p_s$  for use as 2-port valve.

### Accessories for M3P..FY..

Product Title	Data sheet	Stock no.	Product no.
Replacement electronic for M3P..GY, M3P..FY, M2H..FY.., M3B..GY.., M2S..FY and M2FE..	N4348	BPZ:ZM150	<b>ZM150</b>
Replacement electronic for M3P..FY..	N4454	BPZ:ZM250	<b>ZM250</b>
Signal converter DC 0...20 V Phs to DC 0...10 V	N5143	BPZ:SEZ91.6	<b>SEZ91.6</b>

### Blanking flanges for M3P..FY..

Product Title	Stock no.	Product no.
Blanking flange, DN100	BPZ:Z155/100	<b>Z155/100</b>
Blanking flange, DN80	BPZ:Z155/80	<b>Z155/80</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV) 3-port threaded valves

#### VXP45..

#### 3-port seat valves, PN16



3-port valves with threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.

V..P45.. valves are only used as mixing or 2-port valves, not as diverting valves.

Data sheet	N4845
Stroke	5.5 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Leakage rate bypass	0...0.02 % of $k_{vs}$ value
Medium temperature	1...110 °C
Valve characteristic	Throughport up to $k_{vs}$ 6.3: equal-percentage Throughport from [ $k_{vs}$ ] 10: linear Bypass: linear
Rangeability	From $k_{vs}>6,3$ : >100 To $k_{vs}=6,3$ : >50
Permissible operating pressure	1600 kPa
Material, inside set	CrNi steel / Rg5 / brass
PN class	PN 16
Warranty	5 Years

#### Range overview VXP45..

Con-nect. thread	SSB.. $\Delta p_{max}$ [kPa]	SSC.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1/2" B	400		10	0.25	BPZ:VXP45.10-0.25	VXP45.10-0.25
G 1/2" B	400		10	0.4	BPZ:VXP45.10-0.4	VXP45.10-0.4
G 1/2" B	400		10	0.63	BPZ:VXP45.10-0.63	VXP45.10-0.63
G 1/2" B	400		10	1	BPZ:VXP45.10-1	VXP45.10-1
G 1/2" B	400		10	1.6	BPZ:VXP45.10-1.6	VXP45.10-1.6
G 3/4" B	350		15	2.5	BPZ:VXP45.15-2.5	VXP45.15-2.5
G 1" B	350		20	4	BPZ:VXP45.20-4	VXP45.20-4
G 1 1/4" B	300		25	6.3	BPZ:VXP45.25-6.3	VXP45.25-6.3
G 1 1/2" B		300	25	10	BPZ:VXP45.25-10	VXP45.25-10
G 2" B		175	32	16	BPZ:VXP45.32-16	VXP45.32-16
G 2 1/4" B		75	40	25	BPZ:VXP45.40-25	VXP45.40-25

70 %  $k_{vs}$  in bypass for all types.

#### Combinable actuator for VXP45..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	150		N4891	BPZ:SSB31	SSB31
AC 24 DC 24	DC 0...10 V	75		N4891	BPZ:SSB61	SSB61
AC 24	3-position	150		N4891	BPZ:SSB81	SSB81
AC 230	3-position	150	No	N4895	BPZ:SSC31	SSC31
AC/DC 24	DC 0...10 V	30	No	N4895	BPZ:SSC61	SSC61
AC/DC 24	DC 0...10 V	30	Yes (15 s)	N4895	BPZ:SSC61.5	SSC61.5
AC 24	3-position	150	No	N4895	BPZ:SSC81	SSC81

## Valves and actuators

# Globe and pressure independent control valve (PICV) 3-port threaded valves

### 3-port seat valves with bypass, PN16

VMP45..

3-port seat valves with bypass, with threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.



V..P45.. valves are only used as mixing valves, not as diverting valves.

Data sheet	N4845
Stroke	5.5 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Leakage rate bypass	0...0.02 % of $k_{vs}$ value
Medium	Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Equal-percentage: Bypass: linear
Permissible operating pressure	1600 kPa
Material, inside set	CrNi steel, brass
PN class	PN 16
Warranty	5 Years

### Range overview VMP45..

Con-nect. thread	SSB.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1/2" B	400	10	0.25	BPZ:VMP45.10-0.25	<b>VMP45.10-0.25</b>
G 1/2" B	400	10	0.4	BPZ:VMP45.10-0.4	<b>VMP45.10-0.4</b>
G 1/2" B	400	10	0.63	BPZ:VMP45.10-0.63	<b>VMP45.10-0.63</b>
G 1/2" B	400	10	1	BPZ:VMP45.10-1	<b>VMP45.10-1</b>
G 1/2" B	400	10	1.6	BPZ:VMP45.10-1.6	<b>VMP45.10-1.6</b>
G 3/4" B	350	15	2.5	BPZ:VMP45.15-2.5	<b>VMP45.15-2.5</b>
G 1" B	350	20	4	BPZ:VMP45.20-4	<b>VMP45.20-4</b>

70 %  $k_{vs}$  in bypass for all types.

### Combinable actuator for VMP45..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	150	N4891	BPZ:SSB31	<b>SSB31</b>
AC 24 DC 24	DC 0...10 V	75	N4891	BPZ:SSB61	<b>SSB61</b>
AC 24	3-position	150	N4891	BPZ:SSB81	<b>SSB81</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### VXP47..

##### 3-port valves, PN16



3-port valves with threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.

VXP47.. and VMP47.. 3-port valves are only used as mixing valves.  
They are also suitable for SERTO® compression fittings.

Data sheet	N4847
Stroke	2.5 mm
Leakage rate	0...0.05 % of $k_{vs}$ value
Leakage rate bypass	0...0.05 % of $k_{vs}$ value
Medium	Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Throughport: linear Bypass: linear
Permissible operating pressure	1600 kPa
PN class	PN 16
Material, inside set	CrNi steel, brass
Warranty	5 Years

##### Range overview VXP47..

Con-nect. thread	SFP../SSP.. $\Delta p_{max}$ [kPa]	STP.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1/2" B	400	400	10	0.25	BPZ:VXP47.10-0.25	<b>VXP47.10-0.25</b>
G 1/2" B	400	250	10	0.4	BPZ:VXP47.10-0.4	<b>VXP47.10-0.4</b>
G 1/2" B	400	250	10	0.63	BPZ:VXP47.10-0.63	<b>VXP47.10-0.63</b>
G 1/2" B	400	250	10	1	BPZ:VXP47.10-1	<b>VXP47.10-1</b>
G 1/2" B	300	150	10	1.6	BPZ:VXP47.10-1.6	<b>VXP47.10-1.6</b>
G 3/4" B	300	150	15	2.5	BPZ:VXP47.15-2.5	<b>VXP47.15-2.5</b>
G 1" B	175	100	20	4	BPZ:VXP47.20-4	<b>VXP47.20-4</b>

70 %  $k_{vs}$  in bypass for all types.

##### Combinable actuator for VXP47..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	2-position	10	N4865	BPZ:SFP21/18	<b>SFP21/18</b>
AC 24	2-position	10	N4865	BPZ:SFP71/18	<b>SFP71/18</b>
AC 230	3-position	150	N4864	BPZ:SSP31	<b>SSP31</b>
AC/DC 24	DC 0...10 V	34	N4864	BPZ:SSP61	<b>SSP61</b>
AC 24	3-position	150	N4864	BPZ:SSP81	<b>SSP81</b>



## Valves and actuators

# Globe and pressure independent control valve (PICV) 3-port threaded valves

### 3-port seat valves with bypass, PN16

VMP47..

3-port valves with bypass and threaded connections for the control of terminal units, chilled ceilings or heating zones.

Suitable media: Water (to VDI 2035), water with anti-freeze.

VXP47.. and VMP47.. 3-port valves are only used as mixing valves.  
They are also suitable for SERTO® compression fittings.



Data sheet	N4847
Stroke	2.5 mm
Leakage rate	0...0.05 % of $k_{vs}$ value
Leakage rate bypass	0...0.05 % of $k_{vs}$ value
Medium	Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Throughport: linear Bypass: linear
Permissible operating pressure	1600 kPa
PN class	PN 16
Material, inside set	CrNi steel, brass
Warranty	5 Years

### Range overview VMP47..

Con-nect. thread	SFP../SSP.. $\Delta p_{max}$ [kPa]	STP.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1/2" B	400	400	10	0.25	BPZ:VMP47.10-0.25	VMP47.10-0.25
G 1/2" B	400	400	10	0.4	BPZ:VMP47.10-0.4	VMP47.10-0.4
G 1/2" B	400	250	10	0.63	BPZ:VMP47.10-0.63	VMP47.10-0.63
G 1/2" B	400	250	10	0.63	BPZ:VMP47.10-0.63S	VMP47.10-0.63S
G 1/2" B	400	250	10	1	BPZ:VMP47.10-1	VMP47.10-1
G 1/2" B	300	150	10	1.6	BPZ:VMP47.10-1.6	VMP47.10-1.6
G 3/4" B	300	150	15	2.5	BPZ:VMP47.15-2.5	VMP47.15-2.5
W 1 1/8-14"	300	150	15	2.5	BPZ:VMP47.15-2.5S	VMP47.15-2.5S

70 %  $k_{vs}$  in bypass for all types.

### Combinable actuator for VMP47..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	2-position	10	N4865	BPZ:SFP21/18	SFP21/18
AC 24	2-position	10	N4865	BPZ:SFP71/18	SFP71/18
AC 230	3-position	150	N4864	BPZ:SSP31	SSP31
AC/DC 24	DC 0...10 V	34	N4864	BPZ:SSP61	SSP61
AC 24	3-position	150	N4864	BPZ:SSP81	SSP81

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### VXI46../2

##### 3-port zone valves, PN16 with on/off characteristic



3-port valves, internally threaded connections, for the control of zones or terminal units. Suitable media: water (to VDI 2035), water with anti-freeze.

Stroke	2.5 mm
Leakage rate	0...0.05% of $k_{vs}$ value
Leakage rate bypass	2...5% of $k_{vs}$ value
Medium	Water Water with anti-freeze
Medium temperature	1...110 °C
Valve characteristic	Non-linear (on/off)
Permissible operating pressure	1600 kPa
Material, inside set	Stainless steel, brass
PN class	PN 16
Warranty	5 Years

##### Range overview VXI46..

Con-nect. thread	SFA.. $\Delta p_{max}$ [kPa]	STA.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1"	200	140	25	5.5	S55249-V112	VXI46.25T/2
Rp 1/2"	300	200	15	2.15	S55249-V109	VXI46.15/2
Rp 3/4"	300	200	20	3.5	S55249-V110	VXI46.20/2
Rp 1"	250	150	25	5	S55249-V111	VXI46.25/2

To ensure noiseless operation,  $\Delta p_{max}$  should not exceed 100 kPa.

##### Combinable actuator for VXI46..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	2-position	10	N4863	BPZ:SFA21/18	SFA21/18
AC 24	2-position	10	N4863	BPZ:SFA71/18	SFA71/18
AC 230	2-position (SPST)	50 Hz:10 60 Hz:8.3	A6V10446174	S55176-A104	SUA21/3
AC 230	2-position	210	N4884	S55174-A118	STA23B/00
AC 230	2-position	210	N4884	S55174-A114	STA23MP/00
AC 24	2-position	270	N4884	S55174-A117	STA73B/00
DC 24	PDM				
AC 24	2-position	270	N4884	S55174-A113	STA73MP/00
DC 24	PDM				

# Valves and actuators

## Globe and pressure independent control valve (PICV) 3-port threaded valves

### 3-port seat valves PN16 with internally threaded connections

CNVI41..

- With internally threaded connections Rp.. to ISO 7-1
- For chilled water, low pressure hot water in open and closed circuits



Data sheet	N4362
Stroke	20 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Leakage rate bypass	0.5...2 % of $k_{vs}$ value
Medium temperature	-25...150 °C
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	DN 15: >50 DN 20...50: >100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CC491K (Rg5)
Material, inside set	CrNi Steel/ Rg 5 brass
PN class	PN 16
Warranty	5 Years

For customers in Asia / Australia

### Range overview CNVI41..

Con-nect. thread	SAX.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	400	400	15	2.5	BPZ:CNVI41.15-2.5	CNVI41.15-2.5
Rp 1/2"	400	400	15	4	BPZ:CNVI41.15-4	CNVI41.15-4
Rp 3/4"	400	400	20	6.3	BPZ:CNVI41.20-6.3	CNVI41.20-6.3
Rp 1"	400	400	25	10	BPZ:CNVI41.25-10	CNVI41.25-10
Rp 1 1/4"	400	400	32	16	BPZ:CNVI41.32-16	CNVI41.32-16
Rp 1 1/2"	400	400	40	25	BPZ:CNVI41.40-25	CNVI41.40-25
Rp 2"	300	400	50	40	BPZ:CNVI41.50-40	CNVI41.50-40

$\Delta p_{max}$ -ratings in kPa are valid for mixing applications.

### Replacement sealing glands for CNVI41..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM, up to 150 °C		BPZ:428488740	428488740

### Combinable actuator for CNVI41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230	3-position	30	no	N4501	S55150-A106	SAX31.03
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	SAX61.03/MO
AC/DC 24	3-position	120	no	N4501	S55150-A102	SAX81.00
AC/DC 24	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	SKD32.21
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	SKD32.50
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	SKD32.51
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	SKD60

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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### Combinable actuator for CVXI41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV) 3-port threaded valves

### 3-port seat valves PN16 with externally threaded connections

VXG41..

- With threaded connections to ISO 228-1
- For drinking, cooling and chilled water, low and high temperature hot water and brine in open and closed circuits



VXG41..01 are DVGW approved

Data sheet	N4463
Stroke	20 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Leakage rate bypass	Standard version: 0.5...2 % of $k_{vs}$ value Special version: 0...0.02 % of $k_{vs}$ value (VXG41..01)
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	DN 15: > 50 DN 20...50: > 100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CC499K (CuSn5Zn5Pb2)
Material, inside set	CrNi steel
PN class	PN 16
Warranty	5 Years

### Range overview VXG41..

Con-nect. thread	SAX.. $\Delta p_{max}$ [kPa]	SKD.. $\Delta p_{max}$ [kPa]	SKB.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1" B	800	800	800	15	1.6	BPZ:VXG41.1301	<b>VXG41.1301</b>
G 1" B	800	800	800	15	2.5	BPZ:VXG41.1401	<b>VXG41.1401</b>
G 1" B	800	800	800	15	4	BPZ:VXG41.15	<b>VXG41.15</b>
G 1" B	800	800	800	15	4	VXG41.1501	<b>VXG41.1501</b>
G 1¼" B	800	800	800	20	6.3	BPZ:VXG41.20	<b>VXG41.20</b>
G 1¼" B	800	800	800	20	6.3	VXG41.2001	<b>VXG41.2001</b>
G 1½" B	800	800	800	25	10	BPZ:VXG41.25	<b>VXG41.25</b>
G 1½" B	800	800	800	25	10	VXG41.2501	<b>VXG41.2501</b>
G 2" B	800	800	800	32	16	BPZ:VXG41.32	<b>VXG41.32</b>
G 2" B	800	800	800	32	16	VXG41.3201	<b>VXG41.3201</b>
G 2¼" B	525	775	800	40	25	BPZ:VXG41.40	<b>VXG41.40</b>
G 2¼" B	525	775	800	40	25	VXG41.4001	<b>VXG41.4001</b>
G 2¾" B	300	450	800	50	40	BPZ:VXG41.50	<b>VXG41.50</b>
G 2¾" B	300	450	800	50	40	VXG41.5001	<b>VXG41.5001</b>

VXG41..01 are DVGW (drinking water) approved.

VXG41..01 are supplied with tight bypass

$\Delta p_{max}$ -ratings are valid for mixing applications.

ALG..3 fittings must be ordered as individual items and will be delivered separately.

### Replacement sealing glands for VXG41..

Product Title	Data sheet	Stock no.	Product no.
Sealing gland complete, stem diameter 10 mm, sealing material EPDM, up to 150 °C		BPZ:428488740	<b>428488740</b>

### Accessories for VXG41..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..3	<b>ALG..3</b>



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### Combinable actuator for VXG41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120	no	N4501	S55150-A105	<b>SAX31.00</b>
AC 230	3-position	30	no	N4501	S55150-A106	<b>SAX31.03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	<b>SAX61.03</b>
AC/DC 24	Modbus RTU	30	No	N4501	S55150-A140	<b>SAX61.03/MO</b>
AC/DC 24	3-position	120	no	N4501	S55150-A102	<b>SAX81.00</b>
AC/DC 24	3-position	30	no	N4501	S55150-A103	<b>SAX81.03</b>
AC 230	3-position	Open 30 Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	<b>SKD32.21</b>
AC 230	3-position	120	No	N4561	BPZ:SKD32.50	<b>SKD32.50</b>
AC 230	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	<b>SKD32.51</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	No	N4561	BPZ:SKD60	<b>SKD60</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62	<b>SKD62</b>
AC 24	Modbus RTU	Open 30 Close 15	Yes	N4561	S55195-A129	<b>SKD62/MO</b>
AC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open:30 Close:15	Yes (15 s)	N4561	BPZ:SKD62UA	<b>SKD62UA</b>
AC 24	3-position	120	No	N4561	BPZ:SKD82.50	<b>SKD82.50</b>
AC 24	3-position	120	Yes (8 s)	N4561	BPZ:SKD82.51	<b>SKD82.51</b>
AC 230	3-position	120	No	N4564	BPZ:SKB32.50	<b>SKB32.50</b>
AC 230	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB32.51	<b>SKB32.51</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	No	N4564	BPZ:SKB60	<b>SKB60</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62	<b>SKB62</b>
AC 24	Modbus RTU	Open 120 Close 10	Yes	N4564	S55195-A127	<b>SKB62/MO</b>
AC 24	DC 0...10 V 4...20 mA 0...1000 Ohm	Open:120 Close:10	Yes (10 s)	N4564	BPZ:SKB62UA	<b>SKB62UA</b>
AC 24	3-position	120	No	N4564	BPZ:SKB82.50	<b>SKB82.50</b>
AC 24	3-position	120	Yes ( 10 s)	N4564	BPZ:SKB82.51	<b>SKB82.51</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV) 3-port threaded valves

### 3-port seat valves PN16 with externally threaded connections

VXG44..

- With threaded connections to ISO 228/1
- For chilled water or low-temperature hot water in closed circuits



Data sheet	N4464
Stroke	5.5 mm
Leakage rate	0...0.02 % of $k_{vs}$ value
Leakage rate bypass	0...0.02 % of $k_{vs}$ value
Medium temperature	1... 120 °C
Valve characteristic	Throughport: linear Bypass: linear
Rangeability	From DN 20: >100 DN 15: >50
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CC491K (Rg5)
Material, inside set	CrNi steel/Rg5/brass
PN class	PN 16
Warranty	5 Years

### Range overview VXG44..

Con-nect. thread	SAS.. $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1" B	400	15	0.25	BPZ:VXG44.15-0.25	VXG44.15-0.25
G 1" B	400	15	0.4	BPZ:VXG44.15-0.4	VXG44.15-0.4
G 1" B	400	15	0.63	BPZ:VXG44.15-0.63	VXG44.15-0.63
G 1" B	400	15	1	BPZ:VXG44.15-1	VXG44.15-1
G 1" B	400	15	1.6	BPZ:VXG44.15-1.6	VXG44.15-1.6
G 1" B	400	15	2.5	BPZ:VXG44.15-2.5	VXG44.15-2.5
G 1" B	400	15	4	BPZ:VXG44.15-4	VXG44.15-4
G 1¼" B	400	20	6.3	BPZ:VXG44.20-6.3	VXG44.20-6.3
G 1½" B	400	25	10	BPZ:VXG44.25-10	VXG44.25-10
G 2" B	250	32	16	BPZ:VXG44.32-16	VXG44.32-16
G 2¼" B	125	40	25	BPZ:VXG44.40-25	VXG44.40-25

### Accessories for VXG44..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..3	ALG..3

### Combinable actuator for VXG44..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	120	N4581	S55158-A106	SAS31.00
AC 230	3-position	30	N4581	S55158-A107	SAS31.03
AC 230	3-position	120	N4581	S55158-A108	SAS31.50
AC 230	3-position	30	N4581	S55158-A109	SAS31.53
AC/DC 24	DC 0...10 V DC 4...20 mA 0... 1000 Ohm	30	N4581	S55158-A100	SAS61.03
AC/DC 24	Modbus RTU	30	N4581	S55158-A121	SAS61.03/MO
AC/DC 24	DC 0...10 V DC 4...20 mA 0... 1000 Ohm	30	N4581	S55158-A101	SAS61.33
AC/DC 24	Modbus RTU	30	N4581	S55158-A122	SAS61.33/MO

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### Combinable actuator for VXG44..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	N4581	S55158-A102	<b>SAS61.53</b>
AC/DC 24	3-position	120	N4581	S55158-A103	<b>SAS81.00</b>
AC/DC 24	3-position	30	N4581	S55158-A104	<b>SAS81.03</b>
AC/DC 24	3-position	30	N4581	S55158-A105	<b>SAS81.33</b>



# Valves and actuators

## Globe and pressure independent control valve (PICV) 3-port threaded valves

### Modulating control valves with magnetic actuator, PN16, external thread

Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of chilled or low-temperature hot water systems in closed circuits. With positioning control, position feedback signal, spring return function and manual control.

When used as a 2-port valve, port B must be closed off with the accessories (nut, cover, gasket) provided with the valve.

MXG461..P valves for media containing mineral oils (data sheet N4455)

MXG461.. valves are UL listed

#### CAUTION!

Valve may only be used as a mixing or 2-port valve, not as a diverting valve.

Data sheet	N4455
PN class	PN 16
Operating voltage	AC / DC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4...20 mA
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1000 kPa
Leakage rate	< 0.02 % of $k_{vs}$ value
Leakage rate bypass	< 0.2 % of $k_{vs}$ value
Medium temperature	1...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel/brass
Warranty	5 Years



### Range overview MXG461..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Con- nect. thread	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
300	300	G 1" B	0.6	15	BPZ:MXG461.15-0.6	<b>MXG461.15-0.6</b>
300	300	G 1" B	1.5	15	BPZ:MXG461.15-1.5	<b>MXG461.15-1.5</b>
300	300	G 1" B	3	15	BPZ:MXG461.15-3.0	<b>MXG461.15-3.0</b>
300	300	G 1¼" B	5	20	BPZ:MXG461.20-5.0	<b>MXG461.20-5.0</b>
300	300	G 1½" B	8	25	BPZ:MXG461.25-8.0	<b>MXG461.25-8.0</b>
300	300	G 2" B	12	32	BPZ:MXG461.32-12	<b>MXG461.32-12</b>
300	300	G 2¼" B	20	40	BPZ:MXG461.40-20	<b>MXG461.40-20</b>
300	300	G 2¾" B	30	50	BPZ:MXG461.50-30	<b>MXG461.50-30</b>

Fittings ALG..3 must be ordered as separate items and are also supplied as such.

$\Delta p_s$  for use as 2-port valve

### Accessories for MXG461..

Product Title	Data sheet	Stock no.	Product no.
Replacement electronic for MXG461.., MXF461.. and MXG461S.., DN15...32	N4455	BPZ:ASE1	<b>ASE1</b>
Replacement electronic for MXG461.., MXF461.., DN40...65	N4455	BPZ:ASE2	<b>ASE2</b>
Signal converter DC 0...20 V Phs to DC 0...10 V	N5143	BPZ:SEZ91.6	<b>SEZ91.6</b>
Malleable cast iron fitting G 1" / Rp ½", set of 3	N4463	BPZ:ALG153	<b>ALG153</b>
Malleable cast iron fitting G 1¼" / Rp ¾", set of 3	N4463	BPZ:ALG203	<b>ALG203</b>



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### Accessories for MXG461..

Product Title	Data sheet	Stock no.	Product no.
Malleable cast iron fitting G 1½" / Rp 1", set of 3	N4463	BPZ:ALG253	<b>ALG253</b>
Malleable cast iron fitting G 2" / Rp 1¼", set of 3	N4463	BPZ:ALG323	<b>ALG323</b>
Malleable cast iron fitting G 2¼" / Rp 1½", set of 3	N4463	BPZ:ALG403	<b>ALG403</b>
Malleable cast iron fitting G 2¾" / Rp 2", set of 3	N4463	BPZ:ALG503	<b>ALG503</b>

##### Fittings: Set of 3

Product Title	Data sheet	Stock no.	Product no.
Malleable cast iron fitting G 1" / Rp ½", set of 3	N4463	BPZ:ALG153	<b>ALG153</b>
Malleable cast iron fitting G 1¼" / Rp ¾", set of 3	N4463	BPZ:ALG203	<b>ALG203</b>
Malleable cast iron fitting G 1½" / Rp 1", set of 3	N4463	BPZ:ALG253	<b>ALG253</b>
Malleable cast iron fitting G 2" / Rp 1¼", set of 3	N4463	BPZ:ALG323	<b>ALG323</b>
Malleable cast iron fitting G 2¼" / Rp 1½", set of 3	N4463	BPZ:ALG403	<b>ALG403</b>
Malleable cast iron fitting G 2¾" / Rp 2", set of 3	N4463	BPZ:ALG503	<b>ALG503</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV) 3-port threaded valves

#### Modulating control valves with magnetic actuator, PN16, external thread, DVGW

MXG461B..

Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of DHW (mains water, water in open circuits), chilled water or low-temperature hot water.

With positioning control, position feedback signal, spring return function and manual control.

MXG461B... valves are UL listed

#### CAUTION!

Valve may only be used as a mixing or 2-port valve, not as a diverting valve.



Data sheet	N4461
PN class	PN 16
Operating voltage	AC 24 V DC 20...30 V
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1600 kPa
Leakage rate	< 0.05 % of $k_{vs}$ value
Leakage rate bypass	< 0.2 % of $k_{vs}$ value
Medium temperature	-20...130 °C
Medium	Water
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel
Product conformity	DVGW approved
Warranty	5 Years

#### Range overview MXG461B..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Con- nect. thread	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
1000	1000	G 1" B	0.6	15	BPZ:MXG461B15-0.6	<b>MXG461B15-0.6</b>
1000	1000	G 1" B	1.5	15	BPZ:MXG461B15-1.5	<b>MXG461B15-1.5</b>
1000	1000	G 1" B	3	15	BPZ:MXG461B15-3	<b>MXG461B15-3</b>
800	800	G 1¼" B	5	20	BPZ:MXG461B20-5	<b>MXG461B20-5</b>
700	700	G 1½" B	8	25	BPZ:MXG461B25-8	<b>MXG461B25-8</b>
600	600	G 2" B	12	32	BPZ:MXG461B32-12	<b>MXG461B32-12</b>
600	600	G 2¼" B	20	40	BPZ:MXG461B40-20	<b>MXG461B40-20</b>
600	600	G 2¾" B	30	50	BPZ:MXG461B50-30	<b>MXG461B50-30</b>

The fittings are made of bronze / brass and supplied with the valve.

$\Delta p_s$  for use as 2-port valve.

MXG461B.. valves with magnetic actuators are UL-listed.

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### 3-port threaded valves

##### Accessories for MXG461B..

Product Title	Data sheet	Stock no.	Product no.
Stem heating element for media temperatures 0 °C, 10 W, AC/DC 24 V		BPZ:Z366	<b>Z366</b>
Replacement electronic for MXG461B.., MVF461H.. and MXG462S..		BPZ:ASE12	<b>ASE12</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV) 3-port threaded valves

#### Modulating control valves with magnetic actuator, PN16, external thread, stainless steel

MXG461S..

Mixing and 2-port valves with magnetic actuator for modulating control of general and industrial HVAC plants. For open and closed circuits. With positioning control, position feedback signal, spring return function and manual control.

MXG461S... valves are UL listed.

#### CAUTION!

Valve may only be used as a mixing or 2-port valve, not as a diverting valve. When used as a 2-port seat valve, port B must be closed off by means of the supplied cover and the cap nut for the fitting.



Data sheet	N4465
PN class	PN 16
Operating voltage	AC / DC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4...20 mA
Positioning time	< 2 s
Spring return function	A -> AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Leakage rate	< 0.02 % of $k_{vs}$ value
Leakage rate bypass	< 0.2 % of $k_{vs}$ value
Medium temperature	1...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, inside set	CrNi steel
Warranty	5 Years

#### Range overview MXG461S..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
300	300	1.5	15	BPZ:MXG461S15-1.5	<b>MXG461S15-1.5</b>
300	300	5.0	20	BPZ:MXG461S20-5.0	<b>MXG461S20-5.0</b>
300	300	8.0	25	BPZ:MXG461S25-8.0	<b>MXG461S25-8.0</b>
300	300	12	32	BPZ:MXG461S32-12	<b>MXG461S32-12</b>

Union fittings made of stainless steel must be delivered by thirds.

$\Delta p_s$  for use as 2-port valve.

MXG461S.. valves with magnetic actuators are UL-listed.

#### Accessories for MXG461S..

Product Title	Data sheet	Stock no.	Product no.
Replacement electronic for MXG461.., MXF461.. and MXG461S.., DN 15...32	N4455	BPZ:ASE1	<b>ASE1</b>
Replacement electronic for MXG461.., MXF461.., DN 40...65	N4455	BPZ:ASE2	<b>ASE2</b>
Signal converter DC 0...20 V PHS to DC 0...10 V	N5143	BPZ:SEZ91.6	<b>SEZ91.6</b>

**Globe and pressure independent control valve (PICV)  
3-port threaded valves**

**MXG462S..**



**Modulating control valves with magnetic actuator, PN16, external thread, stainless steel**

Mixing and 2-port valves with magnetic actuator for modulating control of general and industrial HVAC plants. For open and closed circuits. With positioning control, position feedback signal, spring return function and manual control.

MXG462S.. valves are UL listed

**CAUTION!**

Valve may only be used as a mixing or 2-port valve, not as a diverting valve. When used as a 2-port valve, port B must be closed off with the cover supplied with the valve and a cap nut of the fitting.

Data sheet	N4466
PN class	PN 16
Operating voltage	AC 24 V DC 20...30 V
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1600 kPa
Leakage rate	< 0.05 % of $k_{vs}$ value
Leakage rate bypass	< 0.2 % of $k_{vs}$ value
Medium temperature	-20...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, inside set	CrNi steel
Warranty	5 Years

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**Range overview MXG462S..**

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Con- nect. thread	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
600	600	G 2 3/4" B	30	50	BPZ:MXG462S50-30	<b>MXG462S50-30</b>

Union fittings made of stainless steel must be delivered by thirds.

$\Delta p_s$  for use as 2-port valve.

MXG462S.. valves with magnetic actuators are UL-listed.

**Accessories for MXG462S..**

Product Title	Data sheet	Stock no.	Product no.
Stem heating element for media temperatures 0 °C, 10 W, AC/DC 24 V		BPZ:Z366	<b>Z366</b>

## Valves and actuators

# Globe and pressure independent control valve (PICV)

### 3-port threaded valves

#### Fittings, pipe-side with threaded connection

ALG..3

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.

Each fitting set ALG..3 consists of 3 cap nuts, 3 insert nuts and 3 flat seals.



Warranty 2 Years

#### Range overview ALG..3

Connecting thread, valve side	Connecting thread, pipe side ["]	Material	Stock no.	Product no.
G 3/4 "	Rp 3/8	Malleable cast iron, phosphated	BPZ:ALG123	ALG123
G 1/2 "	R 3/8	Brass	BPZ:ALG133	ALG133
G 3/4 "	R 1/2	Brass	BPZ:ALG143	ALG143
G 1 "	Rp 1/2	Malleable cast iron, phosphated	BPZ:ALG153	ALG153
G 1 1/4 "	Rp 3/4	Malleable cast iron, phosphated	BPZ:ALG203	ALG203
G 1 1/2 "	Rp 1	Malleable cast iron, phosphated	BPZ:ALG253	ALG253
G 2 "	Rp 1 1/4	Malleable cast iron, phosphated	BPZ:ALG323	ALG323
G 2 1/4 "	Rp 1 1/2	Malleable cast iron, phosphated	BPZ:ALG403	ALG403
G 2 3/4 "	Rp 2	Malleable cast iron, phosphated	BPZ:ALG503	ALG503
G 1 "	Rp 1/2	Brass	S55846-Z101	ALG153B
G 1 1/4 "	Rp 3/4	Brass	S55846-Z103	ALG203B
G 1 1/2 "	Rp 1	Brass	S55846-Z105	ALG253B
G 2 "	Rp 1 1/4	Brass	S55846-Z107	ALG323B
G 2 1/4 "	Rp 1 1/2	Brass	S55846-Z109	ALG403B
G 2 3/4 "	Rp 2	Brass	S55846-Z111	ALG503B

#### Fittings, pipeside with welding connection

ALS..

Cylindric thread to ISO 228-1 on valve side. Welded connection on the pipe side.

Each ALS.. set consists of 2 cap nuts, 2 inserts and 2 flat seals.

Warranty 5 Years



#### Fittings with weldable connections: Set of 2

Pipe diameter [mm]	Connecting thread, valve side ["]	Stock no.	Product no.
21.3	G 3/4	BPZ:ALS152	ALS152
26.8	G 1	BPZ:ALS202	ALS202
33.7	G 1 1/4	BPZ:ALS252	ALS252

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Globe and pressure independent control valve (PICV)

Flanged pressure independent control valves

EVF..



**Intelligent Valve as a sensor controlled pressure independent control valve PN16 with flanged connection including flow and capacity measurement.**

- RS485 for Modbus RTU integration e.g. into Climatix
- Ethernet Daisychain for BACnet IP integration into Desigo
- Cloud connectivity to extend functionality with various Software-as-a-Service (SaaS) packages such as Building Operator - a cloud-based application to manage fleet of sites
- Power supply AC/DC 24 V
- Control signal analog DC0/2..10V or 4..20mA
- With flanged connections to ISO 7005/1
- For use in heating, ventilating, air conditioning systems as a control valve and for dynamic hydraulic balancing
- For use with cooling, chilled, low and high temperature water in closed circuits
- Volumetric flow 10'000...120'000 l/h

Data sheet	A6V11444716
PN class	PN 16
Operating voltage	AC 24 V DC 24 V
Frequency	50 Hz
Communication	Ethernet - BACnet IP Ethernet - Cloud Modbus RTU
Universal inputs	2
Universal input, signal	Pt1000 LG-Ni1000 DC 0...10 V DC 2...10 V 4...20 mA
Analog output, signal	DC 2...10 V DC 0...10 V DC 4...20 mA
Analog inputs, number	2
Analog input, signal	Pt1000
Measurement accuracy	Volume flow: +/- 2% (25...100% V100) Temperature difference (at 20 °C): +/- 0.2 K
Control accuracy, volume flow	+/- 5 % (25...100 % V100)
Rangeability	1:100
Leakage rate	0.03 % of kvs-value
Valve characteristic	selectable
Medium	Low-temperature hot water High-temperature hot water Chilled water
Medium temperature	1...120 °C
Material, inside set	Stainless steel
Warranty	5 Years

**Range overview EVF..**

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	kvs [m³/h]	SAV.. Δp <sub>max</sub> [kPa]	SAV.. Δp <sub>s</sub> [kPa]	SAX.. Δp <sub>max</sub> [kPa]	SAX.. Δp <sub>s</sub> [kPa]	Stock no.	Product no.
65	30	10	55			600	1600	S55300-M106	EVF4U20E065
80	48	16	80			600	1600	S55300-M107	EVF4U20E080
100	75	25	100	600	1600			S55300-M108	EVF4U20E100
125	120	40	142	600	1600			S55300-M109	EVF4U20E125



Valves and actuators

## Globe and pressure independent control valve (PICV) Flanged pressure independent control valves

### Accessories for EVF..

Product Title	Data sheet	Stock no.	Product no.
Control Valve Mounting Set PN16 for Intelligent Valve with flange connection	A6V11444716	BPZ:ALF4..	<b>ALF4..</b>
Pair of temperature sensors Pt1000, length 100 mm, ø 6 mm, type PL, cable length 2.5 m	A6V11444716	S55845-Z230	<b>EZU10-10025</b>
Pair of temperature sensors Pt1000, length 100 mm, ø 6 mm, type PL, cable length 6 m	A6V11444716	S55845-Z237	<b>EZU10-10060</b>
Wall mount socket for Intelligent Valve Controller Box ASE4U10E		S55845-Z234	<b>EZU-WA</b>
Spacer for mounting Intelligent Valve Controller Box ASE4U10E with a 25 mm distance on the flow sensor		S55845-Z236	<b>EZU-WB</b>
Ultrasonic Flow Sensor for Intelligent Valve, PN16, flanged connection	A6V11444716	BPZ:AVF4	<b>AVF4..</b>
Welding sleeve G ½", 45° to the pipe axis, with threaded hole G ½"		S55563-F122	<b>WZT-G12</b>
Welding sleeve G ½", 90° to the pipe axis, with threaded hole G ½"		LYU:WZT-GLG	<b>WZT-GLG</b>

### Accessories for EXF..

Product Title	Data sheet	Stock no.	Product no.
Control Valve Mounting Set PN16 for Intelligent Valve with flange connection	A6V11444716	BPZ:ALF4..	<b>ALF4..</b>
Pair of temperature sensors Pt1000, length 100 mm, ø 6 mm, type PL, cable length 2.5 m	A6V11444716	S55845-Z230	<b>EZU10-10025</b>
Pair of temperature sensors Pt1000, length 100 mm, ø 6 mm, type PL, cable length 6 m	A6V11444716	S55845-Z237	<b>EZU10-10060</b>
Wall mount socket for Intelligent Valve Controller Box ASE4U10E		S55845-Z234	<b>EZU-WA</b>
Spacer for mounting Intelligent Valve Controller Box ASE4U10E with a 25 mm distance on the flow sensor		S55845-Z236	<b>EZU-WB</b>
Ultrasonic Flow Sensor for Intelligent Valve, PN16, flanged connection	A6V11444716	BPZ:AVF4	<b>AVF4..</b>
Welding sleeve G ½", 45° to the pipe axis, with threaded hole G ½"		S55563-F122	<b>WZT-G12</b>
Welding sleeve G ½", 90° to the pipe axis, with threaded hole G ½"		LYU:WZT-GLG	<b>WZT-GLG</b>

Globe and pressure independent control valve (PICV)

Flanged pressure independent control valves

EXF..



**Intelligent Valve 3-Port configuration as a sensor controlled pressure independent control valve PN16 with flanged connection including flow and capacity measurement**

- RS485 for Modbus RTU integration e.g. into Climatix
- Ethernet Daisychain for BACnet IP integration into Desigo
- Cloud connectivity to extend functionality with various Software-as-a-Service (SaaS) packages such as Building Operator – a cloud-based application to manage fleet of sites
- Power supply AC/DC 24 V
- Control signal analog DC0/2..10V or 4..20mA
- With flanged connections to ISO 7005/1
- For use in heating, ventilating, air conditioning systems as a control valve and for dynamic hydraulic balancing
- For use with cooling, chilled, low and high temperature water in closed circuits
- Volume flow 6000...50'000 l/h.

Data sheet	A6V11444716
PN class	PN 16
Operating voltage	AC 24 V DC 24 V
Frequency	50 Hz
Communication	Ethernet - BACnet IP Ethernet - Cloud RS485 - Modbus RTU
Universal inputs	2
Universal input, signal	Pt1000 LG-Ni1000 DC 0... 10 V DC 2... 10 V 4...20 mA
Analog outputs, number	1
Analog outputs	1
Analog output, signal	DC 2... 10 V DC 0... 10 V DC 4...20 mA
Analog inputs, number	2
Analog input, signal	Pt1000
Measurement accuracy	Volume flow: +/- 2% (25...100% V100) Temperature difference (at 20 °C): +/- 0.2 K
Control accuracy, volume flow	+/- 5 % (25...100 % V100)
Rangeability	1:100
Leakage rate	0.03 % of kvs Bypass: 1...3 % of kvs
Valve characteristic	selectable
Medium	Low-temperature hot water High-temperature hot water Chilled water
Medium temperature	1...120 °C
Material, inside set	Stainless steel
Packaging unit	Unit
Warranty	5 Years

Range overview EXF..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	kvs [m³/h]	SAX.. Δpmax [kPa]	Stock no.	Product no.
65	20	6	54	150	S55300-M117	EXF4U20E065
80	32	9.6	79	75	S55300-M118	EXF4U20E080
100	50	15	116	125	S55300-M119	EXF4U20E100

## Valves and actuators

# Globe and pressure independent control valve (PICV) Flanged pressure independent control valves

### Pressure independent control valves (PICV) PN16 with flanged connections

VPF43..

For use in heating, ventilating, air conditioning systems and district heating as a control valve in closed circuits.



Data sheet	N4315
Leakage rate	Class IV (0...0.01% of volumetric flow)
PN class	PN 16
Medium	Water Water with anti-freeze
Valve characteristic	Linear
Rangeability	1:100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron
Material, inside set	Stainless steel, Brass (DZR)
Mounting position	Upright to 90° inclined
Warranty	5 Years

### Range overview VPF43..

DN	Vol. flow Vmin [m³/h]	Vol. flow V [m³/h]	$\Delta P_{min}$ [kPa]	SAV..P $\Delta p_{max}$ [kPa]	SAV..P $\Delta p_s$ [kPa]	SQV..P $\Delta p_{max}$ [kPa]	SQV..P $\Delta p_s$ [kPa]	Stock no.	Product no.
125	18.5	110	35	600	600	600	600	S55266-V108	VPF43.125F110
125	23	135	53	600	600	600	600	S55266-V109	VPF43.125F135
150	25.6	148	35	600	600	600	600	S55266-V110	VPF43.150F160
150	32	195	65	600	600	600	600	S55266-V111	VPF43.150F200
200	95	210	32	600	600	600	600	S55266-V148	VPF43.200F210
200	130	280	78	600	600	600	600	S55266-V149	VPF43.200F280

Further information to the actuators please see "Actuators for combi valves".

Check the datasheet for detailed  $\Delta P_{min}$  values per presetting

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Flanged pressure independent control valves

VPF43../1

#### Pressure independent control valves (PICV) PN16 with flanged connections

For use in heating, ventilating, air conditioning systems and district heating as a control valve in closed circuits.

Data sheet	A6V11213406
Leakage rate	Class IV (0...0.01% of volumetric flow)
PN class	PN 16
Medium	Water
	Water with anti-freeze
Medium temperature	1... 120 °C
Valve characteristic	Linear
Rangeability	1:100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron
Material, inside set	Stainless steel, Brass (DZR)
Mounting position	Upright to 90° inclined
Warranty	5 Years

For customer in Asia/Australia

#### Range overview VPF43../1

DN	Vol. flow V [m³/h]	Vol. flow V <sub>min</sub> [m³/h]	SAV..P Δp <sub>max</sub> [kPa]	SAV..P Δp <sub>s</sub> [kPa]	SQV..P Δp <sub>max</sub> [kPa]	SQV..P Δp <sub>s</sub> [kPa]	Stock no.	Product no.
125	110	18.5	600	600	600	600	S55266-V128	VPF43.125F110/1
125	135	23	600	600	600	600	S55266-V134	VPF43.125F135/1
150	148	25.6	600	600	600	600	S55266-V129	VPF43.150F160/1
150	195	32	600	600	600	600	S55266-V135	VPF43.150F200/1

#### Accessories for VPF43..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45..., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	ALP47
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	ALP48
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	ALP49

#### Combinable actuator for VPF43..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	120	N4510	S55150-A121	SAV31P00
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4510	S55150-A119	SAV61P00
AC/DC 24	Modbus RTU	120	N4510	S55150-A144	SAV61P00/MO

Valves and actuators

## Globe and pressure independent control valve (PICV) Flanged pressure independent control valves

**Combinable actuator for VPF43..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC/DC 24	3-position	120	N4510	S55150-A120	<b>SAV81P00</b>
AC 24 DC 24	3-position DC 0... 10 V DC 4... 20 mA	20 mm: 40 40 mm: 80	N4833	S55150-A130	<b>SQV91P30</b>
AC 24 DC 24	3-position DC 0... 10 V DC 4... 20 mA	20 mm: 40 40 mm: 80	N4833	S55150-A131	<b>SQV91P40</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Flanged pressure independent control valves

#### VPF44..



#### Pressure independent control valves (PICVs) PN16 with flanged connections

For use in heating, ventilation, air conditioning systems and district heating as a control valve in closed circuits.

Leakage rate	Class IV (0...0.01% of volumetric flow)
PN class	PN 16
Medium	Water Water with anti-freeze
Valve characteristic	Linear
Rangeability	1:100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron
Material, inside set	Stainless steel, Brass (DZR)
Mounting position	Upright to 90° inclined
Warranty	5 Years

#### Range overview VPF44..

DN	Vol. flow V [m³/h]	Vol. flow V <sub>min</sub> [m³/h]	ΔP <sub>min</sub> [kPa]	SAX.. Δp <sub>max</sub> [kPa]	SAX.. Δp <sub>s</sub> [kPa]	SAX..P Δp <sub>max</sub> [kPa]	SAX..P Δp <sub>s</sub> [kPa]	SAV.. Δp <sub>max</sub> [kPa]	SAV.. Δp <sub>s</sub> [kPa]	SQV..P Δp <sub>max</sub> [kPa]	SQV..P Δp <sub>s</sub> [kPa]	Stock no.	Product no.
50	14.3	3.7	25	600	700	600	700			600	700	S55266-V174	VPF44.50F15
50	24.6	5.7	55	600	700	600	700			600	700	S55266-V175	VPF44.50F25
65	24.4	4.5	32	600	700	600	700			600	700	S55266-V176	VPF44.65F25
65	37.7	6.4	50	600	700	600	700			600	700	S55266-V177	VPF44.65F35
80	35.7	6.8	22	600	700	600	700			600	700	S55266-V178	VPF44.80F35
80	49.9	8.5	40	600	700	600	700			600	700	S55266-V179	VPF44.80F45
100	69.6	12.2	33					600	700	600	700	S55266-V142	VPF44.100F70
100	90.9	14.8	45					600	700	600	700	S55266-V143	VPF44.100F90

#### Accessories for VPF44..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
DPR replacement for VPF44.100F70/VPF54.100F70		S55264-V161	ALR100F70
DPR replacement for VPF44.100F90/VPF54.100F90		S55264-V162	ALR100F90
DPR replacement for VPF44.50F15/VPF54.50F15		S55264-V155	ALR50F15
DPR replacement for VPF44.50F25/VPF54.50F25		S55264-V156	ALR50F25
DPR replacement for VPF44.65F25		S55264-V157	ALR65F25-LP
DPR replacement for VPF44.65F35		S55264-V158	ALR65F35-LP
DPR replacement for VPF44.80F35/VPF54.80F35		S55264-V159	ALR80F35
DPR replacement for VPF44.80F45/VPF54.80F45		S55264-V160	ALR80F45
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	ALP47
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	ALP48
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	ALP49

Valves and actuators

## Globe and pressure independent control valve (PICV) Flanged pressure independent control valves

### Combinable actuator for VPF44..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	30	N4509	S55150-A118	<b>SAX31P03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	N4509	S55150-A114	<b>SAX61P03</b>
AC/DC 24	Modbus RTU	30	N4509	S55150-A143	<b>SAX61P03/MO</b>
AC/DC 24	3-position	30	N4509	S55150-A116	<b>SAX81P03</b>
AC 230	3-position	120	N4510	S55150-A121	<b>SAV31P00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4510	S55150-A119	<b>SAV61P00</b>
AC/DC 24	Modbus RTU	120	N4510	S55150-A144	<b>SAV61P00/MO</b>
AC/DC 24	3-position	120	N4510	S55150-A120	<b>SAV81P00</b>
AC 24	3-position	20 mm: 40	N4833	S55150-A130	<b>SQV91P30</b>
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			
AC 24	3-position	20 mm: 40	N4833	S55150-A131	<b>SQV91P40</b>
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Flanged pressure independent control valves

#### VPF53..



#### Combi valves (PICV) PN25 with flanged connections

For use in heating, ventilating, air conditioning systems and district heating as a control valve in closed circuits

Data sheet	N4316
Leakage rate	Class IV (0...0.01% of volumetric flow)
PN class	PN 25
Medium	Water Water with anti-freeze
Valve characteristic	Linear
Rangeability	1:100
Permissible operating pressure	2500 kPa
Material, valve body	Cast iron EN-GJS-400-15
Material, inside set	Stainless steel, Brass (DZR)
Mounting position	Upright to 90° inclined
Warranty	5 Years

#### Range overview VPF53..

DN	Vol. flow Vmin [m³/h]	Vol. flow V [m³/h]	$\Delta p_{min}$ [kPa]	SAV..P $\Delta p_{max}$ [kPa]	SAV..P $\Delta p_s$ [kPa]	SQV..P $\Delta p_{max}$ [kPa]	SQV..P $\Delta p_s$ [kPa]	Stock no.	Product no.
125	18.5	110	35	600	600	600	600	S55266-V120	VPF53.125F110
125	23	135	53	600	600	600	600	S55266-V121	VPF53.125F135
150	25.6	148	35	600	600	600	600	S55266-V122	VPF53.150F160
150	32	195	65	600	600	600	600	S55266-V123	VPF53.150F200
200	95		32	600	600	600	600	S55266-V150	VPF53.200F210
200	130		78	600	600	600	600	S55266-V151	VPF53.200F280

Further information to the actuators please see "Actuators for combi valves".

Check the datasheet for detailed  $\Delta p_{min}$  values per presetting

#### Accessories for VPF53..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	ALP47
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	ALP48
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	ALP49

#### Combinable actuator for VPF53..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	120	N4510	S55150-A121	SAV31P00
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4510	S55150-A119	SAV61P00
AC/DC 24	Modbus RTU	120	N4510	S55150-A144	SAV61P00/MO
AC/DC 24	3-position	120	N4510	S55150-A120	SAV81P00
AC 24	3-position	20 mm: 40	N4833	S55150-A130	SQV91P30
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			
AC 24	3-position	20 mm: 40	N4833	S55150-A131	SQV91P40
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			



## Valves and actuators

# Globe and pressure independent control valve (PICV) Flanged pressure independent control valves

### Pressure independent control valves (PICVs) PN25 with flanged connections

VPF54..

