Catalogue 2019/2020

Product and Systems Information

SAUTER

Creating Sustainable Environments.

SAUTER goes smart!

Dear Sir/Madam,
Dear Business Partner,

SAUTER has set the course for digitalisation in building automation: With the **new SAUTER modulo 6 system** we are building bridges between tried and tested technology in a building and the latest trends of digitalisation: **the cloud and IoT.**

The automation station modulo 6 breaks with traditional thinking in terms of separate building systems! The world of the "Internet of Things" (IoT) removes barriers to communication. modulo 6 connects with the cloud and with IoTs just as naturally and securely as with the existing HVAC system. **The system speaks the languages for the networked buildings of the future** but still has its roots in tried-and-tested technology. Which means it uses the specialised communication protocols of heating, ventilation, air conditioning, lighting and energy.

We take **the protection of your investment** seriously: Control and regulation programs from the modulo 5 generation running in existing operation can be used and expanded in modulo 6 – they can not only run on modulo 6 but can complete their tasks in parallel and separately. The system also enables seamless **(interface-free) integration into the room automation**, including control of sunshading. We have expanded our room controllers ecos504/505 with the digital communication modules SMI (blind control), DALI (light control) and Modbus (integration of sensors and actuators).

During the development of modulo 6 we paid particular attention to providing a high level of user-friendliness. SAUTER modulo 6 can be operated intuitively! It connects via Bluetooth to a smartphone or tablet. A clear app enables access to measured values, control values and system parameters. As an alternative to smartphone operation, modulo 6 also has a local operating unit (LOI) with a high-resolution graphical colour display that can be used remotely.

We are also presenting two new room operating units that surpass everything that has gone before in terms of design and function. The ecoUnit365 room operating unit with its intuitively operated, **elegant touch interface** will immediately make you feel at home. And the new ecoUnit355 with its **expansive backlit display** in combination with the individually programmable push-button unit meets the highest requirements of top architects.

With the latest version of **SAUTER Vision Center** (SVC) we round off the user-friendliness and the broad functionality of the overall system. With the **Scenario Manager** from SVC you automate the operation of your buildings and systems. The **Maintenance Module** optimize your maintenance process and quickly detect any weaknesses or failure threats. The interface of SVC, based on HTML5 technology, allows you to create individual cockpits and dashboards. This provides you with an immediate overview of the state of all the building technology!

SAUTER is also continuously expanding its range of new digital field devices. For example, the compact **eValveco flow control system** always supplies the systems with the specified energy quantity regardless of fluctuating pressure conditions. You save all the costs of time-consuming hydronic balancing and annual check-ups.

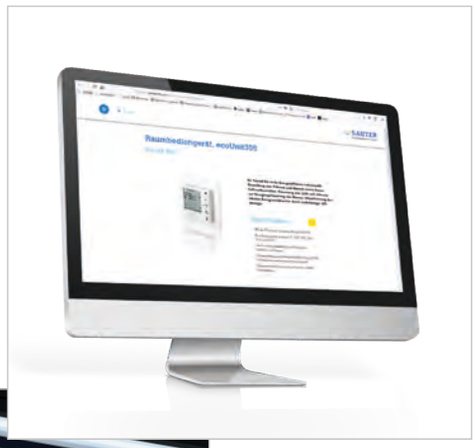
SAUTER will continue to make new developments. Our innovation pipeline is full of projects. We will also be making new products available in the usual digital formats for your **planning with BIM**. Take a look at our specialised website, **SAUTER Building Information Modeling**, under bim.sauter-controls.com.

Our employees all over the world are on hand to carry out the successful implementation of your ideas!

Werner Karlen
CEO

The **new SAUTER catalogue** – also online.

All product information on a PC, tablet or smartphone.
On the SAUTER website, you will find the catalogue as a Pageflip for electronic browsing and as a PDF for downloading. A QR code in the catalogue takes you directly to the relevant product details on the web.



Product information on the web

You will find more detailed product information on our website. It contains the relevant product data sheets, material declarations, fitting instructions, manuals and operating instructions for all of our products.

Displaying info on mobile devices via QR code

Using the QR code on your smartphone or tablet allows you to access more detailed information on the internet. Simply scan the QR code in the footer and call up additional information (a QR code app is required). In Pageflip and PDF files, the QR code links to the information.

Contents

Building automation combines the heating, ventilation, climate and electrical supply to form a digitally networked system and ensures comfort and well-being. The controlled and targeted use of energy, water and air leads to low operating costs: creating sustainable environments.

With digitalisation and the digital transformation, automation technology is also developing further.

Information and data acquisition, maximum mobility and the demand to access "things" from everywhere have led to the "Internet of Things". We combine applications and technologies from industrial automation with "Industry 4.0" and home automation (Smart Home) to create the "Building IoT" for "Smart Buildings".

With the help of SAUTER BIM data ("Building Information Modelling"), architects, planners and builders lay the foundation stone for the efficient and long-lasting operation of buildings right from the start.

Around the world and around the corner

With SAUTER specialists in over 70 countries, we optimise the climatic conditions and well-being factor of environments all over the world. Our local sales organisations ensure that our expertise is always close at hand. As an independent company we are able to think and act flexibly, developing tailor-made, innovative solutions for you.

Swiss and German quality hand in hand

As part of SAUTER, staff in Switzerland and Germany undertake joint research, development and production. And our customers all over the world benefit: They can continue to depend on the fact that quality, superlative precision, reliability, know-how protection and the environmental friendliness of the materials used in the manufacture of SAUTER products are given the highest priority.

A partner for life

Our consistent specialization, plus many years of experience, guarantee comprehensive expertise in all aspects of building management. During the planning, realisation, usage and modernisation phases, we are right by your side, every step of the way.

Widely recognised

SAUTER is excellently qualified to issue users and operators with a concise summary of energy flow and consumption. This is the key to reducing costs and increasing efficiency. SAUTER fulfils all basic criterias for Green Buildings and LEED. We also have IQNet, eu.bac and BTL BACnet certification. These seal our provendedication to uncompromising quality, functionality and precision.

New products

[1] **SAUTER modulo 6**
The new building automation system offers previously unequalled performance in terms of data points per automation station, memory space and processing speed while taking up minimum space in the cabinet.

Based on BACnet/IP, modulo 6 incorporates all of the usual field bus protocols. modulo 6 is operated via the "LOI" unit with a high-resolution graphical colour display for priority operation (EN ISO 16484-2), or via Bluetooth with a smartphone or tablet. SAUTER modulo 6 integrates IoTs via MQTT and saves data in a cloud. The integrated network separation for Internet and building automation provides security. Encryption, authentication and access security are guaranteed. SAUTER modulo 6 is backwards compatible with modulo 5 and allows smooth refurbishment of existing systems.

[2] **SAUTER ecoUnit365**
The new touch room operating unit from SAUTER features high-quality design and can be operated intuitively like a smartphone, enabling individual requirements in the room to be set easily and elegantly. Up to six function tiles are displayed simultaneously on the touch screen of the SAUTER ecoUnit365. Users can swipe left or right to make further tiles visible. The function tiles give room users direct access to individual setting of the room-temperature setpoint, individual switching of multiple light groups and local control of window blinds.

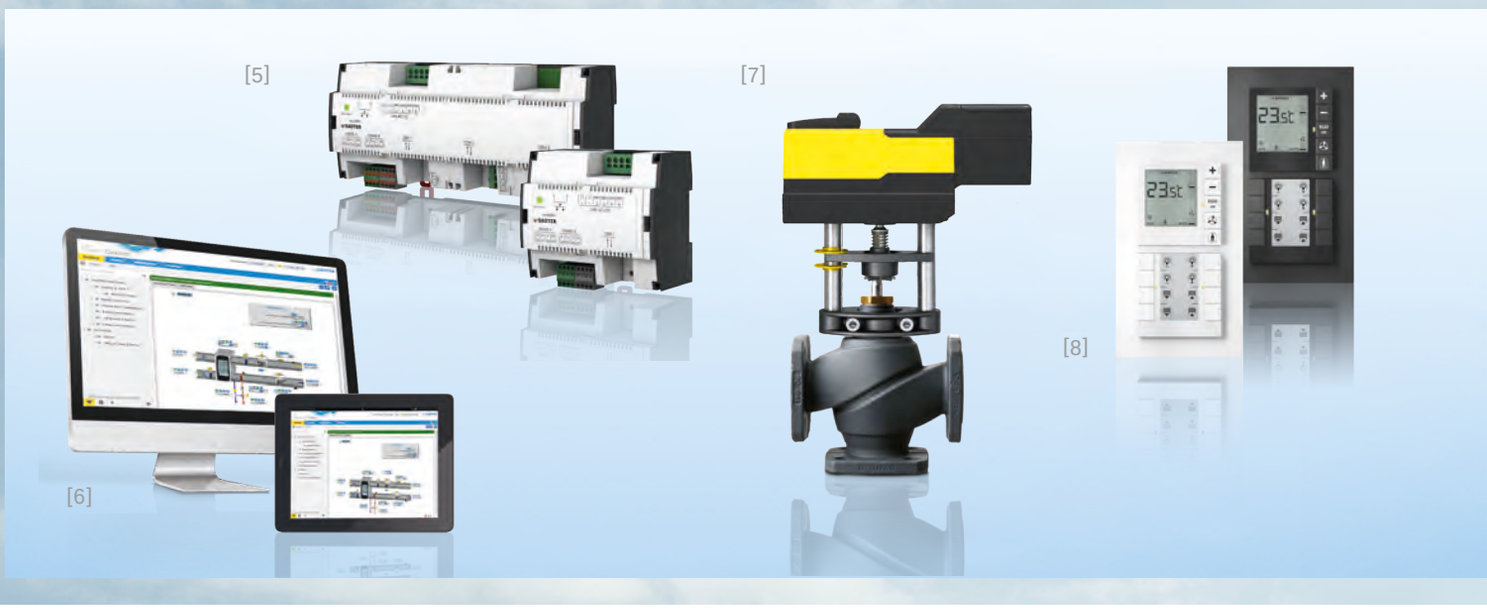
[3] **SAUTER eValveco**
The SAUTER eValveco system is used for real-time flow regulation and automatic hydronic balancing in the full or partial load ranges. It thus replaces a static balancing valve and a regulating/mixing valve or ball valve. The dynamic flow regulating system with a 2-, 3- or 6-way ball valve is used in HVAC systems with variable flow rate.

In combination with the 6-way ball valve, the system is designed for 4-pipe systems. These include climate-control ceilings, for example, or fan coil units.

[4] **SAUTER NRT 300**
The new NRT 300 offers a compact, precise solution for controlling heated and chilled ceilings, systems with variable air volume and fan coils in 4-pipe systems.

The NRT 300 is perfectly matched to the 6-way ball valve with many setting options. It has a push-button for the specific change-over between the normal and set-back modes. The room controller also has inputs for the change-over between the cooling and heating modes, for the normal/set-back mode or window contacts, for dew point monitoring and for shifting the setpoint. Heating/cooling and normal mode are indicated by LEDs.

[5] **SAUTER ecos504/505 room automation stations**
The modular room automation stations can be used for up to 8 rooms/room segments. Powerful function modules integrate the control of the room temperature, the lighting and the sunshading and ensure a



comfortable room climate. Powerful function modules integrate regulation of the room temperature, lighting and sunshading, and create a comfortable room climate. With demand-based ventilation, lighting and window blind control, and using the presence function, window contact monitoring and time-dependent setpoints, you can optimise your energy consumption – in combination with all systems via KNX, DALI,SMI, Modbus (RS-485) or M-Bus.

[6] **SAUTER SVC**
SAUTER Vision Center is the control centre and simultaneously the supervision solution for preparing all the data from installations, buildings and dispersed premises. The HTML5-based building and energy management solution offers functions for room management and energy monitoring. The monitoring views (dashboards) provide the most important key figures (KPIs) and related diagrams.

SVC supports BACnet, SAUTER novaNet and OPC-UA for the incorporation of protocols such as M-Bus, Modbus and LON. Additionally, all applications can be used with an OPC-UA client via the incorporated OPC-UA server.

The flexibility of this solution is illustrated by the scaling of from 500 to 100,000 objects. Full HTML5 support means that it can be operated independently of the operating system or browser. SVC is available on PCs, tablets and smartphones.

[7] **SAUTER AVM321/322 with energy module**
The energy module uses supercaps to store energy for the emergency function in the case of a power failure and it replaces the traditional actuators with spring return. Thanks to this accessory, the actuators of the AxM3xx series are now also available for safety functions.