For use in heating, ventilating, air conditioning systems and district heating as a control valve in closed circuits



Data sheet	A6V12273951
Leakage rate	Class IV (0...0.01% of volumetric flow)
Medium	Water
	Water with anti-freeze
Medium temperature	1...120 °C
Valve characteristic	Linear
Rangeability	1:100
Permissible operating pressure	2500 kPa
Material, valve body	Cast iron EN-GJS-400-15
Material, inside set	Stainless steel, Brass (DZR)
Mounting position	Upright to 90° inclined
Warranty	5 Years

### Range overview VPF54..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	$\Delta P_{min}$ [kPa]	SAX..P $\Delta p_{max}$ [kPa]	SAX..P $\Delta p_s$ [kPa]	SAV..P $\Delta p_{max}$ [kPa]	SAV..P $\Delta p_s$ [kPa]	SQV..P $\Delta p_{max}$ [kPa]	SQV..P $\Delta p_s$ [kPa]	Stock no.	Product no.
50	14.3	3.7	25	600	700			600	700	S55266-V152	VPF54.50F15
50	24.6	5.7	55	600	700			600	700	S55266-V153	VPF54.50F25
65	24.4	4.5	32	600	700			600	700	S55266-V154	VPF54.65F25
65	37.7	6.4	50	600	700			600	700	S55266-V155	VPF54.65F35
80	35.7	6.8	22	600	700			600	700	S55266-V156	VPF54.80F35
80	49.9	8.5	40	600	700			600	700	S55266-V157	VPF54.80F45
100	69.6	12.2	33			600	700	600	700	S55266-V158	VPF54.100F70
100	90.9	14.8	45			600	700	600	700	S55266-V159	VPF54.100F90

### Accessories for VPF54..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combivalves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combivalves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
DPR replacement for VPF44.100F70/VPF54.100F70		S55264-V161	ALR100F70
DPR replacement for VPF44.100F90/VPF54.100F90		S55264-V162	ALR100F90
DPR replacement for VPF44.50F15/VPF54.50F15		S55264-V155	ALR50F15
DPR replacement for VPF44.50F25/VPF54.50F25		S55264-V156	ALR50F25
DPR replacement for VPF54.65F25		S55264-V163	ALR65F25-HP
DPR replacement for VPF44.65F25		S55264-V157	ALR65F25-LP
DPR replacement for VPF54.65F35		S55264-V164	ALR65F35-HP
DPR replacement for VPF44.65F35		S55264-V158	ALR65F35-LP
DPR replacement for VPF44.80F35/VPF54.80F35		S55264-V159	ALR80F35
DPR replacement for VPF44.80F45/VPF54.80F45		S55264-V160	ALR80F45
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	ALP47
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	ALP48
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	ALP49

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Flanged pressure independent control valves

##### Combinable actuator for VPF54..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	30	N4509	S55150-A118	<b>SAX31P03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	N4509	S55150-A114	<b>SAX61P03</b>
AC/DC 24	Modbus RTU	30	N4509	S55150-A143	<b>SAX61P03/MO</b>
AC/DC 24	3-position	30	N4509	S55150-A116	<b>SAX81P03</b>
AC 230	3-position	120	N4510	S55150-A121	<b>SAV31P00</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4510	S55150-A119	<b>SAV61P00</b>
AC/DC 24	Modbus RTU	120	N4510	S55150-A144	<b>SAV61P00/MO</b>
AC/DC 24	3-position	120	N4510	S55150-A120	<b>SAV81P00</b>
AC 24	3-position	20 mm: 40	N4833	S55150-A130	<b>SQV91P30</b>
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			
AC 24	3-position	20 mm: 40	N4833	S55150-A131	<b>SQV91P40</b>
DC 24	DC 0...10 V DC 4...20 mA	40 mm: 80			

## Valves and actuators

# Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

EVG..



### Intelligent Valve - as a sensor controlled pressure independent control valve PN16 with threaded connection including flow and capacity measurement.

- RS485 for Modbus RTU integration e.g. into Climatix
- Ethernet Daisychain for BACnet IP integration into Desigo
- Cloud connectivity to extend functionality with various Software-as-a-Service (SaaS) packages such as Building Operator – a cloud-based application to manage fleet of sites
- Power supply AC/DC 24 V
- Control signal analog DC 0/2..10 V or 4..20 mA
- With threaded connections to ISO 228/1
- For use in heating, ventilating, air conditioning systems as a control valve and for dynamic hydraulic balancing
- For use with cooling, chilled, low and high temperature water in closed circuits
- Volumetric flow 500... 18'000 l/h

Data sheet	A6V11444716
PN class	PN 16
Operating voltage	AC 24 V DC 24 V
Frequency	50 Hz
Power consumption	8.5 VA 5 W
Communication	Ethernet - BACnet IP Ethernet - Cloud RS485 - Modbus RTU
Universal inputs	2
Universal input, signal	Pt1000 LG-Ni1000 DC 0...10 V DC 2...10 V 4...20 mA
Analog outputs	1
Analog output, signal	DC 2...10 V DC 0...10 V DC 4...20 mA
Analog inputs, number	2
Analog input, signal	Pt1000
$\Delta p_{max}$	600 kPa
Measurement accuracy	Volume flow: +/- 2% (25...100% V100) Temperature difference (at 20 °C): +/- 0.2 K
Control accuracy, volume flow	+/- 5 % (25...100 % V100)
Rangeability	1:100
Leakage rate	"Watertight" as per EN 60534-4 L/1, better than class 5
Valve characteristic	selectable
Medium	Low-temperature hot water High-temperature hot water Chilled water
Medium temperature	1...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass
Material, inside set	Brass
Warranty	5 Years

### Range overview EVG..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	$k_{vs}$ [m³/h]	GLA.. $\Delta p_{max}$ [kPa]	GLA.. $\Delta p_s$ [kPa]	Stock no.	Product no.
15	1.5	0.45	3.7	600	1400	S55300-M100	EVG4U10E015
20	3	0.9	5	600	1400	S55300-M101	EVG4U10E020
25	4.5	1.35	10	600	1400	S55300-M102	EVG4U10E025



## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### Range overview EVG..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	k <sub>vs</sub> [m³/h]	GLA.. Δp <sub>max</sub> [kPa]	GLA.. Δp <sub>s</sub> [kPa]	Stock no.	Product no.
32	7	2.1	11	600	1000	S55300-M103	EVG4U10E032
40	11.5	3.5	26	600	800	S55300-M104	EVG4U10E040
50	18	5.4	30	600	600	S55300-M105	EVG4U10E050

##### Accessories for EVG..

Product Title	Data sheet	Stock no.	Product no.
Fittings, pipe-side with threaded connection		BPZ:ALG..2	ALG..2
Control valve section PN16 for Intelligent Valve EVG4U10.. for line sizes DN 15...50 with outside threaded connection	A6V11444716	BPZ:AVG4..	AVG4..VAG
Protection pocket G ¼ B, M10x1, brass, Ø 5.2x40 mm, for temperature sensor Ø 5.2x26 mm	A6V11444716	S55845-Z231	EZT-M40
Pair of temperature sensors Pt1000, length 26.5 mm, ø 5.2 mm, type DS, with screw connector M10 × 1, cable length 1.5 m	A6V11444716	S55845-Z229	EZU10-2615
Wall mount socket for Intelligent Valve Controller Box ASE4U10E		S55845-Z234	EZU-WA
Spacer for mounting Intelligent Valve Controller Box ASE4U10E with a 25 mm distance on the flow sensor		S55845-Z236	EZU-WB
Ball valve Rp ½" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		S55563-F104	WZT-K12
Ball valve Rp ¾" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm		S55563-F120	WZT-K34
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		S55563-F119	WZT-K1
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm		S55563-F121	WZT-G10
Strainer, inside threaded		BPZ:ALX..	ALX..
Insulation covers for ball valves		BPZ:ALI..	ALI..

Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

EXG..



**Intelligent Valve 3-Port configuration as a sensor controlled pressure independent control valve PN16 threaded connection including flow and capacity measurement.**

- RS485 for Modbus RTU integration e.g. into Climatix
- Ethernet Daisychain for BACnet IP integration into Desigo
- Cloud connectivity to extend functionality with various Software-as-a-Service (SaaS) packages such as Building Operator – a cloud-based application to manage fleet of sites.
- Power supply AC/DC 24 V
- Control signal analog DC 0/2..10 V or 4..20 mA
- With threaded connections to ISO 228/1
- For use in heating, ventilating, air conditioning systems as a control valve and for dynamic hydraulic balancing
- For use with cooling, chilled, low and high temperature water in closed circuits
- Volumetric flow 360...12'000 l/h

Data sheet	A6V11444716
PN class	PN 16
Operating voltage	AC 24 V DC 24 V
Frequency	50 Hz
Power consumption	8.5 VA / 5 W
Communication	Ethernet - BACnet IP Ethernet - Cloud RS485 - Modbus RTU
Universal inputs	2
Universal input, signal	Pt1000 LG-Ni1000 DC 0...10 V DC 2...10 V 4...20 mA
Analog outputs, number	1
Analog outputs	1
Analog output, signal	DC 2...10 V DC 0...10 V DC 4...20 mA
Analog inputs, number	2
Analog input, signal	Pt1000
$\Delta p_{max}$	200 kPa
Measurement accuracy	Volume flow: +/- 2% (25...100% V100) Temperature difference (at 20°C): +/- 0.2 K
Control accuracy, volume flow	+/- 5% (25...100% V100)
Rangeability	1:100
Leakage rate	"Watertight" as per EN 60534-4 L/1, better than class 4 Bypass: selectable
Valve characteristic	Low-temperature hot water High-temperature hot water Chilled water
Medium	1...120 °C
Medium temperature	1600 kPa
Permissible operating pressure	Brass
Material, valve body	Brass
Material, inside set	Unit
Packaging unit	5 Years
Warranty	

### Range overview EXG..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	$k_{vs}$ [m³/h]	GLA.. $\Delta p_{max}$ [kPa]	Stock no.	Product no.
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## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### Range overview EXG..

DN	Vol. flow V [m³/h]	Vol. flow Vmin [m³/h]	k <sub>vs</sub> [m³/h]	GLA.. Δp <sub>max</sub> [kPa]	Stock no.	Product no.
15	1.2	0.36	3.7	200	S55300-M111	EXG4U10E015
20	2	0.6	4	200	S55300-M112	EXG4U10E020
25	3.2	0.96	8	200	S55300-M113	EXG4U10E025
32	5	1.5	10	200	S55300-M114	EXG4U10E032
40	8	2.4	18	200	S55300-M115	EXG4U10E040
50	12	3.6	26	200	S55300-M116	EXG4U10E050

##### Accessories for EXG..

Product Title	Data sheet	Stock no.	Product no.
Protection pocket G ¼ B, M10x1, brass, Ø 5.2x40 mm, for temperature sensor Ø 5.2x26 mm	A6V11444716	S55845-Z231	EZT-M40
Pair of temperature sensors Pt1000, length 26.5 mm, ø 5.2 mm, type DS, with screw connector M10 × 1, cable length 1.5 m	A6V11444716	S55845-Z229	EZU10-2615
Wall mount socket for Intelligent Valve Controller Box ASE4U10E		S55845-Z234	EZU-WA
Spacer for mounting Intelligent Valve Controller Box ASE4U10E with a 25 mm distance on the flow sensor		S55845-Z236	EZU-WB
Ball valve Rp ½" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		S55563-F104	WZT-K12
Ball valve Rp ¾" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm		S55563-F120	WZT-K34
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm		S55563-F119	WZT-K1
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm		S55563-F121	WZT-G10
Strainer, inside threaded		BPZ:ALX..	ALX..
Insulation covers for ball valves		BPZ:ALI..	ALI..
Control valve section 3-Port PN16 for Intelligent Valve EXG4U10.. for line sizes DN 15...50 with outside threaded connection	A6V11444716	BPZ:AVG4..VBG	AVG4..VBG

## Valves and actuators

# Globe and pressure independent control valve (PICV)

## Threaded pressure independent control valves

### 2-port seat MiniCombiValves (PICV)

VPD..

CombiValves with presetting, PN 10, with connections according to EN215 for

- ventilation and air conditioning plants for control on the water side and automatic hydraulic balancing of terminal units, such as fan coils, induction units, and in heat exchangers for heating or cooling.
- heating zones like self-contained heating systems, apartments, individual rooms, etc.
- closed circuits



Suitable media: Water (to VDI 2035), water with anti-freeze.

The valves can be operated with Siemens actuators type SSA.. / STA.. and thermostatic actuators RTN..

Data sheet	N2185
Stroke	2.5 mm
PN class	PN 10
Medium	Water with anti-freeze
Medium temperature	1...90 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
Material, inside set	EPDM
Warranty	5 Years

### Range overview VPD..

DN	Con-nect. thread	Vol. flow V [l/h]	kv at 0.5 mm stroke [m <sup>3</sup> /h]	$\Delta P_w$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta P_{min}$ [kPa]	Stock no.	Product no.
10	Rp/R 3/8"	45	0.05	5	200	6	BPZ:VPD110A-45	<b>VPD110A-45</b>
10	Rp/R 3/8"	90	0.09	5	200	8	BPZ:VPD110A-90	<b>VPD110A-90</b>
10	Rp/R 3/8"	145	0.15	5	200	10	BPZ:VPD110A-145	<b>VPD110A-145</b>
15	Rp/R 1/2"	90	0.09	5	200	8	BPZ:VPD115A-90	<b>VPD115A-90</b>
15	Rp/R 1/2"	200	0.2	10	200	20	BPZ:VPD115B-200	<b>VPD115B-200</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

VPE..



#### Angle MiniCombiValves (PICV)

Combivalves with presetting, PN 10, with connections according to EN215 for

- ventilation and air conditioning plants for control on the water side and automatic hydraulic balancing of terminal units, such as fan coils, induction units, and in heat exchangers for heating or cooling.
- heating zones like self-contained heating systems, apartments, individual rooms, etc.
- closed circuits

Suitable media: Water (to VDI 2035), water with anti-freeze.

The valves can be operated with Siemens actuators type SSA.. / STA.. and thermostatic actuators RTN..

Data sheet	N2185
Stroke	2.5 mm
PN class	PN 10
Medium	Water with anti-freeze
Medium temperature	1...90 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
Material, inside set	EPDM
Warranty	5 Years

#### Range overview VPE..

DN	Con-nect. thread	Vol. flow V [l/h]	kv at 0.5 mm stroke [m³/h]	$\Delta P_w$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta P_{min}$ [kPa]	Stock no.	Product no.
10	Rp/R 3/8"	45	0.05	5	200	6	BPZ:VPE110A-45	VPE110A-45
10	Rp/R 3/8"	90	0.09	5	200	8	BPZ:VPE110A-90	VPE110A-90
10	Rp/R 3/8"	145	0.15	5	200	10	BPZ:VPE110A-145	VPE110A-145
15	Rp/R 1/2"	45	0.05	5	200	6	BPZ:VPE115A-45	VPE115A-45
15	Rp/R 1/2"	90	0.09	5	200	8	BPZ:VPE115A-90	VPE115A-90
15	Rp/R 1/2"	145	0.15	5	200	10	BPZ:VPE115A-145	VPE115A-145
10	Rp/R 3/8"	200	0.2	10	200	20	BPZ:VPE110B-200	VPE110B-200
15	Rp/R 1/2"	200	0.2	10	200	20	BPZ:VPE115B-200	VPE115B-200

#### Combinable actuator for VPD.. / VPE..

Operating voltage [V]	Positioning signal	Positioning time [s]	Cable length [m]	Data sheet	Stock no.	Product no.
				N2111	BPZ:RTN51	RTN51
				N4211	BPZ:RTN51G	RTN51G
				N2111	BPZ:RTN71	RTN71
				N2111	BPZ:RTN81	RTN81
DC 21...30 24		50/100	1.5	A6V11858280	S55180-A111	SSA118.09HKN
AC 230	3-position	150	1.5	N4893	BPZ:SSA31.1	SSA31.1
AC 24	3-position	150	1.5	N4893	BPZ:SSA81.1	SSA81.1
AC 24	3-position	67.5	1.5	A6V11858276	S55180-A106	SSA131.00
AC 24	4...20 mA	25	1.5	A6V11858278	S55180-A110	SSA151.05HF
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858276	S55180-A107	SSA161.05
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A108	SSA161.05HF
DC 24						
AC 24	DC 0...10 V	25	1.5	A6V11858278	S55180-A109	SSA161E.05HF
DC 24						
AC 230	3-position	67.5	1.5	A6V11858276	S55180-A105	SSA331.00



Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

### Combinable actuator for VPD.. / VPE..

Operating voltage [V]	Positioning signal	Positioning time [s]	Cable length [m]	Data sheet	Stock no.	Product no.
AC 230	2-position	210		N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210		N4884	S55174-A114	<b>STA23MP/00</b>
AC 24	2-position	270		N4884	S55174-A117	<b>STA73B/00</b>
DC 24	PDM					
AC 24	2-position	270		N4884	S55174-A113	<b>STA73MP/00</b>
DC 24	PDM					

### Seal insertion for VPD.. and VPE.. MiniCombiValves (MCV)

**AV100-VP1**

Valve insert for use with all types of valves of the VPD.. and VPE.. ranges.



Data sheet N2100  
Warranty 2 Years

Stock no.	Product no.
BPZ:AV100-VP1	<b>AV100-VP1</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### VPP46..



##### Combi valves (PICV) PN25, externally threaded

Pre-adjustable Combi valves, PN 25, externally threaded for

- ventilation and air conditioning plants for control on the water side and automatic hydraulic balancing of terminal units, such as fan coils, induction units, and in heat exchangers for heating or cooling.
- heating zones like self-contained heating systems, apartments, individual rooms, etc.
- closed circuits

Volumetric flow 30...4000 l/h. With or without differential pressure test points.

Data sheet	N4855
Stroke	Up to DN 15: 2.5 mm DN 20: 5 mm DN 25-32: 5.5 mm
Leakage rate	Class IV (0...0.01% of volumetric flow $V_{100}$ )
PN class	PN 25
Medium	Water Water with anti-freeze
Medium temperature	1...120 °C
Ambient temperature, operation	1...50 °C
Valve characteristic	Linear
Permissible operating pressure	2500 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant brass (DR), CW602N, stainless steel, PPS
Mounting position	Upright to 90° inclined
Warranty	5 Years

##### Range overview VPP46..

DN	Connect. thread	Vol. flow V [l/h]	Vol. flow $V_{min}$ [l/h]	STA...3.. $\Delta p_{max}$ [kPa]	STA...3.. $\Delta p_{min}$ [kPa]	SSA.. $\Delta p_{max}$ [kPa]	SSA.. $\Delta p_{min}$ [kPa]	Stock no.	Product no.
10	G 1/2"	200	30	600	16	600	16	S55264-V101	VPP46.10L0.2
10	G 1/2"	200	30	600	16	600	16	S55264-V105	VPP46.10L0.2Q
10	G 1/2"	370	65	600	17	600	17	S55264-V131	VPP46.10L0.4
10	G 1/2"	370	65	600	17	600	17	S55264-V132	VPP46.10L0.4Q
15	G 3/4"	200	30	600	16	600	16	S55264-V102	VPP46.15L0.2
15	G 3/4"	200	30	600	16	600	16	S55264-V106	VPP46.15L0.2Q
15	G 3/4"	575	100	600	19	600	19	S55264-V103	VPP46.15L0.6
15	G 3/4"	575	100	600	19	600	19	S55264-V107	VPP46.15L0.6Q
20	G 1"	1330	220	600	21	600	22	S55264-V104	VPP46.20F1.4
20	G 1"	1330	220	600	21	600	22	S55264-V108	VPP46.20F1.4Q
25	G 1 1/4"	1800	280	600	39	600	39	S55264-V121	VPP46.25F1.8
25	G 1 1/4"	1800	280	600	39	600	39	S55264-V123	VPP46.25F1.8Q
32	G 1 1/2"	4000	550	600	24	600	28	S55264-V122	VPP46.32F4
32	G 1 1/2"	4000	550	600	24	600	28	S55264-V124	VPP46.32F4Q

Further information to the actuators please see "Actuators for combi valves with 2.5 mm stroke" and "Actuators for combi valves with 2.5 / 5 mm stroke and radiator valves".

VPP46..Q: with testpoint

Check the datasheet for detailed  $dP_{min}$  values per presetting

##### Accessories for VPP46..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
Black spare valve protection cap (set of 2 pieces)	A6V11877580	S55264-V153	ALP53
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46

Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

### Accessories for VPP46..

Product Title	Data sheet	Stock no.	Product no.
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	<b>ALP47</b>
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	<b>ALP48</b>
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	<b>ALP49</b>

### Combinable actuator for VPP46..

Operating voltage [V]	Positioning signal	Positioning time	Data sheet	Stock no.	Product no.
AC 230	3-position	150 s	N4893	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	150 s	N4893	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	67.5 s	A6V11858276	S55180-A106	<b>SSA131.00</b>
AC 24 DC 24	4...20 mA	25 s	A6V11858278	S55180-A110	<b>SSA151.05HF</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858276	S55180-A107	<b>SSA161.05</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858278	S55180-A108	<b>SSA161.05HF</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858278	S55180-A109	<b>SSA161E.05HF</b>
AC 230	3-position	67.5 s	A6V11858276	S55180-A105	<b>SSA331.00</b>
AC 230	2-position (SPST)	50 Hz:10 s 60 Hz:8.3 s	A6V10446174	S55176-A104	<b>SUA21/3</b>
AC 230	2-position (SPST)	10 s at 50 Hz 8.3 s at 60 Hz	A6V11780780	S55176-A105	<b>SUA21/3P</b>
AC 230	2-position (SPST)	12 s at 50 Hz 10 s at 60 Hz	A6V11780777	S55176-A106	<b>SUE21P</b>
AC 230	2-position	210 s	N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210 s	N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A113	<b>STA73MP/00</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### VPI46..



##### Combi valves (PICV) PN25, internally threaded

Pre-adjustable Combi valves, PN 25, internally threaded for

- ventilation and air conditioning plants for control on the water side and automatic hydraulic balancing of terminal units, such as fan coils, induction units, and in heat exchangers for heating or cooling.
- heating zones like self-contained heating systems, apartments, individual rooms, etc.
- closed circuits

Volumetric flow 30...11500 l/h. With or without differential pressure test points.

Data sheet	N4855
Stroke	Up to DN 15: 2.5 mm DN 20: 5 mm DN 25-32: 5.5 mm DN 40-50: 15 mm
Leakage rate	Class IV (0...0.01% of volumetric flow $V_{100}$ )
PN class	PN 25
Medium	Water Water with anti-freeze
Medium temperature	1...120 °C
Ambient temperature, operation	1...50 °C
Valve characteristic	Linear
Permissible operating pressure	2500 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant brass (DR), CW602N, stainless steel, PPS
Mounting position	Upright to 90° inclined
Warranty	5 Years

##### Range overview VPI46..

DN	Con-nect. thread	Vol. flow V [l/h]	Vol. flow $V_{min}$ [l/h]	SUA.. $\Delta p_{max}$ [kPa]	SUA.. $\Delta p_{min}$ [kPa]	SSA.. $\Delta p_{max}$ [kPa]	SSA.. $\Delta p_{min}$ [kPa]	STA..3.. $\Delta p_{max}$ [kPa]	STA..3.. $\Delta p_{min}$ [kPa]	SAY..P.. $\Delta p_{max}$ [kPa]	SAY..P.. $\Delta p_{min}$ [kPa]	Stock no.	Product no.
15	Rp 1/2"	200	30	600	16	600	16	600	16			S55264-V109	VPI46.15L0.2
15	Rp 1/2"	200	30	600	16	600	16	600	16			S55264-V112	VPI46.15L0.2Q
15	Rp 1/2"	575	100	600	19	600	19	600	19			S55264-V110	VPI46.15L0.6
15	Rp 1/2"	575	100	600	19	600	19	600	19			S55264-V113	VPI46.15L0.6Q
20	Rp 3/4"	1330	220			600	22	600	21			S55264-V111	VPI46.20F1.4
20	Rp 3/4"	1330	220			600	22	600	21			S55264-V114	VPI46.20F1.4Q
25	Rp 1"	1800	280			600	39	600	39			S55264-V125	VPI46.25F1.8
25	Rp 1"	1800	280			600	39	600	39			S55264-V127	VPI46.25F1.8Q
32	Rp 1 1/4"	4000	550			600	28	600	24			S55264-V126	VPI46.32F4
32	Rp 1 1/4"	4000	550			600	28	600	24			S55264-V128	VPI46.32F4Q
40	Rp 1 1/2"	9500	1370							600	25	S55264-V129	VPI46.40F9.5Q
50	Rp 1 1/2"	11500	1400							600	36	S55264-V130	VPI46.50F12Q

Further information to the actuators please see "Actuators for combi valves with 2.5 mm stroke" and "Actuators for combi valves with 2.5 / 5 mm stroke and radiator valves".

VPI46..Q: with testpoint.

Check the datasheet for detailed  $dP_{min}$  values per presetting

##### Accessories for VPI46..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
Black spare valve protection cap (set of 2 pieces)	A6V11877580	S55264-V153	ALP53
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46

Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

### Accessories for VPI46..

Product Title	Data sheet	Stock no.	Product no.
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	<b>ALP47</b>
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	<b>ALP48</b>
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	<b>ALP49</b>

### Combinable actuator for VPI46..

Operating voltage [V]	Positioning signal	Positioning time	Data sheet	Stock no.	Product no.
AC 230	3-position	150 s	N4893	BPZ:SSA31.1	<b>SSA31.1</b>
AC 24	3-position	150 s	N4893	BPZ:SSA81.1	<b>SSA81.1</b>
AC 24	3-position	67.5 s	A6V11858276	S55180-A106	<b>SSA131.00</b>
AC 24 DC 24	4...20 mA	25 s	A6V11858278	S55180-A110	<b>SSA151.05HF</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858276	S55180-A107	<b>SSA161.05</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858278	S55180-A108	<b>SSA161.05HF</b>
AC 24 DC 24	DC 0...10 V	25 s	A6V11858278	S55180-A109	<b>SSA161E.05HF</b>
AC 230	3-position	67.5 s	A6V11858276	S55180-A105	<b>SSA331.00</b>
AC 230	2-position (SPST)	50 Hz:10 s 60 Hz:8.3 s	A6V10446174	S55176-A104	<b>SUA21/3</b>
AC 230	2-position (SPST)	10 s at 50 Hz 8.3 s at 60 Hz	A6V11780780	S55176-A105	<b>SUA21/3P</b>
AC 230	2-position (SPST)	12 s at 50 Hz 10 s at 60 Hz	A6V11780777	S55176-A106	<b>SUE21P</b>
AC 230	2-position	210 s	N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210 s	N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A113	<b>STA73MP/00</b>
AC 230	3-position	30 s	A6V10628469	S55150-A132	<b>SAY31P03</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30 s	A6V10628469	S55150-A133	<b>SAY61P03</b>
AC/DC 24	3-position	30 s	A6V10628469	S55150-A134	<b>SAY81P03</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### VQP46..



##### On/Off PICV, PN 25, externally threaded

Presetable PICVs, PN 25, externally threaded for

- ventilation and air conditioning systems for water side control and automatic hydraulic balancing of air after-treatment devices, such as fan convectors, induction units, and in heat exchangers for heating or cooling.
- heating systems for heating zones such as floor heating systems, apartments, individual rooms, etc.
- closed circuits

Volumetric flow 30... 1800 l/h. With or without pressure measuring points P/T.

Data sheet	A6V11877580
Stroke	4 mm
Leakage rate	Class IV, 0...0.01 % of kvs
PN class	PN 25
Medium	Low-temperature hot water Chilled water Water with anti-freeze
Medium temperature	1...90 °C
Ambient temperature, operation	1...50 °C
Valve characteristic	On/Off
Permissible operating pressure	2500 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, stainless steel, PPS
Mounting position	SUE21P: Horizontally up to 90° and not hanging STA...3...: Any position
Warranty	5 Years

DN	Connect. thread	Vol. flow V [l/h]	Vol. flow V <sub>min</sub> [l/h]	STA...3... ΔP <sub>max</sub> [kPa]	STA...3... ΔP <sub>min</sub> [kPa]	SUE..P ΔP <sub>max</sub> [kPa]	SUE..P ΔP <sub>min</sub> [kPa]	Stock no.	Product no.
10	G 1/2"	520	30	600	30	600	30	S55264-V134	VQP46.10L0.5
10	G 1/2"	520	30	600	30	600	30	S55264-V133	VQP46.10L0.5Q
15	G 3/4"	1300	300	600	28	600	28	S55264-V142	VQP46.15F1.3
15	G 3/4"	1300	300	600	28	600	28	S55264-V141	VQP46.15F1.3Q
15	G 3/4"	520	30	600	28	600	28	S55264-V138	VQP46.15L0.5
15	G 3/4"	520	30	600	28	600	28	S55264-V137	VQP46.15L0.5Q
20	G 1"	1500	320	600	35	600	35	S55264-V146	VQP46.20F1.5
20	G 1"	1500	320	600	35	600	35	S55264-V145	VQP46.20F1.5Q
25	G 1 1/4"	1800	620	600	31	600	31	S55264-V150	VQP46.25F1.8
25	G 1 1/4"	1800	620	600	31	600	31	S55264-V149	VQP46.25F1.8Q

##### Accessories for VQP46..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	ALE10
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	ALE11
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	ALP45
Black spare valve protection cap (set of 2 pieces)	A6V11877580	S55264-V153	ALP53
DPR Replacement-Tool VQI46../VQP46..	A6V11877580	S55264-V154	ALP54
Blanking plug for P/T ports	CE1N4853	S55264-V115	ALP46
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	ALP47
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	ALP48
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	ALP49

Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

### Combinable actuator for VQP46..

Operating voltage [V]	Positioning signal	Positioning time	Data sheet	Stock no.	Product no.
AC 230	2-position (SPST)	12 s at 50 Hz 10 s at 60 Hz	A6V11780777	S55176-A106	<b>SUE21P</b>
AC 230	2-position	210 s	N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210 s	N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A113	<b>STA73MP/00</b>

## Valves and actuators

### Globe and pressure independent control valve (PICV)

#### Threaded pressure independent control valves

##### VQI46..



##### On/Off PICV, PN 25, internally threaded

Presetable PICVs, PN 25, internally threaded for

- ventilation and air conditioning systems for water side control and automatic hydraulic balancing of air after-treatment devices, such as fan convectors, induction units, and in heat exchangers for heating or cooling.
- heating systems for heating zones such as floor heating systems, apartments, individual rooms, etc.
- closed circuits

Volumetric flow 30... 1800 l/h. With or without pressure measuring points P/T.

Data sheet	A6V11877580
Stroke	4 mm
Leakage rate	Class IV, 0...0.01 % of kvs
PN class	PN 25
Medium	Low-temperature hot water Chilled water Water with anti-freeze
Medium temperature	1...90 °C
Ambient temperature, operation	1...50 °C
Valve characteristic	On/Off
Permissible operating pressure	2500 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, stainless steel, PPS
Mounting position	SUE21P: Horizontally up to 90° and not hanging STA...3...: Any position
Warranty	5 Years

##### Range overview VQI46..

DN	Con-nect. thread	Vol. flow V [l/h]	Vol. flow V <sub>min</sub> [l/h]	STA...3... ΔP <sub>max</sub> [kPa]	STA...3... ΔP <sub>min</sub> [kPa]	SUE..P ΔP <sub>max</sub> [kPa]	SUE..P ΔP <sub>min</sub> [kPa]	Stock no.	Product no.
15	Rp 1/2"	520	30	600	28	600	28	S55264-V136	<b>VQI46.15L0.5</b>
15	Rp 1/2"	520	30	600	28	600	28	S55264-V135	<b>VQI46.15L0.5Q</b>
15	Rp 1/2"	1300	300	600	28	600	28	S55264-V140	<b>VQI46.15F1.3</b>
15	Rp 1/2"	1300	300	600	28	600	28	S55264-V139	<b>VQI46.15F1.3Q</b>
20	Rp 3/4"	1500	320	600	35	600	35	S55264-V144	<b>VQI46.20F1.5</b>
20	Rp 3/4"	1500	320	600	35	600	35	S55264-V143	<b>VQI46.20F1.5Q</b>
25	G 1 1/4"	1800	620	600	31	600	31	S55264-V148	<b>VQI46.25F1.8</b>
25	Rp 1"	1800	620	600	31	600	31	S55264-V147	<b>VQI46.25F1.8Q</b>

##### Accessories for VQI46..

Product Title	Data sheet	Stock no.	Product no.
Electronic manometer for Siemens combi valves	CE1N4853	BPZ:ALE10	<b>ALE10</b>
Measuring lines and tips for Siemens combi valves	CE1N4853	BPZ:ALE11	<b>ALE11</b>
Spare nipples for VPI45.., set of 2, for VPI45..	CE1N4853	BPZ:ALP45	<b>ALP45</b>
Black spare valve protection cap (set of 2 pieces)	A6V11877580	S55264-V153	<b>ALP53</b>
DPR Replacement-Tool VQI46../VQP46..	A6V11877580	S55264-V154	<b>ALP54</b>
Blanking plug for P/T ports	CE1N4853	S55264-V115	<b>ALP46</b>
Drain ball valve inclusive O-ring	CE1N4853	S55264-V116	<b>ALP47</b>
Combined P/T port and drain ball valve with red ribbon	CE1N4853	S55264-V117	<b>ALP48</b>
Long P/T ports (set of 2 pieces)	CE1N4853	S55264-V118	<b>ALP49</b>



Valves and actuators

## Globe and pressure independent control valve (PICV) Threaded pressure independent control valves

### Combinable actuator for VQI46..

Operating voltage [V]	Positioning signal	Positioning time	Data sheet	Stock no.	Product no.
AC 230	2-position (SPST)	12 s at 50 Hz 10 s at 60 Hz	A6V11780777	S55176-A106	<b>SUE21P</b>
AC 230	2-position	210 s	N4884	S55174-A118	<b>STA23B/00</b>
AC 230	2-position	210 s	N4884	S55174-A114	<b>STA23MP/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A117	<b>STA73B/00</b>
AC 24 DC 24	2-position PDM	270 s	N4884	S55174-A113	<b>STA73MP/00</b>

Valves and actuators  
**Actuators for rotary valves**  
**Rotary actuators**

**GQD..9A**

**Rotary actuators 2 Nm with spring return for ball valves**



Electromotoric actuators for 3-position and modulating control, with spring-return, pre-wired with 0.9 m long connection cables, for the operation of Siemens 2-port and 3-port valves, types VAI61../VBI61.., VAG61../VBG61.., VAI60../VBI60.. and VAG60../VBG60..

Data sheet	N4659
Torque	2 Nm
Positioning time	Opening with motor: 30 s Closing with spring: 15 s
Degree of protection	IP40
Dimensions (W x H x D)	75 x 113 x 136 mm
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (GQD161.9A)
Warranty	5 Years

**Range overview GQD..9A**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24	2-position	6.5 VA 4.5 W	0	Yes	0.9	BPZ:GQD121.9A	<b>GQD121.9A</b>
AC 24 DC 24	3-position	4 VA 2.5 W	0	Yes	0.9	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	4.5 VA 3 W	0	Yes	0.9	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 230	2-position	10 VA 4.5 W	0	Yes	0.9	BPZ:GQD321.9A	<b>GQD321.9A</b>

**Electromotoric rotary actuators without spring return for ball valves, 2 Nm, 30s**

**GSD..9A**

Electromotoric rotary actuators without spring return, for On-Off (2 wire SPDT) and modulating control, pre-wired with 0.9 m long connection cable, for the operation of Siemens 2-port and 3-port valves, types VAG61.., VAI61.., VBG61.. and VBI61..



Data sheet	A6V10636056
Torque	2 Nm
Positioning time	30 s
Degree of protection	IP40
Dimensions (W x H x D)	75 x 113 x 136 mm
Mounting position	Upright to horizontal
Warranty	5 Years

**Range overview GSD..9A**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC/DC 24	On-Off (2 wire SPDT)	2 VA 1.5 W	0	No	0.9	BPZ:GSD141.9A	<b>GSD141.9A</b>
AC/DC 24	DC 0/2..10 V	2.4 VA 1.4 W	0	No	0.9	S55499-D232	<b>GSD161.9A</b>
AC 230	On-Off (2 wire SPDT)	12 VA 2 W	0	No	0.9	BPZ:GSD341.9A	<b>GSD341.9A</b>

## Valves and actuators

### Actuators for rotary valves

#### Rotary actuators

GDB..9E

#### Electromotoric rotary actuators 5 Nm without spring return for ball valves



Electromotoric actuators for 2-position/3-position and modulating control, without spring return, pre-wired with 0.9 m long connection cables, for the operation of Siemens 6-port control ball valve VWG41.. and Siemens 2-port and 3-port valves, types VAG61.., VAI61.., VBG61.. and VBI61..

Data sheet	A6V10636150 / A6V10725318 / N4657
Torque	5 Nm
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	88 x 112 x 143 mm
Mounting position	Upright to horizontal
Warranty	5 Years

For customers in Asia / Australia please choose S55499-D383; S55499-D384; D55499-D397

#### Range overview GDB..9E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position/3-position	2 VA 1 W	0	No	0.9	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	3 VA 1.5 W	0	No	0.9	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	5 VA 1.6 W	0	No	0.9	S55499-D384	<b>GDB341.9E</b>
AC/DC 24	2-position/3-position	2 VA 1 W	0	No	0.9	S55499-D200	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	3 VA 1.5 W	0	No	0.9	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	5 VA 1.6 W	0	No	0.9	S55499-D201	<b>GDB341.9E</b>
AC 24	KNX S-Mode or KNX PL-Link	3 VA 2.5 W	0	No	0.9	S55499-D203	<b>GDB111.9E/KN</b>
AC 24	Modbus RTU	3 VA 2.5 W	0	No	0.9	S55499-D202	<b>GDB111.9E/MO</b>
AC/DC 24	Modbus RTU	3 VA 2.5 W	0	No	0.9	S55499-D682	<b>GDB161.9E/MO</b>

### Rotary actuators 7 Nm with spring return for ball valves

GMA..9E

Electromotoric actuators for 2-position, 3-position and modulating control, with spring-return, pre-wired with 0.9 m long connection cables, for the operation of Siemens 2-port and 3-port valves, types VAG60../VBG60., VAI60../VBI60., VAG61../VBG61.. and VAI61../VBI61..

Data sheet	N4658
Torque	7 Nm
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Degree of protection	IP54
Dimensions (W x H x D)	93 x 112 x 184 mm
Mounting position	Upright to horizontal
Warranty	5 Years



#### Range overview GMA..9E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24	2-position	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA121.9E	<b>GMA121.9E</b>
AC 24 DC 24	2-position	5 VA 3.5 W	0	Yes	5	S55499-D680	<b>GMA121.9H</b>
AC 24 DC 24	3-position	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA161.9E	<b>GMA161.9E</b>
AC 24 DC 24	DC 0...10 V	5 VA 3.5 W	0	Yes	5	S55499-D679	<b>GMA161.9H</b>
AC 24 DC 24	Modbus RTU	5 VA 3.5 W	0	Yes	0.9	S55499-D683	<b>GMA161.9E/MO</b>
AC 230 DC 24	2-position	7 VA 4.5 W	0	Yes	0.9	BPZ:GMA321.9E	<b>GMA321.9E</b>

### Rotary actuators for ball valves

GLD..9E

- For 2-port and 3-port control ball valves, internally threaded connections or externally threaded connections
- Connection cable 0.9 m

Data sheet	A6V11171770
Torque	8 Nm
Positioning time	30 s
Degree of protection	IP54
Dimensions (W x H x D)	101.2 x 112.4 x 143.2 mm
Warranty	5 Years



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#### Range overview GLD..9E

Operating voltage [V]	Positioning signal	Power consumption	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24	DC 0/2...10V	4.9 VA 1.8 W	No	0.9	S55499-D278	<b>GLD161.9E</b>
AC 24 DC 24	Modbus RTU	4.9 VA 1.8 W	No	0.9	S55499-D695	<b>GLD161.9E/MO</b>

## Valves and actuators

### Actuators for rotary valves

#### Rotary actuators

#### GLB..9E

#### Electromotoric rotary actuators 10 Nm without spring return for ball valves



Electromotoric actuators for 2-position/3-position and modulating control, without spring return, pre-wired with 0.9 m long connection cables, for the operation of Siemens 2-port and 3-port valves, types VAG60../VVG60., VAI60../VBI60., VAG61../VVG61., VAI61../VBI61.. and VWG41..

Torque	10 Nm
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	88 x 112 x 143 mm
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (GLB161.9E)
Warranty	5 Years

For customers in Asia / Australia please choose S55499-D391; S55499-D392; D55499-D402

#### Range overview GLB..9E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position/3-position	3 VA 1.3 W	0	No	0.9	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	0	No	0.9	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	0	No	0.9	S55499-D392	<b>GLB341.9E</b>
AC/DC 24	2-position/3-position	3 VA 1.3 W	0	No	0.9	S55499-D204	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	0	No	0.9	S55499-D277	<b>GLB161.9E</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	0	No	0.9	S55499-D205	<b>GLB341.9E</b>
AC 24	KNX S-Mode or KNX PL-Link	3 VA 2.5 W	0	No	0.9	S55499-D207	<b>GLB111.9E/KN</b>
AC 24	Modbus RTU	3 VA 2.5 W	0	No	0.9	S55499-D206	<b>GLB111.9E/MO</b>
AC/DC 24	Modbus RTU	2.5 VA 1.5 W	0	No	0.9	S55499-D681	<b>GLB161.9E/MO</b>

Rotary air damper actuators 20 Nm, without spring return

GEB..1E / GEB..9E

- With self-centering shaft adapter for shaft dia. 8...20.5 mm, square 8...14.5 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	A6V11449860
Torque	20 Nm
Air damper area	4 m <sup>2</sup>
Angular rotation	90°
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	82 x 192 x 63 mm
Warranty	5 Years

Range overview GEB..1E / GEB..9E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	0	No	0.9	S55499-D329	GEB141.1E
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	0		0.9	S55499-D330	GEB142.1E
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	2		0.9	S55499-D331	GEB146.1E
AC 24 DC 24...48	DC 0/2...10 V	2.5 VA 1.2 W	0	No	0.9	S55499-D332	GEB161.1E
AC/DC 24	Modbus RTU	2.8 VA 1.7 W Holding: 0.7 W	0	No	0.9	S55499-D663	GEB161.1E/MO
AC 24 DC 24...48	DC 0...35 V	2.5 VA 1.2 W	0		0.9	S55499-D333	GEB163.1E
AC 24 DC 24...48	DC 0...35 V	2.5 VA 1.2 W	2		0.9	S55499-D334	GEB164.1E
AC 24 DC 24...48	DC 0/2...10 V	2.5 VA 1.2 W	2		0.9	S55499-D335	GEB166.1E
AC 100...240	2-position/3-position	4 VA 1.6 W	0	No	0.9	S55499-D336	GEB341.1E
AC 100...240	2-position/3-position	4 VA 1.6 W	2		0.9	S55499-D337	GEB346.1E
AC 100...240	DC 0/2...10 V	3.4 VA 1.3 W	0		0.9	S55499-D338	GEB361.1E

Type GEB142.1E has a feedback potentiometer.

## Valves and actuators

### Actuators for rotary valves

#### Rotary actuators

#### GIB..1E



#### Rotary air damper actuators 35 Nm, without spring return

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4626 / A6V101037253
Torque	35 Nm
Air damper area	6 m <sup>2</sup>
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm
Warranty	5 Years

Rotary actuators 35 Nm for ball valves VAF41..

#### Range overview GIB..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24	3-position	7 VA 7 W	0	No	0.9	BPZ:GIB131.1E	<b>GIB131.1E</b>
AC 24	3-position	7 VA 7 W	2		0.9	BPZ:GIB135.1E	<b>GIB135.1E</b>
AC 24	3-position	7 VA 7 W	2		0.9	BPZ:GIB136.1E	<b>GIB136.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	0	No	0.9	BPZ:GIB161.1E	<b>GIB161.1E</b>
AC 24	Modbus RTU	8 VA 8 W	0		0.9	S55499-D299	<b>GIB161.1E/MO</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	0		0.9	BPZ:GIB163.1E	<b>GIB163.1E</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	2		0.9	BPZ:GIB164.1E	<b>GIB164.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	2		0.9	BPZ:GIB166.1E	<b>GIB166.1E</b>
AC 230	3-position	5 VA 5 W	0	No	0.9	BPZ:GIB331.1E	<b>GIB331.1E</b>
AC 230	3-position	5 VA 5 W	2		0.9	BPZ:GIB335.1E	<b>GIB335.1E</b>
AC 230	3-position	5 VA 5 W	2		0.9	BPZ:GIB336.1E	<b>GIB336.1E</b>

Types GIB135.1E and 335.1E have a feedback potentiometer.  
Basic Documentation No.: Z4626

#### Accessories for GIB..1E

Product Title	Data sheet	Stock no.	Product no.
Standard Shaft Adapter, GM		S55859-Z117	<b>ASK71.06</b>
Shaft adapter, GM, square, 12mm		S55859-Z109	<b>ASK74.18</b>
Shaft adapter, GM, square, 10mm		S55859-Z110	<b>ASK74.19</b>
Shaft adapter, GM, square, 8mm		S55859-Z111	<b>ASK74.20</b>
Accessory Kit, GIB/GBB/GCA		S55859-Z102	<b>ASK71.02</b>
Mounting Bracket, GM		S55859-Z114	<b>ASK71.03</b>



SAL..



### Electromotoric actuators 10...40 Nm for slipper and butterfly valves

Rotary actuator for the operation of 3-port slipper valves VBF21.. and butterfly valves VKF41.. + VKF46.. as control and safety shut-off valves in heating, ventilation and air conditioning systems.

With manual adjuster and position indicator, status indication per LED.

Optional functions with auxiliary switches, potentiometer, functional module and stem heater.

SA..81.., SA..61.. are UL listed.

Data sheet	N4502
Degree of protection	IP54
Medium temperature	-10...120 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SA..6..)
Warranty	5 Years

### Range overview SAL..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Auxiliary switch	Positioning time [s]	Torque [Nm]	Stock no.	Product no.
AC 230	3-position	3.5	0	120	10	S55162-A108	SAL31.00T10
AC 230	3-position	5.5	0	30	10	S55162-A121	SAL31.03T10/F05
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	7.5	0	30	10	S55162-A123	SAL61.03T10/F05
AC/DC 24	3-position	5	0	30	10	S55162-A122	SAL81.03T10/F05
AC 230	3-position	5.5	0	30	10	S55162-A109	SAL31.03T10
AC 230	3-position	4.5	0	120	20	S55162-A110	SAL31.00T20
AC 230	3-position	7	0	120	40	S55162-A111	SAL31.00T40
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	5	0	120	10	S55162-A100	SAL61.00T10
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	7.5	0	30	10	S55162-A101	SAL61.03T10
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	6	0	120	20	S55162-A102	SAL61.00T20
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	9	0	120	40	S55162-A103	SAL61.00T40
AC/DC 24	3-position	3	0	120	10	S55162-A104	SAL81.00T10
AC/DC 24	3-position	5	0	30	10	S55162-A105	SAL81.03T10
AC/DC 24	3-position	4	0	120	20	S55162-A106	SAL81.00T20
AC/DC 24	3-position	6	0	120	40	S55162-A107	SAL81.00T40

## Valves and actuators

### Actuators for rotary valves

#### Rotary actuators

##### Accessories for SAL..

Product Title	Data sheet	Stock no.	Product no.
SparePart-Kit SAL..	N4502	BPZ:8000060844	<b>8000060844</b>
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	<b>ASC10.51</b>
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	<b>ASZ7.5/1000</b>
Funtion module for SA..61..., sequence control/changeover of acting direction	N4501	S55845-Z107	<b>AZX61.1</b>
Weathershield for SAX../SAL..	N4501	S55845-Z109	<b>ASK39.1</b>

##### Mounting sets for SAL..

Product Title	Data sheet	Stock no.	Product no.
Mounting set for SAL..T10 onto VBF21..., DN65..150 with ASK31N	N4502	S55845-Z100	<b>ASK31N</b>
Mounting set for SAL..T10 onto VBF21..., DN40..50 with ASK32N	N4502	S55845-Z211	<b>ASK32N</b>
Mounting set for SAL.. onto VKF41..	N4502	S55845-Z101	<b>ASK33N</b>
Mounting set for SAL.. onto VKF45..	N4502	S55845-Z102	<b>ASK35N</b>

## Electromotoric actuators 40...1200 Nm for butterfly valves

SQL36..

With reversible asynchronous motor. Direct-acting manual control. Die-cast aluminium housing and plastic manual knob. For VKF46 butterfly valves from DN40 mm, no mounting kits required.

The actuators have built-in end switches. 1 double auxiliary switch, 1 potentiometer and 1 positioning time module (without SQL36E50..) can be retrofitted.



Data sheet	N4505
Degree of protection	IP67
Medium temperature	≤120 °C
Mounting position	Any
Warranty	5 Years

### Range overview SQL36..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Positioning time [s]	Torque [Nm]	Stock no.	Product no.
AC 230	3-position	25	25	40	BPZ:SQL36E50F04	<b>SQL36E50F04</b>
AC 230	3-position	25	25	40	BPZ:SQL36E50F05	<b>SQL36E50F05</b>
AC 230	3-position	166	6	100	BPZ:SQL36E65	<b>SQL36E65</b>
AC 230	3-position	235	12	400	BPZ:SQL36E110	<b>SQL36E110</b>
AC 230	3-position	235	24	1200	BPZ:SQL36E160	<b>SQL36E160</b>

Running time with auxiliary module SEZ31.1: variable positioning time 30...180 s (SQL36E65), 60...360 s (SQL36E110) resp. 120...720 s (SQL36E160).

### Accessories for SQL36E..

Product Title	Data sheet	Stock no.	Product no.
Double auxiliary switch for SQL36E	N4505	BPZ:ASC36	<b>ASC36</b>
Potentiometer 1000 Ohm for SQL36E..	N4505	BPZ:ASZ36	<b>ASZ36</b>
Auxiliary module, variable positioning time for SQL36E..	N4505	BPZ:SEZ31.1	<b>SEZ31.1</b>

## Valves and actuators

### Actuators for rotary valves

#### Rotary actuators

#### SQL..B..



#### Electromotoric actuators 25...2650 Nm for butterfly valves VKF42..

Electromotoric actuator for operation of VKF42.. butterfly valves as shutoff and control valves in heating, ventilation and air conditioning plants. No mounting kits required.  
Flange connection to EN ISO 5211.

The actuators have built-in end switches. 1 double auxiliary switch.

Data sheet	N4520
Degree of protection	IP67
Medium temperature	-10...80 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SQL361..)
Warranty	5 Years

For customers in Asia / Australia

#### Range overview SQL..B..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Spring return function	Stock no.	Product no.
AC 220	2-position (SPDT)	45	No	S55164-A100	<b>SQL321B25</b>
AC 220	2-position (SPDT)	45	No	S55164-A101	<b>SQL321B50</b>
AC 220	DC 0...10 V	45	No	S55164-A102	<b>SQL361B50</b>
AC 220	2-position (SPDT)	91	No	S55164-A103	<b>SQL321B150</b>
AC 220	DC 0...10 V	91	No	S55164-A104	<b>SQL361B150</b>
AC 220	2-position (SPDT)	165	No	S55164-A105	<b>SQL321B270</b>
AC 220	DC 0...10 V	165	No	S55164-A106	<b>SQL361B270</b>
AC 220	2-position (SPDT)	194	No	S55164-A107	<b>SQL321B570</b>
AC 220	DC 0...10 V	194	No	S55164-A108	<b>SQL361B570</b>
AC 220	2-position (SPDT)	390	No	S55164-A109	<b>SQL321B1400</b>
AC 220	DC 0...10 V	390	No	S55164-A110	<b>SQL361B1400</b>
AC 220	2-position (SPDT)	436	No	S55164-A111	<b>SQL321B2650</b>
AC 220	DC 0...10 V	436	No	S55164-A112	<b>SQL361B2650</b>

#### Accessories for SQL..B..

Product Title	Data sheet	Stock no.	Product no.
Double auxiliary switch	N4520	S55845-Z122	<b>ASC10.21</b>

**2-port control ball valves for flanged connection**

VAF41..

Ball valves for use in heating, cooling, ventilating and air conditioning systems as a control or shutoff valve.

Do not operate GBB331.1E, GBB131.1E, GIB331.1E and GIB131.1E actuators with 2-position control signal. It will damage these rotary actuators.



Data sheet	A6V11168935
Leakage rate	0...0.01 % of $k_{vs}$ value
Medium	Water
	Water with anti-freeze
Medium temperature	2...80 °C
Ambient temperature, operation	-15...55 °C
Rangeability	$\geq 200$
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-450-15
Material, inside set	Stainless steel (SS304)
PN class	PN 16
Warranty	5 Years
For customers in Asia / Australia	

**Range overview VAF41..**

GIB..1E $\Delta p_{max}$ [kPa]	GIB..1E $\Delta p_s$ [kPa]	2 x GIB..1E $\Delta p_{max}$ [kPa]	2 x GIB..1E $\Delta p_s$ [kPa]	GEB..1E $\Delta p_{max}$ [kPa]	GEB..1E $\Delta p_s$ [kPa]	GCA.. $\Delta p_{max}$ [kPa]	GCA.. $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
				400	400	400	400	65	63	S55232-V110	VAF41.65-63/1
						400	400	80	100	S55232-V111	VAF41.80-100/1
400	400							100	160	S55232-V107	VAF41.100-160
400	400							125	250	S55232-V108	VAF41.125-250
		400	400					150	360	S55232-V109	VAF41.150-360

**Accessories for VAF41..**

Product Title	Data sheet	Stock no.	Product no.
Ball valve mounting set, DN 65, DN 80, DN 100, DN 125	A6V11168935	S55845-Z203	ASK77.21
Ball valve mounting set, DN65, DN80	A6V11168935	S55845-Z252	ASK77.23
Ball valve mounting set, DN 150	A6V11168935	S55845-Z204	ASK77.22

**Combinable actuator for VAF41..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24 DC 24...48	2-position/3-position	150	No	A6V11449860	S55499-D329	GEB141.1E
AC 24 DC 24...48	DC 0/2...10 V	150	No	A6V11449860	S55499-D332	GEB161.1E
AC 100...240	2-position/3-position	150	No	A6V11449860	S55499-D336	GEB341.1E
AC 24	3-position	150	No	N4626	BPZ:GIB131.1E	GIB131.1E
AC 24	DC 0...10 V	150	No	N4626	BPZ:GIB161.1E	GIB161.1E
AC 230	3-position	150	No	N4626	BPZ:GIB331.1E	GIB331.1E

VAI61..

2-port control ball valves, internally threaded, PN40



Internally threaded connections Rp.. as per ISO 7-1.  
For use in heating, ventilating and air conditioning plants as a control valve.  
For closed circuits.

Data sheet	N4211
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 5
Medium	Water Water with anti-freeze
Medium temperature	-10...120 °C
Valve characteristic	Equal-percentage
Rangeability	> 500
Permissible operating pressure	1600 kPa
Material, valve body	Brass
Material, inside set	Brass UNS C35330 (DZR), chromium-plated
PN class	PN 40
Warranty	5 Years

Range overview VAI61..

Con-nect. thread	GQD../GSD../9A	GQD../GSD../9A	GDB../9E	GDB../9E	GMA../GLB../9E	GMA../LB../9E	GLD../9E	GLD../9E	DN	k <sub>vs</sub> [m³/h]	Stock no.	Product no.
	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]	Δp <sub>max</sub> [kPa]	Δp <sub>s</sub> [kPa]				
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	0.25	S55230-V220	VAI61.15-0.25
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	0.4	S55230-V221	VAI61.15-0.4
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	0.63	S55230-V222	VAI61.15-0.63
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	1	BPZ:VAI61.15-1	VAI61.15-1
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	1.6	BPZ:VAI61.15-1.6	VAI61.15-1.6
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	2.5	BPZ:VAI61.15-2.5	VAI61.15-2.5
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	4	BPZ:VAI61.15-4	VAI61.15-4
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	6.3	BPZ:VAI61.15-6.3	VAI61.15-6.3
Rp 1/2"	350	1400	350	1400	350	1400	350	1400	15	10	BPZ:VAI61.15-10	VAI61.15-10
Rp 3/4"	350	1400	350	1400	350	1400	350	1400	20	4	BPZ:VAI61.20-4	VAI61.20-4
Rp 3/4"	350	1400	350	1400	350	1400	350	1400	20	6.3	BPZ:VAI61.20-6.3	VAI61.20-6.3
Rp 3/4"	350	1400	350	1400	350	1400	350	1400	20	10	BPZ:VAI61.20-10	VAI61.20-10
Rp 1"	350	1400	350	1400	350	1400	350	1400	25	6.3	BPZ:VAI61.25-6.3	VAI61.25-6.3
Rp 1"	350	1400	350	1400	350	1400	350	1400	25	10	BPZ:VAI61.25-10	VAI61.25-10
Rp 1"	350	1400	350	1400	350	1400	350	1400	25	16	BPZ:VAI61.25-16	VAI61.25-16
Rp 1 1/4"					350	1000	350	1000	32	10	BPZ:VAI61.32-10	VAI61.32-10
Rp 1 1/4"					350	1000	350	1000	32	16	BPZ:VAI61.32-16	VAI61.32-16
Rp 1 1/4"					350	1000	350	1000	32	25	BPZ:VAI61.32-25	VAI61.32-25
Rp 1 1/2"					350	800	350	800	40	16	BPZ:VAI61.40-16	VAI61.40-16
Rp 1 1/2"					350	800	350	800	40	25	BPZ:VAI61.40-25	VAI61.40-25
Rp 1 1/2"					350	800	350	800	40	40	BPZ:VAI61.40-40	VAI61.40-40
Rp 2"					350	600	350	600	50	25	BPZ:VAI61.50-25	VAI61.50-25
Rp 2"					350	600	350	600	50	40	BPZ:VAI61.50-40	VAI61.50-40
Rp 2"					350	600	350	600	50	63	BPZ:VAI61.50-63	VAI61.50-63

Accessories for VAI61..

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	ALJ100
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	ASK77.2
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	ASK77.3
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	ASK77.5

**Accessories for VAI61..**

Product Title	Data sheet	Stock no.	Product no.
Insulation cover for VAI60/61, DN15	CE1N4213	BPZ:ALI15VAI60/61	<b>ALI15VAI60/61</b>
Insulation cover for VAI60/61, DN20	CE1N4213	BPZ:ALI20VAI60/61	<b>ALI20VAI60/61</b>
Insulation cover for VAI60/61, DN25	CE1N4213	BPZ:ALI25VAI60/61	<b>ALI25VAI60/61</b>
Insulation cover for VAI60/61, DN32	CE1N4213	BPZ:ALI32VAI60/61	<b>ALI32VAI60/61</b>
Insulation cover for VAI60/61, DN40	CE1N4213	BPZ:ALI40VAI60/61	<b>ALI40VAI60/61</b>
Insulation cover for VAI60/61, DN50	CE1N4213	BPZ:ALI50VAI60/61	<b>ALI50VAI60/61</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

**Combinable actuator for VAI61..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150	S55499-D200	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	150	No	A6V10636150	S55499-D201	<b>GDB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636150	S55499-D682	<b>GDB161.9E/MO</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC 24 DC 24	Modbus RTU	30	No	A6V11171770	S55499-D695	<b>GLD161.9E/MO</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203	S55499-D277	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636203	S55499-D681	<b>GLB161.9E/MO</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Combinable actuator for VAI61..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>
AC 24 DC 24	Modbus RTU	Open:90 Close:15	Yes	N4658	S55499-D683	<b>GMA161.9E/MO</b>

For customers in Asia / Australia please choose S55499-D383; S55499-D384; S55499-D397; S55499-D391; S55499-D392; S55499-D402



**3-port control ball valves, internally threaded, PN40**

VBI61..

Internally threaded connections Rp.. as per ISO 7-1.  
For use in heating, ventilating and air conditioning plants as a control.  
For closed circuits.



Data sheet	N4211
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 4
Leakage rate bypass	< 1 % of $k_{vs}$ value
Medium	Water
	Water with anti-freeze
Medium temperature	-10...120 °C
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	> 500
Permissible operating pressure	1600 kPa
Material, valve body	Brass
Material, inside set	Brass UNS C35330 (DZR), chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VBI61..**

Con- nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	GQD../ GSD..9A $\Delta p_{max}$ [kPa]	GMA../ GLB..9E $\Delta p_{max}$ [kPa]	GLD..9E $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	350	350	350	350	15	1.6	BPZ:VBI61.15-1.6	<b>VBI61.15-1.6</b>
Rp 1/2"	350	350	350	350	15	2.5	BPZ:VBI61.15-2.5	<b>VBI61.15-2.5</b>
Rp 1/2"	350	350	350	350	15	4	BPZ:VBI61.15-4	<b>VBI61.15-4</b>
Rp 1/2"	350	350	350	350	15	6.3	BPZ:VBI61.15-6.3	<b>VBI61.15-6.3</b>
Rp 3/4"	350	350	350	350	20	4	BPZ:VBI61.20-4	<b>VBI61.20-4</b>
Rp 3/4"	350	350	350	350	20	6.3	BPZ:VBI61.20-6.3	<b>VBI61.20-6.3</b>
Rp 1"	350	350	350	350	25	10	BPZ:VBI61.25-10	<b>VBI61.25-10</b>
Rp 1 1/4"			350	350	32	16	BPZ:VBI61.32-16	<b>VBI61.32-16</b>
Rp 1 1/2"			350	350	40	25	BPZ:VBI61.40-25	<b>VBI61.40-25</b>
Rp 2"			350	350	50	40	BPZ:VBI61.50-40	<b>VBI61.50-40</b>
Rp 2"			350	350	50	63	BPZ:VBI61.50-63	<b>VBI61.50-63</b>

**Accessories for VBI61..**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Insulation cover for VBI60/61, DN15	CE1N4213	BPZ:ALI15VBI60/61	<b>ALI15VBI60/61</b>
Insulation cover for VBI61, DN20	CE1N4213	BPZ:ALI20VBI61	<b>ALI20VBI61</b>
Insulation cover for VBI60/61, DN25	CE1N4213	BPZ:ALI25VBI60/61	<b>ALI25VBI60/61</b>
Insulation cover for VBI60/61, DN32	CE1N4213	BPZ:ALI32VBI60/61	<b>ALI32VBI60/61</b>
Insulation cover for VBI60/61, DN40	CE1N4213	BPZ:ALI40VBI60/61	<b>ALI40VBI60/61</b>
Insulation cover for VBI60/61, DN50	CE1N4213	BPZ:ALI50VBI60/61	<b>ALI50VBI60/61</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Accessories for VBI61..

Product Title	Data sheet	Stock no.	Product no.
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

##### Combinable actuator for VBI61..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150	S55499-D200	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	150	No	A6V10636150	S55499-D201	<b>GDB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636150	S55499-D682	<b>GDB161.9E/MO</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC 24 DC 24	Modbus RTU	30	No	A6V11171770	S55499-D695	<b>GLD161.9E/MO</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203	S55499-D277	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636203	S55499-D681	<b>GLB161.9E/MO</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>
AC 24 DC 24	Modbus RTU	Open:90 Close:15	Yes	N4658	S55499-D683	<b>GMA161.9E/MO</b>

For customers in Asia / Australia please choose S55499-D383; S55499-D384; S55499-D397; S55499-D391; S55499-D392; S55499-D402

**2-port ball open/close valves, internally threaded, PN40**

VAI60..

Internally threaded connections Rp.. as per ISO 7-1.

For use in heating, ventilating and air conditioning plants as open/close ball valves. For closed circuits.



Data sheet	N4213
Leakage rate	„Waterproof“ as per EN 60534-4 L1, better than class 5
Medium	Cooling water Chilled water Water with anti-freeze Low-temperature hot water High-temperature hot water
Medium temperature	-10... 120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VAI60..**

Con-nect. thread	GQD../GSD..9A $\Delta p_{max}$ [kPa]	GQD../GSD..9A $\Delta p_s$ [kPa]	GDB..9E $\Delta p_{max}$ [kPa]	GDB..9E $\Delta p_s$ [kPa]	GMA../GLB..9E $\Delta p_{max}$ [kPa]	GMA../GLB..9E $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	350	1400	350	1400	350	1400	15	15	BPZ:VAI60.15-15	<b>VAI60.15-15</b>
Rp 3/4"	350	1400	350	1400	350	1400	20	22	BPZ:VAI60.20-22	<b>VAI60.20-22</b>
Rp 1"	350	1400	350	1400	350	1400	25	22	BPZ:VAI60.25-22	<b>VAI60.25-22</b>
Rp 1 1/4"					350	1000	32	35	BPZ:VAI60.32-35	<b>VAI60.32-35</b>
Rp 1 1/2"					350	800	40	68	BPZ:VAI60.40-68	<b>VAI60.40-68</b>
Rp 2"					350	600	50	96	BPZ:VAI60.50-96	<b>VAI60.50-96</b>

**Accessories for VAI60..**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Insulation cover for VAI60/61, DN15	CE1N4213	BPZ:ALI15VAI60/61	<b>ALI15VAI60/61</b>
Insulation cover for VAI60/61, DN20	CE1N4213	BPZ:ALI20VAI60/61	<b>ALI20VAI60/61</b>
Insulation cover for VAI60/61, DN25	CE1N4213	BPZ:ALI25VAI60/61	<b>ALI25VAI60/61</b>
Insulation cover for VAI60/61, DN32	CE1N4213	BPZ:ALI32VAI60/61	<b>ALI32VAI60/61</b>
Insulation cover for VAI60/61, DN40	CE1N4213	BPZ:ALI40VAI60/61	<b>ALI40VAI60/61</b>
Insulation cover for VAI60/61, DN50	CE1N4213	BPZ:ALI50VAI60/61	<b>ALI50VAI60/61</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Combinable actuator for VAI60..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD141.9A	<b>GSD141.9A</b>
AC 230	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD341.9A	<b>GSD341.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC 24 DC 24	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD121.9A	<b>GQD121.9A</b>
AC 230	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD321.9A	<b>GQD321.9A</b>
AC 24 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA121.9E	<b>GMA121.9E</b>
AC 230 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA321.9E	<b>GMA321.9E</b>

**3-port changeover ball valve, internally threaded, PN40**

VBI60..

Internally threaded connections Rp.. as per ISO 7-1.

For use in heating, ventilating and air conditioning plants as changeover ball valves. For closed circuits.



Data sheet	N4213
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 4
Leakage rate bypass	< 1 % of $k_{vs}$ value
Medium	Cooling water Chilled water Water with anti-freeze Low-temperature hot water High-temperature hot water
Medium temperature	-10... 120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VBI60..**

Con-nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	GQD../GSD..9A $\Delta p_{max}$ [kPa]	GMA../GLB..9E $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	350	350	350	15	5	BPZ:VBI60.15-5L	<b>VBI60.15-5L</b>
Rp 1/2"	350	350	350	15	12	BPZ:VBI60.15-12T	<b>VBI60.15-12T</b>
Rp 3/4"	350	350	350	20	9	BPZ:VBI60.20-9L	<b>VBI60.20-9L</b>
Rp 3/4"	350	350	350	20	16	BPZ:VBI60.20-16T	<b>VBI60.20-16T</b>
Rp 1"	350	350	350	25	9	BPZ:VBI60.25-9L	<b>VBI60.25-9L</b>
Rp 1"	350	350	350	25	16	BPZ:VBI60.25-16T	<b>VBI60.25-16T</b>
Rp 1 1/4"			350	32	13	BPZ:VBI60.32-13L	<b>VBI60.32-13L</b>
Rp 1 1/4"			350	32	25	BPZ:VBI60.32-25T	<b>VBI60.32-25T</b>
Rp 1 1/2"			350	40	25	BPZ:VBI60.40-25L	<b>VBI60.40-25L</b>
Rp 1 1/2"			350	40	49	BPZ:VBI60.40-49T	<b>VBI60.40-49T</b>
Rp 2"			350	50	37	BPZ:VBI60.50-37L	<b>VBI60.50-37L</b>
Rp 2"			350	50	73	BPZ:VBI60.50-73T	<b>VBI60.50-73T</b>

**Accessories for VBI60..**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Insulation cover for VBI60/61, DN15	CE1N4213	BPZ:ALI15VBI60/61	<b>ALI15VBI60/61</b>
Insulation cover for VBI60, DN20	CE1N4213	BPZ:ALI20VBI60	<b>ALI20VBI60</b>
Insulation cover for VBI60/61, DN25	CE1N4213	BPZ:ALI25VBI60/61	<b>ALI25VBI60/61</b>
Insulation cover for VBI60/61, DN32	CE1N4213	BPZ:ALI32VBI60/61	<b>ALI32VBI60/61</b>
Insulation cover for VBI60/61, DN40	CE1N4213	BPZ:ALI40VBI60/61	<b>ALI40VBI60/61</b>
Insulation cover for VBI60/61, DN50	CE1N4213	BPZ:ALI50VBI60/61	<b>ALI50VBI60/61</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Accessories for VBI60..

Product Title	Data sheet	Stock no.	Product no.
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

##### Combinable actuator for VBI60..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD141.9A	<b>GSD141.9A</b>
AC 230	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD341.9A	<b>GSD341.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC 24 DC 24	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD121.9A	<b>GQD121.9A</b>
AC 230	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD321.9A	<b>GQD321.9A</b>
AC 24 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA121.9E	<b>GMA121.9E</b>
AC 230 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA321.9E	<b>GMA321.9E</b>

**2-port control ball valves, externally threaded, PN40**

VAG61..



For use in heating, ventilating and air conditioning plants as a control valve. For closed circuits.

- Brass CW602N (DZR) ball valve body
- Flat sealing connections with external thread G..B to ISO 228-1
- Applications with auxiliary functions (e.g., switch, potentiometer) can also be combined with standard rotary actuators belonging to the DAC range

Data sheet	N4212
Leakage rate	„Waterproof“ as per EN 60534-4 L1, better than class 5
Medium	Water Chilled water Cooling water Low-temperature hot water High-temperature hot water Water with anti-freeze
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Brass CW602N (DZR), chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VAG61..**

Con-nect. thread	GQD../GSD../9A	GQD../GSD../9A	GDB../9E	GDB../9E	GMA../GLB../9E	GMA../LB../9E	GLD../9E	GLD../9E	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]				
G 1" B	350	1400	350	1400	350	1400	350	1400	15	1	S55230-V100	VAG61.15-1
G 1" B	350	1400	350	1400	350	1400	350	1400	15	1.6	S55230-V101	VAG61.15-1.6
G 1" B	350	1400	350	1400	350	1400	350	1400	15	2.5	S55230-V102	VAG61.15-2.5
G 1" B	350	1400	350	1400	350	1400	350	1400	15	4	S55230-V103	VAG61.15-4
G 1" B	350	1400	350	1400	350	1400	350	1400	15	6.3	S55230-V104	VAG61.15-6.3
G 1¼" B	350	1400	350	1400	350	1400	350	1400	20	4	S55230-V105	VAG61.20-4
G 1¼" B	350	1400	350	1400	350	1400	350	1400	20	6.3	S55230-V106	VAG61.20-6.3
G 1¼" B	350	1400	350	1400	350	1400	350	1400	20	10	S55230-V107	VAG61.20-10
G 1½" B	350	1400	350	1400	350	1400	350	1400	25	6.3	S55230-V108	VAG61.25-6.3
G 1½" B	350	1400	350	1400	350	1400	350	1400	25	10	S55230-V109	VAG61.25-10
G 1½" B	350	1400	350	1400	350	1400	350	1400	25	16	S55230-V110	VAG61.25-16
G 2" B					350	1000	350	1000	32	10	S55230-V111	VAG61.32-10
G 2" B					350	1000	350	1000	32	16	S55230-V112	VAG61.32-16
G 2" B					350	1000	350	1000	32	25	S55230-V113	VAG61.32-25
G 2¼" B					350	800	350	800	40	16	S55230-V114	VAG61.40-16
G 2¼" B					350	800	350	800	40	25	S55230-V115	VAG61.40-25
G 2¼" B					350	800	350	800	40	40	S55230-V116	VAG61.40-40
G 2¾" B					350	600	350	600	50	25	S55230-V117	VAG61.50-25
G 2¾" B					350	600	350	600	50	40	S55230-V118	VAG61.50-40
G 2¾" B					350	600	350	600	50	63	S55230-V119	VAG61.50-63

**Accessories for VAG61..**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	ALJ100
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	ASK77.2
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	ASK77.3
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	ASK77.5
Strainer, inside threaded, DN15		S55845-Z174	ALX15

## Valves and actuators

### Rotary valves

#### Ball valves

#### Accessories for VAG61..

Product Title	Data sheet	Stock no.	Product no.
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

#### Combinable actuator for VAG61..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150	S55499-D200	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	150	No	A6V10636150	S55499-D201	<b>GDB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636150	S55499-D682	<b>GDB161.9E/MO</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC 24 DC 24	Modbus RTU	30	No	A6V11171770	S55499-D695	<b>GLD161.9E/MO</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203	S55499-D277	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636203	S55499-D681	<b>GLB161.9E/MO</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>
AC 24 DC 24	Modbus RTU	Open:90 Close:15	Yes	N4658	S55499-D683	<b>GMA161.9E/MO</b>

For customers in Asia / Australia please choose S55499-D383; S55499-D384; S55499-D397; S55499-D391; S55499-D392; S55499-D402



**3-port control ball valves, externally threaded, PN40**

VBG61..



For use in heating, ventilating and air conditioning plants as a control valve. For closed circuits.

- Brass CW602N (DZR) ball valve body
- Flat sealing connections with external thread G..B to ISO 228-1
- Applications with auxiliary functions (e.g., switch, potentiometer) can also be combined with standard rotary actuators belonging to the DAC range

Data sheet	N4212
Leakage rate	„Waterproof“ as per EN 60534-4 L1, better than class 4
Leakage rate bypass	< 1 % of $k_{vs}$ value
Medium	Water Chilled water Cooling water Low-temperature hot water High-temperature hot water Water with anti-freeze
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Brass CW602N (DZR), chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VBG61..**

Con-nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	GQD../ GSD..9A $\Delta p_{max}$ [kPa]	GMA../ GLB..9E $\Delta p_{max}$ [kPa]	GLD..9E $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1"	350	350	350	350	15	1.6	S55230-V120	<b>VBG61.15-1.6</b>
G 1"	350	350	350	350	15	2.5	S55230-V121	<b>VBG61.15-2.5</b>
G 1"	350	350	350	350	15	4	S55230-V122	<b>VBG61.15-4</b>
G 1"	350	350	350	350	15	6.3	S55230-V123	<b>VBG61.15-6.3</b>
G 1¼"	350	350	350	350	20	4	S55230-V124	<b>VBG61.20-4</b>
G 1¼"	350	350	350	350	20	6.3	S55230-V125	<b>VBG61.20-6.3</b>
G 1½"	350	350	350	350	25	10	S55230-V126	<b>VBG61.25-10</b>
G 2"			350	350	32	16	S55230-V127	<b>VBG61.32-16</b>
G 2¼"			350	350	40	25	S55230-V128	<b>VBG61.40-25</b>
G 2¾"			350	350	50	40	S55230-V129	<b>VBG61.50-40</b>

**Accessories for VBG61..**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Combinable actuator for VBG61..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150	S55499-D200	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	150	No	A6V10636150	S55499-D201	<b>GDB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636150	S55499-D682	<b>GDB161.9E/MO</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC 24 DC 24	Modbus RTU	30	No	A6V11171770	S55499-D695	<b>GLD161.9E/MO</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203	S55499-D277	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC/DC 24	Modbus RTU	150	No	A6V10636203	S55499-D681	<b>GLB161.9E/MO</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>
AC 24 DC 24	Modbus RTU	Open:90 Close:15	Yes	N4658	S55499-D683	<b>GMA161.9E/MO</b>

For customers in Asia / Australia please choose S55499-D383; S55499-D384; S55499-D397; S55499-D391; S55499-D392; S55499-D402

**6-port control ball valves, externally threaded, PN16, DN10****VWG41.10..**

Used in heated/chilled ceilings as control ball valve. For closed circuits.

- Control ball valve body made of hot-pressed brass CW617N
- Flat sealing, external threaded connections G..B, as per ISO 228-1
- Can be combined with standard electromotoric rotary actuators from the DAC product range for applications with additional functions (such as auxiliary switches, potentiometers)



Data sheet	A6V10564480
Leakage rate	"Air tight" per EN 12266-1, class A
Medium	Water with anti-freeze Water Low-temperature hot water
Medium temperature	5...90 °C
Permissible operating pressure	1600 kPa
Material, inside set	Brass CW614N, chrome plated
PN class	PN 16
Warranty	5 Years

**Range overview VWG41.10..**

DN	k <sub>vs</sub> right [m <sup>3</sup> /h]	k <sub>vs</sub> left [m <sup>3</sup> /h]	Con- nect. thread	GDB..9E Δp <sub>max</sub> [kPa]	Stock no.	Product no.
10	0.4	0.25	G ½"	200	S55230-V158	VWG41.10-0.25-0.4
10	0.65	0.25	G ½"	200	S55230-V159	VWG41.10-0.25-0.65
10	1	0.25	G ½"	200	S55230-V160	VWG41.10-0.25-1.0
10	1.3	0.25	G ½"	200	S55230-V175	VWG41.10-0.25-1.3
10	1.6	0.25	G ½"	200	S55230-V176	VWG41.10-0.25-1.6
10	1.9	0.25	G ½"	200	S55230-V177	VWG41.10-0.25-1.9
10	0.4	0.4	G ½"	200	S55230-V178	VWG41.10-0.4-0.4
10	0.65	0.4	G ½"	200	S55230-V161	VWG41.10-0.4-0.65
10	1	0.4	G ½"	200	S55230-V162	VWG41.10-0.4-1.0
10	1.3	0.4	G ½"	200	S55230-V163	VWG41.10-0.4-1.3
10	1.6	0.4	G ½"	200	S55230-V164	VWG41.10-0.4-1.6
10	1.9	0.4	G ½"	200	S55230-V179	VWG41.10-0.4-1.9
10	0.65	0.65	G ½"	200	S55230-V180	VWG41.10-0.65-0.65
10	1	0.65	G ½"	200	S55230-V165	VWG41.10-0.65-1.0
10	1.3	0.65	G ½"	200	S55230-V166	VWG41.10-0.65-1.3
10	1.6	0.65	G ½"	200	S55230-V167	VWG41.10-0.65-1.6
10	1.9	0.65	G ½"	200	S55230-V181	VWG41.10-0.65-1.9
10	1.0	1.0	G ½"	200	S55230-V182	VWG41.10-1.0-1.0
10	1.3	1	G ½"	200	S55230-V168	VWG41.10-1.0-1.3
10	1.6	1	G ½"	200	S55230-V169	VWG41.10-1.0-1.6
10	1.9	1	G ½"	200	S55230-V170	VWG41.10-1.0-1.9
10	1.3	1.3	G ½"	200	S55230-V183	VWG41.10-1.3-1.3
10	1.6	1.3	G ½"	200	S55230-V171	VWG41.10-1.3-1.6
10	1.9	1.3	G ½"	200	S55230-V172	VWG41.10-1.3-1.9
10	1.6	1.6	G ½"	200	S55230-V184	VWG41.10-1.6-1.6
10	1.9	1.6	G ½"	200	S55230-V173	VWG41.10-1.6-1.9
10	1.9	1.9	G ½"	200	S55230-V174	VWG41.10-1.9-1.9

**Accessories for VWG41.10..**

Product Title	Data sheet	Stock no.	Product no.
Brass fitting G ½" / Rp ½", set of 2		S55845-Z195	ALG13.152B
Insulation cover for VWG41.10 6-Way ball valve		S55845-Z194	AL110VWG41

## VWG41.20..

## 6-port control ball valves, externally threaded, PN16, DN20



Used in heated/chilled ceilings as control ball valve. For closed circuits.

- Control ball valve body made of hot-pressed brass CW617N
- Flat sealing, external threaded connections G..B, as per ISO 228-1
- Can be combined with standard electromotoric rotary actuators from the DAC product range for applications with additional functions (such as auxiliary switches, potentiometers)

Data sheet	A6V10564480
Leakage rate	"Air tight" per EN 12266-1, class A
Medium	Water with anti-freeze Water Low-temperature hot water
Medium temperature	5...90 °C
Permissible operating pressure	1600 kPa
Material, inside set	Brass CW614N, chrome plated
PN class	PN 16
Warranty	5 Years

## Range overview VWG41.20..

DN	$k_{vs}$ right [m <sup>3</sup> /h]	$k_{vs}$ left [m <sup>3</sup> /h]	Con- nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	Stock no.	Product no.
20	2.5	0.25	G 1"	200	S55230-V185	VWG41.20-0.25-2.5
20	3.45	0.25	G 1"	200	S55230-V186	VWG41.20-0.25-3.45
20	4.25	0.25	G 1"	200	S55230-V187	VWG41.20-0.25-4.25
20	2.5	0.4	G 1"	200	S55230-V188	VWG41.20-0.4-2.5
20	3.45	0.4	G 1"	200	S55230-V189	VWG41.20-0.4-3.45
20	4.25	0.4	G 1"	200	S55230-V190	VWG41.20-0.4-4.25
20	2.5	0.65	G 1"	200	S55230-V150	VWG41.20-0.65-2.5
20	3.45	0.65	G 1"	200	S55230-V191	VWG41.20-0.65-3.45
20	4.25	0.65	G 1"	200	S55230-V192	VWG41.20-0.65-4.25
20	2.5	1	G 1"	200	S55230-V152	VWG41.20-1.0-2.5
20	3.45	1.0	G 1"	200	S55230-V193	VWG41.20-1.0-3.45
20	4.25	1.0	G 1"	200	S55230-V194	VWG41.20-1.0-4.25
20	2.5	1.3	G 1"	200	S55230-V195	VWG41.20-1.3-2.5
20	3.45	1.3	G 1"	200	S55230-V196	VWG41.20-1.3-3.45
20	4.25	1.3	G 1"	200	S55230-V197	VWG41.20-1.3-4.25
20	2.5	1.6	G 1"	200	S55230-V153	VWG41.20-1.6-2.5
20	3.45	1.6	G 1"	200	S55230-V154	VWG41.20-1.6-3.45
20	4.25	1.6	G 1"	200	S55230-V198	VWG41.20-1.6-4.25
20	2.5	2.5	G 1"	200	S55230-V200	VWG41.20-2.5-2.5
20	3.45	2.5	G 1"	200	S55230-V155	VWG41.20-2.5-3.45
20	4.25	2.5	G 1"	200	S55230-V156	VWG41.20-2.5-4.25
20	3.45	3.45	G 1"	200	S55230-V201	VWG41.20-3.45-3.45
20	4.25	4.25	G 1"	200	S55230-V157	VWG41.20-4.25-4.25

## Accessories for VWG41.20..

Product Title	Data sheet	Stock no.	Product no.
Brass fitting G 1" / G 1/2", 5 °C - 90 °C, set of 2	A6V10564480	S55845-Z156	ALN15.152B
Brass fitting G 1" / G 3/4", 5 °C - 90 °C, set of 2	A6V10564480	S55845-Z157	ALN15.202B
Brass fitting G 1" / Rp 1/2", set of 2		S55845-Z158	ALG15.152B
Brass fitting G 1" / Rp 3/4", set of 2		S55845-Z159	ALG15.202B
Brass fitting G 1" / Rp 1", set of 2		S55845-Z160	ALG15.252B
Insulation cover for VWG41.20 6-Way ball valve	A6V10564480	S55845-Z161	ALI20VWG41

**Accessories for VWG41.20..**

Product Title	Data sheet	Stock no.	Product no.
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>

**Combinable actuator for VWG41..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC 230	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD341.9A	<b>GSD341.9A</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150	S55499-D275	<b>GDB161.9E</b>
AC 100...240	2-position/3-position	150	No	A6V10636150	S55499-D201	<b>GDB341.9E</b>
AC 24	KNX S-Mode or KNX PL-Link	150	No	A6V10725318	S55499-D203	<b>GDB111.9E/KN</b>
AC/DC 24	Modbus RTU	150	No	A6V10636150	S55499-D682	<b>GDB161.9E/MO</b>

VAG60..



2-port open/close ball valves, externally threaded, PN40

For use in heating, ventilating and air conditioning plants as open/close ball valve. For closed circuits.

- Brass CW602N (DZR) ball valve body
- Flat sealing connections with external thread G..B to ISO 228-1
- Applications with auxiliary functions (e.g., switch, potentiometer) can also be combined with standard rotary actuators belonging to the DAC range

Data sheet	N4214
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 5
Medium	Water Chilled water Cooling water Low-temperature hot water High-temperature hot water Water with anti-freeze
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, chromium-plated
PN class	PN 40
Warranty	5 Years

Range overview VAG60..

Con-nect. thread	GQD../GSD..9A $\Delta p_{max}$ [kPa]	GQD../GSD..9A $\Delta p_s$ [kPa]	GDB..9E $\Delta p_{max}$ [kPa]	GDB..9E $\Delta p_s$ [kPa]	GMA../GLB..9E $\Delta p_{max}$ [kPa]	GMA../GLB..9E $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
G 1" B	350	1400	350	1400	350	1400	15	9	S55230-V130	<b>VAG60.15-9</b>
G 1¼" B	350	1400	350	1400	350	1400	20	17	S55230-V131	<b>VAG60.20-17</b>
G 1½" B	350	1400	350	1400	350	1400	25	22	S55230-V132	<b>VAG60.25-22</b>
G 2" B					350	1000	32	35	S55230-V133	<b>VAG60.32-35</b>
G 2¼" B					350	800	40	68	S55230-V134	<b>VAG60.40-68</b>
G 2¾" B					350	600	50	96	S55230-V135	<b>VAG60.50-96</b>

Accessories for VAG60..

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

**Combinable actuator for VAG60..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD141.9A	<b>GSD141.9A</b>
AC 230	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD341.9A	<b>GSD341.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC 24 DC 24	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD121.9A	<b>GQD121.9A</b>
AC 230	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD321.9A	<b>GQD321.9A</b>
AC 24 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA121.9E	<b>GMA121.9E</b>
AC 230 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA321.9E	<b>GMA321.9E</b>

VBG60..



**3-port changeover ball valves, externally threaded, PN40**

For use in heating, ventilating and air conditioning plants as changeover ball valve. For closed circuits.

- Brass CW602N (DZR) ball valve body
- Flat sealing connections with external thread G..B to ISO 228-1
- Applications with auxiliary functions (e.g., switch, potentiometer) can also be combined with standard rotary actuators belonging to the DAC range

Data sheet	N4214
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 4
Leakage rate bypass	< 1 % of $k_{vs}$ value
Medium	Water Chilled water Cooling water Low-temperature hot water High-temperature hot water Water with anti-freeze
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VBG60..**

Con-nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	GQD../GSD..9A $\Delta p_{max}$ [kPa]	GMA../GLB..9E $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m³/h]	Stock no.	Product no.
G 1"	350	350	350	15	8	S55230-V136	<b>VBG60.15-8T</b>
G 1¼"	350	350	350	20	13	S55230-V137	<b>VBG60.20-13T</b>
G 1½"	350	350	350	25	13	S55230-V138	<b>VBG60.25-13T</b>
G 2"			350	32	25	S55230-V139	<b>VBG60.32-25T</b>
G 2¼"			350	40	49	S55230-V140	<b>VBG60.40-49T</b>
G 2¾"			350	50	73	S55230-V141	<b>VBG60.50-73T</b>



**3-port changeover ball valves, PN 40**

VBG60..L



For use in heating, ventilating and air conditioning plants as changeover ball valve. For closed circuits.

- Brass CW602N (DZR) ball valve body
- Flat sealing connections with external thread G..B to ISO 228-1
- Applications with auxiliary functions (e.g., switch, potentiometer) can also be combined with standard rotary actuators belonging to the DAC range

Data sheet	A6V11974394
Angular rotation	90°
Leakage rate	„Waterproof“ as per EN 60534-4 L/1, better than class 4
Leakage rate bypass	1 % of kvs
Medium	Water Chilled water Cooling water Low-temperature hot water High-temperature hot water Water with anti-freeze
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Brass CW602N (DZR)
Material, inside set	Dezincification resistant hot-pressed brass (DZR), CW602N, chromium-plated
PN class	PN 40
Warranty	5 Years

**Range overview VBG60..L**

Con-nect. thread	GDB..9E $\Delta p_{max}$ [kPa]	GQD../GSD..9A $\Delta p_{max}$ [kPa]	GMA../GLB..9E $\Delta p_{max}$ [kPa]	DN	kvs [m <sup>3</sup> /h]	Stock no.	Product no.
G 1"	350	350	350	15	5	S55230-V215	<b>VBG60.15-5L</b>
G 1¼" B	350	350	350	20	8	S55230-V202	<b>VBG60.20-8L</b>
G 1½"	350	350	350	25	9	S55230-V216	<b>VBG60.25-9L</b>
G 2"			350	32	13	S55230-V217	<b>VBG60.32-13L</b>
G 2¼"			350	40	25	S55230-V218	<b>VBG60.40-25L</b>
G 2¾"			350	50	37	S55230-V219	<b>VBG60.50-37L</b>

**Accessories for VBG60..T/..L**

Product Title	Data sheet	Stock no.	Product no.
Temperature Adapter		S55846-Z115	<b>ALJ100</b>
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>
Strainer, inside threaded, DN15		S55845-Z174	<b>ALX15</b>
Strainer, inside threaded, DN20		S55845-Z175	<b>ALX20</b>
Strainer, inside threaded, DN25		S55845-Z176	<b>ALX25</b>
Strainer, inside threaded, DN32		S55845-Z177	<b>ALX32</b>
Strainer, inside threaded, DN40		S55845-Z178	<b>ALX40</b>
Strainer, inside threaded, DN50		S55845-Z179	<b>ALX50</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Combinable actuator for VBG60..T/..L

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD141.9A	<b>GSD141.9A</b>
AC 230	On-Off (2 wire SPDT)	30	No	A6V10636056	BPZ:GSD341.9A	<b>GSD341.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203	S55499-D204	<b>GLB141.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203	S55499-D205	<b>GLB341.9E</b>
AC 24 DC 24	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD121.9A	<b>GQD121.9A</b>
AC 230	2-position	Open:30 Close:15	Yes	N4659	BPZ:GQD321.9A	<b>GQD321.9A</b>
AC 24 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA121.9E	<b>GMA121.9E</b>
AC 230 DC 24	2-position	Open:90 Close:15	Yes	N4658	BPZ:GMA321.9E	<b>GMA321.9E</b>

#### VAI51..



#### 2-port Ball valve, internal thread, PN25

Internally threaded connections Rp.. as per ISO7-1. For use in heating, ventilation, and air conditioning plants as a control valve. For close circuits.

Data sheet	A6V12170194
Angular rotation	90°
Leakage rate	<0.01 % of Kvs value
Medium temperature	-10...120 °C
Valve characteristic	Equal percentage
Permissible operating pressure	2500KPa
Material, valve body	Brass
PN class	PN 25
Warranty	5 Years

For customers in Asia / Australia

#### Range overview VAI51..

Con-nect. / threa	GQD.. / GSD..	GQD.. / GSD..	GDB.. / Δp <sub>max</sub>	GDB.. / Δp <sub>s</sub>	GMA.. / GLB..	GMA.. / Δp <sub>max</sub>	GMA.. / Δp <sub>s</sub>	GMA.. / Δp <sub>max</sub>	GLB.. / Δp <sub>s</sub>	GLB.. / Δp <sub>max</sub>	GLD.. / Δp <sub>max</sub>	GLD.. / Δp <sub>s</sub>	DN	k <sub>vs</sub> [m <sup>3</sup> /h]	Stock no.	Product no.
Rp 1/2"	350	1400	350	1400	350	1400					350	1400	15	4	S55230-V203	<b>VAI51.15-4</b>
Rp 1/2"	350	1400	350	1400	350	1400					350	1400	15	6.3	S55230-V204	<b>VAI51.15-6.3</b>
Rp 3/4"	350	1400	350	1400	350	1400					350	1400	20	10	S55230-V206	<b>VAI51.20-10</b>
Rp 3/4"	350	1400	350	1400	350	1400					350	1400	20	6.3	S55230-V205	<b>VAI51.20-6.3</b>
Rp 1"	350	600	350	1400	350	1400					350	1400	25	10	S55230-V207	<b>VAI51.25-10</b>
Rp 1"	350	600	350	1400	350	1400					350	1400	25	16	S55230-V208	<b>VAI51.25-16</b>
Rp 1 1/4"					350	1000					350	1000	32	16	S55230-V209	<b>VAI51.32-16</b>
Rp 1 1/4"					350	1000					350	1000	32	25	S55230-V210	<b>VAI51.32-25</b>
Rp 1 1/2"					350	800					350	800	40	25	S55230-V211	<b>VAI51.40-25</b>

**Range overview VAI51..**

Con-nect.	GQD..	GQD..	GDB..	GDB..	GMA..	GMA..	GMA..	GMA..	GLB..	GLB..	GLD..	GLD..	DN	k <sub>vs</sub>	Stock no.	Product no.
/	/	9E	9E	/	.9E	/GLB..	.9E	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>		[m <sup>3</sup> /h]		
threa	GSD..	GSD..	Δp <sub>max</sub>	Δp <sub>s</sub>	GLB..	Δp <sub>max</sub>	.9E	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>	Δp <sub>max</sub>	Δp <sub>s</sub>				
d	9A	9A	[kPa]	[kPa]	9E	[kPa]	Δp <sub>s</sub>	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
	Δp <sub>max</sub>	Δp <sub>s</sub>			Δp <sub>max</sub>		[kPa]									
	[kPa]	[kPa]			[kPa]											
Rp 1½"					350		800				350	800	40	40	S55230-V212	<b>VAI51.40-40</b>
Rp 2"						350		400	350	600	350	400	50	40	S55230-V213	<b>VAI51.50-40</b>
Rp 2"						350		400	350	600	350	400	50	63	S55230-V214	<b>VAI51.50-63</b>

**Accessories for VAI51..**

Product Title	Data sheet	Stock no.	Product no.
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>

**Combinable actuator for VAI51..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2...10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>

**Accessories for VAI41..**

Product Title	Data sheet	Stock no.	Product no.
Mounting kit for rotary actuators GMA..1E with spring-return		BPZ:ASK77.2	<b>ASK77.2</b>
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return		BPZ:ASK77.3	<b>ASK77.3</b>
Mounting kits for rotary actuators with or without spring-return, for special types with switches or potentiometer		S55845-Z199	<b>ASK77.5</b>

## Valves and actuators

### Rotary valves

#### Ball valves

##### Combinable actuator for VAI41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC/DC 24	DC 0/2..10 V	30	No	A6V10636056	S55499-D232	<b>GSD161.9A</b>
AC/DC 24	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D383	<b>GDB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636150_e nAP	S55499-D397	<b>GDB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636150_e nAP	S55499-D384	<b>GDB341.9E</b>
AC 24 DC 24	DC 0/2...10 V	30	No	A6V11171770	S55499-D278	<b>GLD161.9E</b>
AC/DC 24	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D391	<b>GLB141.9E</b>
AC/DC 24	DC 0/2...10 V	150	No	A6V10636203_e nAP	S55499-D402	<b>GLB161.9E</b>
AC 230	2-position/3-position	150	No	A6V10636203_e nAP	S55499-D392	<b>GLB341.9E</b>
AC 24 DC 24	3-position	Open:30 Close:15	Yes	N4659	BPZ:GQD131.9A	<b>GQD131.9A</b>
AC 24 DC 24	DC 0...10 V	Open:30 Close:15	Yes	N4659	BPZ:GQD161.9A	<b>GQD161.9A</b>
AC 24 DC 24	3-position	Open:90 Close:15	Yes	N4658	BPZ:GMA131.9E	<b>GMA131.9E</b>
AC 24 DC 24	DC 0...10 V	Open:90 Close:15	Yes	N4658	BPZ:GMA161.9E	<b>GMA161.9E</b>

##### M..B..

##### 2-Port control ball valve and actuator combination, PN16 AC 24 V



Internally threaded connections Rp.. as per ISO 7-1. For use in heating, ventilating and air conditioning plants as a control valve. For closed circuits.

Data sheet	A6V12170259
PN class	PN 16
Operating voltage	AC/DC 24 V
Positioning signal	DC 0/2..10 V
Positioning time	150 s
Position feedback	DC 0/2..10 V
Degree of protection	IP54
Permissible operating pressure	1600 kPa
Leakage rate	<0.01 % of Kvs value
Medium temperature	0...120 °C
Valve characteristic	Equal percentage
Material, valve body	Brass
Material, inside set	Stainless steel/PTFE+Graphite
Warranty	5 Years

For customers in Asia / Australia

##### Range overview M..B..

$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Connect. thread	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
350	1400	Rp 1/2"	6.3	15	S55310-M113	<b>MDB461.15-6.3AI</b>
350	1400	Rp 3/4"	10	20	S55310-M114	<b>MDB461.20-10AI</b>
350	1400	Rp 1"	16	25	S55310-M115	<b>MDB461.25-16AI</b>
350	1000	Rp 1 1/4"	25	32	S55310-M116	<b>MLB461.32-25AI</b>
350	800	Rp 1 1/2"	40	40	S55310-M117	<b>MLB461.40-40AI</b>
350	600	Rp 2"	63	50	S55310-M118	<b>MLB461.50-63AI</b>

**3-port slipper valves PN 6 with flanged connections**

- With flanged connections to ISO 7005
- For chilled or low-temperature hot water in closed circuits

VBF21.40 / VBF21.50 are shipped with manual adjuster.  
 VBF21..., DN40/50, with SQK34..., SQK84...: Direct mounting  
 VBF21..., DN40/50, with SQK33.00 requires mounting set ASK32



Data sheet	N4241
Medium temperature	1...120 °C
Valve characteristic	Linear
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 100: CrNi steel/brass > DN 125: CrNi steel/Rg5
PN class	PN 6
Leakage rate	DN40...100: 0...0.1 % of $k_{vs}$ value DN125...150: 0...0,5 % of $k_{vs}$ value
Warranty	5 Years

**Range overview VBF21..**

SAL..T10 $\Delta p_{max}$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Required mounting set	Stock no.	Product no.
30	40	25	ASK32N	BPZ:VBF21.40	<b>VBF21.40</b>
30	50	40	ASK32N	BPZ:VBF21.50	<b>VBF21.50</b>
30	65	63	ASK31N	BPZ:VBF21.65	<b>VBF21.65</b>
30	80	100	ASK31N	BPZ:VBF21.80	<b>VBF21.80</b>
30	100	160	ASK31N	BPZ:VBF21.100	<b>VBF21.100</b>
30	125	550	ASK31N	BPZ:VBF21.125	<b>VBF21.125</b>
30	150	820	ASK31N	BPZ:VBF21.150	<b>VBF21.150</b>

DN40...50, series 02  
 DN65...150, series 01

**Mounting set for SAL..T10 onto VBF21..., DN65..150 with ASK31N**

Data sheet	N4502
Warranty	2 Years

**ASK31N****7**

Stock no.	Product no.
S55845-Z100	<b>ASK31N</b>

## Valves and actuators

### Rotary valves

### Slipper valves

#### ASK32N

#### Mounting set for SAL..T10 onto VBF21.., DN40..50 with ASK32N



Data sheet  
Warranty

N4502  
2 Years

Stock no.      Product no.  
S55845-Z211    **ASK32N**

#### Combinable actuator for VBF21..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 230	3-position	120		N4502	S55162-A108	<b>SAL31.00T10</b>
AC 230	3-position	30		N4502	S55162-A109	<b>SAL31.03T10</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120		N4502	S55162-A100	<b>SAL61.00T10</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30		N4502	S55162-A101	<b>SAL61.03T10</b>
AC/DC 24	3-position	120		N4502	S55162-A104	<b>SAL81.00T10</b>
AC/DC 24	3-position	30		N4502	S55162-A105	<b>SAL81.03T10</b>

### Butterfly valves PN6/10/16 for flanged connections

- With metallic tight-closing for mounting between 2 flanges PN6, PN10 or PN16 to ISO 7005
- For chilled and low-temperature hot water in closed circuits

SAL..T10, SAL..T40 require mounting set ASK33N

Data sheet	N4131
Material, inside set	Stainless steel
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
PN class	PN 16
Warranty	5 Years



### Range overview VKF41..

SAL..T10 $\Delta p_s$ [kPa]	SAL..T40 $\Delta p_s$ [kPa]	DN	$k_{vs}$ [m <sup>3</sup> /h]	Leakage rate	Required mounting set	Stock no.	Product no.
500		40	50	0.22% of $k_{vs}$	ASK33N	BPZ:VKF41.40	<b>VKF41.40</b>
500		50	80	0.14% of $k_{vs}$	ASK33N	BPZ:VKF41.50	<b>VKF41.50</b>
500		65	200	0.09% of $k_{vs}$	ASK33N	BPZ:VKF41.65	<b>VKF41.65</b>
500		80	400	0.06% of $k_{vs}$	ASK33N	BPZ:VKF41.80	<b>VKF41.80</b>
500		100	760	0.04% of $k_{vs}$	ASK33N	BPZ:VKF41.100	<b>VKF41.100</b>
300		125	1000	0.04% of $k_{vs}$	ASK33N	BPZ:VKF41.125	<b>VKF41.125</b>
250	400	150	2100	0.02% of $k_{vs}$	ASK33N	BPZ:VKF41.150	<b>VKF41.150</b>
125	300	200	4000	0.01% of $k_{vs}$	ASK33N	BPZ:VKF41.200	<b>VKF41.200</b>

### Combinable actuator for VKF41..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	120	N4502	S55162-A108	<b>SAL31.00T10</b>
AC 230	3-position	30	N4502	S55162-A109	<b>SAL31.03T10</b>
AC 230	3-position	120	N4502	S55162-A111	<b>SAL31.00T40</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4502	S55162-A100	<b>SAL61.00T10</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	N4502	S55162-A101	<b>SAL61.03T10</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4502	S55162-A103	<b>SAL61.00T40</b>
AC/DC 24	3-position	120	N4502	S55162-A104	<b>SAL81.00T10</b>
AC/DC 24	3-position	30	N4502	S55162-A105	<b>SAL81.03T10</b>
AC/DC 24	3-position	120	N4502	S55162-A107	<b>SAL81.00T40</b>

VKF42..