[8] **SAUTER ecoUnit355 room operating unit with ecoUnit358 push-button unit**
In addition to precise temperature measurement, the new ecoUnit355 room operating unit and the individually configurable ecoUnit358 push-button unit also provide the user with other room conditions such as humidity, brightness, air quality, operating mode (heating/cooling mode), fan speed, auto/manual mode, ECO mode and the date and time in a clear, backlit LCD display.

The ecoUnit358 push-button unit adds up to eight buttons to the ecoUnit355 room operating unit. The functions of the expandable ecoUnit358 push-button unit can be configured freely and adjusted to the individual room functions. For example, the push-button unit allows you to operate the sunshading (window blinds, roller shutters) individually and to switch on or off, or dim, the lighting. Existing light and window blind switches can therefore be replaced.

On/off controllers

Proven technology developed further

Two-point controllers from SAUTER are used to limit, regulate and monitor temperature, pressure and humidity, with no auxiliary energy required. They provide reliability, even in difficult conditions.

2-point controllers

Thermostats

Frost monitors

Pressure switches

Humidistats

Fan-coil room-temperature controller

SAUTER fan-coil controllers are used for demand-led activation of fan-coil units and ensure that they are operated with optimum use of energy. There are controllers for fan-coil units with a three-speed fan and for the continuous activation of EC motors. The controllers are suitable for 2- and 4-pipe installations and also for fan-coil units with an electric reheater.

Overview of fan-coil room-temperature controllers

				
Type designation	TSO, TSH	TSHK 621...643	TSHK 670...672	TSHK 681...682
Indicating and operating elements				
Mode switch for heating	•	•	•	–
Mode switch for cooling	•	•	•	–
Mode switch for fan	•	•	•	•
Setpoint adjuster	•	•	•	•
LCD	–	–	–	•
Mode of operation				
Load (A)	≤ 10	≤ 6	≤ 10	≤ 6
External sensor	–	–	–	•
2-pipe installation	–	•	–	•
4-pipe installation	–	•	•	•
C/O (changeover)	–	–	–	•
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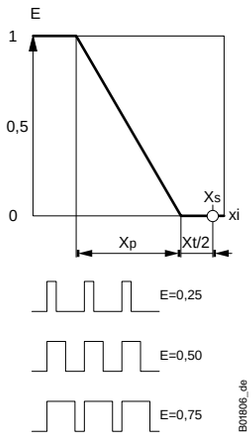
TSO, TSH: Room thermostat

TSO67*F001

TSO67*F001

TSH67*F002



E= control factor

Features

- Variable room temperature as setpoint based on printed temperature scale
- Variants of the standard devices are available, such as thermal feedback, night set-back mode, fan switches and switches for heating/cooling
- Setpoint adjuster with mechanical min. and max. limitation of the setting range

Technical data

Power supply		
	Load[1]	230 V~ 10(2,5) A, 24 V= max. 1 A, 24 V~ min. 0.2 A
Parameters		
	Setting range	5...30 °C
	Night-time reduction (N/R)	Approx. 5 K
	Time constant in still air	17 minutes
	Time constant in moving air (0.2 m/s)	13 minutes
Thermal feedback	Proportional band	Approx. 3 K
	Shortest switching interval	Approx. 19 minutes (E = 0.5)
Ambient conditions		
	Admissible ambient temperature	0...50 °C
Construction		
	Weight	0.11 kg
	Dimensions	76 × 76 mm
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic
	Fitting	Wall/recessed
	Cable inlet	At rear
	Baseplate	Black thermoplastic with membrane sensor and contact system
	Screw terminals	For electrical cables of up to 1.5 mm²
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	II (IEC 60730)
	Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1, EN 60730-2-9
	Low-Voltage Directive 2014/35/EU	EN 60730-1

Overview of types

i *Supply voltage: 10% more voltage means proportional band approx. 4 K, switching period 15 minutes and actual-value reduction approx. 0.5 K*

i *H/C = heating or cooling, depending on connection; H//C = heating or cooling, selectable*

Type	Operating mode switch	Output for	Power supply
TSO670F001	-	H/C	-
TSO672F001	Heating/OFF/Cooling	H//C	-
TSH670F002	-	H/C	230 V~, ±10%, 50...60 Hz
TSH676F002	-	H/C	230 V~, ±10%, 50...60 Hz

[1] *For TSO672F001 for cooling 5(1.5) A*

- *TSO670F001, TSO672F001: Switching difference 1.3 K without thermal feedback[2)]*
- *TSH670F002, TSH676F002: Dynamic switching difference 0.5 K with thermal feedback[3)]*
- *TSH676F002: Additional feature N/R (normal/reduced) for external clock*

Accessories

Type	Description
0362225001	Intermediate plate, pure white, for wall mounting on recessed junction box
0303124000	Recessed junction box

- *0303124000: Only in combination with intermediate cover plate 0362225001*

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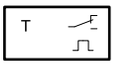
2) *Devices without thermal feedback are pure 2-point controllers. The static switching difference is given, i.e. for very slow changes in temperature. For faster changes in temperature, the time constant must be taken into account.*

3) *Devices with thermal feedback are pulsed by a built-in heating resistor. The control factor falls as the temperature increases, i.e. the controller has proportional behaviour. A small temperature variation of ±0.1…0.5 K occurs as a result of switching, depending on the time constant of the room.*

TSHK 621...643: Fan-coil room-temperature controller, electromechanical

TSHK6**F00*



Features

- Variable room temperature as setpoint based on printed temperature scale
- Changeover from heating to cooling via switch or type of connection
- ON/OFF toggle switch for mains voltage, plus other slide switches for operating mode and fan, depending on the type
- More constant room temperature due to thermal feedback
- Suitable for wall mounting or fitting on recessed junction boxes
- Setpoint adjuster with mechanical min. and max. limitation of the setting range
- 2-point pulsed activation
- Individual unitary temperature control in residential and business rooms for activating, for example, electric heating systems, thermal actuators, or fans or cooling units in air-conditioning systems.

Technical data

Power supply		
	Power supply[1]	230 V~, approx. ±10%, 50...60 Hz
Parameters		
	Setting range	5...30 °C
	Proportional band	3 K
	Hysteresis[2]	Approx. ±0.1...0.5 K
	Shortest switching interval	Approx. 19 minutes (E = 0.5)
	Time constant in still air	20 minutes
	Dead time in still air	2 minutes
	Time constant in moving air (0.2 m/s)	15 minutes
	Dead time in moving air (0.2 m/s)	1 minute
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Outputs		
	Load	6(3) A, 230 V~
	Fan load	6(3) A, 230 V~
Construction		
	Weight	0.18 kg
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic (fire classification UL94 HB)
	Baseplate	Black thermoplastic with bimetallic sensor and contact snap mechanism with permanent magnet
	Cable inlet	At rear
	Screw terminals	For electrical cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	II (IEC 60730)
	Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC

[1] *10% more voltage results in: Proportional band approx. 4 K, switching period 15 min, actual-value reduction approx. 0.5 K*

[2] *Devices with thermal feedback are pulsed by a built-in heating resistor. The control factor reduces as the temperature increases (i.e. the controller has proportional behaviour). A small temperature variation of ±0.1…0.5 K occurs as a result of pulsing, depending on the time constant of the room*

Overview of types

Type	Operating mode
TSHK621F001	Heating/cooling; 2-pipe
TSHK642F001	Heating only/cooling only; 2-pipe
TSHK643F001	Heating/cooling; 4-pipe

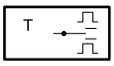
	TSHK621	TSHK642	TSHK643
Mains switch ON/OFF	•	•	•
Operating mode switch	♨ ❄	–	♨ ❄
Fan speeds	⅄ ⅄ ⅄	⅄ ⅄ ⅄	⅄ ⅄ ⅄

Accessories

Type	Description
0362239001	Pure white intermediate cover plate, suitable for various recessed junction boxes

TSHK 670...672: Fan-coil room-temperature controller, heating/cooling sequence

TSHK67*F001



Features

- Variable room temperature as setpoint based on printed temperature scale
- Gradual transition from heating to cooling through sequence characteristic
- Variants with master switch plus slide switch for the fan
- Suitable for wall mounting or fitting on recessed junction boxes
- Electronics unit and switching relay
- Setpoint adjuster with mechanical min. and max. limitation of the setting range
- Quasi-continuous temperature control
- 2-point pulsed activation
- Individual unitary temperature control in residential and business rooms for activating, for example, electric heating systems, thermal actuators, or fans or cooling units in air-conditioning systems.

Technical data

Power supply		
	Power supply	230 V~, approx. ±10%, 50...60 Hz
Parameters		
	Setting range	5...30 °C
	Proportional band	2 × 3 K
	Sequence dead zone	2 K ±0,7
	Hysteresis[1)]	Approx. ±0.1...0.5 K
	Shortest switching interval	Approx. 19 minutes (E = 0.5)
	Time constant in still air	20 minutes
	Dead time in still air	2 minutes
	Time constant in moving air (0.2 m/s)	15 minutes
	Dead time in moving air (0.2 m/s)	1 minute
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Outputs		
	Load	10(4) A, 230 V~
	Fan load	6(3) A, 230 V~
Function		
	Operating mode	Heating/cooling sequence; 4-pipe
Construction		
	Weight	0.18 kg
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic (fire classification UL94 HB)
	Baseplate	Black thermoplastic with NTC sensor
	Cable inlet	At rear
	Screw terminals	For cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)

[1)] *The device is pulsed electronically. When the temperature increases, the control factor is reduced to 0 on the "Heating" output and increased to E = 1 on the "Cooling" output. A small temperature variation of ±0.1...0.5 K occurs as a result of pulsing, depending on the time constant of the room*

Protection class	II (IEC 60730)
Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC

Overview of types

Type	Number of switches
TSHK670F001	0
TSHK672F001	2

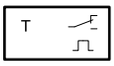
	TSHK670	TSHK672
Mains switch ON/OFF	–	•
Fan speeds	–	
Indicators/display	–	1 LED

Accessories

Type	Description
0362239001	Pure white intermediate cover plate, suitable for various recessed junction boxes

TSHK 681, 682: Fan-coil room-temperature controller, with digital display

TSHK68*F001



Features

- LCD of the room temperature or setpoint, with two buttons (±) for adjusting the setpoint
- Output for heating or cooling depending on connection type, or change in direction of operation with external switch
- With main switch for mains power supply and slide switch for three fan speeds
- Suitable for wall mounting or fitting on recessed junction boxes
- Electronics unit and switching relay
- Quasi-continuous temperature control
- 2-point pulsed activation
- Individual unitary temperature control in residential and business rooms for activating e.g. electric heating systems, thermal actuators, or fans or cooling units in air-conditioning systems.

Technical data

Power supply		
	Power supply[1]	230 V~, approx. ±10 V, 50...60 Hz
Parameters		
	Setting range	5...30 °C; resolution 0.5 °C
	Proportional band	3 K
	Display of actual value	0...40 °C; resolution 0.1 °C
	Hysteresis[2]	Approx. ±0.1...0.5 K
	Shortest switching interval	Approx. 18 minutes (E = 0.5)
	Time constant in still air	20 minutes
	Dead time in still air	2 minutes
	Time constant in moving air (0.2 m/s)	15 minutes
	Dead time in moving air (0.2 m/s)	1 minutes
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Outputs		
	Load	3(2) A, 230 V~
	Fan load	6(3) A, 230 V~
Construction		
	Weight	0.18 kg
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic (fire classification UL94 HB)
	Baseplate	Black thermoplastic with NTC sensor
	Cable inlet	At rear
	Screw terminals	For cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	II (IEC 60730)
	Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC

[1] *10% more voltage results in: Proportional band approx. 4 K, switching period 15 min, actual-value reduction approx. 0.5 K*

[2] *The device is pulsed electronically. When the temperature increases, the control factor falls to zero at the "Heating" output and rises to E = 1 at the "Cooling" output. A small temperature variation of ±0.1...0.5 K occurs as a result of pulsing, depending on the time constant of the room*

Overview of types

Type	Operating mode
TSHK681F001	Heating or cooling or heating/cooling; 2-pipe
TSHK682F001	Heating/cooling; 4-pipe

	TSHK681	TSHK682
Mains switch ON/OFF	•	(•)
Operating mode switch	–	OFF
Fan speeds		
Indicators/display	°C digital	°C digital

Accessories

Type	Description
0362238001	Cable temperature sensor, 4 m long, made of PVC, for external temperature measurement (max. 50 m)
0362239001	Pure white intermediate cover plate, suitable for various recessed junction boxes

Universal thermostats

Temperature control, temperature monitoring and temperature limitation: SAUTER universal thermostats are used for these three applications. They provide control, monitoring and limitation according to needs without auxiliary energy.

Overview of universal thermostats

	
Type designation	TUC
Application	
Clamp-on temperature	•
Duct	•
Pipe	•
Operating mode	
Temperature controller, monitor (TR, TW)	•
Safety temperature limiter (STB)	•
Temperature limiter (TB)	•
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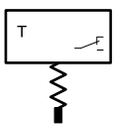
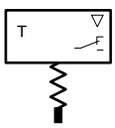
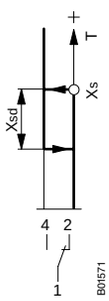
TUC*0*F00*



TW, STW



TB, STB



TUC407F001

TUC407F002

TUC207F003

TUC: Universal thermostat

Features

- Regulates and monitors the temperature of liquids in baths, containers, pipes and ducts
- Variants as temperature monitors (TW), safety temperature monitors (STW), temperature limiters (TB) or safety temperature limiters (STB)
- Thermostat with remote sensor
- Clamp-on thermostat
- Capillary tube thermostat with or without thermowell
- Double thermostat, e.g. as TW and STB
- Certified as per EN 14597 (TUC207F003 and TUC407F001, TUC407F002)
- As per PED 2014/68/EU classified as cat. IV (TUC207F003, TUC407F001 and TUC407F002)
- The shift in the change-over point is minimised due to the temperature compensation.
- Thermowell 100 mm supplied (max. 12 bar)

Technical data

Power supply		
Max. load	Terminal 1-2	230 V~, 10 (2.5) A (on the normally-closed contact)
	Terminal 1-4	230 V~, 2 (0.4) A
Min. load	Terminals 1-2, 1-4	24V =/~, 100 mA
Parameters		
	Adjustment point	For t_a 22 °C
	Effect of temperature at instrument head	Approx. –0.1...–0.2 K/K
	Time constant with thermowell (LW 7)	< 45 s (water) < 60 s (oil)
	Time constant without thermowell	< 120 s (air)
Ambient conditions		
	Ambient temperature	0...70 °C
	Storage and transport temperature	–25...80 °C
	Max. Pipe temperature during fitting	120 °C
Construction		
	Connection terminals	Plug-in connectors
	Cable cross-section	0.75...2.5 mm^2
	Sensor cartridge	Ø 6.5 mm
	Housing	Two sections, lower section black, upper section yellow, including inspection window
	Housing material	PA, ABS, PMMA
	Weight	0.2 kg
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	I (EN 60730)
	Test marks	TÜV ID: 0000046121 (EN 14597)

Overview of types

Type	Setting range	Type	Switching difference	Capillary tube length	Sensor cartridge length (± 12 mm)	Thermowell	Max. sensor temp.
TUC101F003	-10...50 °C	TW	Approx. 4.2 K	1.6 m	80 mm	100 mm, brass	140 °C
TUC102F001	5...30 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C
TUC105F001	15...95 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C
TUC106F001	40...120 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C
TUC107F001	50...130 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C
TUC108F001	80...160 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, stainless steel	200 °C
TUC207F003	70...130 °C	STW	Approx. 10 K	1.6 m	60 mm	100 mm, brass	160 °C
TUC303F001	15...60 °C	TB	≤ 20 K	0.7 m	70 mm	100 mm, brass	200 °C
TUC307F001	50...130 °C	TB	≤ 20 K	0.7 m	65 mm	100 mm, brass	200 °C
TUC407F001	95...130 °C	STB	≤ 20 K	0.7 m	76 mm	100 mm, brass	160 °C
TUC407F002	95...130 °C	STB	≤ 20 K	0.7 m	76 mm	150 mm, brass	160 °C

*With TUC407F001, TUC407F002 and TUC207F003, only use the supplied thermowells or stainless-steel thermowells (part nos.: 0393022*** or 0392022***).*

TUC108 with adapter for temperature reduction, only use the supplied thermowell.

Accessories

Type	Description
0300360008	Retaining holder for cable temperature sensor or capillary tube with 0392022*** (LW 7) or LW 15 (10 pcs)
0300360009	Holder for sensor cartridge
0300360010	Retaining strap for fitting onto pipes for a pipe diameter of 15-100 mm
0300360011	Mounting plate for double thermostats
0300360012	Sensor support spiral for fitting in ventilation duct
0300360013	Duct/wall mounting bracket

Thermowells

Features

- Fitted in pipes and containers for holding sensor cartridges, immersion stems, temperature sensors, temperature controllers or thermostats
- Made of brass (Ms) or stainless steel (V4A)
- Versions with cylindrical pipe thread (G½" male ISO 228/1, flat-sealing)[1] or cone-shaped (R½" ISO 7/1 sealing in thread)
- With pressure spring (LW 15)
- With retaining holder

Overview of types

Type	LW	Length	Material	Thread	Nominal pressure	Test pressure	T_{max}
0391022050	7	50 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022100	7	100 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022200	7	200 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022300	7	300 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022450	7	450 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022600	7	600 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391011050	7	50 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011100	7	100 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011150	7	150 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011200	7	200 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011300	7	300 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011450	7	450 mm	Brass	R½"	10 bar	16 bar	160 °C
0393022100	15	100 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393022200	15	200 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393022450	15	450 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393012100	15	100 mm	Brass	G½"	16 bar	25 bar	160 °C
0393012200	15	200 mm	Brass	G½"	16 bar	25 bar	160 °C
0392022100	7	100 mm	Stainless steel	G½"	25 bar	40 bar	450 °C
0392022300	7	300 mm	Stainless steel	G½"	25 bar	40 bar	450 °C

[1] *G½" male ISO 228/1, flat-sealing: for welding bushings with flat seal (accessories)*

- *0392022100 and 0392022300 for TUC thermostats only*
- *With TUC407F001 and TUC207F003, only use the supplied thermowells or stainless-steel thermowells (part nos.: 0393022*** or 0392022***).*
- *0391... with pressure screw (retaining holder) up to max. 200°C*

Accessories

Type	Description
0300360008	Retaining holder for cable temperature sensor or capillary tube with 0392022*** (LW 7) or LW 15 (10 pcs)
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0300360017	Pressure spring for LW 15 (10 pieces)

			
LW 7, 50 mm	•	• L > 50 mm	–
LW 7, 100 mm	•	•	–
LW 7, 150 mm	•	•	–
LW 7, 200 mm	•	•	–
LW 7, 300 mm	•	• L > 300 mm	–
LW 7, 450 mm	•	•	–
LW 7, 600 mm	•	–	–
LW 15, 100 mm	•	–	•
LW 15, 200 mm	•	–	•
LW 15, 450 mm	•	–	•
0392022100	–	–	•
0392022300	–	–	•

- *0392022100 and 0392022300 for TUC thermostats only.*
- *With TUC407F001 and TUC207F003, only use the supplied thermowells or stainless-steel thermowells (part nos.: 0393022*** or 0392022***).*
- *Only use the thermowells (LW 15) with at least 2 sensors or thermostats with a diameter of at least 6 mm.*
- *0391... with pressure screw (retaining holder) up to max. 200°C.*

Frost monitors

SAUTER frost monitors protect ventilation systems against icing. With their special construction and design, they are particularly suitable for compact installations and/or installations that are subject to vibrations.

Overview of frost monitors

		
Type designation	TFL 201	TFL 611
Function		
Monitor	•	•
Limiter	•	–
Output signal		
Switched	•	•
Continuous	–	•
Auxiliary energy	•	–
Further information	Page 25	Page 27

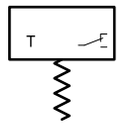
TFL 201: Frost protection monitor/limiter with capillary-tube sensor

Features

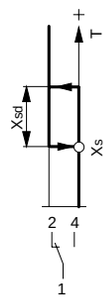
- Temperature monitoring in heating coils and air ducts
- Variants as monitors or limiters
- Copper capillary tube
- Switching point can be set internally
- Small switching difference
- With capillary-tube holders made of plastic

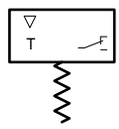
Technical data

TFL201F**2



TFL201F*02





TFL201F*22

Power supply		
Max. load	Terminal 1-2	230 V~, 10 (2.5) A (on the normally-closed contact)
	Terminal 1-4	230 V~, 2 (0.4) A
Parameters		
	Setting range	–10...15 °C
	Factory setting	5 °C
	Switching difference	1.5 K
	Tolerance of switching difference	Max. ±1 K
	Max. sensor temperature	120 °C
Time characteristic	Time constant in moving air (0.3 m/s)[1]	Capillary tube length 1.5 m: 25 s Capillary tube length 3 m: 31 s Capillary tube length 6 m: 51 s
Ambient conditions		
	Ambient temperature[2]	–5...70 °C
	Max. capillary temperature	120 °C
	Storage and transport temperature	–30...80 °C
Construction		
	Connection terminals	Plug-in connectors
	Cable cross-section	Ø 0.75...2.5 mm^2
	Housing	Two sections, lower section black, upper section yellow, including inspection window
	Housing material	ABS, PMMA
	Weight	0.2 kg
Standards and directives		
	Type of protection	IP65 (EN 60529)
	Protection class	I (IEC 60730)
	EMC Directive 2014/30/EU	EN 60730-1, EN 60730-2-9
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9

Overview of types

Type	Function	Switching difference	Capillary tube	Capillary tube holder
TFL201F002	Monitor	1.5 K (±1 K)	3000 mm	3
TFL201F022	Limiter	1.5 K (±1 K)	3000 mm	3
TFL201F102	Monitor	1.5 K (±1 K)	1500 mm	3
TFL201F602	Monitor	1.5 K (±1 K)	6000 mm	6
TFL201F622	Limiter	1.5 K (±1 K)	6000 mm	6

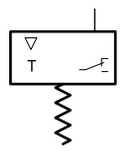
[1] *The frost monitor always reacts to the coldest point (minimum length 7.5 cm (1.5 m), 15 cm (3 m) und 30 cm (6 m))*
[2] *The head of the instrument must be fitted in a warmer location than the sensor, see fitting instructions*

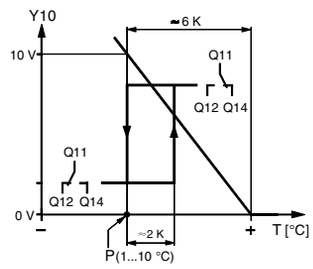
Accessories

Type	Description
0300360014	Six holders for fitting the capillary tube

TFL 611: Continuous frost monitor with capillary sensor

TFL611F*01





Features

- Records the lowest temperature that occurs for a length of at least 250 mm at any position along the capillary tube
- Used on air side in ventilation and air conditioning units where protective measures must be taken against freezing
- Active capillary sensor for measuring the lowest temperatures in the range 0...15 °C
- Vapour-filled capillary tube and diaphragm system with inductive system of measurement
- Setting range 1...10 °C
- Start-up function
- LED and 7-segment display
- Self-monitoring of sensor line

Technical data

Power supply		
	Power supply[1]	24 V~, 10/-20%
	Power consumption	< 6.6 VA
	Frequency	50...60 Hz
Parameters		
	Measuring range	0...15 °C
	Setting range	1...10 °C
	Adjustment point	5 °C
	Accuracy for adjustment point	± 1 K
	Switching difference	Approx. 2 K
	Temperature for capillary tube	< 110 °C
	Time constant in still air	Approx. 90 s
	Time constant in moving air	< 40 s
	Response length for capillary tube	Min. 250 mm
Inputs/outputs		
	Admissible cable length	300 m with 1.5 mm²
Analogue input	Valve control for terminal Y	0...10 V
	Current	< 0.1 mA
Analogue outputs	Sensor temperature for terminal B	0...10 V ≙ 0...15 °C
	Valve control for terminal Y10	0...10 V
	Current	±1 mA
Potential-free relay outputs (Q terminals)	Min. switching capacity	12 V~/=, 100 mA
	Max. switching capacity	250 V~, 6(2) A; 24 V=, 6 A
Ambient conditions		
Operation	Humidity (non-condensing)	< 85% rh
	Temperature	-15...55 °C
Storage and transport	Humidity (non-condensing)	< 95% rh
	Temperature	-25...65 °C
Construction		
	Terminals with spring technology	Max. 2 × 1.5 mm² Or 1 × 2.5 mm² Min. 0.25 mm²
	Cable inlet	Cable gland M16 for cable diameter 5...10 mm
	Protection class[2]	I
	Housing	PA, silver grey (RAL 7001)

[1] *SELV/PELV: Safety Extra Low Voltage/Protected Extra Low Voltage*
[2] *No earth conductor necessary*

Housing cover	PC, transparent
Cap	ABS, light grey (RAL 7035)
Capillary tube	Copper

Standards and directives

Vibration resistance	EN 60721-3-3 (class 3M2)
Type of protection	IP42 (EN 60529)
Operation as per IEC 721-3-3	Class 3K5
Storage and transport as per IEC 721-3-2	Class 2K3
RoHS Directive 2011/65/EU	EN 50581
EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3
Low-Voltage Directive 2014/35/EU	EN 60730-1, EN60730-2-9

Overview of types

Type	Description	Weight
TFL611F201	Continuous frost monitor; 0...15 °C; capillary tube length= 2 m	0.34 kg
TFL611F601	Continuous frost monitor; 0...15 °C; capillary tube length= 6 m	0.41 kg

Accessories

Type	Description
0292146001	Set for duct fitting consisting of: 5 capillary-tube holders, 1 depth-adjustable flange
0300360014	Six holders for fitting the capillary tube
0374534001	Depth-adjustable flange

Pressure switches

SAUTER pressure switches can be used in any application for controlling and monitoring the pressure in liquids, gases and vapours. They detect changes in pressure in gaseous and/or liquid media and are used to switch pumps, valves or compressors.