Butterfly valves PN16 for flanged connections, with tight shutoff

Butterfly valve is used as motorized or shut-off valves in heating, ventilation and air conditioning systems applications.

- In open and closed circuits
- For 2-position (SPDT) or DC0...10V control signals
- For chiller and cooling tower sequencing circuits
- To open or close the flow to a heat exchanger or to complete plant sections

Data sheet	N4119
Angular rotation	90°
Leakage rate	A to ISO 5208 (tight-closing)
Medium	Water Water with anti-freeze
Medium temperature	-10...80 °C
Valve characteristic	Non-linear
Material, valve body	Cast iron
Material, inside set	Stainless steel Nodular cast iron EN-GJS-450-10 (QT450-10)
PN class	Nylon coating PN 16
Mounting position	Upright to horizontal
Required mounting set	Direct
Warranty	5 Years

Range overview VKF42..

SQL321 B25/ SQL361 B50	SQL..B50 Δp <sub>s</sub> [kPa]	SQL..B150 Δp <sub>s</sub> [kPa]	SQL..B270 Δp <sub>s</sub> [kPa]	SQL..B570 Δp <sub>s</sub> [kPa]	SQL..B140 0 Δp <sub>s</sub> [kPa]	SQL..B265 0 Δp <sub>s</sub> [kPa]	DN	k <sub>vs</sub> [m³/h]	Stock no.	Product no.
700							50	65	S55237-V100	VKF42.50
700							65	140	S55237-V101	VKF42.65
700							80	210	S55237-V102	VKF42.80
	700						100	470	S55237-V103	VKF42.100
	700						125	750	S55237-V104	VKF42.125
		700					150	1250	S55237-V105	VKF42.150
		700					200	3100	S55237-V106	VKF42.200
			700				250	4050	S55237-V107	VKF42.250
				700			300	7500	S55237-V108	VKF42.300
				700			350	10250	S55237-V109	VKF42.350
					700		400	14100	S55237-V110	VKF42.400
					700		450	18500	S55237-V111	VKF42.450
						700	500	24000	S55237-V112	VKF42.500
						700	600	37000	S55237-V113	VKF42.600

Combinable actuator for VKF42..

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 220	2-position (SPDT)	11	No	N4520	S55164-A100	SQL321B25
AC 220	2-position (SPDT)	19	No	N4520	S55164-A101	SQL321B50
AC 220	DC 0...10V	19	No	N4520	S55164-A102	SQL361B50
AC 220	2-position (SPDT)	39	No	N4520	S55164-A103	SQL321B150
AC 220	DC 0...10V	39	No	N4520	S55164-A104	SQL361B150
AC 220	2-position (SPDT)	39	No	N4520	S55164-A105	SQL321B270
AC 220	DC 0...10V	39	No	N4520	S55164-A106	SQL361B270



**Combinable actuator for VKF42..**

Operating voltage [V]	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock no.	Product no.
AC 220	2-position (SPDT)	47	No	N4520	S55164-A107	<b>SQL321B570</b>
AC 220	DC 0...10V	47	No	N4520	S55164-A108	<b>SQL361B570</b>
AC 220	2-position (SPDT)	47	No	N4520	S55164-A109	<b>SQL321B1400</b>
AC 220	DC 0...10V	47	No	N4520	S55164-A110	<b>SQL361B1400</b>
AC 220	2-position (SPDT)	105	No	N4520	S55164-A111	<b>SQL321B2650</b>
AC 220	DC 0...10V	105	No	N4520	S55164-A112	<b>SQL361B2650</b>

VKF46..



Butterfly valves PN6/10/16 for flanged connections, with tight shutoff

- With EPDM seal for mounting between 2 flanges PN6, PN10 or NP16 to ISO 7005
- For chilled water, low-temperature hot water, DHW, cold water and fresh water in closed or open circuits

VKF46.450...600 PN 16 only

Data sheet	N4136
Material, inside set	From DN350: Nickel-plated steel To DN300: Stainless steel
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-15
PN class	PN 16
Warranty	5 Years

Range overview VKF46..

SAL..T20	SAL..T40	SQL36	SQL36	SQL36	SQL36	SQL36	DN	k <sub>vs</sub>	Stock no.	Product no.
Δp <sub>s</sub>	Δp <sub>s</sub>	E50F04	E50F05	E65	E110	E160		[m <sup>3</sup> /h]		
[kPa]	[kPa]	Δp <sub>s</sub>	Δp <sub>s</sub>	Δp <sub>s</sub>	Δp <sub>s</sub>	Δp <sub>s</sub>				
		[kPa]	[kPa]	[kPa]	[kPa]	[kPa]				
1600		1600					40	50	BPZ:VKF46.40	<b>VKF46.40</b>
1600		1600					50	85	BPZ:VKF46.50	<b>VKF46.50</b>
1600		1600					65	215	BPZ:VKF46.65	<b>VKF46.65</b>
	1600		1600				80	420	BPZ:VKF46.80	<b>VKF46.80</b>
	1200		1600				100	800	BPZ:VKF46.100	<b>VKF46.100</b>
	800		1000				125	1010	BPZ:VKF46.125	<b>VKF46.125</b>
				1600			150	2100	BPZ:VKF46.150	<b>VKF46.150</b>
				1000			200	4000	BPZ:VKF46.200	<b>VKF46.200</b>
					1000		250	6400	BPZ:VKF46.250	<b>VKF46.250</b>
					1000		300	8500	BPZ:VKF46.300	<b>VKF46.300</b>
					600		350	11500	BPZ:VKF46.350	<b>VKF46.350</b>
					300		400	14500	BPZ:VKF46.400	<b>VKF46.400</b>
						300	450	20500	BPZ:VKF46.450	<b>VKF46.450</b>
						300	500	21000	BPZ:VKF46.500	<b>VKF46.500</b>
						300	600	29300	BPZ:VKF46.600	<b>VKF46.600</b>

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Combinable actuator for VKF46..

Operating voltage [V]	Positioning signal	Positioning time [s]	Data sheet	Stock no.	Product no.
AC 230	3-position	120	N4502	S55162-A110	<b>SAL31.00T20</b>
AC 230	3-position	120	N4502	S55162-A111	<b>SAL31.00T40</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4502	S55162-A102	<b>SAL61.00T20</b>
AC/DC 24	DC 0...10 V DC 4...20 mA 0...1000 Ohm	120	N4502	S55162-A103	<b>SAL61.00T40</b>
AC/DC 24	3-position	120	N4502	S55162-A106	<b>SAL81.00T20</b>
AC/DC 24	3-position	120	N4502	S55162-A107	<b>SAL81.00T40</b>
AC 230	3-position	25	N4505	BPZ:SQL36E50F04	<b>SQL36E50F04</b>
AC 230	3-position	25	N4505	BPZ:SQL36E50F05	<b>SQL36E50F05</b>
AC 230	3-position	6	N4505	BPZ:SQL36E65	<b>SQL36E65</b>
AC 230	3-position	12	N4505	BPZ:SQL36E110	<b>SQL36E110</b>
AC 230	3-position	24	N4505	BPZ:SQL36E160	<b>SQL36E160</b>

**Manual adjuster for VKF46..**

Product Title	Data sheet	Stock no.	Product no.
Manual override for VFW41../VFL41.., DN40 to DN65	A6V12436917	S55845-Z254	ASK41NF04SP
Manual override for VFW41../VFL41.., DN80 to DN125	A6V12436917	S55845-Z255	ASK41NF05SP
Manual override for VFW41../VFL41.., DN150 to DN200	A6V12436917	S55845-Z256	ASK41NF07SP
Manual override for VFW41../VFL41.., DN250 to DN400	A6V12436917	S55845-Z257	ASK41NF10SP
Manual adjuster for VKF46.., DN40 to DN65	N4136	BPZ:ASK46.1	ASK46.1
Manual adjuster for VKF46.., DN80 to DN125	N4136	BPZ:ASK46.2	ASK46.2
Manual adjuster for VKF46.., DN150 to DN200	N4136	BPZ:ASK46.3	ASK46.3
Manual adjuster for VKF46.., DN250 to DN400	N4136	BPZ:ASK46.4	ASK46.4

**Accessories for VKF..**

Product Title	Data sheet	Stock no.	Product no.
Butterfly valve mounting set DN80, DN100	N4119	S55845-Z153	ASK77.10
Butterfly valve mounting set DN125, DN150	N4119	S55845-Z154	ASK77.11
Ball valve mounting set, DN 65, DN 80, DN 100, DN 125	A6V11168935	S55845-Z203	ASK77.21
Butterfly valve mounting set DN50, DN65	N4119	S55845-Z152	ASK77.9
Ball valve mounting set, DN 150	A6V11168935	S55845-Z204	ASK77.22

**Butterfly Valve, flange, PN 6/10/16, tight closing**

VFW41..

Wafer type butterfly valve for fitting between PN 6, PN 10, PN 16 counter-flanges to ISO 7005. For use as motorized or manual control or shut-off valves in heating, ventilation and air conditioning systems. In open and closed circuits, tight closing.

Data sheet	A6V101029242
Angular rotation	90°
Leakage rate	Tight closing
Medium	Water
	Water with anti-freeze
Medium temperature	-20...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Stainless steel valve disc and shaft
PN class	PN 16
Warranty	5 Years

**Range overview VFW41..**

SAL..T20 $\Delta p_s$ [kPa]	SAL..T40 $\Delta p_s$ [kPa]	SQL36 E50F04 $\Delta p_s$ [kPa]	SQL36 E50F05 $\Delta p_s$	SQL36 E65 $\Delta p_s$	SQL36 E110 $\Delta p_s$	SQL36 E160 $\Delta p_s$	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
1600	1600						40	40	S55235-V138	VFW41.40
1600	1600						50	100	S55235-V139	VFW41.50
1600	1600						65	155	S55235-V140	VFW41.65
1600		1600					80	260	S55235-V141	VFW41.80
	1200		1600 kPa				100	520	S55235-V142	VFW41.100
	800		1000				125	820	S55235-V143	VFW41.125
				1600			150	1600	S55235-V144	VFW41.150
				1000			200	4000	S55235-V145	VFW41.200
					1000		250	4550	S55235-V146	VFW41.250
					600		300	7200	S55235-V147	VFW41.300
					300		350	10250	S55235-V148	VFW41.350
							400	14100	S55235-V160	VFW41.400

## Valves and actuators

### Rotary valves

### Butterfly valves

#### Range overview VFW41..

SAL..T20 $\Delta p_s$ [kPa]	SAL..T40 $\Delta p_s$ [kPa]	SQL36 E50F04 $\Delta p_s$ [kPa]	SQL36 E50F05 $\Delta p_s$	SQL36 E65 $\Delta p_s$	SQL36 E110 $\Delta p_s$	SQL36 E160 $\Delta p_s$	DN	$k_{vs}$ [m <sup>3</sup> /h]	Stock no.	Product no.
						300	450	18500	S55235-V161	VFW41.450
						300	500	24000	S55235-V162	VFW41.500
						300	600	31000	S55235-V163	VFW41.600

#### Combinable actuators for VFW41..

Product Title	Data sheet	Stock no.	Product no.
Electromotoric actuator, 20 Nm, 90°, AC 230 V, 3P	N4502	S55162-A110	SAL31.00T20
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P	N4502	S55162-A111	SAL31.00T40
Electromotoric actuator, 20 Nm, 90°, AC/DC 24 V, DC 0...10 V / DC 4...20 mA	N4502	S55162-A102	SAL61.00T20
Electromotoric actuator, 40 Nm, 90°, AC/DC 24 V, DC 0...10 V / DC 4...20 mA	N4502	S55162-A103	SAL61.00T40
Electromotoric actuator, 20 Nm, 90°, AC/DC 24 V, 3P	N4502	S55162-A106	SAL81.00T20
Electromotoric actuator, 40 Nm, 90°, AC/DC 24 V, 3P	N4502	S55162-A107	SAL81.00T40
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P, F04 connection	N4505	BPZ:SQL36E50F04	SQL36E50F04
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P, F05 connection	N4505	BPZ:SQL36E50F05	SQL36E50F05
Electromotoric actuator, 100 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E65	SQL36E65
Electromotoric actuator, 400 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E110	SQL36E110
Electromotoric actuator, 1200 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E160	SQL36E160

#### Manual adjuster for VFW41..

Product Title	Data sheet	Stock no.	Product no.
Manual override for VFW41../VFL41..., DN40 to DN65	A6V12436917	S55845-Z254	ASK41NF04SP
Manual override for VFW41../VFL41..., DN80 to DN125	A6V12436917	S55845-Z255	ASK41NF05SP
Manual override for VFW41../VFL41..., DN150 to DN200	A6V12436917	S55845-Z256	ASK41NF07SP
Manual override for VFW41../VFL41..., DN250 to DN400	A6V12436917	S55845-Z257	ASK41NF10SP

**Butterfly Valves PN6/10/16 VFW41..**

VFW41..U

Nodular cast iron housing EN-GJS-400-18-LT  
 DN 40...200  
 Kvs 40...4000 m<sup>3</sup>/h  
 For fitting between PN 6, PN 10, PN 16 counter-flanges to ISO 7005  
 Angle of rotation 90°  
 No maintenance required  
 Can be fitted with type SAL..T10/F05 electromotoric actuators



Data sheet	A6V101029254
Angular rotation	90°
Leakage rate	0.05 % of kvs
Medium	Water Water with anti-freeze Chilled water Low-temperature hot water High-temperature hot water Brine
Medium temperature	-20... 120 °C
Valve characteristic	non-linear
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJS-400-18-LT
Material, inside set	Cast iron EN-GJS-400-18-LT
PN class	PN 6 PN 10 PN 16
Warranty	5 Years

**Range overview VFW41..U**

SAL..T10 $\Delta p_s$ [kPa]	DN	kvs	Stock no.	Product no.
500	40	40 m <sup>3</sup> /h	S55235-V168	VFW41.40U
500	50	100 m <sup>3</sup> /h	S55235-V169	VFW41.50U
500	65	155 m <sup>3</sup> /h	S55235-V170	VFW41.65U
500	80	260 m <sup>3</sup> /h	S55235-V171	VFW41.80U
500	100	520 m <sup>3</sup> /h	S55235-V172	VFW41.100U
300	125	820 m <sup>3</sup> /h	S55235-V173	VFW41.125U
250	150	1600 m <sup>3</sup> /h	S55235-V174	VFW41.150U
125	200	4000 m <sup>3</sup> /h	S55235-V175	VFW41.200U

**Combinable actuators for VFW41..U**

Product Title	Data sheet	Stock no.	Product no.
Electromotoric actuator, 10 Nm, 90°, AC 230 V, 3P, 30 s	N4502	S55162-A121	SAL31.03T10/F05
Electromotoric actuator, 10 Nm, 90°, AC/DC 24 V, DC 0...10 V / DC 4...20 mA, 30 s	N4502	S55162-A123	SAL61.03T10/F05
Electromotoric actuator, 10 Nm, 90°, AC/DC 24 V, 3P, 30 s	N4502	S55162-A122	SAL81.03T10/F05

**Combinable actuators for VFL41..**

Product Title	Data sheet	Stock no.	Product no.
Electromotoric actuator, 20 Nm, 90°, AC 230 V, 3P	N4502	S55162-A110	SAL31.00T20
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P	N4502	S55162-A111	SAL31.00T40
Electromotoric actuator, 20 Nm, 90°, AC/DC 24 V, DC 0...10 V / DC 4...20 mA	N4502	S55162-A102	SAL61.00T20
Electromotoric actuator, 40 Nm, 90°, AC/DC 24 V, DC 0...10 V / DC 4...20 mA	N4502	S55162-A103	SAL61.00T40
Electromotoric actuator, 20 Nm, 90°, AC/DC 24 V, 3P	N4502	S55162-A106	SAL81.00T20

New Product

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## Valves and actuators

### Rotary valves

### Butterfly valves

#### Combinable actuators for VFL41..

Product Title	Data sheet	Stock no.	Product no.
Electromotoric actuator, 40 Nm, 90°, AC/DC 24 V, 3P	N4502	S55162-A107	<b>SAL81.00T40</b>
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P, F04 connection	N4505	BPZ:SQL36E50F04	<b>SQL36E50F04</b>
Electromotoric actuator, 40 Nm, 90°, AC 230 V, 3P, F05 connection	N4505	BPZ:SQL36E50F05	<b>SQL36E50F05</b>
Electromotoric actuator, 100 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E65	<b>SQL36E65</b>
Electromotoric actuator, 400 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E110	<b>SQL36E110</b>
Electromotoric actuator, 1200 Nm, 90°, AC 230 V, 3P	N4505	BPZ:SQL36E160	<b>SQL36E160</b>

#### Manual adjuster for VFL41..

Product Title	Data sheet	Stock no.	Product no.
Manual override for VFW41../VFL41.., DN40 to DN65	A6V12436917	S55845-Z254	<b>ASK41NF04SP</b>
Manual override for VFW41../VFL41.., DN80 to DN125	A6V12436917	S55845-Z255	<b>ASK41NF05SP</b>
Manual override for VFW41../VFL41.., DN150 to DN200	A6V12436917	S55845-Z256	<b>ASK41NF07SP</b>
Manual override for VFW41../VFL41.., DN250 to DN400	A6V12436917	S55845-Z257	<b>ASK41NF10SP</b>

**MVI422..**



**2-port zone valves & actuators, PN16**

Control valve for use with terminal units for heating and cooling zones. The actuators are equipped with a manual lever and spring return facility (valve closed).

Data sheet	A6V11932500
PN class	PN 16
Operating voltage	AC 230 V
Power consumption	6.5 VA
Positioning signal	2-position
Positioning time	Opening 15 s (motor-driven)
	Closing 10 s (spring force)
Degree of protection	IP40
Ambient temperature, operation	-10...55 °C
Mounting position	Upright up to 85 °C inclined
Permissible operating pressure	1600 kPa
Leakage rate	Tight shut-off (100 % airtight)
Medium temperature	1...95 °C
Material, inside set	Stainless/NBR
Warranty	5 Years
For customers in Asia / Australia	

**Range overview MVI422..**

Product Title	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Stock no.	Product no.
2-port zone valves & actuators, PN16	350	350	S55310-M107	<b>MVI422.15</b>
2-port zone valves & actuators, PN16	350	350	S55310-M108	<b>MVI422.20</b>
2-port zone valves & actuators, PN16	350	350	S55310-M109	<b>MVI422.25</b>

## Valves and actuators

### Rotary valves

### Eccentric plug valves

#### MXI422..



#### 3-port zone valves & actuators, PN16

Control valve for use with terminal units for heating and cooling zones. The actuators are equipped with a manual lever and spring return facility (valve closed).

Data sheet	A6V11932500
PN class	PN 16
Operating voltage	AC 230 V
Power consumption	6.5 VA
Positioning signal	2-position
Positioning time	Opening 15 s (motor-driven)
	Closing 10 s (spring force)
Degree of protection	IP40
Ambient temperature, operation	-10...55 °C
Mounting position	Upright up to 85 °C inclined
Permissible operating pressure	1600 kPa
Leakage rate	Tight shut-off (100 % airtight)
Medium temperature	1...95 °C
Material, inside set	Stainless/NBR
Warranty	5 Years

For customers in Asia / Australia

#### Range overview MXI422..

Product Title	$\Delta p_{\max}$ [kPa]	$\Delta p_s$ [kPa]	Stock no.	Product no.
3-port zone valves & actuators, PN16	250	250	S55310-M110	<b>MXI422.15</b>
3-port zone valves & actuators, PN16	200	200	S55310-M111	<b>MXI422.20</b>
3-port zone valves & actuators, PN16	150	150	S55310-M112	<b>MXI422.25</b>

#### Accessories for MVI422.. /MXI422..

Product Title	Data sheet	Stock no.	Product no.
Waterproof shield for ASK 39.3		S55845-Z251	<b>ASK39.3</b>



**Modulating refrigerant valves with magnetic actuator, PS45, hermetically sealed, for safety refrigerants**

MVL661...-



Hermetically sealed 2-port valves for modulating control of chillers and heat pumps.

- Expansion, hot-gas and suction throttle applications with one type of valve
- PS45, stainless steel with soldering connections
- Integrated power electronic with precise position feedback signal
- For safety refrigerants such as R22, R134a, R404A, R407C, R410A, R507, and R744 (CO<sub>2</sub>). Not suitable for inflammable refrigerants.

The MVL661...- refrigerant valve is used in conjunction with PolyCool for superheat control or Climatix for chiller control.

MVL661...- replaces M2FS..LX.., M2FE..L.. and MVL661.25.

MVL661...- are UL listed.

ASR61: Replacement electronics in the event of defective valve electronics.

Data sheet	N4714
Operating voltage	AC 24 V DC 20...30 V
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Positioning time	< 1 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP65
Ambient temperature, operation	-25...55 °C
Mounting position	Upright to horizontal
Permissible operating pressure	4500 kPa
Leakage rate	< 0.002 % of $k_{vs}$ value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Steel / CrNi steel
Material, inside set	CrNi steel/brass
Warranty	5 Years

**Range overview MVL661..**

$\Delta p_{max}$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	$k_{vs}$ reduced [m <sup>3</sup> /h]	DN	Stock no.	Product no.
2500	0.4	0.25	15	BPZ:MVL661.15-0.4	<b>MVL661.15-0.4</b>
2500	1	0.63	15	BPZ:MVL661.15-1.0	<b>MVL661.15-1.0</b>
2500	2.5	1.6	20	BPZ:MVL661.20-2.5	<b>MVL661.20-2.5</b>
2500	6.3	4	25	BPZ:MVL661.25-6.3	<b>MVL661.25-6.3</b>
1600	10	6.3	32	S55320-M105	<b>MVL661.32-10</b>
200	12	8	32	BPZ:MVL661.32-12	<b>MVL661.32-12</b>

$k_{vs}$ -reduced selectable with DIP switch.

MVL661.32-12 can only be used as a suction throttle valve.

Refrigerant valves

For expansion, hotgas and suction throttle applications

MVS661..N



Modulating refrigerant valves with magnetic actuator, PN 63, hermetically sealed

Hermetically sealed 2-port valves for modulating control of refrigerant circuits including chillers and heat pumps.

- Expansion gas, flash gas and suction throttle applications with one type of valve
- PN 63, stainless steel with welding connections
- Integrated power electronic with precise position feedback signal
- For ammonia R717 and all standard refrigerants, noncorrosive gases/liquids and CO<sub>2</sub> (R744). It is not suited for use with inflammable refrigerants.

"An exchangeable ASR..N valve insert allows for different k<sub>vs</sub>-values with the same type of DN25 valve. In the event of service, this insert can also be replaced on the plant. MVS661..N are UL listed."

Data sheet	N4717
Operating voltage	AC 24 V DC 20...30 V
Power consumption	22 VA
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Positioning time	<1 s
Spring return function	Closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP65
Ambient temperature, operation	-25...55 °C
Mounting position	Upright to horizontal
Permissible operating pressure	6300 kPa
Leakage rate	v <sub>s</sub> -value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution ΔH/H <sub>100</sub>	1:1000
Material, valve body	Steel / CrNi steel
Material, inside set	CrNi steel
Warranty	5 Years

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Range overview MVS661..N

Δp <sub>max</sub> [kPa]	k <sub>vs</sub> [m <sup>3</sup> /h]	k <sub>vs</sub> reduced [m <sup>3</sup> /h]	DN	Stock no.	Product no.
2500	0.16	0.1	25	BPZ:MVS661.25-016N	<b>MVS661.25-016N</b>
2500	0.4	0.25	25	BPZ:MVS661.25-0.4N	<b>MVS661.25-0.4N</b>
2500	1	0.63	25	BPZ:MVS661.25-1.0N	<b>MVS661.25-1.0N</b>
2500	2.5	1.6	25	BPZ:MVS661.25-2.5N	<b>MVS661.25-2.5N</b>
2500	6.3	4	25	BPZ:MVS661.25-6.3N	<b>MVS661.25-6.3N</b>

k<sub>vs</sub>-reduced selectable with DIP switch.

Accessories for MVL661.../ MVS661..N

Product Title	Data sheet	Stock no.	Product no.
Valve insert, k <sub>vs</sub> 0.16 m <sup>3</sup> /h	N4716	BPZ:ASR0.16N	<b>ASR0.16N</b>
Valve insert, k <sub>vs</sub> 0.4 m <sup>3</sup> /h	N4716	BPZ:ASR0.4N	<b>ASR0.4N</b>
Valve insert, k <sub>vs</sub> 1 m <sup>3</sup> /h	N4716	BPZ:ASR1.0N	<b>ASR1.0N</b>
Valve insert, k <sub>vs</sub> 2.5 m <sup>3</sup> /h	N4716	BPZ:ASR2.5N	<b>ASR2.5N</b>

Valves and actuators  
Refrigerant valves  
For expansion, hotgas and suction throttle applications

**Accessories for MVL661...-/ MVS661..N**

Product Title	Data sheet	Stock no.	Product no.
Valve insert, kvs 6.3 m <sup>3</sup> /h	N4716	BPZ:ASR6.3N	<b>ASR6.3N</b>
Replacement electronic for MVL661.. and MVS661..N	N4714	BPZ:ASR61	<b>ASR61</b>
PTC conductive heating element		S55845-Z241	<b>ASR70</b>

## Valves and actuators

### Refrigerant valves

#### 2-port modulating pilot valve

##### M2FP03GX



#### 2-port modulating pilot valve with magnetic actuator, PN32, AC 24 V, DC 0...10 V / 4...20 mA / 0...20 Phs to control main valves

Hermetically sealed 2-port valve as a control valve for main valves from 2" to 5".

- PN32 with threaded connections
- For use with refrigerants such as R22, R134a, R404A, R407C, R507 and ammonia R717
- ZM electronics must be ordered separately (see below)

Data sheet	N4731
PN class	PN 32
Operating voltage	AC 24 V
Power consumption	13 VA
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Positioning time	1 s
Spring return function	Closed
Degree of protection	IP54
Ambient temperature, operation	-40...50 °C
Mounting position	Any
Permissible operating pressure	3200 kPa
Leakage rate	0.25 % of kvs
Medium temperature	-40...100 °C; -40...212 °F
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel
$\Delta p_{max}$	1800 kPa
$k_{vs}$	0.3 m <sup>3</sup> /h
Warranty	5 Years

Stock no.	Product no.
BPZ:M2FP03GX	<b>M2FP03GX</b>

With types ZM101/A and ZM121/A, the DC 0...20 V Phs positioning signal is also possible without operating voltage.

#### Matching ZM.. electronics

Product Title	Data sheet	Stock no.	Product no.
Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	BPZ:ZM100/A	<b>ZM100/A</b>
Terminal housing for valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	BPZ:ZM101/A	<b>ZM101/A</b>
Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	BPZ:ZM120/A	<b>ZM120/A</b>
Terminal housing for valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	BPZ:ZM121/A	<b>ZM121/A</b>
Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	BPZ:ZM200/A	<b>ZM200/A</b>
Terminal housing for control of valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	BPZ:ZM220/A	<b>ZM220/A</b>

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**Modulating refrigerant valves with magnetic actuator, PS43, soldered connection, hermetically sealed**

M3FB..LX..



Hermetically sealed control valves for modulating capacity control of refrigeration units and for heat recovery.

- PN40 with soldered CrNi steel connections
- For organic safety refrigerants such as R22, R134a, R404A, R407C, R410A, R507, etc. Not suitable for flammable refrigerants
- ZM electronics must be ordered separately (see accessories)

Modulating control valves for hot-gas control, without ZM.. electronics housing  
 For use with Staefa controllers (working range 4...8V)

Data sheet	N4721
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Positioning time	< 1 s
Spring return function	AB-> A closed
Degree of protection	IP54
Ambient temperature, operation	-40...50 °C
Mounting position	Any
Permissible operating pressure	4300 kPa
Leakage rate	< 0.05% of $k_{vs}$ -value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel/brass
Warranty	5 Years

**Range overview M3FB..LX..**

Power consumption [VA]	$\Delta p_{max}$ [kPa]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
26	2200	0.6	15	BPZ:M3FB15LX06/A	M3FB15LX06/A
26	2200	1.5	15	BPZ:M3FB15LX15/A	M3FB15LX15/A
26	2200	3	15	BPZ:M3FB15LX/A	M3FB15LX/A
26	1800	5	20	BPZ:M3FB20LX/A	M3FB20LX/A
40	1200	8	25	BPZ:M3FB25LX/A	M3FB25LX/A
40	800	12	32	BPZ:M3FB32LX	M3FB32LX

$\Delta p_{max}$  across control port AB -> A.

**Matching ZM.. electronics**

Product Title	Data sheet	Stock no.	Product no.
Terminal housing for valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	BPZ:ZM101/A	ZM101/A
Terminal housing for valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	BPZ:ZM121/A	ZM121/A



## Valves and actuators

### Refrigerant valves

#### For condensate control

#### M3FK..LX..



#### Modulating refrigerant valves with magnetic actuator, PN32, solder connection, hermetically sealed

Hermetically sealed mixing or straight-through valves for modulating capacity control of condensers.

- PN32 with copper soldering connection
- For safety refrigerants such as R22, R134a, R404A, R407C, R507, etc.
- ZM electronics must be ordered separately (see below)

For use with Staefa controllers (working range 4...8 V)

Data sheet	N4722
PN class	PN 32
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Positioning time	< 1 s
Spring return function	1-> 3 closed
Degree of protection	IP54
Ambient temperature, operation	-40...50 °C
Mounting position	Any
Permissible operating pressure	3200 kPa
Leakage rate	< 0.05% of $k_{vs}$ -value
Leakage rate bypass	< 0.5% of $k_{vs}$ -value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel/brass
Warranty	5 Years

#### Range overview M3FK..LX..

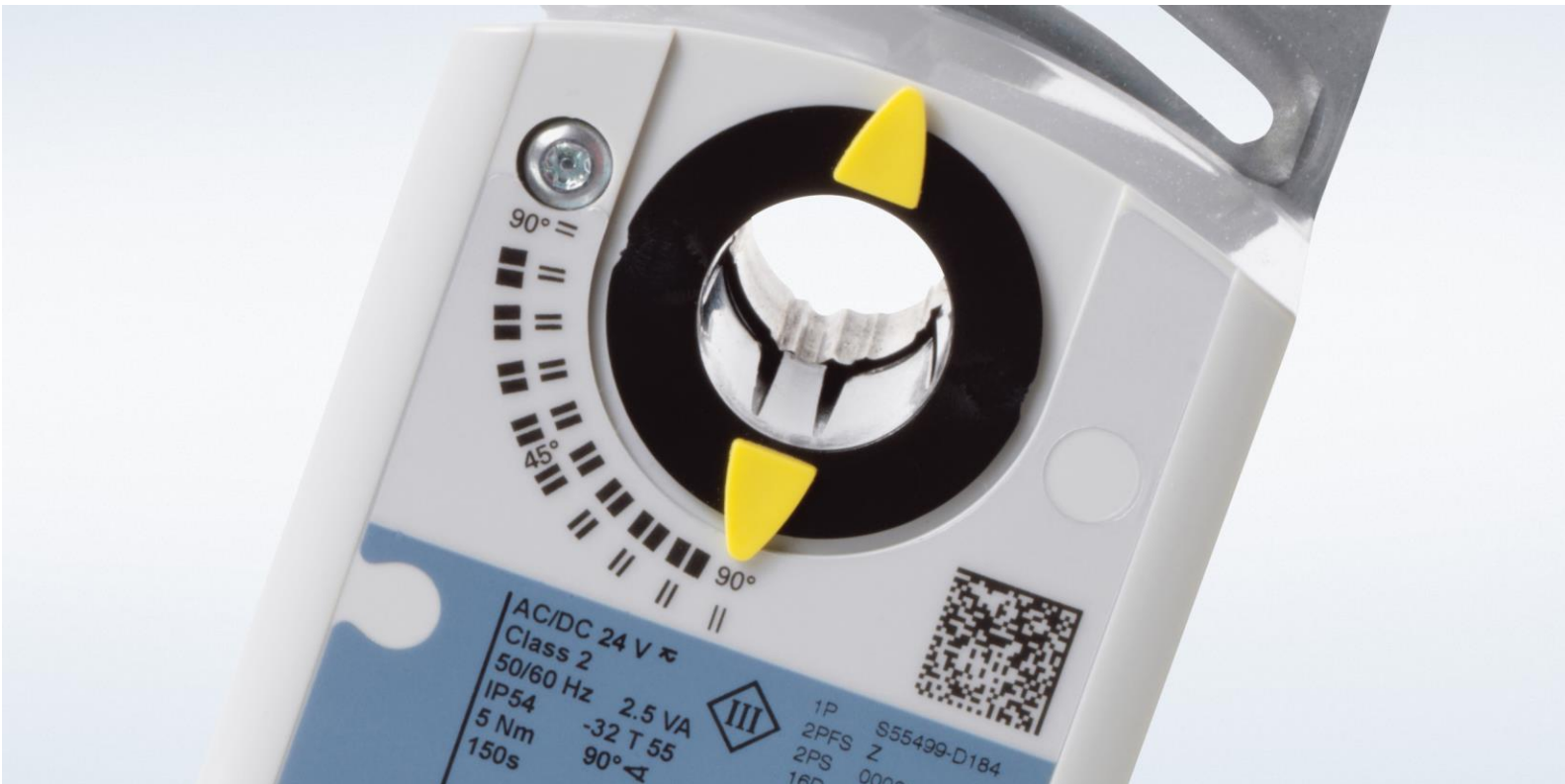
Power consumption [VA]	$k_{vs}$ [m <sup>3</sup> /h]	DN	Stock no.	Product no.
13	0.6	15	BPZ:M3FK15LX06	<b>M3FK15LX06</b>
13	1.5	15	BPZ:M3FK15LX15	<b>M3FK15LX15</b>
13	3	15	BPZ:M3FK15LX	<b>M3FK15LX</b>
16	5	20	BPZ:M3FK20LX	<b>M3FK20LX</b>
16	8	25	BPZ:M3FK25LX	<b>M3FK25LX</b>
20	12	32	BPZ:M3FK32LX	<b>M3FK32LX</b>
40	20	40	BPZ:M3FK40LX	<b>M3FK40LX</b>
40	30	50	BPZ:M3FK50LX	<b>M3FK50LX</b>

With types ZM101/A and ZM121/A, the DC 0...20 V Phs positioning signal is also possible without operating voltage.

#### Matching ZM.. electronics

Product Title	Data sheet	Stock no.	Product no.
Terminal housing for valves with magnetic actuator, AC 24 V, DC 0...10 V / 0...20 V Phs	N4591	BPZ:ZM101/A	<b>ZM101/A</b>
Terminal housing for valves with magnetic actuator, AC 24 V, DC 4...20 mA / 0...20 V Phs	N4591	BPZ:ZM121/A	<b>ZM121/A</b>

# Damper actuators



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## Damper actuators

### Overview and selection tools












New: 5-year warranty on valves and actuators, damper actuators, and sensors.

#### Actuators for HVAC applications

Actuators for HVAC applications	Control signal	Operating voltage	Standard model	Feedback potentiometer (1 kOhm)	Adjustable offset/span	Adjustable offset/span with two auxiliary switches	Feedback (1 kOhm) with two auxiliary switches	Two auxiliary switches	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
 <b>GQD series</b> 2 Nm for approx. 0.3 m <sup>2</sup> damper area 30 s run time 15 s SR time	2-position	AC/DC 24 V	GQD121.1A	–	–	–	–	GQD126.1A	8...15	6...11
		AC 230 V	GQD321.1A	–	–	–	–	GQD326.1A		
	3-position	AC/DC 24 V	GQD131.1A	–	–	–	–	GQD136.1A		
	Modulating DC 0...10 V	AC/DC 24 V	GQD161.1A	–	–	–	–	GQD166.1A		
 <b>GPC series</b> 4 Nm for approx. 0.6 m <sup>2</sup> damper area 60 s run time 15 s SR time	2-position	AC/DC 24 V	GPC121.1A	–	–	–	–	GPC126.1A	8...15	6...11
		AC 230 V	GPC321.1A	–	–	–	–	GPC326.1A		
	3-position	AC/DC 24 V	GPC131.1A	–	–	–	–	GPC136.1A		
	Modulating DC 0...10 V	AC/DC 24 V	GPC161.1A	–	–	–	–	GPC166.1A		
	Modulating DC 0...10 V	AC 230 V	GPC361.1A	–	–	–	–	–		
 <b>GNP series</b> 6 Nm for approx. 1 m <sup>2</sup> damper area 2 s run time el. fail-safe function	2-position	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E	6.4...20.5	6.4...13
	3-position	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E		
	Modulating DC 0/2...10 V	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E		
	Modulating DC 0/4...20 mA	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E		
 <b>GMA series</b> 7 Nm for approx. 1.5 m <sup>2</sup> damper area 90 s run time 15 s SR time	2-position	AC/DC 24 V	GMA121.1E	–	–	–	–	GMA126.1E	6.4...20.5	6.4...13
		AC 230 V	GMA321.1E	–	–	–	–	GMA326.1E		
	3-position	AC/DC 24 V	GMA131.1E	GMA132.1E	–	–	–	GMA136.1E		
	Modulating DC 0...10 V	AC/DC 24 V	GMA161.1E	–	GMA163.1E	GMA164.1E	–	GMA166.1E		
	Modbus RTU	AC/DC 24 V	GMA161.1E/MO	–	–	–	–	–		
 <b>GCA series</b> 18 Nm for approx. 3 m <sup>2</sup> damper area 90 s run time 15 s SR time	2-position	AC/DC 24 V	GCA121.1E	–	–	–	–	GCA126.1E	8...25.6	6...18
		AC 230 V	GCA321.1E	–	–	–	–	GCA326.1E		
	3-position	AC/DC 24 V	GCA131.1E	–	–	–	GCA135.1E	–		
	Modulating DC 0...10 V	AC/DC 24 V	GCA161.1E	–	GCA163.1E	GCA164.1E	–	GCA166.1E		
	Modbus RTU	AC/DC 24 V	GCA161.1E/MO	–	–	–	–	–		







Actuators for HVAC applications

Actuators for HVAC applications	Control signal	Operating voltage	Standard model	Feedback potentiometer (5 kOhm)	Adjustable offset/span	Adjustable offset/span with two auxiliary switches	Feedback (1 kOhm) with two auxiliary switches	Two auxiliary switches	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
 <b>GSD series</b> 2 Nm for approx. 0.3 m <sup>2</sup> damper area 30 s run time	2-position	AC/DC 24 V	GSD141.1A	–	–	–	–	GSD146.1A	8...15	6...11
	3-position	AC 230 V	GSD341.1A	–	–	–	–	GSD346.1A		
	Modulating DC 0...10 V	AC/DC 24 V	GSD161.1A	–	–	–	–	GSD166.1A		
	Modulating DC 0...10 V	AC 230 V	GSD361.1A	–	–	–	–	–		
 <b>GDB series</b> 5 Nm for approx. 0.8 m <sup>2</sup> damper area 150 s run time	2-position	AC/DC 24 V	GDB141.1E	GDB142.1E	–	–	–	GDB146.1E	8...16	6...12.8
	3-position	AC 230 V	GDB341.1E	–	–	–	–	GDB346.1E		
	Modulating DC 0...10 V	AC/DC 24 V	GDB161.1E	–	GDB163.1E	GDB164.1E	–	GDB166.1E		
	AC 230 V	GDB361.1E	–	–	–	–	–			
	Modbus RTU	AC 24 V	GDB111.1E/MO	–	–	–	–	–		
KNX S-/LTE-Mode, KNX PL-Link	AC 24 V	GDB111.1E/KN	–	–	–	–	–			
 <b>GLB series</b> 10 Nm for approx. 1.5 m <sup>2</sup> damper area 150 s run time	2-position	AC/DC 24 V	GLB141.1E	GLB142.1E	–	–	–	GLB146.1E	8...16	6...12.8
	3-position	AC 230 V	GLB341.1E	–	–	–	–	GLB346.1E		
	Modulating DC 0...10 V	AC/DC 24 V	GLB161.1E	–	GLB163.1E	GLB164.1E	–	GLB166.1E		
	AC 230 V	GLB361.1E	–	–	–	–	–			
	Modbus RTU	AC 24 V	GLB111.1E/MO	–	–	–	–	–		
KNX S-/LTE-Mode, KNX PL-Link	AC 24 V	GLB111.1E/KN	–	–	–	–	–			
 <b>GAP series</b> 6 Nm for approx. 1 m <sup>2</sup> damper area 2 s run time	2-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E	6.4...20.5	6.4...13
	3-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E		
 <b>GEB series</b> 20 Nm for approx. 4 m <sup>2</sup> damper area 150 s run time	2-position	AC/DC 24 V	GEB141.1E	GEB142.1E	–	–	–	GEB146.1E	8...20.5	8...14.5
	3-position	AC 230 V	GEB341.1E	–	–	–	–	GEB346.1E		
	Modulating DC 0...10 V	AC/DC 24 V	GEB161.1E	–	GEB163.1E	GEB164.1E	–	GEB166.1E		
	AC 230 V	GEB361.1E	–	–	–	–	–			
Modbus RTU	AC/DC 24 V	GEB161.1E/MO	–	–	–	–	–			
 <b>GBB series</b> 25 Nm for approx. 4 m <sup>2</sup> damper area 150 s run time	3-position	AC 24 V	GBB131.1E	–	–	–	GBB135.1E	GBB136.1E	8...25.6	6...18
	AC 230 V	GBB331.1E	–	–	–	GBB335.1E	GBB336.1E			
 <b>GIB series</b> 35 Nm for approx. 6 m <sup>2</sup> damper area 150 s run time	3-position	AC 24 V	GIB131.1E	–	–	–	GIB135.1E	GIB136.1E	8...25.6	6...18
	AC 230 V	GIB331.1E	–	–	–	GIB335.1E	GIB336.1E			
	Modulating DC 0...10 V	AC 24 V	GIB161.1E	–	GIB163.1E	GIB164.1E	–	GIB166.1E		
Modbus RTU	AC 24 V	GIB161.1E/MO	–	–	–	–	–			
 <b>GDB series</b> 125 N for approx. 0.8 m <sup>2</sup> damper area 150 s run time	3-position	AC 24 V	GDB131.2E	–	–	–	–	GDB136.2E	–	–
	AC 230 V	GDB331.2E	–	–	–	–	GDB336.2E			
 <b>GDB series</b> 125 N for approx. 0.8 m <sup>2</sup> damper area 150 s run time	Modulating DC 0...10 V	AC 24 V	GDB161.2E	–	GDB163.2E	–	–	–	–	–
	AC 24 V	GDB161.2E	–	GDB163.2E	–	–	–			
 <b>GLB series</b> 250 N for approx. 1.5 m <sup>2</sup> damper area 150 s run time	3-position	AC 24 V	GLB131.2E	–	–	–	–	GLB136.2E	–	–
	AC 230 V	GLB331.2E	–	–	–	–	GLB336.2E			
	Modulating DC 0...10 V	AC 24 V	GLB161.2E	–	GLB163.2E	–	–	–		


# Damper actuators

## Overview and selection tools

### Actuators for air volume controllers

Actuators for air volume controllers 300 Pa application range	Control signal	Operating voltage	Standard model	Input/Output	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
 <p><b>GDB 300 Pa VAV compact controller</b> 5 Nm for approx. 0.8 m<sup>2</sup> damper area 150 s running time</p>	3-position	AC 24 V	GDB181.1E/3		8...16	6...12.8
	Modulating DC 0/2...10 V		GDB181.1E/KN			
	KNX S-Mode, KNX LTE-Mode, KNX PL-Link		GDB181.1E/MO			
	Modbus RTU		GDB181.1E/BA			
 <p><b>GLB 300 Pa VAV compact controller</b> 10 Nm for approx. 1.5 m<sup>2</sup> damper area 150 s running time</p>	3-position	AC 24 V	GLB181.1E/3		8...16	6...12.8
	Modulating DC 0/2...10 V		GLB181.1E/KN			
	KNX S-Mode, KNX LTE-Mode, KNX PL-Link		GLB181.1E/MO			
	Modbus RTU		GLB181.1E/BA			
 <p><b>ASV 300 Pa VAV modular controller</b></p>	3-position	AC 24 V	ASV181.1E/3		-	-
	Modulating DC 0/2...10 V					
 <p><b>DXR1..D..</b> Compact room automation station and 5 Nm actuator combination for HVAC application</p>	BACnet/IP	AC 24 V	DXR1.E09PDZ-112	2 UI, 4 DO, 1 AO	8...16	6...12.8
	BACnet/IP		DXR1.E09PDZ-113			
	BACnet MS/TP		DXR1.M09PDZ-112			
	BACnet MS/TP		DXR1.M09PDZ-113			
 <p><b>DXR1..L..</b> Compact room automation station and 10 Nm actuator combination for HVAC application</p>	BACnet/IP	AC 24 V	DXR1.E02PLZ-112	2 UI, 1 DI, 4 DO, 1AO	8...16	6...12.8
	BACnet/IP KNX PL-Link		DXR1.E10PL-112			
	BACnet/IP KNX PL-Link		DXR1.E10PL-113			
 <p><b>DXR2..L..</b> Compact room automation station and 10 Nm actuator combination for HVAC application with lighting and shading</p>	BACnet/IP KNX S-Mode KNX PL-Link	AC 24 V	DXR2.E10PL-102B	2 UI, 1 DI, 4 DO, 1 AO	8...16	6...12.8
	BACnet/IP KNX S-Mode KNX PL-Link		DXR2.E10PLX-102B			
	BACnet MS/TP KNX S-Mode KNX PL-Link		DXR2.M10PL-102B			
	BACnet MS/TP KNX S-Mode KNX PL-Link		DXR2.M10PLX-102B			

### Actuators for fire and smoke protection dampers

Actuators for fire and smoke protection dampers	Control signal	Operating voltage	2 auxiliary switches	2 auxiliary switches and thermal cutout	Dimensions, square damper shaft (mm)
 <b>GRA actuator</b> 4 Nm for approx. 0.6 m <sup>2</sup> damper area 90 s running time 15 s spring return time	2-position	AC/DC 24 V AC 230 V	GRA126.1E/... <sup>1)</sup> GRA326.1E/... <sup>1)</sup>	GRA126.1E/T... <sup>1)</sup> GRA326.1E/T... <sup>1)</sup>	10, 12
 <b>GNA actuator</b> 9/7 Nm for approx. 1 m <sup>2</sup> damper area 90 s running time 15 s spring return time	2-position	AC/DC 24 V AC 230 V	GNA126.1E/... <sup>1)</sup> GNA326.1E/... <sup>1)</sup>	GNA126.1E/T... <sup>1)</sup> GNA326.1E/T... <sup>1)</sup>	10, 12
	Modulating DC 0/2...10 V	AC/DC 24 V		GNA166.1E/T12	12
 <b>GGA actuator</b> 18 Nm for approx. 2.5 m <sup>2</sup> damper area 90 s running time 15 s spring return time	2-position	AC/DC 24 V AC 230 V	GGA126.1E/... <sup>1)</sup> GGA326.1E/... <sup>1)</sup>	GGA126.1E/T... <sup>1)</sup> GGA326.1E/T... <sup>1)</sup>	10, 12

<sup>1)</sup> .. = insert dimension of square damper shaft (mm)








### Actuators for railway applications

Actuators for railway applications	Control signal	Operating voltage	Standard model	Feedback potentiometer	2 integrated auxiliary switches	Rotary direction switch
 <b>GDD series</b> 5 Nm 30 s run time	Modulating DC 0/2...10 V	DC 24 V	GDD161.1E/RW	–	–	Yes
	2-position 3-position		GDD141.1E/RW	GDD142.1E/RW	GDD146.1E/RW	
 <b>GDA series</b> 5 Nm 90 s run time	Modulating DC 0/2...10 V	DC 24 V	GDA161.1E/RW	–	–	Yes
	2-position 3-position		GDA141.1E/RW	GDA142.1E/RW	GDA146.1E/RW	
 <b>GLD series</b> 8 Nm 30 s run time	Modulating DC 0/2...10 V	DC 24 V	GLD161.1E/RW	–	–	Yes
	2-position 3-position		GLD141.1E/RW	GLD142.1E/RW	GLD146.1E/RW	
 <b>GLA series</b> 10 Nm 90 s run time	Modulating DC 0/2...10 V	DC 24 V	GLA161.1E/RW	–	–	Yes
	2-position 3-position		GLA141.1E/RW	GLA142.1E/RW	GLA146.1E/RW	

# Damper actuators

## Overview and selection tools



### Accessories for actuators

Description	GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
 <p><b>Rotary-to-linear set with lever</b> Allows a direct-coupled actuator to provide a linear drive; can be used to simultaneously drive a set of opposing or adjacent dampers with a single actuator.</p>	■			ASK71.5
 <p><b>Rotary-to-linear set with lever</b> Allows a direct-coupled actuator to provide an auxiliary linear drive; can be used to simultaneously drive a set of opposing or adjacent dampers with a single actuator.</p>		■	■	ASK71.13 ASK71.3
 <p><b>Rotary-to-linear set with lever and angle bracket</b> For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.</p>	■			ASK71.6
 <p><b>Rotary-to-linear set with lever and mounting plate</b> For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.</p>		■	■	ASK71.14 ASK71.4
 <p><b>Universal lever</b> For use with all OpenAir rotary-to-linear kits for linear applications requiring connection to damper louver shaft when joint connection is not possible. For 8 to 25.6 mm round.</p>	■	■	■	ASK71.9
 <p><b>Tandem mounting bracket</b>  Tandem mounting bracket for 2-position and 3-position GCA/GIB models  Tandem mounting bracket for modulating GCA/GIB models</p>		■	■	ASK73.3 ASK73.1 ASK73.2
 <p><b>Rotary-to-linear set for duct mounting</b> For airstream applications and where a foot-mounted actuator can be used. Includes crank arm, Teflon support-bearing ring and mounting fasteners.  <b>Rotary-to-linear set for duct and frame mounting</b></p>	■	■	■	ASK71.6 ASK71.1 ASK71.11

Description	GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
 <p><b>Rotary-to-linear set for frame mounting</b> For direct mounting to damper frame. Includes a crank arm to generate a linear stroke, a Teflon support-bearing ring to minimize side-loading on the actuator's output bearing and other mounting fasteners.</p>			■	ASK71.2
		■		ASK71.11
 <p><b>Special shaft adapter</b> • Up to 27 mm shaft diameter  Note: When used with a GIB, accepts shaft diameters from 19 to 27 mm</p>			■	ASK74.1
 <p>Actuator shaft insert for small shaft diameters • Up to 10 mm diameter</p>	■			ASK78.3
 <p><b>Weathershield</b> Includes cover, gasket and screws.</p>	■	■	■ ■ ■	ASK75.3 ASK75.1 ASK75.4 ASK75.6 ASK75.5 ASK75.2
 <p><b>Shaft extension</b></p>		■	■	ASK74.7
 <p><b>Setting unit for VAV compact controller</b> for GDB/GLB/ASV181.1E/..</p>	■			AST20
 <p><b>Interface converter (USB/PPS2) for VAV compact controller</b> Interface converter for use with G..B181.1E/.. for series E and higher to use PC software ACS931/ACS941 etc.</p>	■			AST22

## Damper actuators

### Overview and selection tools

Description	GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
 <p><b>External auxiliary switches</b> External auxiliary switch kit, attachable to GCA, GMA, GEB, GBB and GIB rotary actuators - 1 external auxiliary switch - 2 external auxiliary switches</p>		<ul style="list-style-type: none"> <li>■</li> <li>■</li> </ul>	<ul style="list-style-type: none"> <li>■</li> <li>■</li> </ul>	ASC77.1E ASC77.2E
 <p><b>Shaft inserts for GDB/GLB...1</b> - Round 1/2" - Square 8 x 8 mm - Square 8 x 8 mm fix - Square 10 x 10 mm - Round 10 mm - Round 12 mm - D-profile fix</p>	<ul style="list-style-type: none"> <li>■</li> <li>■</li> <li>■</li> <li>■</li> <li>■</li> <li>■</li> <li>■</li> </ul>			ASK78.5 ASK78.6 ASK78.14 ASK78.7 ASK78.9 ASK78.10 ASK78.12

For accessories and spare parts for air damper actuators, please order data sheet:  
 N4697 (GMA/GEB) /GRA/GNA  
 N4698 (GDB/GLB)  
 N4699 (GCA/GBB/GIB) GGA

GQD..1A

**Rotary air damper actuators 2 Nm, with spring return**

- For shaft dia 8...15 mm, square 6...11 mm, min. shaft length 20 mm
- With housing made of plastic and 0.9 m connecting cable

Data sheet	N4604
Torque	2 Nm
Air damper area	0.3 m <sup>2</sup>
Positioning time	Open with motor: 30 s Closing with spring: 15 s
Cable length	0.9 m
Degree of protection	IP40
Dimensions (W x H x D)	73 x 122 x 63 mm
Warranty	5 Years



**Range overview GQD..1A**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC/DC 24	2-position	6.5 VA 4.5 W	0	BPZ:GQD121.1A	<b>GQD121.1A</b>
AC/DC 24	2-position	6.5 VA 4.5 W	2	BPZ:GQD126.1A	<b>GQD126.1A</b>
AC/DC 24	3-position	4 VA 2.5 W	0	BPZ:GQD131.1A	<b>GQD131.1A</b>
AC/DC 24	3-position	4 VA 2.5 W	2	BPZ:GQD136.1A	<b>GQD136.1A</b>
AC/DC 24	DC 0...10 V	4.5 VA 3 W	0	BPZ:GQD161.1A	<b>GQD161.1A</b>
AC/DC 24	DC 0...10 V	4.5 VA 3 W	2	BPZ:GQD166.1A	<b>GQD166.1A</b>
AC 230	2-position	10 VA 4.5 W	0	BPZ:GQD321.1A	<b>GQD321.1A</b>
AC 230	2-position	10 VA 4.5 W	2	BPZ:GQD326.1A	<b>GQD326.1A</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators with spring return

##### GPC..1



##### Rotary air damper actuators 4 Nm, with spring return

- With self-centering shaft adapter for shaft dia. 8...15 mm, square 6...11 mm, min. shaft length 20 mm
- With position indication
- Emergency function with spring return
- With 0.9 m connecting cable

Data sheet	A6V10636100
Torque	4 Nm
Air damper area	0.6 m <sup>2</sup>
Positioning time	Open with motor: 60 s Closing with spring: 15 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	72 x 124 x 63 mm
Warranty	5 Years

##### Range overview GPC..1

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Stock no.	Product no.
AC/DC 24	2-position	4.3 VA 2.7 W	0	Yes	S55499-D233	<b>GPC121.1A</b>
AC/DC 24	2-position	4.3 VA 2.7 W	2	Yes	S55499-D234	<b>GPC126.1A</b>
AC/DC 24	3-position	4.3 VA 2.7 W	0	Yes	S55499-D235	<b>GPC131.1A</b>
AC/DC 24	3-position	4.3 VA 2.7 W	2	Yes	S55499-D236	<b>GPC136.1A</b>
AC/DC 24	DC 0...10 V	3.7 VA 2.2 W	0	Yes	S55499-D237	<b>GPC161.1A</b>
AC/DC 24	DC 0...10 V	3.7 VA 2.2 W	2	Yes	S55499-D238	<b>GPC166.1A</b>
AC 230	2-position	6.9 VA 2.9 W	0	Yes	S55499-D239	<b>GPC321.1A</b>
AC 230	2-position	6.9 VA 2.9 W	2	Yes	S55499-D240	<b>GPC326.1A</b>
AC 230	DC 0...10 V	6.7 VA 2.9 W	0	Yes	S55499-D241	<b>GPC361.1A</b>



**GMA..1E**



**Rotary air damper actuators 7 Nm, with spring return**

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4614 / A6V101037201
Torque	7 Nm
Air damper area	1.5 m <sup>2</sup>
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm
Warranty	5 Years

**Range overview GMA..1E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA121.1E	<b>GMA121.1E</b>
AC/DC 24	2-position	5 VA 3.5 W	2	Yes	0.9	BPZ:GMA126.1E	<b>GMA126.1E</b>
AC/DC 24	3-position	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA131.1E	<b>GMA131.1E</b>
AC/DC 24	3-position	5 VA 3.5 W	2	Yes	0.9	BPZ:GMA136.1E	<b>GMA136.1E</b>
AC/DC 24	DC 0...10 V	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA161.1E	<b>GMA161.1E</b>
AC/DC 24	Modbus RTU	5 VA 3.5 W	0	Yes	0.9	S55499-D300	<b>GMA161.1E/MO</b>
AC/DC 24	DC 0...35 V Adjustable	5 VA 3.5 W	0	Yes	0.9	BPZ:GMA163.1E	<b>GMA163.1E</b>
AC/DC 24	DC 0...35 V Adjustable	5 VA 3.5 W	2	Yes	0.9	BPZ:GMA164.1E	<b>GMA164.1E</b>
AC/DC 24	DC 0...10 V	5 VA 3.5 W	2	Yes	0.9	BPZ:GMA166.1E	<b>GMA166.1E</b>
AC 230	2-position	7 VA 4.5 W	0	Yes	0.9	BPZ:GMA321.1E	<b>GMA321.1E</b>
AC 230	2-position	7 VA 4.5 W	2	Yes	0.9	BPZ:GMA326.1E	<b>GMA326.1E</b>

Type GMA132.1E has a feedback potentiometer.  
Basic Documentation No.: Z4614

**Accessories for rotary air damper actuators GMA..1E**

Product Title	Data sheet	Stock no.	Product no.
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	<b>ASC77.1E</b>
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	<b>ASC77.2E</b>
Accessory Kit, GEB/GMA		S55859-Z101	<b>ASK71.01</b>
Mounting Bracket, GS		S55859-Z118	<b>ASK71.07</b>
Rotary/linear mounting kit for duct or frame mounting	N4697	BPZ:ASK71.11	<b>ASK71.11</b>
Rotary/linear mounting kit with lever	N4697	BPZ:ASK71.14	<b>ASK71.14</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Standard Shaft adapter, GEB/GMA, complete		S55859-Z103	<b>ASK74.12</b>
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	<b>ASK74.13</b>
Shaft adapter, GS, square, 12mm		S55859-Z105	<b>ASK74.14</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators with spring return

##### Accessories for rotary air damper actuators GMA..1E

Product Title	Data sheet	Stock no.	Product no.
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	<b>ASK74.15</b>
Shaft adapter, GS, square, 8mm		S55859-Z107	<b>ASK74.16</b>
Shaft adapter, GM, square, 15mm		S55859-Z108	<b>ASK74.17</b>
Shaft extension	N4699	BPZ:ASK74.7	<b>ASK74.7</b>
Weather shield	N4697	BPZ:ASK75.3	<b>ASK75.3</b>
Rotary/linear mounting kit with lever and bracket	N4697	BPZ:ASK71.13	<b>ASK71.13</b>
Weather shield for rotary-/linear-type actuator GMA/GEB...E	N4697	BPZ:ASK75.6	<b>ASK75.6</b>

**GCA..1E**



**Rotary air damper actuators 18 Nm, with spring return**

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4613 / A6V101037201
Torque	18 Nm
Air damper area	3 m <sup>2</sup>
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 313 x 71 mm
Warranty	5 Years

**Range overview GCA..1E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position	7 VA 5 W	0	0.9	BPZ:GCA121.1E	<b>GCA121.1E</b>
AC/DC 24	2-position	7 VA 5 W	2	0.9	BPZ:GCA126.1E	<b>GCA126.1E</b>
AC/DC 24	3-position	7 VA 5 W	0	0.9	BPZ:GCA131.1E	<b>GCA131.1E</b>
AC/DC 24	3-position	7 VA 5 W	2	0.9	BPZ:GCA135.1E	<b>GCA135.1E</b>
AC/DC 24	DC 0...10 V	7 VA 5 W	0	0.9	BPZ:GCA161.1E	<b>GCA161.1E</b>
AC/DC 24	Modbus RTU	7 VA 5 W	0	0.9	S55499-D301	<b>GCA161.1E/MO</b>
AC/DC 24	DC 0...10 V	7 VA 5 W	0		S55499-D502	<b>GCA161.1H</b>
AC/DC 24	DC 0...35 V Adjustable	7 VA 5 W	0	0.9	BPZ:GCA163.1E	<b>GCA163.1E</b>
AC/DC 24	DC 0...35 V Adjustable	7 VA 5 W	2	0.9	BPZ:GCA164.1E	<b>GCA164.1E</b>
AC/DC 24	DC 0...10 V	7 VA 5 W	2	0.9	BPZ:GCA166.1E	<b>GCA166.1E</b>
AC 230	2-position	8 VA 6 W	0	0.9	BPZ:GCA321.1E	<b>GCA321.1E</b>
AC 230	2-position	8 VA 6 W	2	0.9	BPZ:GCA326.1E	<b>GCA326.1E</b>
AC 230	2-position	8 VA 6 W	2		S55499-D503	<b>GCA326.1H</b>

Type GCA135.1E has a feedback potentiometer.  
Basic Documentation No.: Z4613

**Accessories for rotary air damper actuators GCA..1E**

Product Title	Data sheet	Stock no.	Product no.
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	<b>ASC77.1E</b>
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	<b>ASC77.2E</b>
Standard Shaft Adapter, GM		S55859-Z117	<b>ASK71.06</b>
Rotary/linear mounting kit for duct mounting	N4699	BPZ:ASK71.1	<b>ASK71.1</b>
Turnkey for manual adjustment		S55859-Z121	<b>ASK71.19</b>
Turnkey for manual adjustment		S55859-Z122	<b>ASK71.20</b>
Rotary/linear mounting kit with lever and bracket	N4699	BPZ:ASK71.4	<b>ASK71.4</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators with spring return

##### Accessories for rotary air damper actuators GCA..1E

Product Title	Data sheet	Stock no.	Product no.
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Bracket for power pack	N4699	BPZ:ASK73.1	<b>ASK73.1</b>
Shaft adapter, GM, square, 12mm		S55859-Z109	<b>ASK74.18</b>
Shaft adapter, GM, square, 10mm		S55859-Z110	<b>ASK74.19</b>
Shaft adapter, GM, square, 8mm		S55859-Z111	<b>ASK74.20</b>
Shaft extension	N4699	BPZ:ASK74.7	<b>ASK74.7</b>
Weather shield for rotary actuator	N4699	BPZ:ASK75.1	<b>ASK75.1</b>
Weather shield for rotarytype actuator GBB/GCA/GIB...1E	N4699	BPZ:ASK75.4	<b>ASK75.4</b>
Rotary/linear mounting kit for frame mounting	N4699	BPZ:ASK71.2	<b>ASK71.2</b>
Accessory Kit, GIB/GBB/GCA		S55859-Z102	<b>ASK71.02</b>
Rotary/linear mounting kit with lever	N4699	BPZ:ASK71.3	<b>ASK71.3</b>
Mounting Bracket, GM		S55859-Z114	<b>ASK71.03</b>
Flexible bracket for power pack	N4699	BPZ:ASK73.2	<b>ASK73.2</b>
Special shaft adapter	N4699	BPZ:ASK74.1	<b>ASK74.1</b>
Shaft Adapter for GSD/GPC		S55859-Z120	<b>ASK74.23</b>

##### Caution!

- ASK73.1 is only valid for GCA12..1E, GCA13..1E, GCA32..1E

- ASK73.2 is only valid for GCA16..1E

### Rotary air damper actuators 2 Nm, without spring return

GSD..1A

- Operate direct driven zone dampers used to control airflow in ducts specifically to address two position domestic and light commercial barrel damper applications.
- For shaft dia 8...15 mm, square 6...11 mm, min. shaft length 20 mm
- With housing made of plastic and 0.9 m connecting cable



Data sheet	N4603
Torque	2 Nm
Air damper area	0.3 m <sup>2</sup>
Positioning time	30 s
Cable length	0.9 m
Degree of protection	IP40
Dimensions (W x H x D)	73 x 122 x 63 mm
Warranty	5 Years

### Range overview GSD..1A

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC 24 DC 24...48	Open-close / three-position	2.2 VA 1.2 W	2	S55499-D227	<b>GSD146.1A</b>
AC 24 DC 24...48	DC 0/2..10 V	2.4 VA 1.4 W	0	S55499-D228	<b>GSD161.1A</b>
AC 24 DC 24...48	Open-close / three-position	2.2 VA 1.2 W	0	S55499-D281	<b>GSD141.1A</b>
AC 24 DC 24...48	DC 0/2..10 V	2.4 VA 1.4 W	2	S55499-D229	<b>GSD166.1A</b>
AC 100...240	Open-close / three-position	4.5 VA 1.8 W	0	S55499-D282	<b>GSD341.1A</b>
AC 100...240	Open-close / three-position	4.5 VA 1.8 W	2	S55499-D230	<b>GSD346.1A</b>
AC 100...240	DC 0/2...10 V	3.7 VA 1.4 W	0	S55499-D231	<b>GSD361.1A</b>

Damper actuators  
 Air damper actuators  
 Rotary damper actuators non-spring return

GDA..1E

**Air damper actuators GDA..1E**

Electronic motor driven actuators for open-close, three-position and modulating control

- Nominal torque 5 Nm
- Operating voltage AC 24 V ~ / DC 24...48 V =
- Running time for 90° rotary angle 90 s
- Mechanically adjustable span between 0...90°
- Pre-wired with 0.9 m long connection cables
- Position indication: mechanical
- Self-adaption of rotational angle range and adjustable auxiliary switches for supplementary functions

Data sheet	A6V11997021
Degree of protection	IP 54 as per EN 60529
Warranty	5 Years

**Range overview GDA..1E**

Operating voltage	Power consumption [W]	Cable length [m]	Stock no.	Product no.
AC 24 V ~ / DC 24...48 V =	1.0 W / 2.0 VA   0.5	0.9	S55499-D638	<b>GDA146.1E</b>

**Rotary air damper actuators 5 Nm, without spring return**

**GDB..1E**

- For shaft dia. 8..16 mm, square 6...12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable



Data sheet	A6V10636149 / A6V10881141
Torque	5 Nm
Air damper area	0.8 m <sup>2</sup>
Positioning time	150 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm
Warranty	5 Years

**Range overview GDB..1E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC 24	KNX TP	3 VA 2.5 W	0	S55499-D190	<b>GDB111.1E/KN</b>
AC 24	Modbus RTU	3 VA 2.5 W	0	S55499-D191	<b>GDB111.1E/MO</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	0	S55499-D377	<b>GDB141.1E</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	0	S55499-D184	<b>GDB141.1E</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	0	S55499-D378	<b>GDB142.1E</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	0	S55499-D185	<b>GDB142.1E</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	2	S55499-D379	<b>GDB146.1E</b>
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	2	S55499-D186	<b>GDB146.1E</b>
AC/DC 24	DC 0/2...10 V	2.1 VA 1.2 W	0	S55499-D393	<b>GDB161.1E</b>
AC/DC 24	DC 0/2...10 V	2.1 VA 1.2 W	0	S55499-D266	<b>GDB161.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.1 VA 1.2 W	0	S55499-D394	<b>GDB163.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.1 VA 1.2 W	0	S55499-D267	<b>GDB163.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.1 VA 1.2 W	2	S55499-D395	<b>GDB164.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.1 VA 1.2 W	2	S55499-D268	<b>GDB164.1E</b>
AC/DC 24	DC 0/2...10 V	3.3 VA 1.3 W	2	S55499-D396	<b>GDB166.1E</b>
AC/DC 24	DC 0/2...10 V	3.3 VA 1.3 W	2	S55499-D269	<b>GDB166.1E</b>
AC 230	2-position/3-position	5 VA 1.6 W	0	S55499-D380	<b>GDB341.1E</b>
AC 230	2-position/3-position	5 VA 1.6 W	0	S55499-D187	<b>GDB341.1E</b>
AC 230	2-position/3-position	5 VA 1.6 W	2	S55499-D381	<b>GDB346.1E</b>
AC 230	2-position/3-position	5 VA 1.6 W	2	S55499-D188	<b>GDB346.1E</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return

##### Range overview GDB..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC 230	DC 0/2...10 V	2.1 VA 1.2 W	0	S55499-D189	<b>GDB361.1E</b>
AC 230	DC 0/2...10 V	2.1 VA 1.2 W	0	S55499-D382	<b>GDB361.1E</b>
AC 230	DC 0/2...10 V	2.1 VA 1.2 W	0	S55499-D504	<b>GDB361.1G</b>

Type GDB142.1E has a feedback potentiometer.

Typ GDB361.1G has a cable length of 2.5m.

Basic Documentation No.: A6V 10636139.

Additional variants of actuators can be configured in Product Configurator.



**Rotary air damper actuators 5 Nm, without spring return**

**GDB..1E/09H**

- For shaft dia. 8..16 mm, square 6...12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m halogenfree connecting cable
- One extra screw in the package (to set lower limitation)



Data sheet	A6V10636149
Torque	5 Nm
Air damper area	0.8 m <sup>2</sup>
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm
Warranty	5 Years

**Range overview GDB..1E/09H**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position/3-position	2.5 VA 1.1 W	0	0.9	S55499-D360	<b>GDB141.1E/09H</b>
AC/DC 24	DC 0/2...10 V	2.1 VA 1.2 W	0	0.9	S55499-D362	<b>GDB161.1E/09H</b>
AC 230	2-position/3-position	5.0 VA 1.6 W	0	0.9	S55499-D361	<b>GDB341.1E/09H</b>

**Accessories for rotary air damper actuators GDB..1E and GLB..1E**

Product Title	Data sheet	Stock no.	Product no.
Mounting Bracket, BG		S55859-Z115	<b>ASK71.04</b>
Position Indicator, BG		S55859-Z116	<b>ASK71.05</b>
Mounting Bracket, BG, short		S55859-Z119	<b>ASK71.08</b>
Centering insert 2 x square 10 mm		S55859-Z123	<b>ASK71.21</b>
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	<b>ASK71.5</b>
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	<b>ASK71.6</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	<b>ASK75.5</b>
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return

##### GLB..1E



##### Rotary air damper actuators 10 Nm, without spring return

- For shaft dia. 8..16 mm, square 6..12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable

Data sheet	A6V10636202 / A6V10881141
Torque	10 Nm
Air damper area	1.5 m <sup>2</sup>
Positioning time	150 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm
Warranty	5 Years

##### Range overview GLB..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC 24	KNX TP	3 VA 2.5 W	0	S55499-D198	<b>GLB111.1E/KN</b>
AC 24	Modbus RTU	3 VA 2.5 W	0	S55499-D199	<b>GLB111.1E/MO</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	0	S55499-D385	<b>GLB141.1E</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	0	S55499-D192	<b>GLB141.1E</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	0	S55499-D386	<b>GLB142.1E</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	0	S55499-D193	<b>GLB142.1E</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	2	S55499-D387	<b>GLB146.1E</b>
AC/DC 24	2-position/3-position	2 VA 1.3 W	2	S55499-D194	<b>GLB146.1E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	0	S55499-D270	<b>GLB161.1E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	0	S55499-D398	<b>GLB161.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.5 VA 1.5 W	0	S55499-D399	<b>GLB163.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.5 VA 1.5 W	0	S55499-D271	<b>GLB163.1E</b>
AC 24	DC 0...35 V Adjustable	2.5 VA 1.5 W	2	S55499-D400	<b>GLB164.1E</b>
AC/DC 24	DC 0...35 V Adjustable	2.5 VA 1.5 W	2	S55499-D272	<b>GLB164.1E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	2	S55499-D273	<b>GLB166.1E</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	2	S55499-D401	<b>GLB166.1E</b>
AC 24				BPZ:GLB181.1EM3	<b>GLB181.1EM3</b>
AC 24				S55499-D263	<b>GLB181.1EMKN</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	0	S55499-D388	<b>GLB341.1E</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	0	S55499-D195	<b>GLB341.1E</b>

Damper actuators  
Air damper actuators  
**Rotary damper actuators non-spring return**

**Range overview GLB..1E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC 230	2-position/3-position	5.8 VA 1.9 W	2	S55499-D389	<b>GLB346.1E</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	2	S55499-D196	<b>GLB346.1E</b>
AC 230	DC 0/2...10 V	4 VA 1.6 W	0	S55499-D390	<b>GLB361.1E</b>
AC 230	DC 0/2...10 V	4 VA 1.6 W	0	S55499-D197	<b>GLB361.1E</b>

Type GLB142.1E has a feedback potentiometer.

Type GLB161.1H has a cable length of 5m.

Basic Documentation No.: A6V10636196.

Additional variants of actuators can be configured in Product Configurator.

**Rotary air damper actuator, AC/DC 24 V, 2-position/3-position, 10 Nm, 150 s**

**GLB141.1H**

- For shaft dia. 8..16 mm, square 6...12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 5.0 m connecting cable

Data sheet	A6V10636202
Torque	10 Nm
Air damper area	1.5 m <sup>2</sup>
Angular rotation	90°
Power consumption	2 VA 1.3 W
Positioning time	150 s
Cable length	5 m
Positioning signal	2-position/3-position
Degree of protection	IP54
Ambient humidity, operation	95 % r.h.
Dimensions (W x H x D)	68 x 137 x 59.5 mm
Operating voltage	AC/DC 24 V
Auxiliary switch	0
Warranty	5 Years

Stock no.	Product no.
S55499-D443	<b>GLB141.1H</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return

##### GLB..1E/09H



##### Rotary air damper actuators 10 Nm, without spring return

- For shaft dia. 8..16 mm, square 6..12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m halogenfree connecting cable
- One extra screw in the package (to set lower limitation)

Data sheet	A6V10636202
Torque	10 Nm
Air damper area	1.5 m <sup>2</sup>
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm
Warranty	5 Years

##### Range overview GLB..1E/09H

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC/DC 24	2-position/3-position	2 VA 1.3 W	0	0.9	S55499-D357	<b>GLB141.1E/09H</b>
AC/DC 24	DC 0/2...10 V	2.5 VA 1.5 W	0	0.9	S55499-D359	<b>GLB161.1E/09H</b>
AC 230	2-position/3-position	5.8 VA 1.9 W	0	0.9	S55499-D358	<b>GLB341.1E/09H</b>

##### GEB..1E / GEB..9E



##### Rotary air damper actuators 20 Nm, without spring return

- With self-centering shaft adapter for shaft dia. 8...20.5 mm, square 8...14.5 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	A6V11449860
Torque	20 Nm
Air damper area	4 m <sup>2</sup>
Angular rotation	90°
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	82 x 192 x 63 mm
Warranty	5 Years

##### Range overview GEB..1E / GEB..9E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	0	No	0.9	S55499-D329	<b>GEB141.1E</b>
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	0		0.9	S55499-D330	<b>GEB142.1E</b>
AC 24 DC 24...48	2-position/3-position	2.3 VA 1.1 W	2		0.9	S55499-D331	<b>GEB146.1E</b>
AC 24 DC 24...48	DC 0/2...10 V	2.5 VA 1.2 W	0	No	0.9	S55499-D332	<b>GEB161.1E</b>
AC/DC 24	Modbus RTU	2.8 VA 1.7 W Holding: 0.7 W	0	No	0.9	S55499-D663	<b>GEB161.1E/MO</b>

Damper actuators  
Air damper actuators  
**Rotary damper actuators non-spring return**

**Range overview GEB..1E / GEB..9E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24 DC 24...48	DC 0...35 V	2.5 VA 1.2 W	0		0.9	S55499-D333	<b>GEB163.1E</b>
AC 24 DC 24...48	DC 0...35 V	2.5 VA 1.2 W	2		0.9	S55499-D334	<b>GEB164.1E</b>
AC 24 DC 24...48	DC 0/2...10 V	2.5 VA 1.2 W	2		0.9	S55499-D335	<b>GEB166.1E</b>
AC 100...240	2-position/3-position	4 VA 1.6 W	0	No	0.9	S55499-D336	<b>GEB341.1E</b>
AC 100...240	2-position/3-position	4 VA 1.6 W	2		0.9	S55499-D337	<b>GEB346.1E</b>
AC 100...240	DC 0/2...10 V	3.4 VA 1.3 W	0		0.9	S55499-D338	<b>GEB361.1E</b>

Type GEB142.1E has a feedback potentiometer.

**Accessories for rotary air damper actuators GEB..1E**

Product Title	Data sheet	Stock no.	Product no.
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	<b>ASC77.1E</b>
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	<b>ASC77.2E</b>
Accessory Kit, GEB/GMA		S55859-Z101	<b>ASK71.01</b>
Mounting Bracket, GS		S55859-Z118	<b>ASK71.07</b>
Rotary/linear mounting kit for duct or frame mounting	N4697	BPZ:ASK71.11	<b>ASK71.11</b>
Rotary/linear mounting kit with lever	N4697	BPZ:ASK71.14	<b>ASK71.14</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Standard Shaft adapter, GEB/GMA, complete		S55859-Z103	<b>ASK74.12</b>
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	<b>ASK74.13</b>
Shaft adapter, GS, square, 12mm		S55859-Z105	<b>ASK74.14</b>
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	<b>ASK74.15</b>
Shaft adapter, GS, square, 8mm		S55859-Z107	<b>ASK74.16</b>
Shaft adapter, GM, square, 15mm		S55859-Z108	<b>ASK74.17</b>
Shaft extension	N4699	BPZ:ASK74.7	<b>ASK74.7</b>
Weather shield	N4697	BPZ:ASK75.3	<b>ASK75.3</b>
Rotary/linear mounting kit with lever and bracket	N4697	BPZ:ASK71.13	<b>ASK71.13</b>
Weather shield for rotary-/linear-type actuator GMA/GEB...E	N4697	BPZ:ASK75.6	<b>ASK75.6</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return

##### GBB..1E

##### Rotary air damper actuators 25 Nm, without spring return



- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4626
Torque	25 Nm
Air damper area	4 m <sup>2</sup>
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm
Warranty	5 Years

Rotary actuators 25 Nm for ball valves VAF41..

##### Range overview GBB..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 24	3-position	7 VA 7 W	0	0.9	BPZ:GBB131.1E	<b>GBB131.1E</b>
AC 24	3-position	7 VA 7 W	2	0.9	BPZ:GBB135.1E	<b>GBB135.1E</b>
AC 24	3-position	7 VA 7 W	2	0.9	BPZ:GBB136.1E	<b>GBB136.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	0	0.9	BPZ:GBB161.1E	<b>GBB161.1E</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	0	0.9	BPZ:GBB163.1E	<b>GBB163.1E</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	2	0.9	BPZ:GBB164.1E	<b>GBB164.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	2	0.9	BPZ:GBB166.1E	<b>GBB166.1E</b>
AC 230	3-position	5 VA 5 W	0	0.9	BPZ:GBB331.1E	<b>GBB331.1E</b>
AC 230	3-position	5 VA 5 W	2	0.9	BPZ:GBB335.1E	<b>GBB335.1E</b>
AC 230	3-position	5 VA 5 W	2	0.9	BPZ:GBB336.1E	<b>GBB336.1E</b>

Types GBB135.1E and GBB335.1E have a feedback potentiometer.  
Basic Documentation No.: Z4626

**GIB..1E**



**Rotary air damper actuators 35 Nm, without spring return**

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4626 / A6V101037253
Torque	35 Nm
Air damper area	6 m <sup>2</sup>
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm
Warranty	5 Years

Rotary actuators 35 Nm for ball valves VAF41..

**Range overview GIB..1E**

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Spring return function	Cable length [m]	Stock no.	Product no.
AC 24	3-position	7 VA 7 W	0	No	0.9	BPZ:GIB131.1E	<b>GIB131.1E</b>
AC 24	3-position	7 VA 7 W	2		0.9	BPZ:GIB135.1E	<b>GIB135.1E</b>
AC 24	3-position	7 VA 7 W	2		0.9	BPZ:GIB136.1E	<b>GIB136.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	0	No	0.9	BPZ:GIB161.1E	<b>GIB161.1E</b>
AC 24	Modbus RTU	8 VA 8 W	0		0.9	S55499-D299	<b>GIB161.1E/MO</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	0		0.9	BPZ:GIB163.1E	<b>GIB163.1E</b>
AC 24	DC 0...35 V Adjustable	8 VA 8 W	2		0.9	BPZ:GIB164.1E	<b>GIB164.1E</b>
AC 24	DC 0...10 V	8 VA 8 W	2		0.9	BPZ:GIB166.1E	<b>GIB166.1E</b>
AC 230	3-position	5 VA 5 W	0	No	0.9	BPZ:GIB331.1E	<b>GIB331.1E</b>
AC 230	3-position	5 VA 5 W	2		0.9	BPZ:GIB335.1E	<b>GIB335.1E</b>
AC 230	3-position	5 VA 5 W	2		0.9	BPZ:GIB336.1E	<b>GIB336.1E</b>

Types GIB135.1E and 335.1E have a feedback potentiometer.  
Basic Documentation No.: Z4626

**Accessories for rotary air damper actuators GBB..1E and GIB..1E**

Product Title	Data sheet	Stock no.	Product no.
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	<b>ASC77.1E</b>
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	<b>ASC77.2E</b>
Standard Shaft Adapter, GM		S55859-Z117	<b>ASK71.06</b>
Rotary/linear mounting kit for duct mounting	N4699	BPZ:ASK71.1	<b>ASK71.1</b>
Turnkey for manual adjustment		S55859-Z121	<b>ASK71.19</b>
Turnkey for manual adjustment		S55859-Z122	<b>ASK71.20</b>
Rotary/linear mounting kit with lever and bracket	N4699	BPZ:ASK71.4	<b>ASK71.4</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Bracket for power pack	N4699	BPZ:ASK73.1	<b>ASK73.1</b>
Shaft adapter, GM, square, 12mm		S55859-Z109	<b>ASK74.18</b>

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return

##### Accessories for rotary air damper actuators GBB..1E and GIB..1E

Product Title	Data sheet	Stock no.	Product no.
Shaft adapter, GM, square, 10mm		S55859-Z110	<b>ASK74.19</b>
Shaft adapter, GM, square, 8mm		S55859-Z111	<b>ASK74.20</b>
Shaft extension	N4699	BPZ:ASK74.7	<b>ASK74.7</b>
Weather shield for rotary actuator	N4699	BPZ:ASK75.1	<b>ASK75.1</b>
Weather shield for rotarytype actuator GBB/GCA/GIB...1E	N4699	BPZ:ASK75.4	<b>ASK75.4</b>
Rotary/linear mounting kit for frame mounting	N4699	BPZ:ASK71.2	<b>ASK71.2</b>
Accessory Kit, GIB/GBB/GCA		S55859-Z102	<b>ASK71.02</b>
Rotary/linear mounting kit with lever	N4699	BPZ:ASK71.3	<b>ASK71.3</b>
Mounting Bracket, GM		S55859-Z114	<b>ASK71.03</b>
Flexible bracket for power pack	N4699	BPZ:ASK73.2	<b>ASK73.2</b>
Special shaft adapter	N4699	BPZ:ASK74.1	<b>ASK74.1</b>

##### Caution!

- ASK73.1 is only valid for GIB13..1E and GIB33..1E
- ASK73.2 is only valid for GIB16..1E



## Rotary damper actuators non-spring return for railway application

### Air damper actuators for railway vehicles 5 Nm, without spring return

GDA..1E/RW

- For shaft dia. 8...16 mm, min. shaft length 30 mm, square 6...12,8 mm, min. shaft length 20 mm
- Button for disengaging the gear train to enable manual override
- For air conditioning units and air distribution systems for railway vehicles
- Connection cables railway specific 0.9 m
- Printed circuit board, coated



Data sheet	A6V10636280 / A6V10636293
Torque	5 Nm
Air damper area	0.8 m <sup>2</sup>
Positioning time	90 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 137 x 60.6 mm
Warranty	5 Years

### Range overview GDA..1E/RW

Operating voltage [V]	Positioning signal	Power consumption [W]	Auxiliary switch	Stock no.	Product no.
DC 24	2-position/3-position	1	0	S55499-D212	GDA141.1E/RW
DC 24	2-position/3-position	1	0	S55499-D214	GDA142.1E/RW
DC 24	2-position/3-position	1	2	S55499-D213	GDA146.1E/RW
DC 24	DC0/2... 10 V	1	0	S55499-D215	GDA161.1E/RW

Type GDA142.1E/RW has a feedback potentiometer.

### Air damper actuators for railway vehicles 5 Nm, without spring return

GDD..1E/RW

- For shaft dia. 8...16 mm, min. shaft length 30 mm, square 6...12,8 mm, min. shaft length 20 mm
- Button for disengaging the gear train to enable manual override
- For air conditioning units and air distribution systems for railway vehicles
- Connection cables railway specific 0.9 m
- Printed circuit board, coated



Torque	5 Nm
Air damper area	0.8 m <sup>2</sup>
Positioning time	30 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 137 x 60.6 mm

### Range overview GDD..1E/RW

Operating voltage [V]	Positioning signal	Power consumption [W]	Auxiliary switch	Stock no.	Product no.
DC 24	2-position/3-position	1.5	0	S55499-D208	GDD141.1E/RW
DC 24	2-position/3-position	1.5	0	S55499-D210	GDD142.1E/RW
DC 24	2-position/3-position	1.5	2	S55499-D209	GDD146.1E/RW
DC 24	DC0/2... 10 V	1.5	0	S55499-D211	GDD161.1E/RW

Type GDD142.1E/RW has a feedback potentiometer.

## Damper actuators

### Air damper actuators

#### Rotary damper actuators non-spring return for railway application

##### GLD..1E/RW



##### Air damper actuators for railway vehicles 8 Nm, without spring return

- For shaft dia. 8...16 mm, min. shaft length 30 mm, square 6...12,8 mm, min. shaft length 20 mm
- Button for disengaging the gear train to enable manual override
- For air conditioning units and air distribution systems for railway vehicles
- Connection cables railway specific 0.9 m
- Printed circuit board, coated

Data sheet	A6V10636286 / A6V10636299
Torque	8 Nm
Air damper area	1.5 m <sup>2</sup>
Positioning time	30 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 137 x 60.6 mm
Warranty	5 Years

##### Range overview GLD..1E/RW

Operating voltage [V]	Positioning signal	Power consumption [W]	Auxiliary switch	Stock no.	Product no.
DC 24	2-position/3-position	1.8	0	S55499-D216	<b>GLD141.1E/RW</b>
DC 24	2-position/3-position	1.8	0	S55499-D218	<b>GLD142.1E/RW</b>
DC 24	2-position/3-position	1.8	2	S55499-D217	<b>GLD146.1E/RW</b>
DC 24	DC0/2... 10 V	1.8	0	S55499-D219	<b>GLD161.1E/RW</b>

Type GLD142.1E/RW has a feedback potentiometer.

##### GLA..1E/RW



##### Air damper actuators for railway vehicles 10 Nm, without spring return

- For shaft dia. 8...16 mm, min. shaft length 30 mm, square 6...12,8 mm, min. shaft length 20 mm
- Button for disengaging the gear train to enable manual override
- For air conditioning units and air distribution systems for railway vehicles
- Connection cables railway specific 0.9 m
- Printed circuit board, coated

Data sheet	A6V10636286 / A6V10636299
Torque	10 Nm
Air damper area	1.5 m <sup>2</sup>
Positioning time	90 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 137 x 60.6 mm
Warranty	5 Years

##### Range overview GLA..1E/RW

Operating voltage [V]	Positioning signal	Power consumption [W]	Auxiliary switch	Stock no.	Product no.
DC 24	2-position/3-position	1.3	0	S55499-D220	<b>GLA141.1E/RW</b>
DC 24	2-position/3-position	1.3	0	S55499-D222	<b>GLA142.1E/RW</b>
DC 24	2-position/3-position	1.3	2	S55499-D221	<b>GLA146.1E/RW</b>
DC 24	DC0/2... 10 V	1.3	0	S55499-D223	<b>GLA161.1E/RW</b>

Type GLA142.1E/RW has a feedback potentiometer.

## Fast-running damper actuators with fail safe function

### Rotary air damper actuators 6 Nm, with electronic fail-safe function

GNP..1E

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4609
Torque	6 Nm
Air damper area	1 m <sup>2</sup>
Positioning time	Opening with motor: 2 s Closing with Super Cap: 2 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm
Warranty	5 Years

### Range overview GNP..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC/DC 24	DC 0(2)...10 V 0(4)...20 mA	20 VA 13 W	0	BPZ:GNP191.1E	<b>GNP191.1E</b>
AC/DC 24	DC 0(2)...10 V 0(4)...20 mA	20 VA 13 W	2	BPZ:GNP196.1E	<b>GNP196.1E</b>

### Accessories for GNP..1E

Product Title	Data sheet	Stock no.	Product no.
Accessory Kit, GEB/GMA		S55859-Z101	<b>ASK71.01</b>
Mounting Bracket, GS		S55859-Z118	<b>ASK71.07</b>
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	<b>ASK74.13</b>
Shaft adapter, GS, square, 12mm		S55859-Z105	<b>ASK74.14</b>
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	<b>ASK74.15</b>
Shaft adapter, GS, square, 8mm		S55859-Z107	<b>ASK74.16</b>
Shaft adapter, GM, square, 15mm		S55859-Z108	<b>ASK74.17</b>

## Damper actuators

### Air damper actuators

#### Fast-running damper actuators fail-in-place

##### GAP..1E



##### Rotary air damper actuators 6 Nm, without electronic fail-save function

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4608
Torque	6 Nm
Air damper area	1 m <sup>2</sup>
Positioning time	2 s
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm
Warranty	5 Years

##### Range overview GAP..1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock no.	Product no.
AC/DC 24	DC 0(2)...10 V 0(4)...20 mA	30 VA 22 W	0	BPZ:GAP191.1E	<b>GAP191.1E</b>
AC/DC 24	DC 0(2)...10 V 0(4)...20 mA	20 VA 13 W	0	S55499-D639	<b>GAP191.1E/IHT</b>
AC/DC 24	DC 0(2)...10 V 0(4)...20 mA	30 VA 22 W	2	BPZ:GAP196.1E	<b>GAP196.1E</b>

##### Accessories for GAP..1E

Product Title	Data sheet	Stock no.	Product no.
Accessory Kit, GEB/GMA		S55859-Z101	<b>ASK71.01</b>
Mounting Bracket, GS		S55859-Z118	<b>ASK71.07</b>
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	<b>ASK74.13</b>
Shaft adapter, GS, square, 12mm		S55859-Z105	<b>ASK74.14</b>
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	<b>ASK74.15</b>
Shaft adapter, GS, square, 8mm		S55859-Z107	<b>ASK74.16</b>
Shaft adapter, GM, square, 15mm		S55859-Z108	<b>ASK74.17</b>

### Linear air damper actuators 125 N, without spring return

- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable

Data sheet	N4664
Force	125 N
Air damper area	0.8 m <sup>2</sup>
Nominal stroke	60 mm
Positioning time	150 s
Degree of protection	IP40
Dimensions (W x H x D)	68 x 152 x 59 mm
Warranty	5 Years

GDB..2E



### Range overview GDB..2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 24	3-position	2 VA 1 W	0	0.9	BPZ:GDB131.2E	<b>GDB131.2E</b>
AC 24	DC 0...10 V	3 VA 2 W	0	0.9	BPZ:GDB161.2E	<b>GDB161.2E</b>
AC 24	DC 0...35 V Adjustable	3 VA 2 W	0	0.9	BPZ:GDB163.2E	<b>GDB163.2E</b>
AC 230	3-position	2 VA 1 W	0	0.9	BPZ:GDB331.2E	<b>GDB331.2E</b>
AC 230	3-position	2 VA 1 W	2	0.9	BPZ:GDB336.2E	<b>GDB336.2E</b>

Basic Documentation No.: Z4664.

## Damper actuators

### Air damper actuators

### Linear damper actuators

#### GLB..2E



#### Linear air damper actuators 250 N, without spring return

- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable

Data sheet	N4664
Force	250 N
Air damper area	1.5 m <sup>2</sup>
Nominal stroke	60 mm
Positioning time	150 s
Degree of protection	IP40
Dimensions (W x H x D)	68 x 152 x 59 mm
Warranty	5 Years

#### Range overview GLB..2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
AC 24	3-position	2 VA 1 W	0	0.9	BPZ:GLB131.2E	<b>GLB131.2E</b>
AC 24	3-position	2 VA 1 W	2	0.9	BPZ:GLB136.2E	<b>GLB136.2E</b>
AC 24	DC 0...10 V	3 VA 2 W	0	0.9	BPZ:GLB161.2E	<b>GLB161.2E</b>
AC 24	DC 0...35 V Adjustable	3 VA 2 W	0	0.9	BPZ:GLB163.2E	<b>GLB163.2E</b>
AC 230	3-position	2 VA 1 W	0	0.9	BPZ:GLB331.2E	<b>GLB331.2E</b>
AC 230	3-position	2 VA 1 W	2	0.9	BPZ:GLB336.2E	<b>GLB336.2E</b>

Basis Documentation No.: Z4664.

#### Accessories for linear air damper actuators GDB..2E and GLB..2E

Product Title	Data sheet	Stock no.	Product no.
Clamp for linkage (5...8 mm dia.)	N4698	BPZ:ASK55.2	<b>ASK55.2</b>
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	<b>ASK75.5</b>

**Compact room automation stations, BACnet/IP, 24 V**

DXR2.E10PL..

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/IP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- KNX S-Mode device integration
- 2-port Ethernet switch
- USB interface for Tool



Data sheet	A6V11259958
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	Max. 66 VA
Communication	BACnet/IP KNX PL-Link KNX S-Mode
Universal inputs, number	3
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Triac output, switching current	150 mA
Degree of protection	IP20
Dimensions (W x H x D)	201 x 137 x 82 mm

**Range overview DXR2.E10PL..**

Product Title	Stock no.	Product no.
Compact room automation station and actuator combination, BACnet/IP, 24 V, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 30 data points	S55376-C145	DXR2.E10PL-102B
Compact room automation station, BACnet/IP, 24 V, DIN housing, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 60 data points	S55376-C146	DXR2.E10PLX-102B

**Accessories for DXR2.E..**

Product Title	Data sheet	Stock no.	Product no.
Universal lever	N4697	BPZ:ASK71.9	ASK71.9
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	ASK78.12
Air tube connection kit 50mm DXA.T50		S55499-D500	DXA.T50
Insert for small shaft dia.	N4698	BPZ:ASK78.3	ASK78.3
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	ASK78.5
Centering insert 8 mm square	N4698	BPZ:ASK78.6	ASK78.6
Centering insert 10 mm square	N4698	BPZ:ASK78.7	ASK78.7
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	ASK78.9
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	ASK78.10
Centering insert 8 mm square	N4698	BPZ:ASK78.14	ASK78.14

## Damper actuators

### VAV controller

#### Compact room automation stations BACnet/MSTP DXR2.M..

##### DXR2.M10PL..



##### Compact room automation station, BACnet/MSTP, 24 V

Compact room automation stations for HVAC, lighting, and shading:

- BACnet/MSTP communications
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- USB interface for Tool

Data sheet	A6V11259964
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	Max. 58 VA
Universal inputs, number	2
Digital inputs, number	1
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	1 mA
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Triac output, switching current	250 mA
Degree of protection	IP20
Dimensions (W x H x D)	201 x 137 x 99 mm

##### Range overview DXR2.M10PL..

Product Title	Stock no.	Product no.
Compact room automation station and actuator combination, BACnet/MSTP, 24 V, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 30 data points	S55376-C147	<b>DXR2.M10PL-102B</b>
Compact room automation station, BACnet/MSTP, 24 V, DIN housing, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, 60 data points	S55376-C148	<b>DXR2.M10PLX-102B</b>

##### Accessories for DXR2.M..

Product Title	Data sheet	Stock no.	Product no.
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Air tube connection kit 50mm DXA.T50		S55499-D500	<b>DXA.T50</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>



## Compact room automation stations BACnet/IP DXR1.E..

### Compact actuating room automation station DXR1.E09PDZ-..

DXR1.E09PDZ..



- Compact, configurable room automation station in combination with actuator for HVAC
- BACnet IP communications (BTL certified)
- 2-port Ethernet switch
- USB interface
- Operating voltage AC 24 V
- Built-in 5 Nm actuator
- Internal 0...500 Pa differential pressure sensor
- Plug-in terminal blocks

Data sheet	A6V11393931
Operating voltage	AC 24 V +/-20 %
Frequency	50/60 Hz
Power consumption	Max. 7.5 VA
Communication	BACnet IP
Max. cable length	30 m
Digital outputs, number	4
Analog outputs, number	1
Degree of protection	IP20
Dimensions (W x H x D)	143.1 x 83.6 x 137 mm
Warranty	2 Years

### Range overview DXR1.E09PDZ..

Product Title	Stock no.	Product no.
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, VAV044	S55499-D456	DXR1.E09PDZ-112
Compact actuating room automation station DXR1.E09PDZ-..	S55499-D788	DXR1.E09PDZ-112/CA
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, FPB052	S55499-D457	DXR1.E09PDZ-113
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, VAV044	S55499-D742	DXR1.E09PLZ-112

### Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, pressure sensor, VAV011 (VAV012)

DXR1.E02PLZ-112



- Combination of compact room automation station and actuator for VAV control
- BACnet IP communications (BTL certified)
- 2-port Ethernet switch
- USB interface
- Operating voltage AC 24 V
- Built-in 10 Nm actuator
- Internal 0...500 Pa differential pressure sensor
- Plug-in terminal blocks

Data sheet	A6V11393935
Operating voltage	AC 24 V +/-20 %
Frequency	50/60 Hz
Power consumption	7 VA
Communication	BACnet IP
Max. cable length	30 m
Mounting	Directly on the damper shaft
Degree of protection	IP20
Dimensions (W x H x D)	143.1 x 83.6 x 137 mm
Warranty	2 Years

Product Title	Stock no.	Product no.
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, pressure sensor, VAV011 (VAV012)	S55499-D460	DXR1.E02PLZ-112

## Damper actuators

### VAV controller

#### Compact room automation stations BACnet/IP DXR1.E..

##### DXR1.E10PL..



##### Compact actuating room automation station DXR1.E10PL-..

- Compact, configurable room automation station in combination with actuator for HVAC
- BACnet IP communications (BTL certified)
- 2-port Ethernet switch
- USB interface
- KNX PL-Link bus to connect sensors, actuators, and operator units (including bus power)
- Operating voltage AC 24 V
- Built-in 10 Nm actuator
- Internal 0...500 Pa differential pressure sensor
- Plug-in terminal blocks

Data sheet	A6V11393933
Operating voltage	AC 24 V +/-20 %
Frequency	50/60 Hz
Power consumption	Max. 12 VA
Communication	BACnet IP
Max. cable length	30 m
Digital outputs, number	4
Analog outputs, number	1
Degree of protection	IP20
Dimensions (W x H x D)	143.1 x 83.6 x 137 mm
Warranty	2 Years

##### Range overview DXR1.E10PL..

Product Title	Stock no.	Product no.
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, VAV045	S55499-D458	<b>DXR1.E10PL-112</b>
Compact, configurable room automation station and actuator combination, BACnet/IP, 24 V, 1 DI, 2 UI, 1 AO, 4 triac, pressure sensor, FPB053	S55499-D459	<b>DXR1.E10PL-113</b>

##### Accessories for DXR1.E..

Product Title	Data sheet	Stock no.	Product no.
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Air tube connection kit 50mm DXA.T50		S55499-D500	<b>DXA.T50</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>

Compact room automation stations BACnet/MSTP DXR1.M..

Compact actuating room automation station DXR1.M09PDZ-..

DXR1.M09PDZ..

- Compact, configurable room automation station in combination with actuator for HVAC
- BACnet MS/TP communications (BTL certified)
- USB interface
- Operating voltage AC 24 V
- Built-in 5 Nm actuator
- Internal 0...500 Pa differential pressure sensor
- Plug-in terminal blocks



Data sheet	A6V11393929
Operating voltage	AC 24 V +/-20 %
Frequency	50/60 Hz
Power consumption	Max. 5.5 VA
Communication	BACnet MS/TP
Max. cable length	30 m
Universal inputs, number	2
Digital outputs, number	4
Analog outputs, number	1
Degree of protection	IP20
Dimensions (W x H x D)	143.1 x 83.6 x 137 mm
Warranty	2 Years

Range overview DXR1.M09PDZ..

Product Title	Stock no.	Product no.
Compact, configurable room automation station and actuator combination, BACnet/MSTP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, VAV044	S55499-D462	DXR1.M09PDZ-112
Compact, configurable room automation station and actuator combination, BACnet/MSTP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, FPB052	S55499-D463	DXR1.M09PDZ-113
Compact, configurable room automation station and actuator combination, BACnet/MSTP, 24 V, 2 UI, 1 AO, 4 triac, pressure sensor, VAV044	S55499-D741	DXR1.M09PLZ-112

Accessories for DXR1.M..