Overview of pressure switches

								
Type designation	DSA	DSB	DSF	DSL	DSH	DFC 17B	DFC 27B	DSD
Pressure monitors	•	•	•	–	–	•	•	–
Pressure limiters								
For rising pressure	–	–	–	–	•	(•)	(•)	–
For falling pressure	–	–	–	•	–	(•)	(•)	–
Differential pressure switch	–	–	–	–	–	–	–	•
Pressure sensors								
Of brass	•	•	–	•	–	•	–	–
Of stainless steel	–	–	•	–	•	–	•	•
Switching difference								
Fixed	•	–	–	•	•	–	–	•
Variable	–	•	•	–	–	•	•	–
Certification								
VdTÜV 100	–	•	•	•	•	•	•	–
EN 12952-11, EN 12953-9	–	•	•	•	•	•	•	–
Germanischer Lloyd (GL)	–	•	•	•	•	•	•	–
Lloyds Register	–	•	•	•	•	–	–	–
Can be used for aggressive media	–	–	•	–	•	–	•	–
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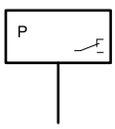
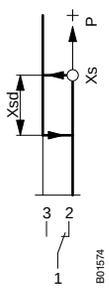
(•): Depending on approval

DSA14*F002





DSA: Pressure switch

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Especially suitable for applications in compact installations
- Upper switching point can be adjusted
- Fixed switching difference, no hysteresis setting is necessary
- Sealable
- Pressure sensor made of brass for non-aggressive media

Technical data

Power supply		
	Maximum load with gold-plated contacts[1]	400 mA, 24 V, 10 VA
	Minimum load with gold-plated contacts	4 mA, 5 V
	Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G½" male
Ambient conditions		
	Admissible sensor temperature	70 °C
	Admissible ambient temperature	–20...70 °C
Construction		
	Fitting	Pipe and wall mounting
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard plug with female cable connector for cable of Ø 6...10 mm
Standards and directives		
	Type of protection[2]	IP65 (EN 60529)
	Protection class	I (IEC 60730)
CE conformity according to[3]	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-6
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Setting range	Switching difference	Maximum pressure	Admissible vacuum loading	Weight
DSA140F002	0.5...2.5 bar	0.25 bar	12 bar	-0.7 bar	0.5 kg
DSA143F002	0.5...6 bar	0.3 bar	16 bar	-0.7 bar	0.5 kg
DSA146F002	1...10 bar	0.4 bar	20 bar	-1.0 bar	0.4 kg

[1] *If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*
[2] *Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.*
[3] *Excluded from the Pressure Equipment Directive 97/23/EC (as per Art. 1.3.6)*

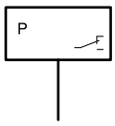
DSA: Pressure sensor made of brass for non-aggressive media; X_s = upper switching point

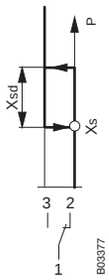
Accessories

Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0192222000	Cap nut with solder connector
0192700000	1 m capillary tube for absorbing pressure surges, copper
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0259239000	Reduction nipple G½" on 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: ±3% of the setting range, but a minimum of ±0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: With accessory 0292150001 only

DSB1**F001





DSB, DSF: Pressure monitors and pressure switches

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Adjustable lower switching point
- Adjustable switching difference
- Sealable
- Pressure sensor made of brass for non-aggressive media (DSB)
- Pressure sensor made of stainless steel for aggressive media (DSF)
- SIL 2 certified as per EN 61508
- Approved for marine applications (GL and LR certified)

Technical data

Power supply		
	Maximum load with gold-plated contacts[1]	400 mA, 24 V, 10 VA
	Minimum load with gold-plated contacts	4 mA, 5 V
	Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G½" male
Ambient conditions		
	Admissible ambient temperature	-20...70 °C
Construction		
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard plug with female cable connector for cable Ø 6...10 mm
Standards and directives		
	Type of protection[2]	IP65 (EN 60529)
	Protection class	I (IEC 60730)
	Test marks[3]	TÜV DWFS (SDBFS) ID: 0000006024
	PED 2014/68/EU	VdTÜV pressure information sheet 100 cat. IV (as SDBFS) EN 12952-11, EN 12963-9
	Ship-approved	Germanischer Lloyd (GL) Lloyds Register
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-6
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100
SIL-conformity as per SIL 2	Standards	IEC 61508 parts 1-2 and 4-7 IEC 61511 parts 1-3

[1] *If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*

[2] *Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.*

[3] *DWFS (SDBFS): As a safety pressure limiter when an external electrical locking facility is fitted downstream in the circuit. Certificates can be downloaded from www.certipedia.com*

Overview of types

Type	Setting range	Switching difference	Maximum pressure	Max. sensor temp.	Admissible vacuum loading	Weight
DSB138F001	0...1.6 bar	0.25...0.65 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB140F001	0...2.5 bar	0.25...0.75 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB143F001	0...6 bar	0.3...1.6 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSB146F001	0...10 bar	0.8...3.7 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB152F001	6...16 bar	1...4 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB158F001	0...25 bar	1...7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSB170F001	5...40 bar	1.4...7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSF125F001	-1...1.5 bar	0.25...0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF127F001	-1...5 bar	0.3...1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF135F001	0...0.6 bar	0.12...0.60 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF138F001	0...1.6 bar	0.25...0.7 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF140F001	0...2.5 bar	0.25...0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF143F001	0...6 bar	0.3...1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF146F001	0...10 bar	0.8...3.0 bar	18 bar	110 °C	-1 bar	0.5 kg
DSF152F001	0...16 bar	1.2...3.8 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF158F001	0...25 bar	1.5...8.0 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF170F001	15...40 bar	1.7...8.2 bar	60 bar	110 °C	-1 bar	0.3 kg

DSB: Pressure sensor made of brass for non-aggressive media; X_S = lower switching point

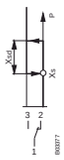
DSF: Pressure sensor made of stainless steel for aggressive media; X_S = lower switching point

The switching difference must be within the setting range of the switching point. The minimum values of the switching difference are only possible in the lower setting range.

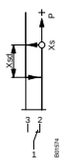
Accessories

Type	Description
0192222000	Cap nut with solder connector
0259239000	Reduction nipple G½" on 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: ±3% of the setting range, but a minimum of ±0.2 bar)
0292002000	Switching difference according to customers' wishes (setting accuracy: ±5% of the setting range, but a minimum of ±0.05 bar, with accessory 0292001 only)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: With accessory 0292150001 only



DSL1**F001



DSH1**F001

DSL, DSH: Specially designed pressure limiter

Features

- Switching point can be adjusted
- Sealable
- Pressure sensor made of brass for non-aggressive media (DSL)
- Pressure sensor made of stainless steel for aggressive media (DSH)
- Locking type: With falling pressure (DSL) or with rising pressure (DSH)
- SIL 2 certified as per EN 61508
- Approved for marine applications (GL and LR certified)

Technical data

Power supply		
	Maximum load with gold-plated contacts[1]	400 mA, 24 V, 10 VA
	Minimum load with gold-plated contacts	4 mA, 5 V
	Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G½" male
Ambient conditions		
	Admissible ambient temperature	-20...70 °C
Construction		
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard plug with female connector for cable of Ø 6...10 mm
Standards and directives		
	Type of protection[2]	IP65 (EN 60529)
	Protection class	I (IEC 60730)
	Test marks[3]	TÜV DSL: SDBF ID: 0000006022 DSH: SDB ID: 0000006023 PED: 2014/68/EU, cat. IV
	Ship-approved	Germanischer Lloyd (GL) Lloyds Register
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-6
	PED 2014/68/EU	VdTÜV pressure information sheet 100, cat. IV EN 12952-11 EN 12953-9
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100
SIL-conformity as per SIL 2	Standards	IEC 61508 parts 1-2 and 4-7 IEC 61511 parts 1-3

[1] *If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*

[2] *Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.*

[3] *Certificates can be downloaded from www.certipedia.com*

Overview of types

Min. change for reset: Average values

Type	Setting range	Min. change for reset	Maximum pressure	Admissible sensor temperature	Admissible vacuum loading	Weight
DSL140F001	0...2.5 bar	0.4 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSL143F001	0...6 bar	0.5 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSL152F001	6...16 bar	1.2 bar	30 bar	70 °C	-1.0 bar	0.4 kg
DSH127F001	-1...5 bar	-0.4 bar	16 bar	110 °C	-1.0 bar	0.5 kg
DSH143F001	0.5...6 bar	-0.45 bar	16 bar	110 °C	-0.7 bar	0.5 kg
DSH146F001	1...10 bar	-0.8 bar	18 bar	110 °C	-1.0 bar	0.5 kg
DSH152F001	2...16 bar	-1.5 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH158F001	5...25 bar	-1.8 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH170F001	15...40 bar	-2.0 bar	60 bar	110 °C	-1.0 bar	0.3 kg

DSL: Locks when the pressure falls (SDBF); pressure sensor made of brass for non-aggressive media

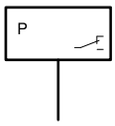
DSH: Locks when the pressure rises (SDB); pressure sensor made of stainless steel

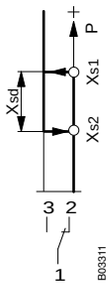
Accessories

Type	Description
0192222000	Cap nut with solder connector
0259239000	Reduction nipple G½" on 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: ±3% of the setting range, but a minimum of ±0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: With accessory 0292150001 only

DFC17B76F001





DFC 17B, 27B: Heavy-duty pressure switch

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Especially suitable for installations subject to vibrations
- Contact rating 1 mA/6 V to 10 A/400 V
- Gold-plated silver contacts, vibration-proof snap-action switch with single-pole change-over switch
- Upper and lower switching points can be set independently of each other
- Sealable
- Splashproof
- DFC17B**F001: Pressure sensor made of brass for non-aggressive media
- DFC27B**F002: Pressure sensor made of stainless steel for aggressive media

Technical data

Power supply		
	Maximum load with gold-plated contacts[1]	200 mA, 50 V
	Minimum load with gold-plated contacts	1 mA, 6 V
	Maximum load with silver-plated contacts[2]	10(2) A, 400 V~ (25 W), 250 V=
	Minimum load with silver-plated contacts	100 mA, 24 V
Ambient conditions		
	Temperature of medium	≤ 110 °C
	Admissible ambient temperature	–40...70 °C
Construction		
	Housing	Transparent cover
	Housing material	Light metal
	Cable inlet	PG 13.5
	Screw terminals	For electrical cables of up to 2.5 mm²
	Pressure connection	G½" male
Standards and directives		
	Type of protection	IP44 (EN 60529)
	Protection class	I (IEC 60730)
	Test marks[3]	TÜV DWFS (SDBF) ID: 0000006018 DWFS (SDB) ID: 0000006019 DB (SDBF) ID: 0000006017
	Mode of operation	Type 2 B (EN 60730)
CE conformity according to	Low-Voltage Directive 2014/35/EU	EN 60730-1, 60730-2-6
	EMC Directive 2014/30/EU	EN 6100-6-1, EN61000-6-2 EN 61000-6-3, EN 61000-6-4
	PED 2014/68/EU	VdTÜV pressure information sheet 100, sheet 1, cat. IV, DIN 3398 T4 EN 12952-11, EN 12953-9

[1] *If the contacts are subjected to a load greater than 200 mA, 50 V, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*

[2] *Take the RC circuitry into account for inductive loads*
230/400 V networks
From 70 °C media temperature, the current must be reduced to 6 A

[3] *Certificates can be downloaded from www.certipedia.com*

Overview of types

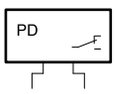
Type	Setting range (bar)	Min. switching difference (bar)	Maximum pressure (bar)	Max. temp., sensor (°C)	Admissible vacuum loading (bar)	Weight (kg)
DFC17B54F001	0...2.5	0.14	16	70	-0.7	1.2
DFC17B58F001	0...6.0	0.18	16	70	-1.0	1.2
DFC17B59F001	-1...5.0	0.20	16	70	-1.0	1.2
DFC17B76F001	0...10	0.50	40	70	-1.0	1.1
DFC17B78F001	0...16	0.50	40	70	-1.0	1.1
DFC17B79F001	16...32	0.80	42	70	-1.0	1.1
DFC17B96F001	0...25	1.70	100	70	-1.0	1
DFC17B97F001	25...50	2.00	100	70	-1.0	1
DFC17B98F001	0...40	1.80	100	70	-1.0	1
DFC27B26F002	-1...2.5	0.30	21	110	-1.0	0.9
DFC27B43F002	0.5...6.0	0.30	21	110	-1.0	0.9
DFC27B46F002	1...10	0.30	21	110	-1.0	0.9
DFC27B52F002	2...16	0.30	21	110	-1.0	0.9

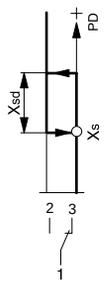
The switching difference must be within the setting range of the switching point. The minimum values of the switching difference are only possible in the lower setting range.