Product Title	Data sheet	Stock no.	Product no.
Universal lever	N4697	BPZ:ASK71.9	ASK71.9
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	ASK78.12
Air tube connection kit 50mm DXA.T50		S55499-D500	DXA.T50
Insert for small shaft dia.	N4698	BPZ:ASK78.3	ASK78.3
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	ASK78.5
Centering insert 8 mm square	N4698	BPZ:ASK78.6	ASK78.6
Centering insert 10 mm square	N4698	BPZ:ASK78.7	ASK78.7
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	ASK78.9
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	ASK78.10
Centering insert 8 mm square	N4698	BPZ:ASK78.14	ASK78.14

## Damper actuators

### VAV controller

#### VAV compact controllers with KNX PL-Link communication

##### G..B181.1E/KN



##### VAV compact controller KNX

- Compact controller with KNX communication for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor, damper actuator and digitally configurable air volume controller
- Nominal torque 5 or 10 Nm
- Air damper rotation angle mechanically adjustable between 0 and 90°
- Configurable as single device per room or for cascade control with pressure ratio 1:1, positive pressure, or negative pressure
- Prewired with a 0.9 m cable and a 0.9 m cable

Data sheet	N3547
Positioning time	150 s
Communication	KNX S-Mode KNX LTE-Mode KNX PL-Link
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 158 x 61 mm
Warranty	5 Years

##### Range overview G..B181.1E/KN

Torque [Nm]	Operating voltage [V]	Air damper area [m <sup>2</sup> ]	Power consumption	Stock no.	Product no.
5	AC 24	0.8	3 VA 2.5 W	S55499-D134	<b>GDB181.1E/KN</b>
5	AC 24	0.8	3 VA 2.5 W	S55499-D505	<b>GDB181.1EMKN</b>
10	AC 24	1.5	3 VA 2.5 W	S55499-D135	<b>GLB181.1E/KN</b>

GDB181.EMKN packaging unit 18 pieces.  
Basic Documentation No.: P3547

##### Accessories for G..B181.1E/KN

Product Title	Data sheet	Stock no.	Product no.
Connection cable VAV to control panel with wire ends		BPZ:7442401250	<b>7442401250</b>
Connection cable VAV to AST20, 7 pins		BPZ:7442403010	<b>7442403010</b>
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	<b>ASK71.5</b>
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	<b>ASK71.6</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Handheld tool for VAV compact controllers	A6V10631836	S55499-D165	<b>AST20</b>
Interface Converter USB/PPS2	A6V11236956	S55499-D373	<b>AST22</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	<b>ASK75.5</b>
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>

VAV compact controller BACnet

G..B181.1E/BA

- Networked compact controller with BACnet MS/TP (BTL-listed) communication for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor, damper actuator and digitally configurable air volume controller
- Nominal torque 5 or 10 Nm
- Air damper rotation angle mechanically adjustable between 0 and 90°
- Configurable as single device per room or for cascade control with pressure ratio 1:1, positive pressure, or negative pressure
- Prewired with a 0.9 m connecting cable and a 0.9 m bus cable



Data sheet	A6V10631834
Positioning time	150 s
Communication	BACnet MS/TP
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 158 x 61 mm
Warranty	5 Years

Range overview G..B181.1E/BA

Torque [Nm]	Operating voltage [V]	Air damper area [m <sup>2</sup> ]	Power consumption	Stock no.	Product no.
10	AC 24	1.5	3 VA 2.5 W	S55499-D169	GLB181.1E/BA

GDB181.EMBA packaging unit 18 pieces

Accessories for G..B181.1E/BA

Product Title	Data sheet	Stock no.	Product no.
Connection cable VAV to control panel with wire ends		BPZ:7442401250	7442401250
Connection cable VAV to AST20, 7 pins		BPZ:7442403010	7442403010
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	ASK71.5
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	ASK71.6
Universal lever	N4697	BPZ:ASK71.9	ASK71.9
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	ASK78.12
Handheld tool for VAV compact controllers	A6V10631836	S55499-D165	AST20
Interface Converter USB/PPS2	A6V11236956	S55499-D373	AST22
Insert for small shaft dia.	N4698	BPZ:ASK78.3	ASK78.3
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	ASK75.5
Centering insert 12.7 mm dia. (½")	N4698	BPZ:ASK78.5	ASK78.5
Centering insert 8 mm square	N4698	BPZ:ASK78.6	ASK78.6
Centering insert 10 mm square	N4698	BPZ:ASK78.7	ASK78.7
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	ASK78.9
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	ASK78.10
Centering insert 8 mm square	N4698	BPZ:ASK78.14	ASK78.14

## Damper actuators

### VAV controller

#### VAV compact controllers with Modbus RTU communication

##### G..B181.1E/MO



##### VAV compact controller Modbus

- Networked compact controller with Modbus RTU communication for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor, damper actuator and digitally configurable air volume controller
- Nominal torque 5 or 10 Nm
- Air damper rotation angle mechanically adjustable between 0 and 90°
- Configurable as single device per room or for cascade control with pressure ratio 1:1, positive pressure, or negative pressure
- Prewired with a 0.9 m connecting cable and a 0.9 m bus cable

Data sheet	A6V10631832
Positioning time	150 s
Communication	Modbus RTU
Cable length	0.9 m
Degree of protection	IP54
Dimensions (W x H x D)	71 x 158 x 61 mm
Warranty	5 Years

##### Range overview G..B181.1E/MO

Torque [Nm]	Operating voltage [V]	Air damper area [m <sup>2</sup> ]	Power consumption	Stock no.	Product no.
5	AC 24	0.8	3 VA 2.5 W	S55499-D166	<b>GDB181.1E/MO</b>
10	AC 24	1.5	3 VA 2.5 W	S55499-D167	<b>GLB181.1E/MO</b>

##### Accessories for G..B181.1E/MO

Product Title	Data sheet	Stock no.	Product no.
Connection cable VAV to control panel with wire ends		BPZ:7442401250	<b>7442401250</b>
Connection cable VAV to AST20, 7 pins		BPZ:7442403010	<b>7442403010</b>
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	<b>ASK71.5</b>
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	<b>ASK71.6</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Handheld tool for VAV compact controllers	A6V10631836	S55499-D165	<b>AST20</b>
Interface Converter USB/PPS2	A6V11236956	S55499-D373	<b>AST22</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	<b>ASK75.5</b>
Centering insert 12.7 mm dia. (1/2")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>

G..B181.1E/3



VAV compact controller

- Compact controller for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor, damper actuator and digitally configurable air volume controller
- Nominal torque 5 or 10 Nm
- Air damper rotation angle mechanically adjustable between 0 and 90°
- Forced close-off function in DC 2...10 V operation
- Optionally configurable as VAV compact controller or as damper actuator/differential pressure sensor unit
- Prewired with a 0.9 m connecting cable

Data sheet	N3544
Positioning time	150 s
Positioning signal	DC 0...10 V DC 2...10 V 3-position
Degree of protection	IP54
Dimensions (W x H x D)	71 x 158 x 61 mm
Warranty	5 Years

Range overview G..B181.1E/3

Torque [Nm]	Operating voltage [V]	Air damper area [m²]	Power consumption	Auxiliary switch	Cable length [m]	Stock no.	Product no.
5	AC 24	0.8	3 VA 2.5 W	0	0.9	BPZ:GDB181.1E/3	<b>GDB181.1E/3</b>
10	AC 24	1.5	3 VA 2.5 W	0	0.9	BPZ:GLB181.1E/3	<b>GLB181.1E/3</b>

Basic Documentation No.: P3544.

Accessories for G..B181.1E/3

Product Title	Data sheet	Stock no.	Product no.
Connection cable VAV to control panel with wire ends		BPZ:7442401250	<b>7442401250</b>
Connection cable VAV to AST20, 6 pins		BPZ:7442401260	<b>7442401260</b>
Connection cable VAV to AST20, 7 pins		BPZ:7442403010	<b>7442403010</b>
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	<b>ASK71.5</b>
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	<b>ASK71.6</b>
Universal lever	N4697	BPZ:ASK71.9	<b>ASK71.9</b>
Centering insert D-profile fixed 12 mm dia. x 9 mm	N4698	BPZ:ASK78.12	<b>ASK78.12</b>
Handheld tool for VAV compact controllers	A6V10631836	S55499-D165	<b>AST20</b>
Interface Converter USB/PPS2	A6V11236956	S55499-D373	<b>AST22</b>
Insert for small shaft dia.	N4698	BPZ:ASK78.3	<b>ASK78.3</b>
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	<b>ASK75.5</b>
Centering insert 12.7 mm dia. (½")	N4698	BPZ:ASK78.5	<b>ASK78.5</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.6	<b>ASK78.6</b>
Centering insert 10 mm square	N4698	BPZ:ASK78.7	<b>ASK78.7</b>
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	<b>ASK78.9</b>
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	<b>ASK78.10</b>
Centering insert 8 mm square	N4698	BPZ:ASK78.14	<b>ASK78.14</b>

Damper actuators  
**VAV controller**  
**VAV modular controllers**

**ASV181.1E/3**



**VAV modular controller**

- Modular controller for plants with variable or constant air volume flow
- Integrated, highly precise differential pressure sensor and digitally configurable air volume controller
- For connection to an OpenAir™ family 3-position air damper actuator with high torque or safety functions
- Prewired with a 0.9 m cable and a 0.3 m connecting cable

Data sheet	N3545
Angular rotation	90°
Power consumption	1 VA
	0.5 W
Positioning time	150 s
Positioning signal	DC 0...10 V
	DC 2...10 V
	3-position
Degree of protection	IP40
Medium temperature	0...50 °C
Ambient humidity, operation	95 % r.h.
Dimensions (W x H x D)	68 x 144 x 45 mm
Operating voltage	AC 24 V
Warranty	5 Years

Stock no. Product no.

BPZ:ASV181.1E/3 **ASV181.1E/3**

**Accessories for ASV181.1E/3**

Product Title	Data sheet	Stock no.	Product no.
Connection cable VAV to control panel with wire ends		BPZ:7442401250	<b>7442401250</b>
Connection cable VAV to AST20, 7 pins		BPZ:7442403010	<b>7442403010</b>
Handheld tool for VAV compact controllers	A6V10631836	S55499-D165	<b>AST20</b>
Interface Converter USB/PPS2	A6V11236956	S55499-D373	<b>AST22</b>



### Actuators for fire protection dampers

GRA..26.1E

- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (for 72 °C)
- Fixed auxiliary switches for switching points 5° and 80°
- Type ../..A have adjustable end position switches
- Rigid connection between actuator and damper square shafts (10x10, 12x12)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP54 / Actuator IP54



Data sheet	A6V10888424
Torque	4 Nm
Air damper area	0.6 m <sup>2</sup>
Positioning time	Open with motor: 90 s Close with spring return: 15 s
Connection cable	Supply: 2 x 0.75 mm <sup>2</sup> / auxiliary switch: 6 x 0.75 mm <sup>2</sup>
Medium temperature	≤72 °C
Dimensions (W x H x D)	81 x 178 x 63 mm
Warranty	5 Years

### Range overview GRA..26.1E

Operating voltage [V]	Positioning signal	Power consumption	Cable length [m]	Shaft linkage [mm]	Stock no.	Product no.
AC/DC 24	2-position	5 VA 3.5 W	0.9	10 x 10	S55499-D294	GRA126.1E/10
AC/DC 24	2-position	5 VA 3.5 W	0.9	12 x 12	S55499-D507	GRA126.1E/12A
AC/DC 24	2-position	5 VA 3.5 W	0.9	12 x 12	S55499-D566	GRA126.1E/C12
AC 230	2-position	7 VA 4.5 W	0.9	12 x 12	S55499-D674	GRA326.1E/12A
AC 230	2-position	7 VA 4.5 W	0.9	10 x 10	S55499-D295	GRA326.1E/10
AC/DC 24	2-position	5 VA 3.5 W	0.9	12 x 12	S55499-D296	GRA126.1E/12
AC 230	2-position	7 VA 4.5 W	0.9	12 x 12	S55499-D297	GRA326.1E/12
AC/DC 24	2-position	5 VA 3.5 W	0.9	10 x 10	S55499-D290	GRA126.1E/T10
AC 230	2-position	7 VA 4.5 W	0.9	10 x 10	S55499-D291	GRA326.1E/T10
AC/DC 24	2-position	5 VA 3.5 W	0.9	12 x 12	S55499-D292	GRA126.1E/T12
AC 230	2-position	7 VA 4.5 W	0.9	12 x 12	S55499-D293	GRA326.1E/T12

The 2 final figures of the classification correspond to the square of axis in mm.  
Types GRA../T10 and GRA../T12 are equipped with a temperature monitoring unit.  
Types ../C.. have cables with AMP plugs.  
Types ../..A have adjustable end position switches.

## Damper actuators

### Actuators for fire and smoke protection dampers

#### Fire damper actuators

##### Accessories for GRA..26.1E

Product Title	Data sheet	Stock no.	Product no.
Accessory Kit, GEB/GMA		S55859-Z101	ASK71.01
Mounting Bracket, GS		S55859-Z118	ASK71.07
Turnkey for manual adjustment		S55859-Z122	ASK71.20
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	ASK74.13
Shaft adapter, GS, square, 12mm		S55859-Z105	ASK74.14
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	ASK74.15
Shaft adapter, GS, square, 8mm		S55859-Z107	ASK74.16
Duct tip for temperature monitor unit (72 °C)	N4697	BPZ:ASK79.4	ASK79.4
Duct tip for temperature monitor unit (95 °C)	N4697	BPZ:ASK79.5	ASK79.5

**GNA..26.1E**



**Actuators for fire protection dampers**

- Rotary type
- 2-position (Type GNA166.1E.. has a modulating DC 0/2...10V positioning signal)
- Spring return to failsafe position
- Temperature monitoring unit (for 72 °C) (Type GNA..26.1E/H.. are for 95°C)
- Fixed auxiliary switches for switching points 5° and 80° (Type GNA..26.1E/..A have adjustable end position switches)
- Rigid connection between actuator and damper square shafts (10 x 10, 12 x 12)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP54 / Actuator IP54

Data sheet	N4620
Torque	9 Nm
Air damper area	1 m <sup>2</sup>
Positioning time	Open with motor: 90 s Close with spring return: 15 s
Connection cable	Supply: 2 x 0.75 mm <sup>2</sup> / auxiliary switch: 6 x 0.75 mm <sup>2</sup>
Degree of protection	IP54
Dimensions (W x H x D)	81 x 178 x 63 mm
Warranty	5 Years

**Range overview GNA..26.1E with or without temperature monitoring unit**

Operating voltage [V]	Positioning signal	Power consumption	Shaft linkage [mm]	Stock no.	Product no.
AC/DC 24	2-position	5 VA 3.5 W	10 x 10	BPZ:GNA126.1E/10	<b>GNA126.1E/10</b>
AC 24 DC 24...48	DC 0..10 V	5 VA 3.5 W	12 x 12	S55499-D496	<b>GNA166.1E/T12</b>
AC 230	2-position	7 VA 4.5 W	10 x 10	BPZ:GNA326.1E/10	<b>GNA326.1E/10</b>
AC/DC 24	2-position	5 VA 3.5 W	10 x 10	BPZ:GNA126.1E/C10	<b>GNA126.1E/C10</b>
AC 24 DC 24	2-position	5 VA 3.5 W	12 x 12	BPZ:GNA126.1E/C12	<b>GNA126.1E/C12</b>
AC/DC 24	2-position	7 VA 4.5 W	12 x 12	S55499-D447	<b>GNA126.1E/12A</b>
AC 24 DC 24	2-position	7 VA 4.5 W	12 x 12	S55499-D182	<b>GNA126.1E/H12</b>
AC 230	2-position	7 VA 4.5 W	12 x 12	S55499-D448	<b>GNA326.1E/12A</b>
AC/DC 24	2-position	5 VA 3.5 W	12 x 12	BPZ:GNA126.1E/12	<b>GNA126.1E/12</b>
AC 230	2-position	7 VA 4.5 W	12 x 12	BPZ:GNA326.1E/12	<b>GNA326.1E/12</b>
AC/DC 24	2-position	5 VA 3.5 W	10 x 10	BPZ:GNA126.1E/T10	<b>GNA126.1E/T10</b>
AC 230	2-position	7 VA 4.5 W	10 x 10	BPZ:GNA326.1E/T10	<b>GNA326.1E/T10</b>
AC/DC 24	2-position	7 VA 4.5 W	12 x 12	BPZ:GNA126.1E/T12	<b>GNA126.1E/T12</b>
AC 230	2-position	7 VA 4.5 W	12 x 12	BPZ:GNA326.1E/T12	<b>GNA326.1E/T12</b>

## Damper actuators

### Actuators for fire and smoke protection dampers

#### Fire damper actuators

The 2 final figures of the classification correspond to the square of axis in mm.  
Types GNA../T10 and GNA../T12 are equipped with a temperature monitoring unit.  
Types ../C.. have cables with AMP plugs.  
Types ../A have adjustable end position switches.  
Type../H.. has a 95°C temperature monitoring unit.

#### Accessories for GNA..26.1E

Product Title	Data sheet	Stock no.	Product no.
Accessory Kit, GEB/GMA		S55859-Z101	<b>ASK71.01</b>
Mounting Bracket, GS		S55859-Z118	<b>ASK71.07</b>
Turnkey for manual adjustment		S55859-Z122	<b>ASK71.20</b>
Shaft adapter, GS, square, 15mm, complete		S55859-Z104	<b>ASK74.13</b>
Shaft adapter, GS, square, 12mm		S55859-Z105	<b>ASK74.14</b>
Shaft adapter, GEB/GMA, square, 10mm, complete		S55859-Z106	<b>ASK74.15</b>
Shaft adapter, GS, square, 8mm		S55859-Z107	<b>ASK74.16</b>
Duct tip for temperature monitor unit (72 °C)	N4697	BPZ:ASK79.4	<b>ASK79.4</b>
Duct tip for temperature monitor unit (95 °C)	N4697	BPZ:ASK79.5	<b>ASK79.5</b>

### Actuators for fire protection dampers

**GGA..26.1E**

- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (for 72 °C)
- Fixed auxiliary switches for switching points 5° and 80°
- Rigid connection between actuator and damper square shafts (10 x 10, 12 x 12)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP54 / Actuator IP54



Data sheet	N4617
Torque	18 Nm
Air damper area	2.5 m <sup>2</sup>
Positioning time	Open with motor: 90 s Close with spring return 15 s
Connection cable	Supply: 2 x 0.75 mm <sup>2</sup> / auxiliary switch: 6 x 0.75 mm <sup>2</sup>
Degree of protection	IP54
Medium temperature	≤72 °C
Dimensions (W x H x D)	100 x 264 x 71 mm
Warranty	5 Years

### Range overview GGA..26.1E with or without temperature monitoring unit

Operating voltage [V]	Positioning signal	Power consumption	Shaft linkage [mm]	Stock no.	Product no.
AC/DC 24	2-position	7 VA 5 W	10 x 10	BPZ:GGA126.1E/10	<b>GGA126.1E/10</b>
AC/DC 24	2-position	7 VA 5 W	12 x 12	BPZ:GGA126.1E/12	<b>GGA126.1E/12</b>
AC/DC 24	2-position	7 VA 5 W	10 x 10	BPZ:GGA126.1E/C10	<b>GGA126.1E/C10</b>
AC/DC 24	2-position	7 VA 5 W	12 x 12	BPZ:GGA126.1E/C12	<b>GGA126.1E/C12</b>
AC 230	2-position	8 VA 6 W	10 x 10	BPZ:GGA326.1E/10	<b>GGA326.1E/10</b>
AC 230	2-position	8 VA 6 W	12 x 12	BPZ:GGA326.1E/12	<b>GGA326.1E/12</b>
AC/DC 24	2-position	7 VA 5 W	10 x 10	BPZ:GGA126.1E/T10	<b>GGA126.1E/T10</b>
AC 230	2-position	8 VA 6 W	10 x 10	BPZ:GGA326.1E/T10	<b>GGA326.1E/T10</b>
AC/DC 24	2-position	7 VA 5 W	12 x 12	BPZ:GGA126.1E/T12	<b>GGA126.1E/T12</b>
AC 230	2-position	8 VA 6 W	12 x 12	BPZ:GGA326.1E/T12	<b>GGA326.1E/T12</b>

The 2 final figures of the classification correspond to the square of axis in mm.  
Types GGA../T10 and GGA../T12 are equipped with a temperature monitoring unit.  
Types ../C.. have cables with AMP plugs.

### Accessories for GGA..26.1E

Product Title	Data sheet	Stock no.	Product no.
Standard Shaft Adapter, GM		S55859-Z117	<b>ASK71.06</b>
Turnkey for manual adjustment		S55859-Z121	<b>ASK71.19</b>
Shaft adapter, GM, square, 15mm		S55859-Z108	<b>ASK74.17</b>
Shaft adapter, GM, square, 12mm		S55859-Z109	<b>ASK74.18</b>
Shaft adapter, GM, square, 10mm		S55859-Z110	<b>ASK74.19</b>

## Damper actuators

### Actuators for fire and smoke protection dampers

#### Fire damper actuators

##### Accessories for GGA..26.1E

Product Title	Data sheet	Stock no.	Product no.
Shaft adapter, GM, square, 8mm		S55859-Z111	<b>ASK74.20</b>
Duct tip for temperature monitor unit (72 °C)	N4697	BPZ:ASK79.4	<b>ASK79.4</b>
Duct tip for temperature monitor unit (95 °C)	N4697	BPZ:ASK79.5	<b>ASK79.5</b>
Accessory Kit, GIB/GBB/GCA		S55859-Z102	<b>ASK71.02</b>
Mounting Bracket, GM		S55859-Z114	<b>ASK71.03</b>

# Variable speed drives






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# Variable speed drives

## Overview and selection tools

### Order instruction

G120P Bundle		order separately
<b>Control Unit</b> CU230P-2-BT incl. shield connection kit  	<b>Power Module</b> PM230 3 AC 380 ... 480 V 0.75 ... 75 kW (IP20) 0.75 ... 90 kW (IP55)  	<b>Operator panel</b> IOP-2-BT Intelligent Operator Panel or BOP-2 Basic Operator Panel or SAM Smart Access Module or Blanking cover  
<b>Optional accessory</b> CU230P-2 DP (PROFIBUS DP) CU230P-2 CAN (CANopen) CU230P-2 PN (PROFINET IO) Air guide sheets Door mounting kits		<b>Spare parts</b> Small mounting parts Fan units

### Power range G120P

		Dimension / WxHxD			
		IP55		IP20	
kW	Frame size	Filter A	Filter B	Filter A	Filter B
0.75	A	154x460x249	154x460x249	73x196x223	73x202x288
1.1	A	154x460x249	154x460x249	73x196x223	73x202x288
1.5	A	154x460x249	154x460x249	73x196x223	73x202x288
2.2	A	154x460x249	154x460x249	73x196x223	73x202x288
3	A	154x460x249	154x460x249	73x196x223	73x202x288
4	B	180x540x249	180x540x249	100x292x223	100x297x308
5.5	B	180x540x249	180x540x249	100x292x223	100x297x308
7.5	B	180x540x249	180x540x249	100x292x223	100x297x308
11	C	230x620x249	230x620x249	140x355x223	140x359x318
15	C	230x620x249	230x620x249	140x355x223	140x359x318
18.5	C/D	230x620x249	320x640x329	140x355x223	140x359x318
22	D	320x640x329	320x640x329	275x512x253	375x419x253
30	D	320x640x329	320x640x329	275x512x253	375x419x253
37	E	320x751x329	320x751x329	275x635x253	385x499x253
45	E	320x751x329	320x751x329	275x635x253	385x499x253
55	F	410x915x416	410x915x416	350x934x365	500x634x365
75	F	410x915x416	410x915x416	350x934x365	500x634x365
90	F	410x915x416	410x915x416	not available	not available

IP20: The depth increases by 12 mm if BOP-2, IOP-2-BT or blanking cover is used.

IP55: The depth increases by 7 mm if BOP-2, IOP-2-BT or blanking cover is used.

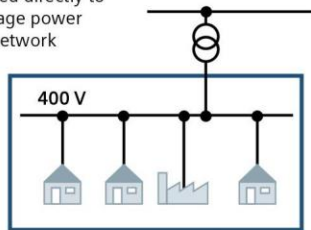
IP20: The height increases if screen plate is used:

FSA: + 80 mm; FSB: + 78 mm; FSC: + 77 mm; FSD, FSE, FSF: + 123 mm.



Filter

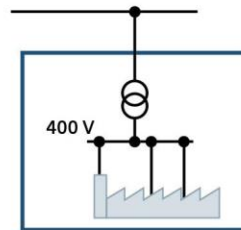
**1<sup>st</sup> Enviroment**  
Connected directly to  
low voltage power  
supply network



**G120P filter B**  
for EMV sensitive applications  
filter according EN 55011 Class B / EN 61800-3 C1

**G120P filter A**  
for standard applications  
filter according EN 55011 Class A1 / EN 61800-3 C2  
installation and commissioning by a professional

**2<sup>nd</sup> Enviroment**  
Any building fed from a  
dedicated transformer



**Variable speed drive with filter**  
according EN 55011 Class A2  
EN 61800-3 C3

**Variable speed drive unfiltered**  
EN 61800-3 C4



### Variable Speed Drive for pumps and fans, IP55, Filter B (C1)

G120P..5B

Variable speed drive for energy-optimized speed control of pump, compressor and fan motors in building control applications, including: PowerModule PM230, Control Unit CU230P-2-BT with screening plate without panel.



The G120P Bundle does not contain an operator panel or blanking cover. To achieve the IP55 or IP54 protection rating with the IP55 devices, please order an operator panel or blanking cover separately.

Data sheet	N5111
Operating voltage	400 V
Frequency	50/60 Hz
Communication	Modbus/RTU RS485/US5 BACnet MS/TP PROFIBUS (optional) PROFINET (optional) CANopen (optional)
Product conformity	CE EAC RCM
Standard	EN 61800-3

#### Range overview G120P..5B

Power output [kW]	Output current [A]	Filter type	Dimensions (WxHxD) [mm]	Weight (net) [kg]	Stock no.	Product no.
0.75	2.2	B	154 x 460 x 249	5.01	6SL3200-6AM12-2BH0	G120P-0.75/35B
1.1	3.1	B	154 x 460 x 249	5.01	6SL3200-6AM13-1BH0	G120P-1.1/35B
1.5	4.1	B	154 x 460 x 249	5.01	6SL3200-6AM14-1BH0	G120P-1.5/35B
2.2	5.9	B	154 x 460 x 249	5.01	6SL3200-6AM15-8BH0	G120P-2.2/35B
3	7.7	B	154 x 460 x 249	5.01	6SL3200-6AM17-7BH0	G120P-3/35B
4	10.2	B	180 x 540 x 249	7.01	6SL3200-6AM21-0BH0	G120P-4/35B
5.5	13.2	B	180 x 540 x 249	7.01	6SL3200-6AM21-3BH0	G120P-5.5/35B
7.5	18	B	180 x 540 x 249	7.01	6SL3200-6AM21-8BH0	G120P-7.5/35B
11	26	B	230 x 620 x 249	10.21	6SL3200-6AM22-6BH0	G120P-11/35B
15	32	B	230 x 620 x 249	10.21	6SL3200-6AM23-2BH0	G120P-15/35B
18.5	38	B	320 x 640 x 329	31.71	6SL3200-6AM23-8BH0	G120P-18.5/35B
22	45	B	320 x 640 x 329	31.71	6SL3200-6AM24-5BH0	G120P-22/35B
30	60	B	320 x 640 x 329	31.71	6SL3200-6AM26-0BH0	G120P-30/35B
37	75	B	320 x 751 x 329	37.71	6SL3200-6AM27-5BH0	G120P-37/35B
45	90	B	320 x 751 x 329	37.71	6SL3200-6AM28-8BH0	G120P-45/35B
55	110	B	410 x 915 x 416	70.71	6SL3200-6AM31-1BH0	G120P-55/35B
75	145	B	410 x 915 x 416	70.71	6SL3200-6AM31-4BH0	G120P-75/35B
90	178	B	410 x 915 x 416	70.71	6SL3200-6AM31-7BH0	G120P-90/35B

IP55: The depth increases by 7mm if BOP-2, IOP-2-BT or blind cover is used.

## Variable speed drives

### Variable Speed Drives for HVAC Applications

#### G120P..

#### G120P..5A



#### Variable Speed Drive for pumps and fans, IP55, Filter A (C2)

Variable speed drive for energy-optimized speed control of pump, compressor and fan motors in building control applications, including: Power Module PM230, Control Unit CU230P-2-BT with screening plate without panel.

The G120P Bundle does not contain an operator panel or blanking cover. To achieve the IP55 or IP54 protection rating with the IP55 devices, please order an operator panel or blanking cover separately.

Data sheet	N5111
Operating voltage	400 V
Frequency	50/60 Hz
Communication	Modbus/RTU RS485/USS BACnet MS/TP PROFIBUS (optional) PROFINET (optional) CANopen (optional)
Product conformity	CE RCM EAC
Standard	EN 61800-3

#### Range overview G120P..5A

Power output [kW]	Output current [A]	Filter type	Dimensions (WxHxD) [mm]	Weight (net) [kg]	Stock no.	Product no.
0.75	2.2	A	154 x 460 x 249	5.01	6SL3200-6AM12-2AH0	<b>G120P-0.75/35A</b>
1.1	3.1	A	154 x 460 x 249	5.01	6SL3200-6AM13-1AH0	<b>G120P-1.1/35A</b>
1.5	4.1	A	154 x 460 x 249	5.01	6SL3200-6AM14-1AH0	<b>G120P-1.5/35A</b>
2.2	5.9	A	154 x 460 x 249	5.01	6SL3200-6AM15-8AH0	<b>G120P-2.2/35A</b>
3	7.7	A	154 x 460 x 249	5.01	6SL3200-6AM17-7AH0	<b>G120P-3/35A</b>
4	10.2	A	180 x 540 x 249	7.01	6SL3200-6AM21-0AH0	<b>G120P-4/35A</b>
5.5	13.2	A	180 x 540 x 249	7.01	6SL3200-6AM21-3AH0	<b>G120P-5.5/35A</b>
7.5	18	A	180 x 540 x 249	7.01	6SL3200-6AM21-8AH0	<b>G120P-7.5/35A</b>
11	26	A	230 x 620 x 249	10.21	6SL3200-6AM22-6AH0	<b>G120P-11/35A</b>
15	32	A	230 x 620 x 249	10.21	6SL3200-6AM23-2AH0	<b>G120P-15/35A</b>
18.5	38	A	230 x 620 x 249	10.21	6SL3200-6AM23-8AH0	<b>G120P-18.5/35A</b>
22	45	A	320 x 640 x 329	31.71	6SL3200-6AM24-5AH0	<b>G120P-22/35A</b>
30	60	A	320 x 640 x 329	31.71	6SL3200-6AM26-0AH0	<b>G120P-30/35A</b>
37	75	A	320 x 751 x 329	37.71	6SL3200-6AM27-5AH0	<b>G120P-37/35A</b>
45	90	A	320 x 751 x 329	37.71	6SL3200-6AM28-8AH0	<b>G120P-45/35A</b>
55	110	A	410 x 915 x 416	70.71	6SL3200-6AM31-1AH0	<b>G120P-55/35A</b>
75	145	A	410 x 915 x 416	70.71	6SL3200-6AM31-4AH0	<b>G120P-75/35A</b>
90	178	A	410 x 915 x 416	70.71	6SL3200-6AM31-7AH0	<b>G120P-90/35A</b>

IP55: The depth increases by 7mm if BOP-2, IOP-2-BT or blind cover is used.

### Variable Speed Drive for pumps and fans, IP20, Filter B (C1)

G120P..2B



Variable speed drive for energy-optimized speed control of pump, compressor and fan motors in building control applications, including: Power Module PM230, Control Unit CU230P-2-BT with screening plate without panel.

Data sheet	N5111
Operating voltage	400 V
Frequency	50/60 Hz
Communication	Modbus/RTU RS485/US BACnet MS/TP PROFIBUS (optional) PROFINET (optional) CANopen (optional)
Product conformity	CE UL RCM EAC
Standard	EN 61800-3

#### Range overview G120P..2B

Power output [kW]	Output current [A]	Filter type	Dimensions (WxHxD) [mm]	Weight (net) [kg]	Stock no.	Product no.
0.75	2.2	B	73 x 202 x 288	4.06	6SL3200-6AE12-2BH0	G120P-0.75/32B
1.1	3.1	B	73 x 202 x 288	4.06	6SL3200-6AE13-1BH0	G120P-1.1/32B
1.5	4.1	B	73 x 202 x 288	4.06	6SL3200-6AE14-1BH0	G120P-1.5/32B
2.2	5.9	B	73 x 202 x 288	4.06	6SL3200-6AE15-8BH0	G120P-2.2/32B
3	7.7	B	73 x 202 x 288	4.06	6SL3200-6AE17-7BH0	G120P-3/32B
4	10.2	B	100 x 297 x 308	7.71	6SL3200-6AE21-0BH0	G120P-4/32B
5.5	13.2	B	100 x 297 x 308	7.71	6SL3200-6AE21-3BH0	G120P-5.5/32B
7.5	18	B	100 x 297 x 308	7.71	6SL3200-6AE21-8BH0	G120P-7.5/32B
11	26	B	140 x 359 x 318	13.11	6SL3200-6AE22-6BH0	G120P-11/32B
15	32	B	140 x 359 x 318	13.11	6SL3200-6AE23-2BH0	G120P-15/32B
18.5	38	B	140 x 359 x 318	13.11	6SL3200-6AE23-8BH0	G120P-18.5/32B
22	45	B	375 x 419 x 253	21.5	6SL3200-6AE24-5BH0	G120P-22/32B
30	60	B	375 x 419 x 253	21.5	6SL3200-6AE26-0BH0	G120P-30/32B
37	75	B	385 x 499 x 253	34.3	6SL3200-6AE27-5BH0	G120P-37/32B
45	90	B	385 x 499 x 253	34.3	6SL3200-6AE28-8BH0	G120P-45/32B
55	110	B	500 x 634 x 365	70.6	6SL3200-6AE31-1BH0	G120P-55/32B
75	145	B	500 x 634 x 365	70.6	6SL3200-6AE31-4BH0	G120P-75/32B

IP20: The depth increases by 12mm if BOP-2, IOP-2-BT or blind cover is used.

## Variable speed drives

### Variable Speed Drives for HVAC Applications

#### G120P..

#### G120P..2A



#### Variable Speed Drive for pumps and fans, IP20, Filter A (C2)

Variable speed drive for energy-optimized speed control of pump, compressor and fan motors in building control applications, including: Power Module PM230, Control Unit CU230P-2-BT with screening plate without panel.

Data sheet	N5111
Operating voltage	400 V
Frequency	50/60 Hz
Communication	Modbus/RTU RS485/US5 BACnet MS/TP PROFIBUS (optional) PROFINET (optional) CANopen (optional)
Product conformity	CE UL EAC RCM
Standard	EN 61800-3

#### Range overview G120P..2A

Power output [kW]	Output current [A]	Filter type	Dimensions (WxHxD) [mm]	Weight (net) [kg]	Stock no.	Product no.
0.75	2.2	A	73 x 196 x 223	2.31	6SL3200-6AE12-2AH0	<b>G120P-0.75/32A</b>
1.1	3.1	A	73 x 196 x 223	2.31	6SL3200-6AE13-1AH0	<b>G120P-1.1/32A</b>
1.5	4.1	A	73 x 196 x 223	2.31	6SL3200-6AE14-1AH0	<b>G120P-1.5/32A</b>
2.2	5.9	A	73 x 196 x 223	2.31	6SL3200-6AE15-8AH0	<b>G120P-2.2/32A</b>
3	7.7	A	73 x 196 x 223	2.31	6SL3200-6AE17-7AH0	<b>G120P-3/32A</b>
4	10.2	A	100 x 292 x 223	3.71	6SL3200-6AE21-0AH0	<b>G120P-4/32A</b>
5.5	13.2	A	100 x 292 x 223	3.71	6SL3200-6AE21-3AH0	<b>G120P-5.5/32A</b>
7.5	18	A	100 x 292 x 223	3.71	6SL3200-6AE21-8AH0	<b>G120P-7.5/32A</b>
11	26	A	140 x 355 x 223	5.81	6SL3200-6AE22-6AH0	<b>G120P-11/32A</b>
15	32	A	140 x 355 x 223	5.81	6SL3200-6AE23-2AH0	<b>G120P-15/32A</b>
18.5	38	A	140 x 355 x 223	5.81	6SL3200-6AE23-8AH0	<b>G120P-18.5/32A</b>
22	45	A	275 x 512 x 253	14	6SL3200-6AE24-5AH0	<b>G120P-22/32A</b>
30	60	A	275 x 512 x 253	14	6SL3200-6AE26-0AH0	<b>G120P-30/32A</b>
37	75	A	275 x 635 x 245	22	6SL3200-6AE27-5AH0	<b>G120P-37/32A</b>
45	90	A	275 x 635 x 253	22	6SL3200-6AE28-8AH0	<b>G120P-45/32A</b>
55	110	A	350 x 934 x 365	48	6SL3200-6AE31-1AH0	<b>G120P-55/32A</b>
75	145	A	350 x 934 x 365	48	6SL3200-6AE31-4AH0	<b>G120P-75/32A</b>

IP20: The depth increases by 12mm if BOP-2, IOP-2-BT or blind cover is used.

Variable speed drives  
**Variable Speed Drives for HVAC Applications**  
**Accessories and spare parts for G120P..**

**Available operator panels for G120P..**

Product Title	Data sheet	Stock no.	Product no.
G120P blanking cover, IP55		6SL3256-6BA00-0AA0	<b>G120P-BCOVER</b>
G120P basic operator panel BOP-2, IP55	N5116	6SL3255-6AA00-4CA0	<b>G120P-BOP-2</b>
G120P intelligent operator panel IOP-2-BT	N5116	6SL3255-6AA00-4JA2	<b>G120P-IOP-2-BT</b>
G120P-SAM Smart Access Module	N5116	6SL3255-6AA00-5AA0	<b>G120P-SAM</b>

**Accessories and spare parts for IP55**

Product Title	Data sheet	Stock no.	Product no.
G120P PM Fan IP55, external, FSA		6SL3200-0SF21-0AA1	<b>G120P-FExtFSA-IP55</b>
G120P PM Fan IP55, external, FSB		6SL3200-0SF22-0AA1	<b>G120P-FExtFSB-IP55</b>
G120P PM Fan IP55, external, FSC		6SL3200-0SF23-0AA1	<b>G120P-FExtFSC-IP55</b>
G120P-SAM Smart Access Module	N5116	6SL3255-6AA00-5AA0	<b>G120P-SAM</b>
G120P air guide sheet PM230, IP55, FSA	N5111	6SL3266-7SA00-0MA0	<b>G120P-AIRSHEET-FSA</b>
G120P air guide sheet PM230, IP55, FSB	N5111	6SL3266-7SB00-0MA0	<b>G120P-AIRSHEET-FSB</b>
G120P air guide sheet PM230, IP55, FSC	N5111	6SL3266-7SC00-0MA0	<b>G120P-AIRSHEET-FSC</b>
G120P PM Fan IP55, external, FSD-FSE		6SL3200-0SF24-0AA0	<b>G120P-FExtFSD-IP55</b>
G120P PM Fan IP55, external, FSF		6SL3200-0SF26-0AA0	<b>G120P-FExtFSF-IP55</b>
G120P PM Fan IP55, internal, FSA-FSC		6SL3200-0SF31-0AA0	<b>G120P-FlntFSAC-IP55</b>
G120P PM Fan IP55, internal, FSD-FSF		6SL3200-0SF32-0AA0	<b>G120P-FlntFSD-IP55</b>
Operator Panel Extension cable for G120P IP55		6SL3256-1BA00-4H80	<b>G120P-IP55-PAN-EXT</b>
G120P mounting parts set, PM230, IP55, FSA		6SL3200-0SK02-0AA0	<b>G120P-MSetFSA-IP55</b>
G120P mounting parts set, PM230, IP55, FSB		6SL3200-0SK03-0AA0	<b>G120P-MSetFSB-IP55</b>
G120P mounting parts set, PM230, IP55, FSC		6SL3200-0SK04-0AA0	<b>G120P-MSetFSC-IP55</b>
G120P mounting parts set, PM230, IP55, FSD		6SL3200-0SK05-0AA0	<b>G120P-MSetFSD-IP55</b>
G120P mounting parts set, PM230, IP55, FSE		6SL3200-0SK06-0AA0	<b>G120P-MSetFSE-IP55</b>
G120P mounting parts set, PM230, IP55, FSF		6SL3200-0SK07-0AA0	<b>G120P-MSetFSF-IP55</b>

**Accessories and spare parts for IP20**

Product Title	Data sheet	Stock no.	Product no.
G120P Door mounting kit for IOP or BOP-2		6SL3256-6AP00-0JA0	<b>G120P-DOOR-KIT</b>
G120P Screening-Kit, PM230 IP20 FSA		6SL3266-1EA00-0KA0	<b>G120P-Screen-FSA</b>
G120P Screening-Kit, PM230 IP20 FSB		6SL3266-1EB00-0KA0	<b>G120P-Screen-FSB</b>
G120P Screening-Kit, PM230 IP20 FSC		6SL3266-1EC00-0KA0	<b>G120P-Screen-FSC</b>
G120P Screening-Kit, PM230 IP20 FSD-FSE		6SL3262-1AD00-0DA0	<b>G120P-Screen-FSDE</b>
G120P Screening-Kit, PM230 IP20 FSF		6SL3262-1AF00-0DA0	<b>G120P-Screen-FSF</b>
G120P PM Fan IP20, external, FSD-FSE		6SL3200-0SF05-0AA0	<b>G120P-FExtFSD-IP20</b>
G120P PM Fan IP20, external, FSF		6SL3200-0SF08-0AA0	<b>G120P-FExtFSF-IP20</b>
G120P PM Fan IP20, external, FSA		6SL3200-0SF21-0AA0	<b>G120P-FExtFSA-IP20</b>
G120P PM Fan IP20, external, FSB		6SL3200-0SF22-0AA0	<b>G120P-FExtFSB-IP20</b>
G120P PM Fan IP20, external, FSC		6SL3200-0SF23-0AA0	<b>G120P-FExtFSC-IP20</b>

**Accessories and spare parts for IP55 and IP20**

Product Title	Data sheet	Stock no.	Product no.
G120P Control Unit, CANopen		6SL3243-0BB30-1CA3	<b>CU230P-2 CAN</b>
G120P Control Unit, PROFIBUS DP		6SL3243-0BB30-1PA3	<b>CU230P-2 DP</b>
G120P Control Unit, USS, Modbus, BACnet		S55529-E100	<b>CU230P-2-BT</b>
G120P PC-Inverter Connection Kit-2		6SL3255-0AA00-2CA0	<b>G120P-PC-Kit</b>
STARTER Commissioning Tool for Sinamics and Micromaster Drives		6SL3072-0AA00-0AG0	<b>G120P-Starter</b>
G120P Control Unit, PROFINET IO		6SL3243-0BB30-1FA0	<b>CU230P-2 PN</b>
G120P CU230P-2 Screening Kit		6SL3264-1EA00-0FA0	<b>G120P-CUScreen</b>





# Meters




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## Meters

### Overview and selection tools


#### Heat cost allocators WHE5..

		2 sensors	Communication	Summer switch off	Due date
	WHE502-D10	■	none	■ <sup>1)</sup>	31.12
	WHE542-D100S	■	AMR & walk-by	■ <sup>1)</sup>	31.12
	WHE542-D291S	■	AMR & walk-by	■ <sup>2)</sup>	30.09
	WHE632-D292C	■	AMR & walk-by	■ <sup>2)</sup>	30.09

<sup>1)</sup> Beginning of summer: 01.06 – End of summer: 31.08

<sup>2)</sup> Beginning of summer: 01.06 – End of summer: 30.09

#### Mechanical impeller type hot and cold water meters

	Type of meter	Q3	Mounting length	Communication	Connection	
	WFK30.D080	Cold water up to 30° C	2.5 m <sup>3</sup> /h	80 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 3/4"
	WFK30.D110	Cold water up to 30° C	2.5 m <sup>3</sup> /h	110 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 3/4"
	WFK30.E130	Cold water up to 30° C	4 m <sup>3</sup> /h	130 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 1"
	WFW30.D080	Hot water up to 90° C	2.5 m <sup>3</sup> /h	80 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 3/4"
	WFW30.D110	Hot water up to 90° C	2.5 m <sup>3</sup> /h	110 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 3/4"
	WFW30.E130	Hot water up to 90° C	4 m <sup>3</sup> /h	130 mm	walk-by or AMR or M-Bus <sup>1)</sup>	G 1"

<sup>1)</sup> With add-on module: AMR + walk-by (WFZ661), M-Bus (WFZ311)

#### Mechanical impeller type hot and cold water meters


	Type of meter	Q3	Mounting length	Communication	Connection	
	WFK240.D080	Cold water up to 50° C	2.5 m <sup>3</sup> /h	80 mm	Reed contact or Namur <sup>2)</sup>	G 3/4"
	WFK240.D110	Cold water up to 50° C	2.5 m <sup>3</sup> /h	110 mm	Reed contact or Namur <sup>2)</sup>	G 3/4"
	WFK240.E130	Cold water up to 50° C	4.0 m <sup>3</sup> /h	130 mm	Reed contact or Namur <sup>2)</sup>	G 1"
	WFW240.D080	Hot water from 30 to 90° C	2.5 m <sup>3</sup> /h	80 mm	Reed contact or Namur <sup>2)</sup>	G 3/4"
	WFW240.D110	Hot water from 30 to 90° C	2.5 m <sup>3</sup> /h	110 mm	Reed contact or Namur <sup>2)</sup>	G 3/4"
	WFW240.E130	Hot water from 30 to 90° C	4.0 m <sup>3</sup> /h	130 mm	Reed contact or Namur <sup>2)</sup>	G 1"

<sup>2)</sup> With impulse module: Reed contact (WFZ44), reed contact with Namur (WFZ43)

#### Electronic impeller type hot and cold water meters

	Type of meter	Q3	Mounting length	Communication	Connection	
	WFK636.D080	Cold water meter up to 30° C	2.5 m <sup>3</sup> /h	80 mm	AMR + walk-by	G 3/4"
	WFK636.D110	Cold water meter up to 30° C	2.5 m <sup>3</sup> /h	110 mm	AMR + walk-by	G 3/4"
	WFK636.E130	Cold water meter up to 30° C	4.0 m <sup>3</sup> /h	130 mm	AMR + walk-by	G 1"
	WFW636.D080	Hot water meter up to 90° C	2.5 m <sup>3</sup> /h	80 mm	AMR + walk-by	G 3/4"
	WFW636.D110	Hot water meter up to 90° C	2.5 m <sup>3</sup> /h	110 mm	AMR + walk-by	G 3/4"
	WFW636.E130	Hot water meter up to 90° C	4.0 m <sup>3</sup> /h	130 mm	AMR + walk-by	G 1"

### Impeller type meters

		Type of meter	Nominal flow rate	Communication	Power supply	Type	Connection	Mounting length
	WFM501-E000H0	Heat	0.6 m <sup>3</sup> /h	walk-by or AMR or M-Bus <sup>3)</sup>	Battery	Impeller meter	G 3/4"	110 mm
	WFM541-G000H0	Heat	0.6 m <sup>3</sup> /h	M-Bus	Battery	Impeller meter	G 3/4"	110 mm
	WFM681-G000H0	Heat	0.6 m <sup>3</sup> /h	AMR + walk-by	Battery	Impeller meter	G 3/4"	110 mm
	WFM502-E000H0	Heat	1.5 m <sup>3</sup> /h	walk-by or AMR or M-Bus <sup>3)</sup>	Battery	Impeller meter	G 3/4"	110 mm
	WFM542-C000H0	Heat	1.5 m <sup>3</sup> /h	M-Bus	Battery	Impeller meter	G 3/4"	80 mm
	WFM542-G000H0	Heat	1.5 m <sup>3</sup> /h	M-Bus	Battery	Impeller meter	G 3/4"	110 mm
	WFM682-G000H0	Heat	1.5 m <sup>3</sup> /h	AMR + walk-by	Battery	Impeller meter	G 3/4"	110 mm
	WFM503-J000H0	Heat	2.5 m <sup>3</sup> /h	walk-by or AMR or M-Bus <sup>3)</sup>	Battery	Impeller meter	G 1"	130 mm
	WFM543-L000H0	Heat	2.5 m <sup>3</sup> /h	M-Bus	Battery	Impeller meter	G 1"	130 mm
	WFM683-L000H0	Heat	2.5 m <sup>3</sup> /h	AMR + walk-by	Battery	Impeller meter	G 1"	130 mm

<sup>3)</sup> With add-on module: AMR & walk-by (WFZ662), M-Bus (WFZ51)

## Meters

### Overview and selection tools

#### Ultrasonic meters

	Type of meter	Nominal flow rate	Communication	Power supply	Type	Connection	Mounting length	
	WSM506-0E	Heat	0.6 m³/h	none	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM506-BE	Heat	0.6 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM506-FE	Heat	0.6 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM606-BE	Heat	0.6 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN506-BE	Combi	0.6 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN506-FE	Combi	0.6 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN606-BE	Combi	0.6 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM515-0E	Heat	1.5 m³/h	none	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM515-BE	Heat	1.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM515-FE	Heat	1.5 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM615-BE	Heat	1.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN515-BE	Combi	1.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN515-FE	Combi	1.5 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN615-BE	Combi	1.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM525-0E	Heat	2.5 m³/h	none	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
	WSM525-BE	Heat	2.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
	WSM525-FE	Heat	2.5 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
	WSM625-BE	Heat	2.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
	WSN525-BE	Combi	2.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
	WSN525-FE	Combi	2.5 m³/h	M-Bus Funk	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm
WSN625-BE	Combi	2.5 m³/h	M-Bus	Battery <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm	
	WSM805-FBBAE3A	Heat	0.6 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM821-FBBAE3A	Heat	1.5 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM836-FBBAE3A	Heat	2.5 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 1"	130 mm
	WSM836-FHBAE3A	Heat	0.6 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM821-FHBAE3A	Heat	1.5 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSM836-FHBAE3A	Heat	2.5 m³/h	M-Bus	M-Bus plus 1 back-up battery <sup>2)</sup>	Ultrasonic meter	G 1"	130 mm
	WSN805-FBBBF3A	Combi	0.6 m³/h	M-Bus	M-Bus plus 2 back-up batteries <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN821-FBBBF3A	Combi	1.5 m³/h	M-Bus	M-Bus plus 2 back-up batteries <sup>1)</sup>	Ultrasonic meter	G 3/4"	110 mm
	WSN836-FBBBF3A	Combi	2.5 m³/h	M-Bus	M-Bus plus 2 back-up batteries <sup>1)</sup>	Ultrasonic meter	G 1"	130 mm

<sup>1)</sup> Battery life: 11 years

<sup>2)</sup> Battery life: 6 years

Ultrasonic meters

	Type of meter	Nominal flow rate	Communication	Power supply	Type	Connec- tion	Mounting length	
	UH50-A05-00	Heat	0.6 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-C05-00	Heat	0.6 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-C06-00	Combi	0.6 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-A21-00	Heat	1.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-C21-00	Heat	1.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-C22-00	Combi	1.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 3/4"	110 mm
	UH50-C25-00	Combi	1.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1"	190 mm
	UH50-A36-00	Heat	2.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1"	130 mm
	UH50-C36-00	Heat	2.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1"	130 mm
	UH50-C37-00	Combi	2.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1"	130 mm
	UH50-C40-00	Combi	2.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1"	190 mm
	UH50-A45-00	Heat	3.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1 1/4"	260 mm
	UH50-C45-00	Combi	3.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1 1/4"	260 mm
	UH50-C47-00	Combi	3.5 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1 1/4"	260 mm
	UH50-A50-00	Heat	6.0 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1 1/4"	260 mm
	UH50-C50-00	Combi	6.0 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 1 1/4"	260 mm
	UH50-C52-00	Combi	6.0 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 25	260 mm
	UH50-C60-00	Combi	10 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	G 2"	300 mm
	UH50-A61-00	Heat	10 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 40	300 mm
	UH50-C61-00	Combi	10 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 40	300 mm
	UH50-A65-00	Heat	15 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 50	270 mm
	UH50-C65-00	Combi	15 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 50	270 mm
	UH50-A70-00	Heat	25 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 65	300 mm
	UH50-C70-00	Combi	25 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 65	300 mm
	UH50-A74-00	Heat	40 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 80	300 mm
	UH50-C74-00	Combi	40 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 80	300 mm
	UH50-A83-00	Heat	60 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 100	360 mm
	UH50-C83-00	Combi	60 m <sup>3</sup> /h	none <sup>3)</sup>	none <sup>3)</sup>	Ultrasonic meter	DN 100	360 mm



<sup>3)</sup> Various communication and power supply modules available

## Meters

### Overview and selection tools

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## Electronic heat cost allocators

### Electronic heat cost allocators WHE50..

#### Electronic heat cost allocator

WHE50..

Device for heat cost allocation by acquiring the amount of heat emitted by radiators. WHE50.. heat cost allocators without communication interface must be visually read on site and the readings must be manually written down. They are especially suited for basic plants that require no complex data evaluations or no very fast readout.

- Programming is performed with the ACT50 software.
- Available as a two-sensor device or with remote sensor.

All heat cost allocators are supplied without mounting plate. The mounting plate must be ordered as a separate item.

Data sheet	A6V10786229
Voltage supply	Lithium battery
Battery life	>10 Years
Operating voltage	DC 3 V
Display	LCD
Dimensions (W x H x D)	40 x 102 x 31 mm



#### Range overview WHE50..

Product Title	Stock no.	Product no.
Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 08/31, due date 12/31	S55562-F101	WHE502-D10

## Meters

### Electronic heat cost allocators

#### Electronic heat cost allocators WHE54..

##### WHE54..



##### Electronic heat cost allocators (RF)

Device for heat cost allocation by acquiring the amount of heat emitted by radiators. The heat cost allocators transmit simultaneously walk-by and AMR telegrams in S-mode (RF 868 MHz). Readout is performed via walk-by, the consumption data are collected on site using a mobile data collector. If the data shall be read out from a remote location (AMR), they are collected by a network node, stored and periodically sent to the customer via gateway.

- Programming is performed with the ACT50 software.
- Available as a two-sensor device or with remote sensor
- Communication in S-mode or C-mode

All heat cost allocators are supplied without mounting plate. The mounting plate must be ordered as a separate item.

Data sheet	A6V10786229
Voltage supply	Lithium battery
Battery life	>10 Years
Operating voltage	DC 3 V
Display	LCD
Dimensions (W x H x D)	40 x 102 x 31 mm

##### Range overview WHE54..

Product Title	Stock no.	Product no.
Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 08/31, due date 12/31, meter reading by walk-by: Annually, S-mode	S55562-F127	<b>WHE542-D100S</b>
Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 – 09/30, due date 09/30, meter reading by walk-by: Monthly, S-mode	S55562-F128	<b>WHE542-D291S</b>

##### WHE632-D292C



##### Electronic heat cost allocator with watchdog timer, Double sensor, Summer switch-off: 06/01 - 09/30, due date 09/30, C-mode

Device for heat cost allocation by acquiring the amount of heat emitted by radiators. The heat cost allocators transmit simultaneously walk-by and AMR telegrams in C-mode (RF 868 MHz). Readout is performed via walk-by, the consumption data are collected on site using a mobile data collector. If the data shall be read out from a remote location (AMR), they are collected by a network node, stored and periodically sent to the customer via gateway.

- Programming is performed with the ACT50 software.
- Available as a two-sensor device or with remote sensor
- Communication in C-mode

All heat cost allocators are supplied without mounting plate. The mounting plate must be ordered as a separate item.

Data sheet	A6V10786229
Voltage supply	Lithium battery
Battery life	>10 Years
Operating voltage	DC 3 V
Due Date	09.30
Display	LCD
Dimensions (W x H x D)	40 x 102 x 31 mm

Stock no.	Product no.
S55562-F129	<b>WHE632-D292C</b>



## Electronic heat cost allocators

### Accessories and mounting material for WHE5..

#### Parts for fixing

Product Title	Packaging unit	Stock no.	Product no.
Threaded hoop (pipe 18...30 mm)	10 pieces	JXF:FKT0014	<b>FKT0014</b>
Threaded hoop (pipe up to 17 mm)	10 pieces	JXF:FKT0004	<b>FKT0004</b>
Shank nut M3 x 3 mm	100 pieces	JXF:FNM0002	<b>FNM0002</b>
Shank nut M3 x 6 mm	100 pieces	JXF:FNM0003	<b>FNM0003</b>
Shank nut M3 x 9.5 mm	100 pieces	JXF:FNM0001	<b>FNM0001</b>
Clamping sleeve special radiator	10 pieces	JXF:FKM0002	<b>FKM0002</b>
Clamping bracket (pipes TE 36 mm)	10 pieces	JXF:FKT0015	<b>FKT0015</b>
Clamping bracket (pipes TE 46 mm)	10 pieces	JXF:FKT0016	<b>FKT0016</b>
Clamping bracket shortened	10 pieces	JXF:FKT0009	<b>FKT0009</b>
Clamping bracket trapezoidal 35 mm	10 pieces	JXF:FKT0018	<b>FKT0018</b>
Clamping bracket trapezoidal 50 mm	10 pieces	JXF:FKT0019	<b>FKT0019</b>
Clamping bracket trapezoidal 65 mm	10 pieces	JXF:FKT0020	<b>FKT0020</b>
Expanding bracket of lamella-type radiator	10 pieces	JXF:FKA0004	<b>FKA0004</b>
Square bolt 4.5 mm with cross pin	10 pieces	JXF:BOZ4002	<b>BOZ4002</b>
Square bolt 6 mm with cross pin	10 pieces	JXF:BOZ4003	<b>BOZ4003</b>
Square bolt 12 mm with cross pin	10 pieces	JXF:BOZ4004	<b>BOZ4004</b>

#### Parts for mounting

Product Title	Packaging unit	Stock no.	Product no.
Mounting plate (P3)	50 pieces	S55563-F115	<b>FKA0017</b>
Mounting plate wide	25 pieces	JXF:FKA0022	<b>FKA0022</b>
Prism for installation plate	1 piece	JXF:FKA0001	<b>FKA0001</b>
Spacer sleeve	10 pieces	JXF:FKT0010	<b>FKT0010</b>
Spacer	10 pieces	JXF:FKA0013	<b>FKA0013</b>
Threaded bushing	10 pieces	JXF:FKA0012	<b>FKA0012</b>
Clamping piece (threaded hoop 17 mm)	10 pieces	JXF:FKA0003	<b>FKA0003</b>
Clamping piece (threaded hoop 18...30 mm)	10 pieces	JXF:FKA0008	<b>FKA0008</b>
Installation plate for remote sensor	10 pieces	JXF:FKA0009	<b>FKA0009</b>
Wall bracket (P3)	10 pieces	JXF:FKK0044	<b>FKK0044</b>
Contact screw	10 pieces	JXF:FKA0010	<b>FKA0010</b>
Contact screw long	10 pieces	JXF:FKA0011	<b>FKA0011</b>

#### Standard parts

Product Title	Packaging unit	Stock no.	Product no.
Self-tapping screw B 2.9 x 13 mm	500 pieces	JXF:FNR0008	<b>FNR0008</b>
Screw B 3.9 x 45 mm	500 pieces	JXF:FNR0007	<b>FNR0007</b>
Cross-slot screw M4 x 30 mm	500 pieces	JXF:FNR0003	<b>FNR0003</b>
Cross-slot screw M4 x 40 mm	500 pieces	JXF:FNR0004	<b>FNR0004</b>
Cross-slot screw M4 x 50 mm	500 pieces	JXF:FNR0005	<b>FNR0005</b>
Cross-slot screw M4 x 70 mm	500 pieces	JXF:FNR0006	<b>FNR0006</b>
Welding stud M3 x 8 mm	1000 pieces	JXF:FKT0013	<b>FKT0013</b>
Welding stud M3 x 12 mm	1000 pieces	JXF:FKT0011	<b>FKT0011</b>
Welding stud M3 x 15 mm	1000 pieces	JXF:FKT0012	<b>FKT0012</b>
Hexagon nut M4	1000 pieces	JXF:FNM0004	<b>FNM0004</b>
Self-locking nut with serrated bearing M3	1000 pieces	JXF:FNM0005	<b>FNM0005</b>

#### Miscellaneous accessory

Product Title	Packaging unit	Stock no.	Product no.
Dowel 6 mm	100 pieces	JXF:FNU0001	<b>FNU0001</b>
Kit remote sensor 1.5 m	1 piece	JXF:HCAIK0100S1	<b>HCAIK0100S1</b>
Kit remote sensor 2.5 m	1 piece	JXF:HCAIK0100S2	<b>HCAIK0100S2</b>
Kit remote sensor 5 m	1 piece	JXF:HCAIK0100S5	<b>HCAIK0100S5</b>

## Meters

### Electronic heat cost allocators

#### Accessories and mounting material for WHE5..

##### Miscellaneous accessory

Product Title	Packaging unit	Stock no.	Product no.
Lead seal blue	100 pieces	JXF:FKK0041	<b>FKK0041</b>
Cable duct white	10 m	JXF:FOZ0001	<b>FOZ0001</b>
Snap-on panel	50 pieces	JXF:FKK0034	<b>FKK0034</b>
Installation template	1 piece	JXF:HCAIP001001	<b>HCAIP001001</b>
Installation aid (convector)	1 piece	JXF:FKT0017	<b>FKT0017</b>
ERGO universal instant glue 3g	1 piece	JXF:FSS0007	<b>FSS0007</b>

##### Programming tools and software

Product Title	Stock no.	Product no.
ACT50 – Readout and parameterization software	JXF:ACT50	<b>ACT50</b>
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Programming adapter	JXF:HCAPH001001	<b>HCAPH001001</b>

## Mechanical water meters

### Mechanical single-jet water meters

#### Mechanical single-jet water meters (module compatible)

WFK30.. / WFW30..

Mechanical single-jet impeller meter for measuring the consumption of cold (WFK30..) or hot water (WFW30..). Display of cumulated consumption. Versions without remote reading output. Body made of brass, dry-runner with magnetic transmission and pivotable totalizer. All water meters WFK30.. and WFW30.. can be retrofitted with electronic communication modules for radio (WFZ661) or M-Bus (WFZ311) readout. These meters are MID conform.

- Metrological class, horizontal mounting of body = R80 (class B).
- Metrological class, vertical mounting of body = R40 (class A).
- Flow rate Q3 according 2004/22/EC MID



Mechanical water meter to acquire the water consumption in domestic water systems in residential or non-residential buildings and in water supply systems.

The meters are supplied with Installation Instructions in the following languages: English, French, German, Italian, Russian and Spanish.

Data sheet	N5326
PN class	PN 16
Display	m <sup>3</sup> ; 0...99999.999

#### Range overview WFK30.. / WFW30..

Flow rate Q3 [m <sup>3</sup> /h]	Mounting length [mm]	Con- nect. thread	Max. water temperature [°C]	Stock no.	Product no.
2.5	80	G ¾"	30	S55560-F100	WFK30.D080
2.5	110	G ¾"	30	S55560-F101	WFK30.D110
4	130	G 1"	30	JXF:WFK30.E130	WFK30.E130
2.5	80	G ¾"	90	S55560-F102	WFW30.D080
2.5	110	G ¾"	90	S55560-F103	WFW30.D110
4	130	G 1"	90	JXF:WFW30.E130	WFW30.E130

## Meters

### Mechanical water meters

#### Mechanical single-jet water meters

##### WF.240..



##### Mechanical single-jet water meter with module slot, cold or hot

The mechanical single-jet impeller type meters are of compact design and used for measuring the consumption of cold water (WFK240..) or hot water (WFW240..). They are available as wall-mounted dry runner versions in different sizes, with a flow measuring section body made of brass. The cumulated consumption value acquired by the water meter can be read out on site. All water meters WFK240.. and WFW240.. can be retrofitted with a pulse module equipped with Reed contact (WFZ44) or Reed contact with Namur circuit (WFZ43). They conform to MID.

The meters are supplied with Installation Instructions in the following languages: Bulgarian, Croatian, Czech, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Slovakian, Slovenian, Spanish, Turkish.

Mechanical single-jet water meter with module slot, cold or hot

Data sheet	A6V12048975
PN class	PN 16
Display	m3; 0...99999.999

##### Range overview WF.240..

Flow rate Q3 [m <sup>3</sup> /h]	Mounting length [mm]	Con- nect. thread	Max. water temperature [°C]	Stock no.	Product no.
2.5	80	G ¾"	50	S55560-F110	WFK240.D080
2.5	110	G ¾"	50	S55560-F111	WFK240.D110
4	130	G 1"	50	S55560-F112	WFK240.E130
2.5	80	G ¾"	90	S55560-F113	WFW240.D080
2.5	110	G ¾"	90	S55560-F114	WFW240.D110
4	130	G 1"	90	S55560-F115	WFW240.E130

## Mechanical water meters

### Mechanical capsule water meters

#### Mechanical capsule water meter flush-mounted (module compatible)

WMK10../WMW10..



Mechanical capsule water meter for measuring the consumption of hot (WMW..) and cold (WMK..) water. Designed specifically for flush-mounting. The meter consists of an easy-to-replace measuring cell with a mechanical totalizer and a single-pipe connecting piece (EAT) which must be ordered separately and which is firmly connected to the water pipe. Suited for flush or wall mounting. Display of cumulated consumption. Dry-runner with magnetic transmission and pivotable totalizer. Body and single-pipe connecting piece are made of brass. Versions without remote reading output. The mechanical capsule water meters WMK10.D and WMW10.D can be retrofitted with electronic modules for M-Bus radio (WFZ661) or M-Bus (WFZ311) readout are MID approved. For the use with radio modules there are extra rosettes and bezels available.

Metrological class, horizontal mounting of body = class B

Metrological class, vertical mounting of body = class A

Mechanical water meter to acquire the water consumption in domestic water systems in residential or non-residential buildings and in water supply systems.

The meters are supplied with Installation Instructions in the following languages: English, French, German, Italian, Russian and Spanish.

Data sheet

N5327

PN class

PN 10

#### Range overview measuring cell water meters without remote reading output

Nominal flow rate [m <sup>3</sup> /h]	Con- nect. thread	Max. water temperature [°C]	Stock no.	Product no.
2.5	G 2"	30	JXF:WMK10.D	<b>WMK10.D</b>
2.5	G 2"	90	JXF:WMW10.D	<b>WMW10.D</b>

## Meters

### Mechanical water meters

#### Accessories for mechanical water meters

##### Communication modules

Product Title	Stock no.	Product no.
M-bus add-on module for water meters WF.30.. / WM.10..	S55563-F158	<b>WFZ311</b>
Add-on radio module WFZ661 for water meters WF.30.. / WM.10..	S55563-F147	<b>WFZ661</b>
Pulse add-on module with reed contact for WF.240.. water meters	S55563-F134	<b>WFZ44</b>
Pulse add-on module with reed contact and namur circuit for WF.240.. water meters	S55563-F135	<b>WFZ43</b>

##### Mounting material for single-jet water meters

Product Title	Stock no.	Product no.
Adapter set from G 3/4" to 1", incl. gaskets	JXF:WZM-V110	<b>WZM-V110</b>
Extension set from 110 mm G 3/4" to 130 mm G 3/4", incl. gaskets	JXF:WZM-V130	<b>WZM-V130</b>
Extension set from 110 mm G 3/4" to 165 mm G 3/4", incl. gaskets	JXF:WZM-V165	<b>WZM-V165</b>
Extension set from 110 mm G 3/4" to 190 mm G 1", incl. gaskets	JXF:WZM-V190	<b>WZM-V190</b>
Spacer G 3/4", length 80 mm	JXF:WFZ.R80	<b>WFZ.R80</b>
Spacer G 3/4", length 110mm	JXF:WFZ.R110	<b>WFZ.R110</b>
Spacer G 1", length 130 mm	JXF:WFZ.R130	<b>WFZ.R130</b>
WFZ.R2 Mounting kit	S55563-F151	<b>WFZ.R2</b>
WFZ.R2-1 Mounting kit	S55563-F152	<b>WFZ.R2-1</b>
Mounting kit for washstand water meter	JXF:WFZ.W	<b>WFZ.W</b>
Mounting kit for tap water meter	JXF:WFZ.Z	<b>WFZ.Z</b>
Self-lock seal with sealing wire	JXF:WFZ.P	<b>WFZ.P</b>
Torque Screwdriver, Torx Plus™	JXF:FZ201-009	<b>FZ201-009</b>

##### Mounting material for capsule water meters

Product Title	Data sheet	Stock no.	Product no.
M-bus add-on module for water meters WF.30.. / WM.10..	A6V11991477	S55563-F158	<b>WFZ311</b>
EAT cover		JXF:WME.VRING	<b>WME.VRING</b>
Add-on radio module WFZ661 for water meters WF.30.. / WM.10..	A6V10986918	S55563-F147	<b>WFZ661</b>
Self-lock seal with sealing wire		JXF:WFZ.P	<b>WFZ.P</b>
Single-pipe connecting piece		JXF:WME.G20/OV/H	<b>WME.G20/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L15/OV/H	<b>WME.L15/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L18/OV/H	<b>WME.L18/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L22/OV/H	<b>WME.L22/OV/H</b>
Mounting aid		JXF:WME.EINPUTZ1	<b>WME.EINPUTZ1</b>
Profiled seal		JXF:WME.PRODICHT	<b>WME.PRODICHT</b>
Mounting key		JXF:WMZ.K5	<b>WMZ.K5</b>
Sealing ring	A6V12128928	JXF:FKK0139	<b>FKK0139</b>
Torque Screwdriver, Torx Plus™		JXF:FZ201-009	<b>FZ201-009</b>
Guide piece for M77 x 1.5 mm capsule water meter	A6V12128928	JXF:FKK0173	<b>FKK0173</b>
O-ring for M77 x 1.5 mm capsule water meter	A6V12128928	JXF:FKS0034	<b>FKS0034</b>
Round cover with thrust tube in chrome look	A6V12128928	JXF:WMXI.KCR1-001	<b>WMXI.KCR1:001</b>
Round cover with thrust tube in white	A6V12128928	JXF:WMXI.KBL1-001	<b>WMXI.KBL1:001</b>
Inner extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	JXF:WMXI.KCR1-002	<b>WMXI.KCR1:002</b>
Inner extensions for thrust tube (5 pcs./PU) in white	A6V12128928	JXF:WMXI.KBL1-002	<b>WMXI.KBL1:002</b>
Outer extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	JXF:WMXI.KCR1-003	<b>WMXI.KCR1:003</b>
Outer extensions for thrust tube (5 pcs./PU) in white	A6V12128928	JXF:WMXI.KBL1-003	<b>WMXI.KBL1:003</b>

##### Software and Tools

Product Title	Data sheet	Stock no.	Product no.
ACT50 – Readout and parameterization software	N2887	JXF:ACT50	<b>ACT50</b>
Infrared read head (with USB interface)	N2886	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams		JXF:WFZ.PS	<b>WFZ.PS</b>

WF.636..



### Electronic impeller type cold or hot water meter

The electronic single-jet impeller type water meters are of compact design and used for measuring the consumption of cold water (WFK636..) or hot water (WFW636..). They are available as wall-mounted dry runner versions in different sizes, with a flow measuring section body made of brass. The cumulated consumption values determined by the meter can be read out on the meter itself or remotely via M-bus radio (AMR / walk-by).

Metrolologically, the water meters are classified as follows:

- Horizontal: R80
- Vertical: R50

They are used primarily in domestic water systems in residential or non-residential buildings and in water supply systems.

The meters are supplied with Installation Instructions in the following languages: Bulgarian, Croatian, Czech, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Romanian, Russian, Slovakian, Slovenian, Spanish, Turkish.

Data sheet	A6V12128928
PN class	PN 16
Battery life	10 years
Display	8 digits on LCD

### Range overview WF.636..

Flow rate Q3	Mounting length [mm]	Connect. thread	Max. water temperature	Communi- cation	Stock no.	Product no.
2.5	80	G ¾"	30	Wireless M-Bus S-Mode	S55560-F116	<b>WFK636.D080</b>
2.5	110	G ¾"	30	Wireless M-Bus S-Mode	S55560-F117	<b>WFK636.D110</b>
2.5	80	G ¾"	90	Wireless M-Bus S-Mode	S55560-F118	<b>WFW636.D080</b>
2.5	110	G ¾"	90	Wireless M-Bus S-Mode	S55560-F119	<b>WFW636.D110</b>
4	130	G 1"	30	Wireless M-Bus S-Mode	JXF:WFK636.E130	<b>WME5SI0N2011:00S00</b>
4	130	G 1"	90	Wireless M-Bus S-Mode	JXF:WFW636.E130	<b>WME5SI1N2011:00S00</b>

### Accessories

Product Title	Data sheet	Stock no.	Product no.
Adapter set from G ¾" to 1", incl. gaskets		JXF:WZM-V110	<b>WZM-V110</b>
Extension set from 110 mm G ¾" to 130 mm G ¾", incl. gaskets		JXF:WZM-V130	<b>WZM-V130</b>
Extension set from 110 mm G ¾" to 165 mm G ¾", incl. gaskets		JXF:WZM-V165	<b>WZM-V165</b>
Extension set from 110 mm G ¾" to 190 mm G 1", incl. gaskets		JXF:WZM-V190	<b>WZM-V190</b>
Spacer G ¾", length 80 mm		JXF:WFZ.R80	<b>WFZ.R80</b>
Spacer G ¾", length 110mm		JXF:WFZ.R110	<b>WFZ.R110</b>
Spacer G 1", length 130 mm		JXF:WFZ.R130	<b>WFZ.R130</b>
WFZ.R2 Mounting kit		S55563-F151	<b>WFZ.R2</b>
WFZ.R2-1 Mounting kit		S55563-F152	<b>WFZ.R2-1</b>
Self-lock seal with sealing wire		JXF:WFZ.P	<b>WFZ.P</b>

### Software and Tools

Product Title	Data sheet	Stock no.	Product no.
ACT50 – Readout and parameterization software	N2887	JXF:ACT50	<b>ACT50</b>
Infrared read head (with USB interface)	N2886	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams		JXF:WFZ.PS	<b>WFZ.PS</b>

New Product

## Meters

### Electronic water meters

#### Electronic measuring capsule water meters

##### WM.636..

##### Electronic multi-jet measuring capsule water meters

The electronic multi-jet measuring capsule water meters are of compact design and used for measuring the consumption of cold water (WMK636..) or hot water (WMW636..).

In most cases, the single-pipe connection piece (EAT) is already present and embedded in the masonry. The measuring capsule is screwed on accordingly.

The cumulated consumption values determined by the meter can be read out on the meter itself or remotely via M-bus radio (AMR / walk-by).

Metrologically, the water meters are classified as follows:

- Horizontal: R80
- Vertical: R40

They are used primarily in existing domestic water systems in residential or non-residential buildings and in water supply systems.

The meters are supplied with Installation Instructions in the following languages: Bulgarian, Croatian, Czech, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Romanian, Russian, Slovakian, Slovenian, Spanish, Turkish.

Data sheet	A6V12128928
PN class	PN 16
Battery life	10 years
Display	8 digits on LCD

##### Range overview WM.636..

Flow rate Q3	Connect. thread	Max. water temperature	Communication	Stock no.	Product no.
2.5	G 2"	30	Wireless M-Bus S-Mode	JXF:WMK636.DIS00	<b>WME55I0N4111:00S00</b>
2.5	M77 x 1.5 mm	30	Wireless M-Bus S-Mode	JXF:WMK636.DAL00	<b>WME55I0N6011:00S00</b>
2.5	M62 x 2 mm	30	Wireless M-Bus S-Mode	JXF:WMK636.DTE00	<b>WME55I0N8111:00S00</b>
2.5	G 2"	90	Wireless M-Bus S-Mode	JXF:WMW636.DIS00	<b>WME55I1N4111:00S00</b>
2.5	M77 x 1.5 mm	90	Wireless M-Bus S-Mode	JXF:WMW636.DAL00	<b>WME55I1N6011:00S00</b>
2.5	M62 x 2 mm	90	Wireless M-Bus S-Mode	JXF:WMW636.DTE00	<b>WME55I1N8111:00S00</b>

##### Accessories

Product Title	Data sheet	Stock no.	Product no.
EAT cover		JXF:WME.VRING	<b>WME.VRING</b>
Self-lock seal with sealing wire		JXF:WFZ.P	<b>WFZ.P</b>
Single-pipe connecting piece		JXF:WME.G20/OV/H	<b>WME.G20/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L15/OV/H	<b>WME.L15/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L18/OV/H	<b>WME.L18/OV/H</b>
Single-pipe connecting piece (EAT)		JXF:WME.L22/OV/H	<b>WME.L22/OV/H</b>
Mounting aid		JXF:WME.EINPUTZ1	<b>WME.EINPUTZ1</b>
Profiled seal		JXF:WME.PRODICHT	<b>WME.PRODICHT</b>
Mounting key		JXF:WMZ.K5	<b>WMZ.K5</b>
Sealing ring	A6V12128928	JXF:FKK0139	<b>FKK0139</b>
Guide piece for M77 x 1.5 mm capsule water meter	A6V12128928	JXF:FKK0173	<b>FKK0173</b>
O-ring for M77 x 1.5 mm capsule watermeter	A6V12128928	JXF:FKS0034	<b>FKS0034</b>
Round cover with thrust tube in chrome look	A6V12128928	JXF:WMXI.KCR1-001	<b>WMXI.KCR1:001</b>
Round cover with thrust tube in white	A6V12128928	JXF:WMXI.KBL1-001	<b>WMXI.KBL1:001</b>
Inner extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	JXF:WMXI.KCR1-002	<b>WMXI.KCR1:002</b>



## Electronic water meters

### Electronic measuring capsule water meters

#### Accessories

Product Title	Data sheet	Stock no.	Product no.
Inner extensions for thrust tube (5 pcs./PU) in white	A6V12128928	JXF:WMXI.KBL1-002	<b>WMXI.KBL1:002</b>
Outer extensions for thrust tube (5 pcs./PU) in chrome look	A6V12128928	JXF:WMXI.KCR1-003	<b>WMXI.KCR1:003</b>
Outer extensions for thrust tube (5 pcs./PU) in white	A6V12128928	JXF:WMXI.KBL1-003	<b>WMXI.KBL1:003</b>

#### Software and Tools

Product Title	Data sheet	Stock no.	Product no.
ACT50 – Readout and parameterization software	N2887	JXF:ACT50	<b>ACT50</b>
Infrared read head (with USB interface)	N2886	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams		JXF:WFZ.PS	<b>WFZ.PS</b>

## Meters

### Impeller type heat/cooling energy meters

#### Impeller type heat/cooling energy meters WFM5.. / WFN5..

##### WF.5..

##### Electronic impeller type heat and heat / cooling energy meters



The compact, electronic and mains-independent impeller type heat and cool energy meters WF.5.. are used for the physically correct acquisition of energy consumption. They are available as wall-mounting versions in different sizes and have been developed for heat, combined heat/cooling or solar energy metering.

The devices consist of flow measuring section, 2 ready connected temperature sensors and a processor which – based on flow rate and temperature differential – calculates the energy consumption. The consumption values can be read out either on the meter itself or from a remote location. Using modules, the noncommunicating meters (WF.50..) can be upgraded for readout via AMR/walk-by (WFZ662) or M-bus (WFZ51).

In addition to modules, the meters with M-bus communication (WF.54..) are equipped with 2 pulse inputs for reading out 2 water meters (Reed contact).

The WF.5.. are used primarily in plants with central production of heat or heat and cooling energy, where the energy is supplied via zones to several individual consumers in the building.

##### The meters are supplied with Operating and Mounting Instructions in the following languages:

Bulgarian, Croatian, Czech, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Slovakian, Slovenian, Spanish and Turkish

Data sheet	CE2N5323, A6V10800216
Measurement accuracy	MID class 3
Operating voltage	DC 3 V
Voltage supply	Lithium battery
Standard	DIN EN 1434
Battery life	> 10 years
PN class	PN 16
Measuring range, temperature	Heat: 15...105 °C Refrigeration range: 0.2...24 °C
Temperature response threshold	Heat: 1.0 K Cold: 0.2 K
Sensing element, temperature	Pt1000
Sensor	DS Ø5.0x45 mm
Cable length, sensor	1.5 m
Due Date	12.31
Display	kWh
Mounting location	Meter: return Sensor in the flow: directly immersed or in approved protection pockets Sensor in the return: integrated in the return, directly immersed

##### Range overview WF.5..

Nominal flow rate [m³/h]	Mounting length [mm]	Connect. thread	Communication	Type of Meter	Connect. thread	Stock no.	Product no.
0.6	110	G ¾ "	IrDA + module	Heat interface	G ¾ "	S55561-F177	<b>WFM501-E000H0</b>
0.6	110	G ¾ "	IrDA, M-bus &	Heat pulse inputs	G ¾ "	S55561-F239	<b>WFM541-G000H0</b>
1.5	110	G ¾ "	IrDA + module	Heat interface	G ¾ "	S55561-F178	<b>WFM502-E000H0</b>
1.5	80	G ¾ "	IrDA, M-bus &	Heat pulse inputs	G ¾ "	S55561-F240	<b>WFM542-C000H0</b>
1.5	110	G ¾ "	IrDA, M-bus &	Heat pulse inputs	G ¾ "	S55561-F241	<b>WFM542-G000H0</b>
2.5	130	G 1 "	IrDA + module	Heat interface	G 1 "	S55561-F179	<b>WFM503-J000H0</b>
2.5	130	G 1 "	IrDA, M-bus &	Heat pulse inputs	G 1 "	S55561-F242	<b>WFM543-L000H0</b>

Meter mounting for WFM542-C000H0: return; Sensor in the flow: directly immersed or in approved protection pockets; Sensor in the return: not integrated, directly immersed or in approved protection pockets.

## Impeller type heat/cooling energy meters

### Impeller type heat/cooling energy meters WFM6.. / WFN6..

WF.6..



#### Electronic impeller type heat and heat/cooling energy meter set with RF communication

The impeller type heat and heat/cooling energy meter set WF.6.. consists of a non-communicative meter and a preinstalled RF communication module.

The electronic, mains-independent impeller type heat and heat/cooling energy meter is of compact design and used for the physically correct acquisition of energy consumption. The meter consists of a flow measuring section, two ready connected temperature sensors and an integrated processor which – based on flow rate and temperature differential – calculates the energy consumption.

The consumption values can be read out either on the meter itself or from a remote location via AMR or walk-by.

The WF.6.. are used primarily in plants with central production of heat and heat/cooling energy, where the energy is supplied via zones to several individual consumers in the building.

Data sheet	A6V11259309
Measurement accuracy	MID class 3
Standard	DIN EN 1434
Voltage supply	Lithium battery
Operating voltage	DC 3 V
Battery life	> 10 years
PN class	PN 16
Measuring range, temperature	Heat: 15...105 °C Refrigeration range: 0.2...24 °C
Temperature response threshold	Heat: 1.0 K Cold: 0.2 K
Sensing element, temperature	Pt1000
Sensor	DS Ø5.0x45 mm
Cable length, sensor	1.5 m
Due Date	12.31
Display	kWh
Mounting location	Return

#### Range overview WFM6.. / WFN6..

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	Connect. thread ["]	Communication	Type of Meter	Connect. thread	Stock no.	Product no.
0.6	110	G ¾	IrDA interface	Heat	G ¾"	S55561-F260	<b>WFM681-G000H0</b>
1.5	110	G ¾	IrDA interface	Heat	G ¾"	S55561-F261	<b>WFM682-G000H0</b>
2.5	130	G 1	IrDA interface	Heat	G 1"	S55561-F262	<b>WFM683-L000H0</b>

## Meters

### Impeller type heat/cooling energy meters

#### Accessories for impeller type heat meters

##### Screwed type meters

Product Title	Stock no.	Product no.
Installation set Rp 1/2" - ball valve Rp 1/2" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK001-001	HMXIK001-001
Installation set Rp 3/4" - ball valve Rp 3/4" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK001-002	HMXIK001-002
Installation set Rp 1" - ball valve Rp 1" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK001-003	HMXIK001-003
Installation set Rp 1" - ball valve Rp 1" with coupling nut G 1" and flat gaskets	JXF:HMXIK001-004	HMXIK001-004
Installation set Rp 3/4" - ball valve Rp 3/4" with coupling nut G 1" and flat gaskets	JXF:HMXIK001-005	HMXIK001-005

##### Installation sets fittings

Product Title	Stock no.	Product no.
Installation set R 1/2" - fitting R 1/2" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK002-001	HMXIK002-001
Installation set R 3/4" - fitting R 3/4" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK002-002	HMXIK002-002
Installation set R 1" - fitting R 1" with coupling nut G 3/4" and flat gaskets	JXF:HMXIK002-003	HMXIK002-003
Installation set R 1" - fitting R 1" with coupling nut G 1" and flat gaskets	JXF:HMXIK002-004	HMXIK002-004
Installation set R 3/4" - fitting R 3/4" with coupling nut G 1" and flat gaskets	JXF:HMXIK002-005	HMXIK002-005

##### Accessories

Product Title	Stock no.	Product no.
Fitting R 1/2" x G 3/4"	JXF:FKM0018	FKM0018
Fitting R 3/4" x G 3/4"	JXF:FKM0019	FKM0019
Fitting R 1" x G 3/4"	JXF:FKM0020	FKM0020
Fitting R 3/4" x G 1"	JXF:FKM0021	FKM0021
Fitting R 1" x G 1"	JXF:FKM0022	FKM0022
Ball valve Rp 1/2" with thread	JXF:FKM0023	FKM0023
Ball valve Rp 3/4" with thread	JXF:FKM0024	FKM0024
Ball valve Rp 1" with thread	JXF:FKM0025	FKM0025
Ball valve Rp 1/2" with coupling nut and thread	JXF:FKM0026	FKM0026
T-piece R 1/2" x G 1/4"	JXF:FKM0035	FKM0035
T-piece R 3/4" x G 1/4"	JXF:FKM0036	FKM0036
T-piece R 1" x G 1/4"	JXF:FKM0037	FKM0037
Immersion sleeve G 1/4"	JXF:FKM0038	FKM0038
Immersion sleeve G 1/4"	JXF:FKM0039	FKM0039
Temperatur sensor sleeve G 1/4"	JXF:FKM0049	FKM0049
Temperatur sensor sleeve M10x1 mm	JXF:FKM0050	FKM0050
Immersion sleeve 5.0 mm, M10x1 mm	JXF:FKM0051	FKM0051
Immersion sleeve 5.2 mm, M10x1 mm	JXF:FKM0052	FKM0052
Spacer G 3/4", length 80 mm	JXF:FKM0070	FKM0070
Spacer G 3/4", length 110 mm	JXF:FKM0074	FKM0074
Spacer G 1", length 130 mm	JXF:FKM0075	FKM0075
Ball valve R 1/2" with coupling nut G 3/4"	JXF:FKM0076	FKM0076
Ball valve R 3/4" with coupling nut G 3/4"	JXF:FKM0077	FKM0077
Ball valve Rp 1" with union nut G 3/4"	JXF:FKM0078	FKM0078
Ball valve Rp 3/4" with union nut G 1"	JXF:FKM0079	FKM0079
Ball valve Rp 1" with union nut G 1"	JXF:FKM0080	FKM0080
Flat gasket 3/4"	JXF:FKS0005	FKS0005
Flat gasket 1"	JXF:FKS0006	FKS0006
Seal	JXF:FNS0001	FNS0001
M-bus cable for WF.54..	JXF:FKL0012	FKL0012
Impulse cable for WF.54..	JXF:FKL0013	FKL0013
Wall bracket	JXF:HMRIK001-001	HMRIK001-001
Adapter set from G 3/4" to G 1"	JXF:HMXIK003-001	HMXIK003-001
Extension set from G 3/4" to G 1"	JXF:HMXIK003-002	HMXIK003-002
Extension set from 110 mm G 3/4" to 130 mm G 3/4"	JXF:HMXIK003-003	HMXIK003-003
Extension set from 110 mm G 3/4" to 165 mm G 3/4"	JXF:HMXIK003-004	HMXIK003-004

## Impeller type heat/cooling energy meters

### Accessories for impeller type heat meters

#### Accessories

Product Title	Stock no.	Product no.
Extension set from 110 mm G 3/4" to 190 mm G 1"	JXF:HMXIK003-005	<b>HMXIK003-005</b>
Temperature sensor screwed	JXF:HMXIK004-001	<b>HMXIK004-001</b>
Sensor accessories set	JXF:BOZ5005	<b>BOZ5005</b>

#### Add-on module for WF..5..

Product Title	Data sheet	Stock no.	Product no.
M-bus add-on module for WFx5.. meters	N5323	S55563-F131	<b>WFZ51</b>
Radio module with integrated antenna for WFx5.. meters	N5323	S55563-F153	<b>WFZ662</b>

#### Programming tools and software for impeller type heat meters

Product Title	Stock no.	Product no.
ACT50 – Readout and parameterization software	JXF:ACT50	<b>ACT50</b>
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams	JXF:WFZ.PS	<b>WFZ.PS</b>
M-bus programming adapter (USB)	JXF:WFZ.MBM-USB	<b>WFZ.MBM-USB</b>

## Meters

### Ultrasonic heat/cooling energy meters

#### Ultrasonic heat/cooling energy meters WS.5..

##### WS.5..



##### Ultrasonic heat and cooling energy meters

The WSM5.. heat meters and WSN5.. heat and cooling energy meters acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, a volume measuring section made of high-tech plastic, and wear resistance.

The consumption values acquired by the meter can be read out either on the meter itself or from a remote location. The meter transmits the current consumption value, the monthly values, the set day value and error messages to the respective data collector.

The processor can be removed (cable length 1.5 m). The display informs the user about the amount of energy consumed.

The WSM5.. and WSN5.. are used in residential or commercial buildings to acquire the amount of heat or cooling energy consumed.

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5372
Measurement accuracy	MID class 2
Standard	EN 1434
Voltage supply	Lithium battery
Operating voltage	Battery operation: 3.6V
PN class	PN 16
Sensing element, temperature	Pt500
Sensor	PL Ø5.2x45 mm
Cable length, sensor	1.5 m
Due Date	01.01
Display	kWh
Temperature range electronic unit	0...180 °C
Temperature range volume measuring section	5...90 °C
Mounting location	Meter: return Sensor in the flow: selectable, directly/indirectly immersed Sensor in the return: integrated in the return, directly immersed

##### Range overview WS.5..

Nominal flow rate [m³/h]	Mounting length [mm]	Connect. thread	Communication	Battery life	Stock no.	Product no.
0.6	110	G ¾"		11 years	S55561-F133	<b>WSM506-OE</b>
0.6	110	G ¾"	M-bus	11 years	S55561-F194	<b>WSM506-BE</b>
0.6	110	G ¾"	M-bus RF	11 years	S55561-F246	<b>WSM506-FE</b>
1.5	110	G ¾"		11 years	S55561-F135	<b>WSM515-OE</b>
1.5	110	G ¾"	M-bus	11 years	S55561-F195	<b>WSM515-BE</b>
1.5	110	G ¾"	M-bus RF	11 years	S55561-F247	<b>WSM515-FE</b>
2.5	130	G 1"		11 years	S55561-F137	<b>WSM525-OE</b>
2.5	130	G 1"	M-bus	11 years	S55561-F196	<b>WSM525-BE</b>
2.5	130	G 1"	M-bus RF	11 years	S55561-F248	<b>WSM525-FE</b>
0.6	110	G ¾"	M-bus	11 years	S55561-F278	<b>WSN506-BE</b>
0.6	110	G ¾"	M-bus RF	11 years	S55561-F281	<b>WSN506-FE</b>
1.5	110	G ¾"	M-bus	11 years	S55561-F279	<b>WSN515-BE</b>
1.5	110	G ¾"	M-bus RF	11 years	S55561-F282	<b>WSN515-FE</b>
2.5	130	G 1"	M-bus	11 years	S55561-F280	<b>WSN525-BE</b>
2.5	130	G 1"	M-bus RF	11 years	S55561-F283	<b>WSN525-FE</b>

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters WS.5..

#### Mounting sets

Product Title	Stock no.	Product no.
Mounting set 110 mm	LYU:WZT-MS110	<b>WZT-MS110</b>
Mounting set 130 mm	LYU:WZT-MS130	<b>WZT-MS130</b>

#### Ball valves

Product Title	Stock no.	Product no.
Ball valve R 1/2" with union nut G 3/4"	LYU:WZT-K12-34	<b>WZT-K12-34</b>
Ball valve R 3/4" with union nut G 3/4"	LYU:WZT-K34-34	<b>WZT-K34-34</b>
Ball valve R 3/4" with union nut G 1"	LYU:WZT-K34-1	<b>WZT-K34-1</b>
Ball valve R 1" with union nut G 1"	LYU:WZT-K1-1	<b>WZT-K1-1</b>
Ball valve Rp 1/2" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F104	<b>WZT-K12</b>
Ball valve Rp 3/4" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm	S55563-F120	<b>WZT-K34</b>
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F119	<b>WZT-K1</b>

#### Adapter and accessories

Product Title	Stock no.	Product no.
Installation kit G 3/4", for threaded connection R 1/2"	S55563-F124	<b>WZM-E34</b>
Mounting kit G1", for threaded connection R 3/4"	S55563-F123	<b>WZM-E1</b>
Adapter from 110 mm G 3/4" to 130 mm G 3/4", incl. gaskets	LYU:WZM-V130	<b>WZM-V130</b>
Adapter G 3/8 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/8"	LYU:WZT-A38	<b>WZT-A38</b>
Adapter from 110 mm G 3/4 B" to 130 mm G 1 B", incl. 4 gaskets	LYU:WZM-V130.G1	<b>WZM-V130.G1</b>
Adapter M10x1 mm x G 1/2 B" for sensor DS M10x1 mm / d=5.2 x 45 mm	S55563-F116	<b>WZT-A12</b>
Adapter from 110 mm G 3/4 B" to 165 mm G 3/4 B", incl. 1 gasket	LYU:WZM-VE165	<b>WZM-VE165</b>
Adapter G 3/4 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/4"	LYU:WZT-A34	<b>WZT-A34</b>
Adapter from 110 mm G 3/4 B" to 190 mm G 1 B", incl. gaskets	LYU:WZM-V190	<b>WZM-V190</b>
Protection pocket G 1/2 B", length 35 mm, made of brass, for temperature sensor Ø 5.2x45 mm	S55563-F103	<b>WZT-M35</b>
Protection pocket G 1/2 B", brass, Ø 5.2x50 mm, for temperature sensor Ø 5.2x45 mm	LYU:WZT-M50	<b>WZT-M50</b>
Pocket G 1/2 B", stainless steel, 5.2 x 37 mm, with seal	LYU:WZT-S43V	<b>WZT-S43V</b>
Adapter kit for sensor Ø 5.2x45 mm, incl. 2 O-rings	LYU:9956230	<b>9956230</b>
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm	S55563-F121	<b>WZT-G10</b>
Spacer G 3/4", length 110 mm, incl. 2 flat gaskets	LYU:WZM-G110	<b>WZM-G110</b>
Spacer G 1", length 130 mm, incl. 2 flat gaskets	LYU:WZM-G130	<b>WZM-G130</b>
Wall adapter, incl. 2 screws and 2 dowels	LYU:T23-WA10	<b>T23-WA10</b>
Self-lock seal with sealing wire	LYU:9956186001	<b>9956186001</b>
Flat seal for WS.5.., for thread G 3/4", connection R 1/2"	LYU:9060951	<b>9060951</b>
Flat seal for WS.5.., for thread G 1", connection R 3/4"	LYU:9060952	<b>9060952</b>

#### Programming accessories for ultrasonic meters

Product Title	Stock no.	Product no.
Optical read head with USB interface for PC	LYU:WZR-OP-USB	<b>WZR-OP-USB</b>
UltraAssist Profi, first license, CD with USB mini-dongle	LYU:WZX-UA-PEU-MINI	<b>WZX-UA-PEU-MINI</b>
UltraAssist Profi, second license, USB mini-dongle	LYU:WZX-UA-PFU-MINI	<b>WZX-UA-PFU-MINI</b>

## Meters

### Ultrasonic heat/cooling energy meters

#### Ultrasonic heat/cooling energy meters WS.6..

##### WS.6..



##### Ultrasonic heat and heat / cooling energy meters

The WSM6.. heat meters and WSN6.. heat and cooling energy meters acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, a volume measuring section made of brass, and wear resistance.

The consumption values acquired by the meter can be read out either on the meter itself or from a remote location. The meter transmits the current consumption value, the monthly values, the set day value and error messages to the respective data collector.

The processor can be removed (cable length 1.5 m). The display informs the user about the amount of energy consumed.

The WSM6.. and WSB6.. are used in residential or commercial buildings to acquire the amount of heat or cooling energy consumed.

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish.

Data sheet	N5372
Type of Meter	Heat Cooling
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Lithium battery
Operating voltage	Battery operation: 3.6 V
PN class	PN 16
Sensing element, temperature	Pt500
Sensor	Type Ø 5.2 x 45 mm
Cable length, sensor	1.5 m
Due Date	01.01
Display	kWh
Mounting location	Meter: return Sensor in the flow: selectable, directly/indirectly immersed Sensor in the return: integrated in the return, directly immersed
Dimensions (W x H x D)	Electronic unit: 116 x 71 x 32 mm Flow measuring section: 110 x 43 x 64 mm (without cable) mm

##### Range overview WS.6..

Nominal flow rate [m³/h]	Mounting length [mm]	Connect. thread	Communication	Battery life	Stock no.	Product no.
0.6	110	G ¾"	M-bus	11 years	S55561-F249	<b>WSM606-BE</b>
0.6	110	G ¾"	M-bus	11 years	S55561-F266	<b>WSN606-BE</b>
1.5	110	G ¾"	M-bus	11 years	S55561-F250	<b>WSM615-BE</b>
1.5	110	G ¾"	M-bus	11 years	S55561-F267	<b>WSN615-BE</b>
2.5	130	G 1"	M-bus	11 years	S55561-F251	<b>WSM625-BE</b>
2.5	130	G 1"	M-bus	11 years	S55561-F268	<b>WSN625-BE</b>



## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters WS.6..

#### Mounting sets

Product Title	Stock no.	Product no.
Installation kit G 3/4", for threaded connection R 1/2"	S55563-F124	<b>WZM-E34</b>
Mounting kit G1", for threaded connection R 3/4"	S55563-F123	<b>WZM-E1</b>
Adapter from 110 mm G 3/4" to 130 mm G 3/4", incl. gaskets	LYU:WZM-V130	<b>WZM-V130</b>
Adapter from 110 mm G 3/4B" to 130 mm G 1B", incl. 4 gaskets	LYU:WZM-V130.G1	<b>WZM-V130.G1</b>
Adapter from 110 mm G 3/4B" to 165 mm G 3/4B", incl. 1 gasket	LYU:WZM-VE165	<b>WZM-VE165</b>
Adapter from 110 mm G 3/4B" to 190 mm G 1B", incl. gaskets	LYU:WZM-V190	<b>WZM-V190</b>
Mounting set 110 mm	LYU:WZT-MS110	<b>WZT-MS110</b>
Mounting set 130 mm	LYU:WZT-MS130	<b>WZT-MS130</b>

#### Ball valves

Product Title	Stock no.	Product no.
Ball valve R 1/2" with union nut G 3/4"	LYU:WZT-K12-34	<b>WZT-K12-34</b>
Ball valve R 3/4" with union nut G 3/4"	LYU:WZT-K34-34	<b>WZT-K34-34</b>
Ball valve R 3/4" with union nut G 1"	LYU:WZT-K34-1	<b>WZT-K34-1</b>
Ball valve R 1" with union nut G 1"	LYU:WZT-K1-1	<b>WZT-K1-1</b>
Ball valve Rp 1/2" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F104	<b>WZT-K12</b>
Ball valve Rp 3/4" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm	S55563-F120	<b>WZT-K34</b>
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F119	<b>WZT-K1</b>

#### Adapter and accessories

Product Title	Stock no.	Product no.
Adapter G 3/8 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/8"	LYU:WZT-A38	<b>WZT-A38</b>
Adapter M10x1 mm x G 1/2 B" for sensor DS M10x1 mm / d=5.2 x 45 mm	S55563-F116	<b>WZT-A12</b>
Adapter G 3/4 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/4"	LYU:WZT-A34	<b>WZT-A34</b>
Protection pocket G 1/2 B", length 35 mm, made of brass, for temperature sensor Ø 5.2x45 mm	S55563-F103	<b>WZT-M35</b>
Protection pocket G 1/2 B", brass, Ø 5.2x50 mm, for temperature sensor Ø 5.2x45 mm	LYU:WZT-M50	<b>WZT-M50</b>
Pocket G 1/2 B", stainless steel, 5.2 x 37 mm, with seal	LYU:WZT-S43V	<b>WZT-S43V</b>
Adapter set brass for sensor 5.2 x 45 mm	LYU:WZT-FA	<b>WZT-FA</b>
Adapter kit for sensor Ø 5.2x45 mm, incl. 2 O-rings	LYU:9956230	<b>9956230</b>
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm	S55563-F121	<b>WZT-G10</b>
Spacer G 3/4", length 110 mm, incl. 2 flat gaskets	LYU:WZM-G110	<b>WZM-G110</b>
Spacer G 1", length 130 mm, incl. 2 flat gaskets	LYU:WZM-G130	<b>WZM-G130</b>
Sealing disk G 3/4", for threaded connection R 1/2"	LYU:9060944002	<b>9060944002</b>
Sealing disk G 1", for threaded connection R 3/4"	LYU:9060944003	<b>9060944003</b>
Wall adapter, incl. 2 screws and 2 dowels	LYU:T23-WA10	<b>T23-WA10</b>
Self-lock seal with sealing wire	LYU:9956186001	<b>9956186001</b>

#### Programming accessories for ultrasonic meters

Product Title	Stock no.	Product no.
Optical read head with USB interface for PC	LYU:WZR-OP-USB	<b>WZR-OP-USB</b>
UltraAssist Profi, first license, CD with USB mini-dongle	LYU:WZX-UA-PEU-MINI	<b>WZX-UA-PEU-MINI</b>
UltraAssist Profi, second license, USB mini-dongle	LYU:WZX-UA-PFU-MINI	<b>WZX-UA-PFU-MINI</b>

## Meters

### Ultrasonic heat/cooling energy meters

#### Ultrasonic heat/cooling energy meters WS.8..

##### WS.8..



##### Ultrasonic heat and heat/cooling energy meter

The WSM8.. is a measuring instrument used for the physically correct acquisition of energy consumption. The device consists of a flow measuring section made of brass, two temperature sensors, and an electronic unit which calculates the energy consumption from the flow and the temperature differential. The processor unit can be equipped with different sensors, up to four batteries and a communication module. In addition up to two impulse water meters can be readout.