Accessories

Type	Description
0192222000	Cap nut with solder connector
0259239000	Reduction nipple G½" on 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0035465000	Throttle screw for absorbing pressure surges, brass
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0192700000	1 m capillary tube for absorbing pressure surges, copper
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0259189000	Holder for raised wall mounting
0259409000	Fixing bracket (provides 3-point fixing with accessory 0259189)
0292019001	Setpoint adjustment for each switching point according to customer's wishes (setting accuracy: ±3% of the setting range)
0292019002	Sealing of the adjustment screw for each switching point (only with accessory 0292019001)
0381141001	Profile sealing ring, copper, for G½"

DSD1**F002





DSD: Differential pressure switch

Features

- For monitoring the differential pressure in liquids, gases and vapours
- For use in, for example, filter technology and plant and machine engineering
- Differential pressure setting ranges from 0.06 to 6 bar
- Up to 80 °C media temperature
- High repeat precision
- High overload protection
- Can be used in all neutral media, such as heating water, neutral gases, oils etc.
- Long serviceable life
- With fitting bracket

Technical data

Parameters		
	Min. load	0.1 A, 250 V~, 25 VA 0.1 A, 30 V=
	Max. load	3(1) A, 250 V~, 250 VA 0.4 A, 30 V=, 10 W
	Temperature dependence	1.5%/10 K
	Accuracy	3% of the setting range
	Hysteresis	5% of the setting range
	Mechanical serviceable life	10^6 switchings
	Max. static operating pressure (positive and negative pressure)	16 bar
Ambient conditions		
	Admissible ambient temperature	-10...70 °C
	Admissible temperature of medium	0...80 °C (non-freezing media)
	Admissible ambient humidity	45...75% rh
Construction		
	Power cable[1)]	3 x 0.5 mm^2
	Diaphragms	Chromium-nickel steel 1.4310
	Connecting thread	G ⅛" (female thread)
	Weight	0.2 kg
Standards and directives		
	Type of protection	IP65 (EN 60529)
	Protection class	II (EN 60730)
CE conformity according to	Low-Voltage Directive 2014/35/EU	EN 60730-1 / EN 60730-2-6
	EMC Directive 2014/30/EU	EN 55014 Click rate N < 0.2 Art. 4.2
	PED 97/23/EC	Art. 3.3
	PED 2014/68/EU	Art. 13, fluid group 2

Overview of types

Type	Setting range (bar)
DSD134F102	0.06...0.6
DSD137F002	0.10...1.0
DSD140F002	0.25...2.5
DSD143F002	0.6...6.0

[1)] *1 m long, fixed wiring*

Accessories

Type	Description
0300360005	Cutting ring fitting G⅛" to 6 mm pipe (2 pcs)
0300360006	Pneumatic fitting G⅛" to 6 mm hose (2 pcs)
0300360016	Throttle screws G⅛", G⅛" (2 pcs)

Humidistats

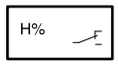
Room-, panel- and duct-mounted humidistats are employed for monitoring and controlling devices that are used for humidity regulation (fans, driers and humidifiers).

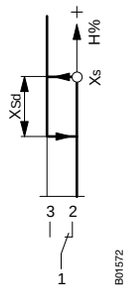
Overview of humidistats

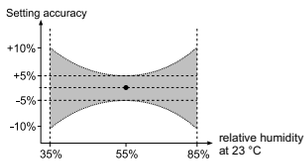
			
Type designation	HSC 120	HSC 101	HBC
Application			
Room	•	–	–
Panel	–	•	–
Duct	–	–	•
Further information	Page 41	Page 42	Page 43

HSC 120: Room humidistat

HSC120F0**







Features

- Monitoring and regulation of relative humidity in rooms by controlling fans, drying units and air humidifiers
- Variable relative humidity as setpoint based on printed scale in % rh
- Measurement taken via a measuring element of stabilised synthetic textile tape.
- Micro-switch with fixed switching difference X_{sd}

Technical data

Power supply		
	Max. load	5(3) A, 250 V~
	Min. load	100 mA, 24 V
Parameters		
	Setting range	30...90% rh
	Setting accuracy[1]	±5% rh
	Humidity calibration at	55% rh, 23 °C
	Switching difference	Typ. 6% rh
	Long-term stability	Approx. -1.5% rh/a
	Time constant in moving air (0.2 m/s)	Approx. 5 minutes
	Temperature influence	0.5% rh/K
Ambient conditions		
Operation	Humidity (non-condensing)	30...90% rh
	Temperature	0...50 °C
Storage and transport	Humidity (non-condensing)	10...95% rh
	Temperature	-20...70 °C
Construction		
	Weight	0.09 kg
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic
	Screw terminals	For electrical cables of up to 1.5 mm²
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	II (IEC 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-13

Overview of types

Type	Features
HSC120F001	External setpoint adjuster
HSC120F010	Internal setpoint adjuster

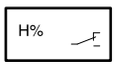
Accessories

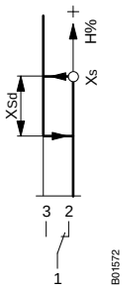
Type	Description
0362225001	Intermediate plate, pure white, for wall mounting on recessed junction box

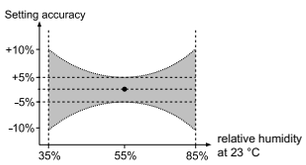
[1] *The setting accuracy of the humidistat is valid for the calibration point ±5% rh at 55% rh and 23 °C following initial calibration at the factory. See diagram "Setting accuracy". In general, humidity sensors (humidistats) are subject to increased ageing if they are used and/or stored in very contaminated air or aggressive gases. The humidistat may start to drift and its linearity may change under these conditions. If the humidistats are used in very contaminated air, the warranty does not cover a premature re-calibration or the replacement of the complete humidistat*

HSC 101: Panel-mounted humidistat (packing unit: 50 pieces)

HSC101F001







Features

- Monitoring and regulation of relative humidity by controlling fans, drying units and air humidifiers
- Adjustment of change-over point via setpoint adjustment axis
- Suitable for fitted applications with protection class II
- Measurement via a measuring element of stabilised synthetic textile tape
- Secured with bolting hole and fixing hole (blind hole)
- Micro-switch with single-pole change-over contacts and fixed switching difference
- Suitable for panel-mounted units only

Technical data

Power supply		
	Max. load	5(3) A, 250 V~
	Min. load	100 mA, 24 V
Parameters		
	Setting range	25...95% rh
	Setting accuracy[1]	±5% rh
	Humidity calibration at	55% rh, 23 °C
	Switching difference[2]	6% rh
	Long-term stability	–1.5% rh/a
	Time constant in moving air (0.2 m/s)	Approx. 3 minutes
	Temperature influence	0.5% rh/K
Ambient conditions		
Operation	Humidity (non-condensing)	25...95% rh
	Temperature	0...70 °C
Storage and transport	Humidity (non-condensing)	10...95% rh
	Temperature	-20...70 °C
Construction		
	Weight	0.03 kg
	Baseplate	Thermoplastic
	Electrical connection	AMP terminals 2.8 mm
Standards and directives[3]		
	Type of protection	IP00 (EN 60529)
	Protection class	0 (IEC 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 55014 Art. 4.2
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-13

Overview of types

Type	Features
HSC101F001	Panel-mounted humidistat

[1] *The setting accuracy of the humidistat is valid for the calibration point ±5% rh at 55% rh and 23 °C following initial calibration at the factory. See diagram "Setting accuracy". In general, humidity sensors (humidistats) are subject to increased ageing if they are used and/or stored in very contaminated air or aggressive gases. The humidistat may start to drift and its linearity may change under these conditions. If the humidistats are used in very contaminated air, the warranty does not cover a premature re-calibration or the replacement of the complete humidistat*

[2] *Can be substantially improved by recalibration during usage*

[3] *The fitting method must adhere to the relevant safety standards*

HBC: Duct-mounted humidistat

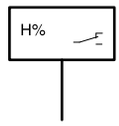
HBC11*F001

Features

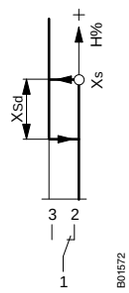
- Monitoring and regulation of relative humidity by controlling fans, drying units and air humidifiers
- Temperature-compensated humidity sensor
- Variable relative humidity as setpoint based on printed scale in % rh
- Includes fixing bracket with seal for duct or wall mounting
- For fitting in a ventilation duct or on a wall
- With single-pole change-over contacts and fixed switching difference X_{sd}
- Immersion depth 130...156 mm; includes fixing bracket

Technical data

Power supply		
	Max. load	5(3) A, 250 V~
	Min. load	100 mA, 24 V
Parameters		
	Setting range	15...95% rh
	Setting accuracy	±5% rh
	Humidity calibration at	55% rh, 23 °C
	Temperature influence	Compensated
	Long-term stability	–1.5% rh/a
	Time constant in moving air (0.2 m/s)	Approx. 3 minutes
	Switching difference X_{sd}	4% rh (after humidity calibration)
	Max. air speed	10 m/s
Ambient conditions		
Operation	Humidity (non-condensing)	30...90% rh
	Temperature	0...70 °C
Storage and transport	Humidity (non-condensing)	10...95% rh
	Temperature	-20...70 °C
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Housing cover	Thermoplastic, sealable
	Sensor tube	Glass-fibre-reinforced thermoplastic, Ø 30 mm
	Cable inlet	PG 11
	Screw terminals	For electrical cables of up to 1.5 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	II (IEC 60730)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-13



HBC111F001



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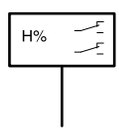

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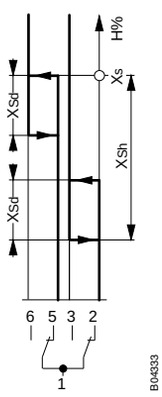


HBC112F001

Overview of types

Type	Switching range X_{sh}	Number of switches	Weight
HBC111F001	–	1	0.33 kg
HBC112F001	6...25% rh	2	0.35 kg

HBC 112: For 3-point control or min./max. monitoring and internally adjustable switching range X_{sd}

Accessories

Type	Description
0303538001	Set for increasing protection rating to IP55 (housing lid with transparent cap for setpoint knob, seal, 1 cable gland - PG 11, 1 plug - PG 11)
0370560011	Cable screw fitting PG 11, plastic, for cable of Ø 9...11 mm

Data capture

Accurate data form the basis for efficient control

The results from the data acquisition form the basis for control and monitoring. SAUTER provides quality sensors for all physical variables, such as temperature, humidity, pressure, flow and air quality, that are specifically geared towards building automation systems and the HVAC industry.

Data capture

Temperature

Air quality

Humidity

Flow and pressure

Temperature sensors

SAUTER temperature sensors are used for heating and air-conditioning systems in residential, office and business spaces. They are used to measure room, duct, outside and pipe temperatures.

Overview of temperature sensors

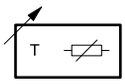
				
Type designation	EGT 130	EGT 330...335, 430	EGT 386, 388, 486, 686, 688	EGT 301, 401
Application				
Pipe/duct	–	–	–	–
Cable	–	–	–	–
Room (passive)	–	•	•	–
Room (active)	•	–	–	–
Clamp-on temperature	–	–	–	–
Outdoor temperature	–	–	–	•
Further information	Page 49	Page 49	Page 51	Page 52

				
Type designation	EGT 353...356, 456, 554	EGT 346...348, 392, 446, 447	EGT 311, 411	EGS 100
Application				
Pipe/duct	–	•	–	–
Cable	•	–	–	–
Room (passive)	–	–	–	–
Room (active)	–	–	–	–
Clamp-on temperature	–	–	•	–
Outdoor temperature	–	–	–	–
Radiation temperature	–	–	–	•
Further information	Page 54	Page 56	Page 60	Page 62

EGT 130, 330, 332, 335, 430: Room-temperature sensor, surface-mounted

EGT*30F***

EGT332F102



Features

- Passive measuring element
- Temperature measurement in dry rooms
- Variants with setpoint adjuster, presence button and status LED

Technical data

Power supply		
	Power supply	See type list
Parameters		
Time characteristic	Time constant in still air	12 minutes
Ambient conditions		
	Storage and transport temperature	–35...70 °C
	Admissible ambient temperature	-35...70 °C
Construction		
	Housing	Pure white, similar to RAL9010
	Housing material	ASA
	Cable inlet	From rear or side top/bottom
	Connection terminals	Screw terminal, max. 1.5 mm^2
	Weight	50 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Resistance values

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standards	Nominal value	Tolerance at 0°C
Ni500	DIN 43760	500 Ω at 0 °C	±0.4 K
Ni1000	DIN 43760	1000 Ω at 0 °C	±0.4 K
Pt100	DIN EN 60751	100 Ω at 0 °C	±0.3 K
Pt1000	DIN EN 60751	1000 Ω at 0 °C	±0.3 K

Overview of passive types

Type	Measuring range	Output signal	Adjuster
EGT330F052	-35...70 °C	Passive, Ni500	-
EGT330F102	-35...70 °C	Passive, Ni1000	-
EGT332F102	-35...70 °C	Passive, Ni1000	Resistor signal 2.5 kΩ
EGT335F102	-35...70 °C	Passive, Ni1000	Resistor signal 2.5 kΩ
EGT430F012	-35...70 °C	Passive, Pt100	-
EGT430F102	-35...70 °C	Passive, Pt1000	-

EGT 335 with presence button and 3 LEDs

Active

Type	Measuring range	Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption	Adjuster
EGT130F031	3 temperature ranges, adjustable on device (see connection diagram)	Typ. ±1% of measuring range[1)2)]	Active, 0...10 V, min. load 5 kΩ	15...24 V= (±10%)/ 24 V~ (±10%)	Max. 12 mA / 24 V=	-

[1)] *With offset adjustment ±3 K*

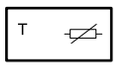
[2)] *The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be avoided by the customer.*

EGT 386, 388, 486, 686, 688: Room temperature sensor, recessed

EGT386F101

EGT486F101

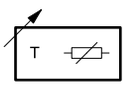
EGT686F101



EGT388F101

EGT388F102

EGT688F101



Features

- Passive room temperature measurement
- For temperature measurement in dry rooms (e.g. in residential properties, offices and business premises)
- Including frame

Technical data

Parameters		
	Measuring range	-35...70 °C
Time characteristic	Time constant in still air	30 minutes
Ambient conditions		
	Storage and transport temperature	–35...70 °C
	Admissible ambient temperature	-35...70 °C
Construction		
	Housing	Pure white
	Housing material	Thermoplastic
	Frame design	Gira E2
Standards and directives		
	Type of protection	IP20 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

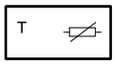
Measuring element	Standard	Nominal value at 0 °C	Tolerance at 0 °C
Ni1000	DIN 43760	1000 Ω	±0.4 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K
NTC 10k	-	10 kΩ at 25 °C	±0.3 K

Overview of types

Type	Measuring element	Adjuster	Weight
EGT386F101	Ni1000	–	0.053 kg
EGT388F101	Ni1000	10 kΩ	0.083 kg
EGT388F102	Ni1000	100 Ω	0.083 kg
EGT486F101	Pt1000	–	0.083 kg
EGT686F101	NTC 10k	–	0.053 kg
EGT688F101	NTC 10k	10 kΩ	0.083 kg

EGT*01F102

EGT301F031



EGT 301, 401: Outdoor temperature sensor

Features

- Passive or active measuring element
- Extra protection against dust and humidity (IP65)
- Cable inlet on back or via cable gland
- For weather-dependent heating and ventilation systems

Technical data

Parameters		
	Recommended measurement current	< 1 mA
Time characteristic	Time constant in still air	EGT*01F102: 12 minutes EGT301F031: 7 minutes
Ambient conditions		
	Ambient temperature	EGT*01F102: -35...90 °C, EGT301F031: -35...70 °C
Storage and transport	Storage and transport temperature	–35...70 °C
	Humidity (non-condensing)	85% rh
Construction		
	Sensor sleeve	EGT301F031: stainless steel 1.4571 Ø 6×25 mm
	Housing	White
	Housing material	Polyamide
	Connection terminals	Screw terminals 0.35 - 1.5 mm^2, for number of poles, see connection diagram
	Cable inlet	EGT*01F102:M16 for cable min. Ø 5 mm, max. Ø 8 mm EGT301F031:M20 for cable min. Ø 5 mm, max. Ø 8 mm
Standards and directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581
	EMC Directive 2014/30/EU	EGT301F031: EN 60730-1 (mode of operation 1, residential premises)

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standards	Nominal value at 0 °C	Tolerance at 0°C
Ni1000	DIN 43760	1000 Ω	±0.4 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K

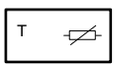
Overview of types

Type	Measuring range	Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption	Weight
EGT301F102	-35...90 °C	-	Passive, Ni1000	-	-	80 g
EGT401F102	-35...90 °C	-	Passive, Pt1000	-	-	80 g
EGT301F031	5 temperature ranges (-50...160 °C), adjustable on device (see connection diagram)	Typ. ±1% of measuring range[1)2)]	Active, 0...10 V, min. load impedance 1 kΩ	15...24 V= (±10%)/ 24 V~ (±10%)	Max. 0.42 W / 0.84 VA	120 g

[1)] *With offset adjustment ±3 K*

[2)] *The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be avoided by the customer.*

EGT*5*F***



EGT 353...356, 456, 554: Cable temperature sensor

Features

- Passive measuring element
- Particularly suitable for direct connection in installations with short distances between the controllers and the sensors
- Sensor with a wide range of applications and high type of protection (IP67) and fast time characteristic
- Used in air, used in liquid media with thermowells, or as a clamp-on temperature sensor with an accessory
- Large temperature measuring range

Technical data

Parameters

	Recommended measurement current	Typ. < 1 mA
Time characteristic in water	Time constant with thermowell (LW 7) in still water	9 s (t_{63})
Time characteristic in air	Time constant in still air	155 s (t_{63})
	Time constant in moving air (3 m/s)	35 s (t_{63})

Construction

	Sensor sleeve	Ø 6 × L (mm) - see table, up to 16 bar
	Material	Sensor sleeve: Stainless steel 1.4571 Cable: see table
	Power cable	Ø 5 mm with wire ferrules
	Cable cross-section	2 x 0.25 mm^2
	Active length	10 mm

Standards and directives

	Type of protection	IP67 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standards	Nominal value	Tolerance at 0 °C
Ni1000	DIN 43760	1000 Ω at 0 °C	±0.4 K
Pt100	DIN EN 60751	100 Ω at 0 °C	±0.3 K
Pt1000	DIN EN 60751	1000 Ω at 0 °C	±0.3 K
NTC 10k	-	10 kΩ at 25 °C	±0.3 K
NTC 22k	-	22 kΩ at 25 °C	±0.3 K

Overview of types

Type	Measuring element	Measuring range	Sleeve length LH	Total length Lg	Material	Weight
EGT353F101	NTC 10k	-35...100 °C	50 mm	1.5 m	PVC	0.04 kg
EGT353F103	NTC 10k	-35...100 °C	50 mm	3 m	PVC	0.085 kg
EGT353F110	NTC 10k	-35...100 °C	50 mm	10 m	PVC	0.28 kg
EGT353F120	NTC 10k	-35...100 °C	50 mm	20 m	PVC	0.55 kg
EGT554F103	NTC 22k	-35...100 °C	50 mm	3 m	PVC	0.085 kg
EGT354F102	Ni1000	-35...100 °C	50 mm	1 m	PVC	0.03 kg
EGT354F104	Ni1000	-35...100 °C	50 mm	3 m	PVC	0.085 kg
EGT354F111	Ni1000	-35...100 °C	50 mm	10 m	PVC	0.28 kg
EGT354F121	Ni1000	-35...100 °C	50 mm	20 m	PVC	0.55 kg
EGT355F902	Ni1000	-50...180 °C	100 mm	2 m	Silicone	0.06 kg
EGT355F903	Ni1000	-50...180 °C	150 mm	2 m	Silicone	0.06 kg

Type	Measuring element	Measuring range	Sleeve length LH	Total length Lg	Material	Weight
EGT356F102	Ni1000	-50...180 °C	50 mm	1 m	Silicone	0.03 kg
EGT356F104	Ni1000	-50...180 °C	50 mm	3 m	Silicone	0.09 kg
EGT356F111	Ni1000	-50...180 °C	50 mm	10 m	Silicone	0.3 kg
EGT356F304	Ni200	-50...180 °C	50 mm	3 m	Silicone	0.09 kg
EGT456F012	Pt100	-50...180 °C	50 mm	1 m	Silicone	0.03 kg
EGT456F102	Pt1000	-50...180 °C	50 mm	1 m	Silicone	0.03 kg

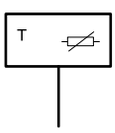
Accessories

Type	Description
0300360000	Compression fitting G¼"; stainless steel, up to 16 bar
0300360003	Mounting flange; plastic (max. 140 °C)
0300360004	Heat-conducting paste incl. gun with 2 g content
0300360008	Retaining holder for cable temperature sensor or capillary tube with 0392022*** (LW 7) or LW 15 (10 pcs)
0300360012	Sensor support spiral for fitting in ventilation duct
0313214001	Fixing kit (holder, heat-conducting paste, retaining strap)

*039*******: Thermowells (LW 7 and LW 15) made of brass or stainless steel (see product data sheet)*

EGT*4*

EGT392F102



EGT 346...348, 392, 446, 447: Duct temperature sensor

Features

- Passive or active measuring element
- For use in pipes and vessels by means of optional thermowells (LW 7). For use in standard HVAC applications up to 160 °C and aggressive ambient conditions up to 260 °C (EGT392F102)

Technical data

Parameters		
	Recommended measurement current	Typ. < 1 mA
Time characteristic	Time constant in moving air (3 m/s)	35 s (t_{63})
	Time constant in still air	155 s (t_{63})
	Time constant in still water	9 s (t_{63})
	Time constant in still water, with thermowell made of brass	17 s (t_{63})
	Time constant in still water, with thermowell made of stainless steel	20 s (t_{63})
Ambient conditions		
	Ambient temperature	EGT*4* passive: -35...90 °C EGT*4* active: -35...70 °C EGT392F102: -25...90 °C
Storage and transport	Storage and transport temperature	–35...70 °C
	Humidity (non-condensing)	85% rh
Construction		
	Housing	EGT*4*: Black/yellow
	Housing material	EGT*4*: Polyamide EGT392F102: Form J made of die-cast aluminium
	Connection terminals	EGT*4*: 45° screw terminals 0.35...1.5 mm^2 For number of poles, see connection diagram
	Cable inlet	M16 for cable min. Ø 5 mm, max. Ø 8 mm
	Immersion stem	Ø 6×L (mm) made of stainless steel 1.4571, up to 16 bar, see table
	Active length	10 mm
Standards and directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581
	EMC Directive 2014/30/EU	EGT34*F031: EN 60730-1 (mode of operation 1, residential premises)

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standard	Nominal value at 0 °C	Tolerance at 0 °C
Ni1000	DIN 43760	1000 Ω	±0.4 K
Ni200	DIN 43760	200 Ω	±0.4 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K
Pt100	DIN EN 60751	100 Ω	±0.3 K

Overview of passive types

Type	Measuring element	Immersion length L (mm)	Measuring range	Weight
EGT346F022	Ni200	100 mm	-50...160 °C	85 g
EGT346F102	Ni1000	100 mm	-50...160 °C	85 g
EGT347F022	Ni200	200 mm	-50...160 °C	95 g
EGT347F102	Ni1000	200 mm	-50...160 °C	95 g
EGT348F102	Ni1000	450 mm	-50...160 °C	120 g
EGT392F102	Ni1000	100 mm	-50...260 °C	105 g
EGT446F012	Pt100	100 mm	-50...160 °C	85 g
EGT446F102	Pt1000	100 mm	-50...160 °C	85 g
EGT447F012	Pt100	200 mm	-50...160 °C	95 g
EGT447F102	Pt1000	200 mm	-50...160 °C	95 g