The consumption values acquired by the meter can be read out either on the meter itself or from a remote location. The meter transmits the current consumption value, the monthly values, the set day value and error messages to the respective data collector. The processor can be removed (cable length 1.5 m). The display informs the user about the amount of energy consumed.

The Mounting and Operating Instructions are supplied in 18 languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish and Turkish.

Data sheet	A6V11905989
Measurement accuracy	Class II
Standard	EN 1434
Voltage supply	Lithium battery
Operating voltage	3,6 V
PN class	PN 16
Sensing element, temperature	Pt500
Cable length, sensor	1.5 m
Due Date	01.01
Mounting location	Meter mounting: In return Sensor mounting: Return sensor, integrated in the flow measuring section
Dimensions (W x H x D)	105 x 138 x 44 mm

##### Range overview WS.8..

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	Connect. thread	Communi- cation	Battery life	Stock no.	Product no.
0.6	110	G ¾"	M-bus	6 years	S55561-F269	<b>WSM805-FBBAE3A</b>
0.6	110	G ¾"	M-bus	6 years	S55561-F272	<b>WSM805-FHBAE3A</b>
1.5	110	G ¾"	M-bus	6 years	S55561-F270	<b>WSM821-FBBAE3A</b>
1.5	110	G ¾"	M-bus	6 years	S55561-F273	<b>WSM821-FHBAE3A</b>
2.5	130	G 1"	M-bus	6 years	S55561-F271	<b>WSM836-FBBAE3A</b>
2.5	130	G 1"	M-bus	6 years	S55561-F274	<b>WSM836-FHBAE3A</b>
0.6	110	G ¾"	M-bus	11 years	S55561-F275	<b>WSN805-FBBBF3A</b>
1.5	110	G ¾"	M-bus	11 years	S55561-F276	<b>WSN821-FBBBF3A</b>
2.5	130	G 1"	M-bus	11 years	S55561-F277	<b>WSN836-FBBBF3A</b>

The meter can be supplied via M-bus. In this case the battery serves as a backup battery.

##### Power packs

Product Title	Stock no.	Product no.
Battery set, 1 battery	LYU:T45-BA-1	<b>T45-BA-1</b>
Battery set, set of 2 batteries	LYU:T45-BA-2	<b>T45-BA-2</b>
Battery set, set of 3 batteries	LYU:T45-BA-3	<b>T45-BA-3</b>
Battery set, set of 4 batteries	LYU:T45-BA-4	<b>T45-BA-4</b>

##### Communication modules

Product Title	Stock no.	Product no.
M-bus wired module	LYU:T45-MBUS	<b>T45-MBUS</b>
Pulse module	LYU:T45-PULSE	<b>T45-PULSE</b>
Radio-module, 868 MHz	LYU:T45-RADIO	<b>T45-RADIO</b>
Pulse input set for heat meters	LYU:T45-PULSE-IN	<b>T45-PULSE-IN</b>

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters WS.8..

#### Mounting sets

Product Title	Stock no.	Product no.
Installation kit G ¾", for threaded connection R ½"	S55563-F124	<b>WZM-E34</b>
Mounting kit G1", for threaded connection R ¾"	S55563-F123	<b>WZM-E1</b>
Adapter from 110 mm G ¾" to 130 mm G ¾", incl. gaskets	LYU:WZM-V130	<b>WZM-V130</b>
Adapter from 110 mm G ¾B" to 130 mm G 1B", incl. 4 gaskets	LYU:WZM-V130.G1	<b>WZM-V130.G1</b>
Adapter from 110 mm G ¾B" to 165 mm G ¾B", incl. 1 gasket	LYU:WZM-VE165	<b>WZM-VE165</b>
Adapter from 110 mm G ¾B" to 190 mm G 1B", incl. gaskets	LYU:WZM-V190	<b>WZM-V190</b>
Mounting set 110 mm	LYU:WZT-MS110	<b>WZT-MS110</b>
Mounting set 130 mm	LYU:WZT-MS130	<b>WZT-MS130</b>

#### Spacers and sealing disks

Product Title	Stock no.	Product no.
Spacer G ¾", length 110 mm, incl. 2 flat gaskets	LYU:WZM-G110	<b>WZM-G110</b>
Spacer G 1", length 130 mm, incl. 2 flat gaskets	LYU:WZM-G130	<b>WZM-G130</b>
Sealing disk G ¾", for threaded connection R ½"	LYU:9060944002	<b>9060944002</b>
Sealing disk G 1", for threaded connection R ¾"	LYU:9060944003	<b>9060944003</b>

#### Ball valves

Product Title	Stock no.	Product no.
Ball valve R ½" with union nut G ¾"	LYU:WZT-K12-34	<b>WZT-K12-34</b>
Ball valve R ¾" with union nut G ¾"	LYU:WZT-K34-34	<b>WZT-K34-34</b>
Ball valve R ¾" with union nut G 1"	LYU:WZT-K34-1	<b>WZT-K34-1</b>
Ball valve R 1" with union nut G 1"	LYU:WZT-K1-1	<b>WZT-K1-1</b>
Ball valve Rp ½" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F104	<b>WZT-K12</b>
Ball valve Rp ¾" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm	S55563-F120	<b>WZT-K34</b>
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F119	<b>WZT-K1</b>

#### Accessories

Product Title	Stock no.	Product no.
Adapter G 3/8 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/8"	LYU:WZT-A38	<b>WZT-A38</b>
Mounting set for sensor Ø 5.2x45 mm	LYU: WZT-FA	<b>WZT-FA</b>
Mounting plate for top hat rail	LYU:WZU-MH	<b>WZU-MH</b>
Plate for wall mounting	LYU:WZU-WH	<b>WZU-WH</b>
Adapter M10x1 mm x G 1/2 B" for sensor DS M10x1 mm / d=5.2 x 45 mm	S55563-F116	<b>WZT-A12</b>
Adapter G ¾ B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G ¾"	LYU:WZT-A34	<b>WZT-A34</b>
Protection pocket G ½ B", length 35 mm, made of brass, for temperature sensor Ø 5.2x45 mm	S55563-F103	<b>WZT-M35</b>
Protection pocket G ½ B", brass, Ø 5.2x50 mm, for temperature sensor Ø 5.2x45 mm	LYU:WZT-M50	<b>WZT-M50</b>
Pocket G ½ B", stainless steel, 5.2 x 37 mm, with seal	LYU:WZT-S43V	<b>WZT-S43V</b>
Adapter kit for sensor Ø 5.2x45 mm, incl. 2 O-rings	LYU:9956230	<b>9956230</b>
Sealing disk Ø 8.6/5.3, size 1 mm, for temperature sensor DS M10x1 mm	LYU:9060944001	<b>9060944001</b>
Sealing disk Ø 8.6/5.3, size 1.5 mm, for temperature sensor DS M10x1 mm made of copper	LYU:9060950	<b>9060950</b>
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm	S55563-F121	<b>WZT-G10</b>
Self-lock seal with sealing wire	LYU:9956186001	<b>9956186001</b>
Mounting plate for wall mounting	LYU:WZU-WA	<b>WZU-WA</b>

#### Temperature sensors (pairs)

Product Title	Stock no.	Product no.
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 1.5 m	LYU:WZU5-2815	<b>WZU5-2815</b>
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 2.5 m	LYU:WZU5-2825	<b>WZU5-2825</b>
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 1.5 m	LYU:WZU5-3815	<b>WZU5-3815</b>

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters WS.8..

#### Temperature sensors (pairs)

Product Title	Stock no.	Product no.
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 2.5 m	LYU:WZU5-3825	<b>WZU5-3825</b>
Pair of temperature sensors Pt500, PS Ø5.2x45 mm, cable length 1.5 m	LYU:WZU5-4515	<b>WZU5-4515</b>
Pair of temperature sensors Pt500, PS Ø 5.2x45 mm, cable length 5 m	LYU:WZU5-4550	<b>WZU5-4550</b>

#### Programming accessories for ultrasonic meters

Product Title	Stock no.	Product no.
Optical read head with USB interface for PC	LYU:WZR-OP-USB	<b>WZR-OP-USB</b>
UltraAssist Profi, first license, CD with USB mini-dongle	LYU:WZX-UA-PEU-MINI	<b>WZX-UA-PEU-MINI</b>
UltraAssist Profi, second license, USB mini-dongle	LYU:WZX-UA-PFU-MINI	<b>WZX-UA-PFU-MINI</b>

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Ultrasonic heat and heating/cooling energy meters

UH50\_0.6..2.5 m<sup>3</sup>/h

The UH50-A.. heat meter and the UH50-C.. heat/combi meter acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, wear resistance, and long-term stability. The UH50.. transmits the current consumption value, the monthly values, the set day value, and error messages to the respective data collector.

The processor unit can be equipped with different sensors, different power supplies, and 2 communication modules.



The display informs the user about the amount of energy consumed.

The ultrasonic meters are used in residential or commercial buildings to acquire the amount of heat or heat/cooling energy consumed.

The standard meter is supplied without power supply and without communication (see accessories).

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5324
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Without, see accessories
Due Date	01.01
Temperature response threshold	Heat: 0.2 K Cold: 0.2 K
Measuring range, temperature	Processor unit: 0...180 °C Flow measuring section: 5...130 °C
Sensing element, temperature	Pt500
Sensor	Sensor type: DS 10x1 mm, length 27.5 mm
Communication	Without, see accessories
Mounting location	Meter: Return

#### Range overview UH50.. 0.6..2.5 m<sup>3</sup>/h

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	PN class	Cable length, sensor [m]	Display	Connect. thread	Type of Meter	Stock no.	Product no.
0.6	110	PN 16		kWh	G ¾"	Heat	S55561-F112	UH50-A05-00
0.6	110	PN 16	1.5	kWh	G ¾"	Heat Cooling	S55561-F122	UH50-C05-00
0.6	110	PN 25	1.5	kWh	G ¾"	Heat Cooling	S55561-F252	UH50-C06-00
1.5	110	PN 16	1.5	kWh	G ¾"	Heat	S55561-F113	UH50-A21-00
1.5	110	PN 16	1.5	kWh	G ¾"	Heat Cooling	S55561-F123	UH50-C21-00
1.5	110	PN 25	1.5	kWh	G ¾"	Heat Cooling	S55561-F253	UH50-C22-00
1.5	190	PN 16	1.5	kWh	G 1"	Heat	S55561-F180	UH50-A23-00
1.5	190	PN 25	1.5	kWh	G 1"	Heat Cooling	S55561-F254	UH50-C25-00
2.5	130	PN 16	1.5	kWh	G 1"	Heat	S55561-F114	UH50-A36-00
2.5	130	PN 16	1.5	kWh	G 1"	Heat Cooling	S55561-F124	UH50-C36-00
2.5	130	PN 25	1.5	kWh	G 1"	Heat Cooling	S55561-F255	UH50-C37-00
2.5	190	PN 16	1.5	kWh	G 1"	Heat	S55561-F181	UH50-A38-00
2.5	190	PN 25	1.5	kWh	G 1"	Heat Cooling	S55561-F256	UH50-C40-00

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

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Accessories see datasheet: N5324

UH50-C06-00, UH50-C22-00, UH50-C25-00, UH50-C37-00, UH50-C40-00

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; return sensor installation in measuring tube optional

Sensors: DS M10x1 mm, length = 27.5 mm, cable length = 1.5 m

Display: kWh

Other types:

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; the return sensor is integrated in the volume measuring section (internally, directly immersed).

Sensors: DS M10x1 mm, length = 27.5 mm, cable length = 1.5 m

Display: kWh

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Ultrasonic heat and heating/cooling energy meters 3.5...6 m<sup>3</sup>/h

UH50\_3.5..6 m<sup>3</sup>/h

The UH50-A.. heat meter and the UH50-C.. heat/combi meter acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, wear resistance, and long-term stability. The UH50.. transmits the current consumption value, the monthly values, the set day value, and error messages to the respective data collector.

The processor unit can be equipped with different sensors, different power supplies, and 2 communication modules.



The display informs the user about the amount of energy consumed.

The ultrasonic meters are used in residential or commercial buildings to acquire the amount of heat or heat/cooling energy consumed.

The standard meter is supplied without power supply and without communication (see accessories).

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5324
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Without, see accessories
Due Date	01.01
Measuring range, temperature	Processor unit: 0...180 °C Flow measuring section: 5...130 °C
Temperature response threshold	Heat: 0.2 K Cold: 0.2 K
Sensing element, temperature	Pt500
Sensor	Sensor type: DS 10x1 mm, length 38 mm
Communication	Without, see accessories
Mounting location	Meter: Return

#### Range overview UH50.. 3.5..6 m<sup>3</sup>/h

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	PN class	Cable length, sensor [m]	Display	Connect. thread	DN	Type of Meter	Stock no.	Product no.
3.5	260	PN 16	1.5	kWh	G 1¼"		Heat	S55561-F115	UH50-A45-00
3.5	260	PN 16	1.5	kWh	G 1¼"		Heat Cooling	S55561-F125	UH50-C45-00
3.5	260	PN 25	2.5	kWh	G 1¼"		Heat Cooling	S55561-F257	UH50-C47-00
6	260	PN 16	1.5	kWh	G 1¼"		Heat	S55561-F116	UH50-A50-00
6	260	PN 16	1.5	kWh	G 1¼"		Heat Cooling	S55561-F126	UH50-C50-00
6	260	PN 25	1.5	kWh		25	Heat Cooling	S55561-F258	UH50-C52-00

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

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Accessories see datasheet: N5324

#### UH50-C47-00

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; return sensor installation in measuring tube optional

Sensors: DS M10x1 mm, length = 38 mm, cable length = 2.5 m

Display: kWh

#### UH50-C52-00

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; the return sensor is not integrated in the volume measuring section.

Sensors: Ø 5.2x45 mm, cable length = 1.5 m

Display: kWh

#### Other types:

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; the return sensor is integrated in the volume measuring section (internally, directly immersed).

Sensors: DS M10x1 mm, length = 38 mm, cable length = 1.5 m

Display: kWh



## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Ultrasonic heat and heating/cooling energy meters 10 m<sup>3</sup>/h

UH50\_10 m<sup>3</sup>/h

The UH50-A.. heat meter and the UH50-C.. heat/combi meter acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, wear resistance, and long-term stability. The UH50.. transmits the current consumption value, the monthly values, the set day value, and error messages to the respective data collector.

The processor unit can be equipped with different sensors, different power supplies, and 2 communication modules.



The display informs the user about the amount of energy consumed.

The ultrasonic meters are used in residential or commercial buildings to acquire the amount of heat or heat/cooling energy consumed.

The standard meter is supplied without power supply and without communication (see accessories).

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5324
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Without, see accessories
Due Date	01.01
Measuring range, temperature	Processor unit: 0...180 °C Flow measuring section: 5...130 °C
Temperature response threshold	Heat: 0.2 K Cold: 0.2 K
Sensing element, temperature	Pt500
Sensor	Sensor type: d = 6 mm, length 100 mm
Communication	Without, see accessories
Mounting location	Meter: Return

#### Range overview UH50.. 10 m<sup>3</sup>/h

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	PN class	Display	Connect. thread	DN	Type of Meter	Stock no.	Product no.
10	300	PN 25	kWh		40	Heat	S55561-F117	<b>UH50-A61-00</b>
10	300	PN 25	kWh		40	Heat Cooling	S55561-F127	<b>UH50-C61-00</b>
10	300	PN 16	kWh	G 2"		Heat Cooling	S55561-F259	<b>UH50-C60-00</b>

Accessories see datasheet: N5324

#### UH50-C60-00

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; the return sensor is not integrated in the volume measuring section.

Sensors: Ø 6 mm, length = 100 mm, cable length = 2 m

Display: kWh

#### UH50-A61-00, UH50-C61-00

Design of processor unit: Split unit with ready wired control line of 1.5 m.

Connection of sensor: The sensor can be replaced; the return sensor is not integrated in the volume measuring section.

Sensors: Ø 6 mm, length = 100 mm, cable length = 5 m

Display: kWh

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### UH50\_15..25 m3/h



#### Ultrasonic heat and heating/cooling energy meters 15...25 m3/h

The UH50-A.. heat meter and the UH50-C.. heat/combi meter acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, wear resistance, and long-term stability. The UH50.. transmits the current consumption value, the monthly values, the set day value, and error messages to the respective data collector.

The processor unit can be equipped with different sensors, different power supplies, and 2 communication modules.

The display informs the user about the amount of energy consumed.

The ultrasonic meters are used in residential or commercial buildings to acquire the amount of heat or heat/cooling energy consumed.

The standard meter is supplied without power supply and without communication (see accessories).

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5324
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Without, see accessories
Due Date	01.01
Measuring range, temperature	Processor unit: 0...180 °C Flow measuring section: 5...130 °C
Temperature response threshold	Heat: 0.2 K Cold: 0.2 K
Sensing element, temperature	Pt500
Sensor	Sensor type: d = 6 mm, length 100 mm
Communication	Without, see accessories
Mounting location	Meter: Return

#### Range overview UH50.. 15..25 m3/h

Nominal flow rate [m³/h]	Mounting length [mm]	PN class	Cable length, sensor [m]	Display	DN	Type of Meter	Stock no.	Product no.
15	270	PN 25	5	MWh	50	Heat	S55561-F118	<b>UH50-A65-00</b>
15	270	PN 25	5	MWh	50	Heat Cooling	S55561-F128	<b>UH50-C65-00</b>
25	300	PN 25	5	MWh	65	Heat	S55561-F119	<b>UH50-A70-00</b>
25	300	PN 25	5	MWh	65	Heat Cooling	S55561-F129	<b>UH50-C70-00</b>

Accessories see datasheet: N5324

Design of processor unit: Split unit with ready wired control line of 3 m.

Connection of sensor: The sensor can be replaced; the return sensor is not integrated in the volume measuring section.

Sensors: Ø 6 mm, length = 100 mm, cable length = 5 m

Display: MWh

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Ultrasonic heat and heating/cooling energy meters 40...60 m<sup>3</sup>/h

UH50\_40..60 m<sup>3</sup>/h

The UH50-A.. heat meter and the UH50-C.. heat/combi meter acquire the volume flow statically based on the ultrasonic measuring principle. They are available as wall-mounting versions in different sizes. The meters excel in great measuring accuracy, wear resistance, and long-term stability. The UH50.. transmits the current consumption value, the monthly values, the set day value, and error messages to the respective data collector.

The processor unit can be equipped with different sensors, different power supplies, and 2 communication modules.



The display informs the user about the amount of energy consumed.

The ultrasonic meters are used in residential or commercial buildings to acquire the amount of heat or heat/cooling energy consumed.

The standard meter is supplied without power supply and without communication (see accessories).

The meters are supplied with Operating and Mounting Instructions in the following languages: Bulgarian, Chinese, Croatian, Czech, Dutch, English, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Russian, Slovakian, Slovenian, Spanish, and Turkish

Data sheet	N5324
Measurement accuracy	Heat: MID class 2 Cold: EN 1434
Standard	EN 1434
Voltage supply	Without, see accessories
Due Date	01.01
Measuring range, temperature	Processor unit: 0...180 °C Flow measuring section: 5...130 °C
Temperature response threshold	Heat: 0.2 K Cold: 0.2 K
Sensing element, temperature	Pt500
Sensor	Sensor type: d=6 mm, length 150 mm
Communication	Without, see accessories
Mounting location	Meter: Return

#### Range overview UH50.. 40..60 m<sup>3</sup>/h

Nominal flow rate [m <sup>3</sup> /h]	Mounting length [mm]	PN class	Cable length, sensor [m]	Display	DN	Type of Meter	Stock no.	Product no.
40	300	PN 25	5	MWh	80	Heat	S55561-F120	<b>UH50-A74-00</b>
40	300	PN 25	5	MWh	80	Heat Cooling	S55561-F130	<b>UH50-C74-00</b>
60	360	PN 25	5	MWh	100	Heat	S55561-F121	<b>UH50-A83-00</b>
60	360	PN 25	5	MWh	100	Heat Cooling	S55561-F131	<b>UH50-C83-00</b>

Accessories see datasheet: N5324

Design of processor unit: Split unit with ready wired control line of 3 m.

Connection of sensor: The sensor can be replaced; the return sensor is not integrated in the volume measuring section.

Sensors: Ø 6 mm, length = 150 mm, cable length = 5 m

Display: MWh

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Communication modules

Product Title	Stock no.	Product no.
Pulse module with 2 channels	S55563-F107	WZU-P2
M-bus module for heat and heat/cooling energy meters, generation 4	S55563-F110	WZU-MB G4
M-bus module with 2 pulse inputs for heat and heat/cooling energy meters, generation 4	S55563-F108	WZU-MI
GPRS module with external antenna (magnetic attachment) and power pack 110...230 V	LYU:WZU-GPRS	WZU-GPRS
GPRS module with external antenna (for screw mounting) and power pack 110...230 V	LYU:WZU-GPRS-ANT	WZU-GPRS-ANT
Analog module	LYU:WZU-AM	WZU-AM
Power pack for WZU-AM, WZU-485E-BAC and WZU-485E-MOD	LYU:WZU-NE24	WZU-NE24
Modul Modbus RTU RS485	LYU:WZU-485E-MOD	WZU-485E-MOD
BACnet module RS-485 (MS/TP)	LYU:WZU-485E-BAC	WZU-485E-BAC
LoRaWAN communication module	LYU:WZU-LR	WZU-LR
LoRaWAN comm. module, ext. antenna	LYU:WZU-LR-EXT	WZU-LR-EXT
NB-IoT module	LYU:NB-IoT-EXT	NB-IoT-EXT
Antenna with magnetic foot	LYU:WZU-ANT-MAG	WZU-ANT-MAG
Wall mounted antenna	LYU:WZU-ANT-WALL	WZU-ANT-Wall

#### Power packs

Product Title	Stock no.	Product no.
Power supply AC 110/230 V for UH50..	S55563-F154	WZU-AC110/230-15
Power supply AC 110/230 V for UH50..	LYU:WZU-AC110/230-50	WZU-AC110/230-50
Power pack AC/DC 24 V	S55563-F156	WZU-ACDC24-50
Standard battery (2x AA) for 6 years, complete with fastener	S55563-F114	WZU-BA+GUM
Universal battery (D-cell), life 6 and 16 years respectively	S55563-F113	WZU-BDS

#### Temperature sensors (pairs)

Product Title	Stock no.	Product no.
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 1.5 m	LYU:WZU5-2815	WZU5-2815
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 27.5 mm, cable length 2.5 m	LYU:WZU5-2825	WZU5-2825
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 1.5 m	LYU:WZU5-3815	WZU5-3815
Pair of temperature sensors Pt500, DS M10x1 mm, sensor length 38 mm, cable length 2.5 m	LYU:WZU5-3825	WZU5-3825
Pair of temperature sensors Pt500, PS Ø5.2x45 mm, cable length 1.5 m	LYU:WZU5-4515	WZU5-4515
Pair of temperature sensors Pt500, PS Ø 5.2x45 mm, cable length 5 m	LYU:WZU5-4550	WZU5-4550
Pair of temperature sensors Pt500, PL Ø 6x100 mm, cable length 2 m	LYU:WZU5-1020	WZU5-1020
Pair of temperature sensors Pt500, PL Ø 6x100 mm, cable length 5 m	LYU:WZU5-1050	WZU5-1050
Pair of temperature sensors Pt500, PL Ø 6x150 mm, cable length 2 m	LYU:WZU5-1520	WZU5-1520
Pair of temperature sensors Pt500, PL Ø 6x150 mm, cable length 5 m	LYU:WZU5-1550	WZU5-1550

#### Fittings

Product Title	Stock no.	Product no.
Installation kit G ¾", for threaded connection R ½"	S55563-F124	WZM-E34
Mounting kit G1", for threaded connection R ¾"	S55563-F123	WZM-E1
Mounting kit G2 x R 1½"	LYU:WZM-E2.1	WZM-E2.1
Installation kit G1 1/4 x R1"	S55563-F125	WZM-E54
Adapter from 110 mm G ¾" to 130 mm G ¾", incl. gaskets	LYU:WZM-V130	WZM-V130
Adapter from 110 mm G ¾" to 130 mm G 1B", incl. 4 gaskets	LYU:WZM-V130.G1	WZM-V130.G1
Adapter from 110 mm G ¾" to 165 mm G ¾", incl. 1 gasket	LYU:WZM-VE165	WZM-VE165
Adapter from 110 mm G ¾" to 190 mm G 1B", incl. gaskets	LYU:WZM-V190	WZM-V190
Mounting set 110 mm	LYU:WZT-MS110	WZT-MS110
Mounting set 130 mm	LYU:WZT-MS130	WZT-MS130

## Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Spacers and sealing disks

Product Title	Stock no.	Product no.
Spacer for heat meter DN20, length 190 mm, PN16, incl. 2 flat gaskets	BPZ:WZM-F190	<b>WZM-F190</b>
Spacer for heat meter DN25, length 260 mm, PN16, incl. 2 flat gaskets	BPZ:WZM-F260	<b>WZM-F260</b>
Sealing disk G 2", for threaded connection R 1½"	LYU:9060944006	<b>9060944006</b>
Sealing disk for DN 25 flange	LYU:9060944022	<b>9060944022</b>
Spacer DN 50, length 270 mm, PN16, incl. 2 flat gaskets	LYU:WZM-F270	<b>WZM-F270</b>
Spacer DN 40, length 300 mm, PN16, incl. 2 flat gaskets	LYU:WZM-F300	<b>WZM-F300</b>
Spacer DN 65, length 300 mm, PN16, incl. 2 flat gaskets	LYU:WZM-F300.65	<b>WZM-F300.65</b>
Spacer DN 80, length 300 mm, PN16, incl. 2 flat gaskets	LYU:WZM-F300.80	<b>WZM-F300.80</b>
Spacer DN 100, length 360 mm, PN25, incl. 2 flat gaskets	LYU:WZM-F360.100-25	<b>WZM-F360.100-25</b>
Spacer G ¾", length 110 mm, incl. 2 flat gaskets	LYU:WZM-G110	<b>WZM-G110</b>
Spacer G 1", length 130 mm, incl. 2 flat gaskets	LYU:WZM-G130	<b>WZM-G130</b>
Spacer G 1", length 190 mm, incl. 2 flat gaskets	LYU:WZM-G190	<b>WZM-G190</b>
Spacer G 1¼", length 260 mm, incl. 2 flat gaskets	LYU:WZM-G260	<b>WZM-G260</b>
Spacer G 2", length 300 mm, incl. 2 flat gaskets	LYU:WZM-G300.1	<b>WZM-G300.1</b>
Ball valve Rp 1¼" with union nut G 1¼"	LYU:WZT-K54-54	<b>WZT-K54-54</b>
Ball valve Rp 2" with union nut G 2"	LYU:WZT-K2-2	<b>WZT-K2-2</b>
Sealing disk G ¾", for threaded connection R ½"	LYU:9060944002	<b>9060944002</b>
Sealing disk G 1", for threaded connection R ¾"	LYU:9060944003	<b>9060944003</b>
Sealing disk G 1¼", for threaded connection R 1"	LYU:9060944004	<b>9060944004</b>
Sealing disk for flange DN 40	LYU:9060944024	<b>9060944024</b>
Sealing disk for flange DN 50	LYU:9060944025	<b>9060944025</b>
Sealing disk for flange DN 65	LYU:9060944026	<b>9060944026</b>
Sealing disk for flange DN 80	LYU:9060944027	<b>9060944027</b>
Sealing disk for flange DN 100	LYU:9060944028	<b>9060944028</b>

#### Ball valves

Product Title	Stock no.	Product no.
Ball valve R ½" with union nut G ¾"	LYU:WZT-K12-34	<b>WZT-K12-34</b>
Ball valve R ¾" with union nut G ¾"	LYU:WZT-K34-34	<b>WZT-K34-34</b>
Ball valve R ¾" with union nut G 1"	LYU:WZT-K34-1	<b>WZT-K34-1</b>
Ball valve R 1" with union nut G 1"	LYU:WZT-K1-1	<b>WZT-K1-1</b>
Ball valve Rp ½" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F104	<b>WZT-K12</b>
Ball valve Rp ¾" for sensor DS M10x1 mm, length = 27.5 mm or Ø 5.2x45 mm	S55563-F120	<b>WZT-K34</b>
Ball valve Rp 1" for sensor DS M10x1 mm, length 27.5 mm or Ø 5.2x45 mm	S55563-F119	<b>WZT-K1</b>
Ball valve Rp 1¼" for sensors 38 mm M10x1	LYU:WZT-K54	<b>WZT-K54</b>
Ball valve Rp 1½" for sensors 38 mm M10x1	LYU:WZT-K112	<b>WZT-K112</b>

#### Accessories

Product Title	Stock no.	Product no.
Adapter G 3/8 B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G 3/8"	LYU:WZT-A38	<b>WZT-A38</b>
Mounting plate for top hat rail	LYU:WZU-MH	<b>WZU-MH</b>
Plate for wall mounting	LYU:WZU-WH	<b>WZU-WH</b>
Adapter M10x1 mm x G 1/2 B" for sensor DS M10x1 mm / d=5.2 x 45 mm	S55563-F116	<b>WZT-A12</b>
Adapter G ¾ B" with threaded hole to install sensor DS M10x1 mm, incl. gasket G ¾"	LYU:WZT-A34	<b>WZT-A34</b>
Protection pocket G ½ B", length 35 mm, made of brass, for temperature sensor Ø 5.2x45 mm	S55563-F103	<b>WZT-M35</b>
Protection pocket G ½ B", brass, Ø 5.2x50 mm, for temperature sensor Ø 5.2x45 mm	LYU:WZT-M50	<b>WZT-M50</b>
Protection pocket G ½ B", stainless steel, with threaded hole G ¼", L = 100 mm	S55563-F117	<b>WZT-S100</b>
Protection pocket G ½ B", stainless steel, with threaded hole G ¼", L = 150 mm	S55563-F118	<b>WZT-S150</b>
Pocket G ½ B", stainless steel, 5.2 x 37 mm, with seal	LYU:WZT-S43V	<b>WZT-S43V</b>
Adapter set brass for sensor 5.2 x 45 mm	LYU:WZT-FA	<b>WZT-FA</b>
Adapter kit for sensor Ø 5.2x45 mm, incl. 2 O-rings	LYU:9956230	<b>9956230</b>
Mounting set G ½ B" with threaded hole G ¼" for direct mounting of long sensors	LYU:WZT-A100	<b>WZT-A100</b>

## Meters

### Ultrasonic heat/cooling energy meters

### Ultrasonic heat/cooling energy meters UH50..

#### Accessories

Product Title	Stock no.	Product no.
Sealing disk Ø 8.6/5.3, size 1 mm, for temperature sensor DS M10x1 mm	LYU:9060944001	<b>9060944001</b>
Sealing disk Ø 8.6/5.3, size 1.5 mm, for temperature sensor DS M10x1 mm made of copper	LYU:9060950	<b>9060950</b>
Sealing disc ½" made of copper	LYU:9060948	<b>9060948</b>
Welding sleeve G ½", 45° to the pipe axis, with threaded hole G ½"	S55563-F122	<b>WZT-G12</b>
Welding sleeve G ½", 90° to the pipe axis, with threaded hole G ½"	LYU:WZT-GLG	<b>WZT-GLG</b>
Welding sleeve with threaded hole for temperature sensor DS M10x1 mm	S55563-F121	<b>WZT-G10</b>
Adapter for ball valve to install sensor DS M10x1 mm, length 38 mm	LYU:WZT-KA	<b>WZT-KA</b>
Self-lock seal with sealing wire	LYU:9956186001	<b>9956186001</b>
Mounting plate for wall mounting	LYU:WZU-WA	<b>WZU-WA</b>

#### Programming accessories for ultrasonic meters

Product Title	Stock no.	Product no.
Optical read head with USB interface for PC	LYU:WZR-OP-USB	<b>WZR-OP-USB</b>
UltraAssist Profi, first license, CD with USB mini-dongle	LYU:WZX-UA-PEU-MINI	<b>WZX-UA-PEU-MINI</b>
UltraAssist Profi, second license, USB mini-dongle	LYU:WZX-UA-PFU-MINI	<b>WZX-UA-PFU-MINI</b>

## Systems for remote readout Automatic Meter Reading System

### AMR wireless system

AMR



The Automatic Meter Reading system (AMR) is an innovative system for wireless remote readout of consumption data. It consists of network nodes (data collectors) which form a network within the premises to collect all consumption data transmitted by the metering devices, to store them and to make them available for further handling. The network nodes can be read either locally or by making use of Internet technologies, also from the office. The types of consumption meters included in the AMR system are heat meters, water meters and heat cost allocators. A pulse adapter is available, enabling third-party meters to be integrated into the system. The AMR system excels in versatility, ease of installation and maintenance, and offers a large number of readout choices matched to customer needs. The system components are suited for installation in small premises (e.g. 3 apartments) and in large plant comprising several buildings. Installation of the wireless network is largely automatic, including self-configuration.

**Functioning principle:** The system automatically configures itself during installation, forming a network. The battery-powered network nodes receive and store the consumption data from the metering devices installed within their range. In the network, the measured values received from all metering devices are constantly updated. This means that every network node holds the consumption data of the entire plant so that readout can take place at any of the nodes. For local readout, a laptop can be connected to any of the network nodes via cable, or an optional wireless module can be used. This works within the range of each network node. Depending on the local situation, it may not even be necessary to enter the house for making the readout. If AMR plant shall be read out from a remote location, one of the network nodes is to be used with a gateway. This gateway then offers a number of communication choices: Data can be transmitted directly to the billing systems via GSM network, broadband cable network or computer network. The user can choose the transmission medium he prefers.

Data sheet N2870

Stock no.	Product no.
JXF:AMR	AMR

### Network node

WTT662-BA1100



The network node WTT662.. is a component of an M-bus radio network. It receives the radio telegrams transmitted by the consumption meters and stores them locally. The WTT662.. can be read out either locally via M-bus or USB or from a remote location via gateway.

Data sheet	A6V11731517
Operating voltage	3.6 V
Voltage supply	Lithium battery
Battery life	Power supply main battery: Min. 5 years Power supply backup battery: Min. 10 years
Communication	C-mode S-mode
Ambient temperature, operation	-5...+55 °C
Ambient temperature, storage	-5...45 °C
Degree of protection	IP20
Weight (net)	0.810 kg
Color	White
Dimensions (W x H x D)	200 x 200 x 57.1 mm

Stock no.	Product no.
S55563-F157	WTT662-BA1100

## Meters

### Systems for remote readout Automatic Meter Reading System

#### WTT667-AE0020

#### M-bus RF gateway WTT667-AE0020



The M-bus RF gateway WTT667-AE0020 collects consumption data from the entire network and transmits it a maximum of 4 times a month via the portal to a defined client.

Reads a max. 2,500 meters per gateway. Meter data is securely transmitted to the portal in the GSM/UMTS band.

Data transmission via GPRS/EDGE/UMTS/HSPA (Quad-Band 900, 1,800 and 2,100 MHz) as well as connectivity through national and international roaming transmits data to the corresponding service throughout Europe at no extra charge. Battery-powered means no additional installation required (service life of 5 years) and GPRS/EDGE/UMTS/HSPA communication.

Data sheet	A6V11918443
Operating voltage	3.0 V
Voltage supply	Lithium battery
Battery life	Min. 5 years
Ambient temperature, operation	-5...+45 °C
Ambient temperature, storage	-5...45 °C
Degree of protection	IP42
Dimensions (W x H x D)	203 x 209 x 58.5 mm

Stock no. Product no.

S55563-F160

**WTT667-AE0020**

#### WFZ661

#### Add-on radio module WFZ661 for water meters WF.30.. / WM.10..



Radio adapter for mechanical modularis water meters (WFx30, WMx10). Adapter acquires and processes the metering pulses of the radio-ready mechanical water meters WFx30../WMx10.. and transmits AMR and walk-by telegrams in a parallel way.

Data sheet	A6V10986918
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Stock no. Product no.

S55563-F147

**WFZ661**

#### Tools for network nodes

Product Title	Stock no.	Product no.
M-bus programming adapter (USB)	JXF:WFZ.MBM-USB	<b>WFZ.MBM-USB</b>
USB programming adapter	JXF:RNNPH0010020	<b>RNNPH0010020</b>
M-bus adapter plug for WFZ.MBM-USB	JXF:RNNPH0020010	<b>RNNPH0020010</b>

#### Batteries for network nodes and gateways

Product Title	Stock no.	Product no.
Battery for WTT..	JXF:WTZ.BAT	<b>WTZ.BAT</b>
Backup battery for WTX16..	JXF:FBCRAA/KS	<b>FBCRAA/KS</b>



## RF converter

WTX660-E05060

The WTX660.. RF converter receives and processes data from heat cost allocators, heat and water meters within a M-bus radio system.

- Storage for up to 500 metering devices
- Repeater on the mesh system for up to 2,000 additional wireless devices
- Coverage of distances up to 500 meters outdoors and 40 meters in buildings
- Supports devices using AES128 encryption
- Mains power AC 230 V
- Optimum location function
- LED to indicate signal strength



The WTX660-E05060 can only be used in combination with the WTV676-HB6035.

Data sheet	A6V11135903
Operating voltage	AC 100...240 V
Voltage supply	Lithium battery
Frequency	50/60 Hz
Power consumption	Max. 4.5 W
Ambient temperature, operation	-20...+55 °C
Ambient temperature, storage	-25...85 °C
Degree of protection	IP40 per EN60529
Weight (net)	1.46 kg
Color	White
Dimensions (W x H x D)	160 x 160 x 35 mm

Stock no.	Product no.
S55563-F149	<b>WTX660-E05060</b>

## Radio module with integrated antenna for WfX5.. meters

WFZ662

The walk-by add-on module acquires and handles the consumption data and service information delivered by the WfX5.. heat and heat/cooling meters and passes it on parallelly to the walk-by and AMR system.



Data sheet	N5323
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Stock no.	Product no.
S55563-F153	<b>WFZ662</b>

## Tools

Product Title	Stock no.	Product no.
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams	JXF:WFZ.PS	<b>WFZ.PS</b>
Torque Screwdriver, Torx Plus™	JXF:FZ201-009	<b>FZ201-009</b>

## Software

Product Title	Stock no.	Product no.
ACT50 – Readout and parameterization software	JXF:ACT50	<b>ACT50</b>
ACT21 - Parameterization software	JXF:ACT21	<b>ACT21</b>
ACS26 – AMR remote readout software	JXF:ACS26	<b>ACS26</b>
ACT26 – Commissioning and service software	JXF:ACT26	<b>ACT26</b>

## Meters

### Systems for remote readout Walk-by radio system

#### walk-by



#### Walk-by radio system

Simple, fast and reliable. These three attributes are the most apt descriptions of the walk-by system. After all, it provides values for billing consumption easily, quickly and dependably. And the meter-reader does not even have to enter the tenant's flat - on the reading date, he only has to enter the commonly accessible area of the property.

For smaller properties, he can even collect data outside of the building. That not only benefits the meter-reader (who does not have to plan and mount data collectors any more), but also tenants. They no longer have to agree on a date for reading or even be there on the readout day. It couldn't be simpler. At the set reading time, the meters send current consumption data at short intervals. The meter-reader only has to enter the building or even just walk around it with his mobile meter-reading system. This consists of a mobile data collector and a laptop with application software. The data collector collects the radio telegrams and, after a plausibility check, sends them wirelessly to the laptop via the Bluetooth interface. The software on the laptop not only manages the data, it also shows the meter-reader the current progress of the process. After having received all data, the meter-reader can then leave the property. Back at his workplace, the meter-reader only has to export the data saved and read them for example into a billing program. If data is needed on a regular basis – meaning permanently mounted data collectors are to be retrofitted with an interface for remote data transmission – the measuring devices can be reprogrammed from the walk-by system to the stationary AMR system from Siemens at any time. This means that readout values can be called up on a daily basis without entering the property.

Within the walk-by system there are walk-by heat cost allocators and walk-by radio adapters available. More devices on request.

Stock no.	Product no.
JXF:walk-by	<b>walk-by</b>

#### WFZ661

#### Add-on radio module WFZ661 for water meters WF.30.. / WM.10..



Radio adapter for mechanical modularis water meters (WFx30, WMx10). Adapter acquires and processes the metering pulses of the radio-ready mechanical water meters WFx30../WMx10.. and transmits AMR and walk-by telegrams in a parallel way.

Data sheet [A6V10986918](#)

Stock no.	Product no.
S55563-F147	<b>WFZ661</b>

#### WFZ662

#### Radio module with integrated antenna for WFX5.. meters



The walk-by add-on module acquires and handles the consumption data and service information delivered by the WFX5.. heat and heat/cooling meters and passes it on parallelly to the walk-by and AMR system.

Data sheet [N5323](#)

Stock no.	Product no.
S55563-F153	<b>WFZ662</b>

#### Tools and software

Product Title	Stock no.	Product no.
ACT50 – Readout and parameterization software	JXF:ACT50	<b>ACT50</b>
Walk-by readout software	LYU:ACT46	<b>ACT46</b>
Mobile data collector	JXF:WTT665-BD5000	<b>WTT665-BD5000</b>
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
Triggering tool for radio telegrams	JXF:WFZ.PS	<b>WFZ.PS</b>
Torque Screwdriver, Torx Plus™	JXF:FZ201-009	<b>FZ201-009</b>

## M-Bus metering system

M-Bus

The M-Bus Metering System is a proven system used for the remote readout of consumption data. It conforms to EN 1434/3. The system contains all components required for reading M-bus-compatible consumption meters via an easy-to-install, interference-proof 2-wire bus. The consumption meters available within the M-Bus Metering System are heat meters and water meters. A pulse adapter enables third-party meters to be integrated into the system. M-bus-compatible meters of other manufacture can also be read out after appropriate testing. The M-Bus Metering System excels in immunity, ease of installation and maintenance plus a large number of readout choices matched to customer needs. The system components are suited for installation in small premises (e.g. 3 apartments) and in large plant comprising several buildings.

Data sheet

N5361

Stock no.

Product no.

BPZ:M-Bus

M-Bus

## M-bus web server

WTV676-HB6035

The M-bus web server reads devices connected directly to the web server, devices connected to the web server via level converters as well as devices connected to the web server via RF converters.

Web server can be used:

- Alone with up to 20 directly connected, wired M-bus devices
- As master on a M-bus network with up to six parallel connected level converters per line. Per line up to 250 M-bus devices (max. 250 M-bus meters, max. 250 RVD converters) can be connected.
- As a master on an M-bus wireless network with up to 23 RF converters, each with up to 500 wireless devices

The web server can read out up to 2,500 wireless devices and up to 500 wired devices. It records the data from the connected M-bus devices, can evaluate the data, and sends email notifications on events and alarms.

A PC/Internet browser reads the data and log files either locally over Ethernet or from anywhere over the Internet. In addition, the report files can be periodically transmitted with device data to an email recipient or to an FTP server.

An email can be sent on events and alarms.

The web server can be integrated in the Synco IC-Cloud. This permits the periodic upload of invoicing and trend data as well as alarm messages to the cloud per customized settings as well as distributing the information to the corresponding customers via email.



Data sheet

A6V11157961

Operating voltage

AC/DC 24 V +/- 10 %

Frequency

50/60 Hz

Power consumption

Max. 15 VA

Ambient humidity, operation

5...95 % r. F.

Mounting

DIN rail

Weight (net)

2.44 kg

Stock no.

Product no.

S55563-F150

WTV676-HB6035

Systems for remote readout  
M-bus system

**WTX631-GA0090**



**M-bus Level Converter/Repeater 250**

The level converter/repeater WTX631-GA0090 is the interface between M-bus device and a read system. It consists of a level converter and the associated power supply.

- The level converter and associated power supply form a unit: No addition transformer or auxiliary power required
- Connect up to 250 M-bus devices (max. 250 simply M-bus loads)
- Can be used with the M-bus web server WTV676.., PXC devices, other M-bus read / configuration systems
- Up to 6 level converters connected in parallel on one M-bus network
- Local data reading of M-bus devices via RS-232 or RS-485 interface
- Remote reading of M-bus devices via M-bus web server WTV676.. (Cloud)

Data sheet	A6V11742346
Operating voltage	Power supply: AC 110...240 V Level converter: DC 24 V
Frequency	50/60 Hz
Power consumption	6 W + 0.07 W for each connected M-bus device
Ambient temperature, operation	-20...+55° C
Mounting	DIN rail
Degree of protection	IP20
Weight (net)	0.392 kg
Dimensions (W x H x D)	Per device: 110 x 71 x 62 mm

Stock no. Product no.

S55563-F159 **WTX631-GA0090**

**WTV531-GA5060**



**Level converter**

The level converter WTV531-GA5060 is an interface for use between M-bus meters and reading systems. The meter data can be read on site via PC software ACT531 or via internet using the optional web server. The level converter can read up to 60 M-bus devices (60 M-bus loads).

It is used:

- As a master on an M-bus network with up to 60 meters. It can read data on site from the level converter with the help of PC software ACT531
- As a slave to extend the M-bus network to up to 6 level converters (1 master and 5 slaves) with up to 60 devices each. It can read out a maximum of 360 M-bus loads and a maximum of 1,000 logical meters. Data are read locally via the master level converter
- As a slave on the optional M-bus web server to read data from remote locations

Data sheet	A6V10844290
Operating voltage	24 V AC/DC
Frequency	50/60 Hz
Power consumption	Max. 12 VA
Weight (net)	0.166 kg

Stock no. Product no.

S55563-F145 **WTV531-GA5060**

**Software and Tools**

Product Title	Stock no.	Product no.
ACT50 – Readout and parameterization software	JXF:ACT50	<b>ACT50</b>
Readout software for WTV531-GA5060 level converter	JXF:ACT531	<b>ACT531</b>
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	<b>WFZ.IRDA-USB</b>
M-bus programming adapter (USB)	JXF:WFZ.MBM-USB	<b>WFZ.MBM-USB</b>
USB programming adapter	JXF:RNNPH0010020	<b>RNNPH0010020</b>
M-bus adapter plug for WFZ.MBM-USB	JXF:RNNPH0020010	<b>RNNPH0020010</b>

**M-bus add-on module for water meters WF.30.. / WM.10..**

The M-bus add-on module is used to integrate a mechanical watermeter WFx30.. / WMx10..in an M-bus system. It can be retrofitted at any time.

Data sheet A6V11991477

**WFZ311**



Stock no.	Product no.
S55563-F158	<b>WFZ311</b>

**M-bus add-on module for WFx5.. meters**

The add-on module acquires and processes the consumption data and service information from the WFx5.. heat and heat/cooling energy meter. It is periodically read out by an M-bus master.

Data sheet N5323

**WFZ51**



Stock no.	Product no.
S55563-F131	<b>WFZ51</b>

**M-bus pulse adapter**

Module for acquiring and storing the pulses received from consumption meters with pulse output. It can handle pulses from heat, gas, hot water, chilled water, electricity or hours run meters.

Data sheet N5383

**AEW310.2**

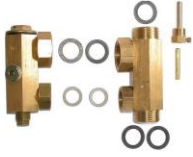


Stock no.	Product no.
S55563-F130	<b>AEW310.2</b>

## Meters

### Synergry control and metering system Mounting kit for WRV81/84 replacement

#### ALG80WRI



#### Mounting kit for WRV81/84 replacement

Using the ALG80WRI, heat meter and small valve (complete with actuator) can be installed in very confined spaces, analogous to the WRV mounting dimensions.  
The ALG80WRI consists of 2 hydraulic diversion pieces with fittings, a built-in immersion sleeve and the necessary sealings.

Data sheet N2803

Stock no. Product no.

BPZ:ALG80WRI **ALG80WRI**

#### ALG83WRI



#### Mounting kit for WRV83 replacement

Using the ALG83WRI, a WRV83 valve can be hydraulically replaced by a heat meter without having to modify the existing piping.  
The ALG83WRI consists of 2 threaded adapters (from 3/4" to 1"), an immersion sleeve and the necessary sealings.

Data sheet N2803

Stock no. Product no.

BPZ:ALG83WRI **ALG83WRI**

#### ALG10/20



#### Mounting kit

Mounting kit for zone valve VVP47.10...; to be applied when replacing a valve WRV8... by an interface WRI80.

Data sheet N2803  
Warranty 2 Years

Stock no. Product no.

BPZ:ALG10/20 **ALG10/20**

**Synergyr control and metering system  
Mounting kit for WRV83 replacement**

**Mounting kit for WRV83 replacement**

**ALG83WRI**

Using the ALG83WRI, a WRV83 valve can be hydraulically replaced by a heat meter without having to modify the existing piping.  
The ALG83WRI consists of 2 threaded adapters (from 3/4" to 1"), an immersion sleeve and the necessary sealings.



Data sheet N2803

Stock no. Product no.

	BPZ:ALG83WRI	ALG83WRI
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**Published by  
Siemens Switzerland Ltd**

Smart Infrastructure  
Global Headquarters  
Theilerstrasse 1a  
6300 Zug  
Switzerland  
Tel +41 58 724 24 24

**For the U.S. published by  
Siemens Industry Inc.**

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Suite 450  
Alpharetta, GA 30005  
United States

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