Active

Type	Measuring range	Measuring accuracy at 21 °C[1)2)]	Output signal	Power supply	Power consumption	Immersion length L (mm)	Weight
EGT346F031	5 temperature ranges (-50...160 °C), adjustable on device (see connection diagram)	Typ. ±1% of measuring range	0...10 V, min. load 5 kΩ	15...24 V= (±10%) or 24 V~ (±10%)	Typ. 0.35 W / 0.82 VA	100 mm	90 g
EGT347F031	5 temperature ranges (-50...160 °C), adjustable on device (see connection diagram)	Typ. ±1% of measuring range	0...10 V, min. load 5 kΩ	15...24 V= (±10%) or 24 V~ (±10%)	Typ. 0.35 W / 0.82 VA	200 mm	100 g
EGT348F031	5 temperature ranges (-50...160 °C), adjustable on device (see connection diagram)	Typ. ±1% of measuring range	0...10 V, min. load 5 kΩ	15...24 V= (±10%) or 24 V~ (±10%)	Typ. 0.35 W / 0.82 VA	450 mm	120 g

Accessories

Type	Description
0300360000	Compression fitting G¼"; stainless steel, up to 16 bar
0300360003	Mounting flange; plastic (max. 140 °C)
0300360004	Heat-conducting paste incl. gun with 2 g content

*039*******: Thermowells (LW 7 and LW 15) made of brass or stainless steel (see product data sheet)*

[1)] *With offset adjustment ±3 K*

[2)] *The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be avoided by the customer.*

Thermowells

Features

- Fitted in pipes and containers for holding sensor cartridges, immersion stems, temperature sensors, temperature controllers or thermostats
- Made of brass (Ms) or stainless steel (V4A)
- Versions with cylindrical pipe thread (G½" male ISO 228/1, flat-sealing)[1] or cone-shaped (R½" ISO 7/1 sealing in thread)
- With pressure spring (LW 15)
- With retaining holder

Overview of types

Type	LW	Length	Material	Thread	Nominal pressure	Test pressure	T_{max}
0391022050	7	50 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022100	7	100 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022200	7	200 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022300	7	300 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022450	7	450 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391022600	7	600 mm	Stainless steel	G½"	40 bar	60 bar	325 °C
0391011050	7	50 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011100	7	100 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011150	7	150 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011200	7	200 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011300	7	300 mm	Brass	R½"	10 bar	16 bar	160 °C
0391011450	7	450 mm	Brass	R½"	10 bar	16 bar	160 °C
0393022100	15	100 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393022200	15	200 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393022450	15	450 mm	Stainless steel	G½"	40 bar	60 bar	450 °C
0393012100	15	100 mm	Brass	G½"	16 bar	25 bar	160 °C
0393012200	15	200 mm	Brass	G½"	16 bar	25 bar	160 °C
0392022100	7	100 mm	Stainless steel	G½"	25 bar	40 bar	450 °C
0392022300	7	300 mm	Stainless steel	G½"	25 bar	40 bar	450 °C

[1] *G½" male ISO 228/1, flat-sealing: for welding bushings with flat seal (accessories)*

0392022100 and 0392022300 for TUC thermostats only

*With TUC407F001 and TUC207F003, only use the supplied thermowells or stainless-steel thermowells (part nos.: 0393022*** or 0392022***).*

0391... with pressure screw (retaining holder) up to max. 200°C

Accessories

Type	Description
0300360008	Retaining holder for cable temperature sensor or capillary tube with 0392022*** (LW 7) or LW 15 (10 pcs)
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0300360017	Pressure spring for LW 15 (10 pieces)

			
LW 7, 50 mm	•	• L > 50 mm	–
LW 7, 100 mm	•	•	–
LW 7, 150 mm	•	•	–
LW 7, 200 mm	•	•	–
LW 7, 300 mm	•	• L > 300 mm	–
LW 7, 450 mm	•	•	–
LW 7, 600 mm	•	–	–
LW 15, 100 mm	•	–	•
LW 15, 200 mm	•	–	•
LW 15, 450 mm	•	–	•
0392022100	–	–	•
0392022300	–	–	•

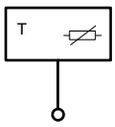
0392022100 and 0392022300 for TUC thermostats only.

*With TUC407F001 and TUC207F003, only use the supplied thermowells or stainless-steel thermowells (part nos.: 0393022*** or 0392022***).*

Only use the thermowells (LW 15) with at least 2 sensors or thermostats with a diameter of at least 6 mm.

0391... with pressure screw (retaining holder) up to max. 200°C.

EGT*11F***



EGT 311, 411: Clamp-on temperature sensor

Features

- Passive or active measuring element
- Extra protection against dust and humidity (IP65)
- Temperature measurement on pipes
- Including retaining strap for pipes of Ø 10...50 mm
- Heat-conducting paste (silicone-free) is included in the scope of delivery

Technical data

Parameters		
	Recommended measurement current	Typ.< 1 mA
Time characteristic with heat-conducting paste	Time constant	16 s

Ambient conditions		
	Storage and transport temperature	–35...70 °C
	Humidity (non-condensing)	85% rh

Construction		
	Housing	Yellow/black
	Housing material	Polyamide
	Connection terminals	Screw terminals 0.35 - 1.5 mm^2, for number of poles see connection diagram
	Cable inlet	M16 for cable min. Ø 5 mm, max. Ø 8 mm

Standards and directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581
	EMC Directive 2014/30/EU	EGT311F031: EN 60730-1 (mode of operation 1, residential premises)

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standards	Nominal value	Tolerance at 0°C
Ni1000	DIN 43760	1000 Ω at 0 °C	±0.4 K
Ni200	DIN 43760	200 Ω at 0 °C	±0.4 K
Pt100	DIN EN 60751	100 Ω at 0 °C	±0.3 K

Overview of types

Type	Measuring range	Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption	Weight
EGT311F022	-35...90 °C	-	Passive, Ni200	-	-	80 g
EGT311F102	-35...90 °C	-	Passive, Ni1000	-	-	80 g

Type	Measuring range	Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption	Weight
EGT411F102	-35...90 °C	-	Passive, Pt1000	-	-	80 g
EGT311F031	5 temperature ranges (-50...160 °C), adjustable on device (see connection diagram)	Typ. ±1% of measuring range[1)2)]	Active, 0...10 V, min. load impedance 5 kΩ	15...24 V= (±10%) 24 V~ (±10%)	Max. 0.42 W / 0.84 VA	120 g

Accessories

Type	Description
0300360002	Retaining strap 900 mm and heat-conducting paste
0300360004	Heat-conducting paste incl. gun with 2 g content

1) *With offset adjustment ±3 K*

2) *The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be avoided by the customer.*

EGS100F70*

EGS 100: Radiation temperature sensor

Features

- Mean value measuring of radiation temperature and room temperature
- Ni or NTC characteristic
- Passive measuring element
- Measuring range: -35...70 °C
- Measuring element: Thin-film sensor

Technical data

Parameters		
	Measuring range	-35...70 °C
Time characteristic	Time constant in still air	15 min
Construction		
	Weight	0.1 kg
	Dimensions	84.5 × 84.5 mm
	Housing	Pure white, similar to RAL 9010
	Housing material	Thermoplastic with black hemisphere
	Connection terminals	2 × 1.5 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	RoHS Directive 2011/65/EU	EN 50581
CE conformity	EMC Directive 2014/30/EU	EN60730-1 (mode of operation 1, residential premises)

Overview of types

Type	Resistance values	Tolerance	Measuring elements
EGS100F705	1 kΩ (at 0 °C)	±0.4 K (at 0 °C)	2x Ni500 as per DIN 43760 in series
EGS100F706	10 kΩ (at 25 °C)	±1% (at 25 °C)	2x NTC 5 kΩ in series
EGS100F707	22 kΩ (at 25 °C)	±1% (at 25 °C)	2x NTC 11 kΩ in series

Air quality sensors

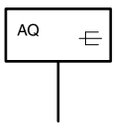
Air quality is of the utmost importance for the performance and well-being of people in closed rooms. With CO_2 and VOC sensors from SAUTER, it is possible to measure air quality exactly, so that ventilation systems can be controlled in accordance with demand. As a result, not only is the indoor air quality improved, but energy consumption is also reduced by improving the operational efficiency of ventilation systems.

Overview of air quality sensors

			
Type designation	EGQ 220, 222	EGQ 120	EGQ 281
Application			
Room, surface-mounted	•	•	–
Room, recessed	–	–	•
Duct	–	–	–
Variables			
CO_2	•	–	•
VOC	–	•	–
Temperature	•	–	–
Humidity	–	–	–
Pressure	–	–	–
Further information	Page 69	Page 66	Page 71

			
Type designation	EGQ 212	EGQ 110	CRP 510
Application			
Room, surface-mounted	–	–	–
Room, recessed	–	–	•
Duct	•	•	–
Variables			
CO_2	•	–	–
VOC	–	•	–
Temperature	•	–	•
Humidity	–	–	•
Pressure	–	–	•
Volume flow	–	–	–
Further information	Page 67	Page 64	Page 72

EGQ110F031



EGQ 110: Duct transducer, air quality (VOC)

Features

- Measures the relative mixed gas concentration (organic components in the room air), such as tobacco smoke, kitchen vapours or human body odours
- Demand-based ventilation control in buildings such as restaurants and offices
- For measuring air quality in air ducts
- Automatic self-calibration through software algorithm
- Calibrated ex works and ready to use immediately
- The sensors have been developed according to the DIN EN 13779, DIN EN 15251, VDI 6038 and 6040 directives
- Mounting flange supplied

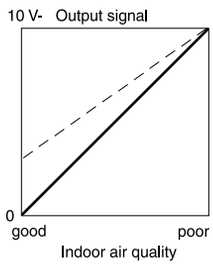
Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Power consumption	Max. 1.5 W (24 V=) | 2.9 VA (24 V~)
	Peak inrush current	10 A < 2 ms
Outputs		
	Output signal	0...10 V Min. load: 10 kΩ
Parameters		
	Flow speed	Min. 3 m/s Max. 10 m/s
	Readiness for operation	< 2 minutes (operational), 15 minutes (max. precision)
Time characteristic	In moving air (3 m/s)	5 minutes
	Measuring range	0...100%
	Serviceable life	Typically 10 years
	Sensor	VOC sensor, heated tin dioxide semi-conductor
Ambient conditions		
	Ambient temperature	0...50 °C
	Ambient humidity	Max. 85% rh non-condensing
Construction		
	Connection terminals	Clamp connector 1.5 mm^2
	Cable inlet	M20 for cable Ø min. 5 mm, max. 10 mm
	Housing	Yellow/black
	Housing material	Polyamide 6
	Filter unit material	Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
	Sensor tube length	180 mm
	Weight	350 g
Standards and directives		
	Type of protection	Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Features
EGQ110F031	Duct transducer; VOC; 0-10 V

EGQ120F031



EGQ 120: Room transducer, air quality, surface-mounted

Features

- Measures the relative mixed gas concentration (organic components in the room air), such as tobacco smoke, kitchen vapours or human body odours
- Demand-based ventilation control in buildings such as restaurants and offices
- Active VOC semi-conductor sensor (volatile organic compound) for measuring the mixed gas concentration
- Calibration of the output signal using a trim potentiometer
- Suitable for fitting directly to walls

Technical data

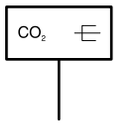
Power supply		
	Power supply	24 V=/~ ±10%
	Power consumption	1.2 W / 2.2 VA
	Warming-up time	Approx. 30 minutes
Parameters		
	Time constant in moving air (0.5 m/s)	Approx. 100 seconds
Ambient conditions		
	Admissible ambient temperature	-20...50 °C
	Admissible ambient humidity	Max. 85% rh, no condensation
Inputs/outputs		
	Output signal	0...10 V, min. load 10 kΩ
Construction		
	Housing	Pure white
	Housing material	ABS, ASA
	Connection terminals	Screw terminal, max. 1.5 mm^2
	Weight	65 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)

Overview of types

Type	Description
EGQ120F031	Room transducer, air quality, surface-mounted

EGQ 212: Duct transducer, CO_2 and temperature

EGQ212F031



Features

- Selective measurement of the CO_2 concentration and temperature for demand-controlled ventilation of rooms (e.g. meeting rooms, conference rooms, offices, classrooms, etc.)
- CO_2 measurement with NDIR[1] Dual-beam technology, therefore stable in the long term and largely resistant to external influences
- Suitable for 24-hour operation
- Calibrated ex works and ready to use immediately
- The sensors have been developed according to the DIN EN 13779, DIN EN 15251, VDI 6038 and 6040 directives
- Mounting flange supplied

Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Power consumption	Max. 1.5 W (24 V=) | 2.9 VA (24 V~)
	Peak inrush current	10 A, 2 ms
Outputs		
	Output signal	2 × 0...10 V, load > 10 kΩ
Parameters		
	Readiness for operation	< 2 minutes (operational), 15 minutes (max. precision)
	Flow speed	Min. 3 m/s Max. 10 m/s
Time characteristic	In moving air (3 m/s)	5 minutes
CO_2	Measuring range	0...2000 ppm
	Measuring accuracy	±75 ppm, >750 ppm:±10% (typ. at 21 °C)
	Pressure dependence	Typ.0.135% of the measured value per mm Hg
	Temperature dependence	Typ.2 ppm per °C (0...50 °C)
	Gradual drift	< 5% FS or < 10% per year
Temperature	Measuring range	0...50 °C
	Measuring accuracy	±1 °C for the measuring range (typ. 21 °C and 24 V=)
Ambient conditions		
	Ambient temperature	0...50 °C
	Ambient humidity	Max. 85% rh non-condensing
Construction		
	Connection terminals	Plug-in connector, max. 1.5 mm^2
	Cable inlet	M20 for cable Ø min. 5 mm, max. 10 mm
	Housing	Yellow/black
	Housing material	PA6
	Filter unit material	Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
	Sensor tube length	180 mm
	Weight	180 g
Standards and directives		
	Type of protection	Instrument head: IP65 (EN 60529)

[1] *NDIR: Non-dispersive infrared sensor*

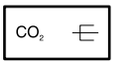
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

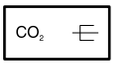
Type	Description
EGQ212F031	Duct transducer, CO_2 and temperature; 2 x 0-10 V

EGQ 220, 222: Room transducer, CO_2, surface-mounted

EGQ220F031



EGQ222F031



- Selective measurement of the CO_2 concentration for demand-controlled ventilation of rooms (e.g. meeting rooms, conference rooms, offices, classrooms, etc.)
- Available in 2 versions: With and without temperature measurement
- CO_2 measurement with NDIR[1] Dual-beam technology, therefore stable in the long term and largely resistant to external influences
- Suitable for 24-hour operation
- Calibrated ex works and ready to use immediately
- Very fast response to changes in the CO_2 concentration in rooms
- Temperature-compensated calibration for the standard air pressure of 1013 mbar
- The sensors have been developed according to the DIN EN 13779, DIN EN 15251, VDI 6038 and 6040 directives

Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Power consumption	Max. 3 W (24 V=) | 6 VA (24 V~)
	Peak inrush current	10 A, 2 ms
Parameters		
Time characteristic	In room (0.1 m/s)	2 minutes
CO2	Measuring range	0...2000 ppm
	Measuring accuracy	±75 ppm, >750 ppm:±10% (typ. at 21 °C)
	Pressure dependence	Typ.0.135% of the measured value per mm Hg
	Temperature dependence	Typ.2 ppm per °C (0...50 °C)
	Gradual drift[2]	< 5% FS or < 10% per year
Temperature (EGQ 222)	Measuring range	0...50 °C
	Measuring accuracy	±1% of measuring range (typ. at 21 °C)
Ambient conditions		
	Ambient temperature	0...50 °C
	Admissible ambient humidity	Max. 85% rh non-condensing
Construction		
	Connection terminals	Screw terminal, max. 1.5 mm^2
	Cable inlet	From behind, top, bottom
	Housing	Pure white
	Housing material	ASA
	Weight	90 g
Standards and directives		
	Type of protection	IP30 according to EN 60529
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

[1] *NDIR: Non-dispersive infrared sensor*
[2] *Air flow speed 0,15 m/s, air flow direction, laminar from below upwards.*

Overview of types

Type	Description	Readiness for operation	Output signal
EGQ220F031	Room transducer, surface-mounted, CO_2; 0-10 V	< 2 minutes (operational), < 15 minutes (response time)	1 x 0...10 V, load ≥ 10 kΩ
EGQ222F031	Room transducer, surface-mounted, CO_2 + temp; 2 x 0-10 V	< 2 minutes (operational), 15 minutes (response time)	2 x 0...10 V, load ≥ 10 kΩ

EGQ 281: Room transducer, CO_2, recessed

EGQ281F031

Features

- CO_2 sensor for continuous measurement of the CO_2 concentration for the demand-controlled ventilation of rooms (e.g. meeting rooms, conference rooms, offices, classrooms, etc.)
- CO_2 measurement with NDIR dual-beam technology[1], therefore stable in the long term and resistant to external influences
- Any ageing or contaminating effects are continuously compensated in real time
- Very fast response to changes in the CO_2 concentration in rooms
- Temperature-compensated calibration for the standard air pressure of 1013 mbar
- Calibrated ex works and ready to use immediately
- Low energy requirement of the ventilation system during the warming up time of the sensor
- Including frame

Technical data

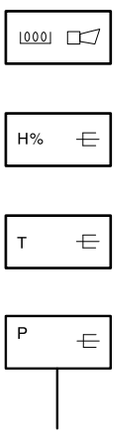
Power supply		
	Power supply (SELV)	15...24 V= (±10%) / 24 V~ (±10%)
	Power consumption	< 1.6 W (typ. 0.3 W) < 3.9 VA (typ. 0.7 VA)
Output signal		
	Analogue output	0...10 V
	Load current	Max. 10 mA
Parameters		
	Measuring range	0...2000 ppm
	Measuring accuracy	< ±50 ppm 2% of the measured value (25 °C and 1013 mbar)
	Time constant	< 195 s (t_{90})
	Measuring cycle	15 s
	Long-term stability	Typ.20 ppm/year
Ambient conditions		
	Ambient temperature	-20...70 °C
Construction		
	Housing	Pure white
	Housing material	Lower section: PA6 Front plate: PC
	Frame design	Gira E2
	Weight	90 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Description
EGQ281F031	Room transducer, CO_2; 0...10 V, recessed

[1] *NDIR: Non-dispersive infrared sensor*

CRP510F010D



CRP 510: Cleanroom Monitoring Panel

Features

- Clean room panel for data capture of temperature, pressure, humidity in clean rooms and safety laboratories as per EN ISO 14644-1, class 1-9 and GMP, class A-D
- Integration via serial RS-485 interface with SLC protocol or 0...10 V signals
- Notification via acoustic alarm and background colour of display
- Ports for zero adjustment of pressure sensor
- Convenient operation and actual value indication via touch display
- USB port for convenient data transfer and configuration
- Very precise temperature and humidity sensor
- Dual-membrane pressure sensor with calibrating valve
- Freely configurable inputs and outputs and display tiles
- Surface resistant to chemicals
- Quick display of measured values with alarm thresholds
- User management

Technical data

Power supply		
	Power supply	24 V~ ± 20%, 50...60 Hz 24 V= ± 20%
	Power consumption	15 VA / 8 W
	Start-up current	700 mA
Temperature		
	Measuring range	-40...100 °C
	Accuracy	± 0.5 °C at 23 °C
	Stability	< 0.04 °C/p.a.
Humidity		
	Measuring range	0...100% rh
	Accuracy	< 2% rh at 10...90% rh
	Stability	< 0.3% rh/p.a. at 10...90% rh
Pressure		
	Measuring range Δp (gain = 1)	-75...75 Pa
	Linearity error	2% FS
	Time constant	0.1 s
	Reproducibility	0.2% FS
	Zero point stability	0.2% FS at 20 °C
	Admissible positive pressure	± 10 kPa
	Admissible operating pressure p_{stat}	± 3 kPa
Touch colour display, LCD		
	Size of display	3.5"
	Type	TN TFT
	Resolution	320 x 240 pixels
	Touch	Resistive
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	10...90% rh
	Storage and transport temperature	−10...70 °C
	Environment	For use in all clean room classes as per EN ISO 14611-1 and EU GMP guidelines

Inputs/outputs		
	Analogue inputs	0...10 V
	Analogue outputs	0...10 V, 20 mA
Inputs/outputs in combination with ecos500/504/505		
	Ni1000/Pt1000	-20...100 °C
	Digital outputs	Relay normally-open contact 230 V~/5 A (total max. 10 A)
	Analogue outputs	0...10 V, 2 mA
Function		
	Horn	Acoustic, integrated into back
Interfaces and communication		
	Interface	RS-485
	Protocol	SLC (SAUTER Local Communication)
Construction		
	Weight	3.1 kg
	Dimensions W x H x D	700 × 200 × 49 mm
	Connections	Terminals/plugs
	Panel fitting	6 × hexagon socket screws, M4
	Fitting cut-out	Min. H: 480 (+2) mm Min. B: 138 (+2) mm
	Front panel material	V2A
Standards and directives		
	Type of protection	IP67 (front, when built-in) IP20 (back cover)
	Protection class	II (EN 60730-1)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1

Overview of types

Type	Description
CRP510F010D	Clean room panel with integrated pressure, temperature and humidity sensor (rel.)
CRP510F001D	Clean room panel with integrated pressure sensor

Accessories

Type	Description
0297867001	Reference pressure container

Humidity sensors

SAUTER humidity sensors are used for the energy-efficient control and monitoring of ventilation systems. Sensors are available for measuring the relative humidity and enthalpy of the air. They can be used in residential or business premises and can also be fitted in air ducts.

Overview of humidity sensors

					
Type designation	EGH 120, 130	EGH 681	EGH 110...112	EGE 112	EGH 102
Application					
Room, surface-mounted	•	–	–	–	–
Room, recessed	–	•	–	–	–
Duct	–	–	•	•	–
Clamp-on sensor	–	–	–	–	•
Measurement					
Temperature	•	•	•	•	–
Relative humidity	•	•	•	–	–
Enthalpy	–	–	–	•	–
Dew point	–	–	–	–	•
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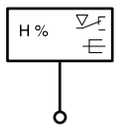
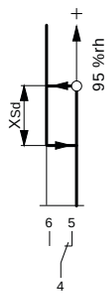
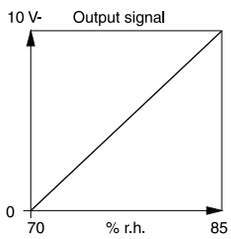
EGH 102: Dew point monitor and transducer

EGH102F*01







Features

- Protects against dew formation on chilled ceilings
- Controls a regulating unit via a holding relay that interrupts the cooling water flow or increases the cooling water temperature
- Best solution for monitoring chilled-ceiling systems
- Measurement taken by a spring-mounted dew point sensor
- Active measuring element
- Variant with external sensor (EGH102F101)
- Holding relay with changeover contacts
- Includes retaining strap for pipes of ∅ 10...100 mm and heat-conducting paste

Technical data

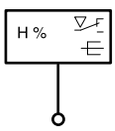
Power supply		
	Power supply	24 V~/=, ±20%
	Power consumption	Max. 1 VA
Parameters		
	Measuring range	70...85% rh
	Change-over contact[1]	1 A, 24 V~/=
	Response time in still air	80 to 99% rh, 99 to 80% rh, max. 3 minutes
	Exposure to dew	Max. 30 min
	Switching difference	Fixed, approx. 5% rh
	Switching point	95 ±4% rh
Ambient conditions		
	Admissible ambient temperature	5...60 °C
Inputs/outputs		
	Output signal	Approx. 70...85% rh, 0...10 V, load > 10 kΩ
Construction		
	Screw terminals	For electrical cables of up to 1.5 mm²
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic
	Weight	0.1 kg
	Cable inlet	For Pg 11
Standards and directives		
	Type of protection	IP40 (EN 60529)
	Mode of operation	Type 1 C (EN 60730)

Overview of types

Type	Clamp-on sensor
EGH102F001	Integrated in housing
EGH102F101	Cable 1 m long, sensor integrated in the cable end

[1] *When activating relays, gates etc. with cos ϕ < 0.3, it is recommended to use RC circuitry in parallel to the coil. This reduces contact pitting and prevents high-frequency interference*

EGH103F001



EGH 103: Dew-point monitor

Features

- Protects against dew formation on chilled ceilings etc.
- Controls a regulating unit via a holding relay that interrupts the cooling water flow or increases the cooling water temperature.
- Measurement is performed by a dew-point sensor
- Potential-free output contact for 24 V and 230 V
- Holding relay with changeover contacts
- LED indicator for power supply and dew formation
- Plug-in connectors for electrical cables up to 1.5 mm^2
- Cable inlet M20
- Fitted onto pipes using the provided cable tie for pipes Ø 10...100 mm

Technical data

Power supply		
	Power supply	230 V~ ±10%
	Power consumption	Max. 3.5 VA
Parameters		
	Change-over contact[1)]	5A, 230 V~
	Switching point	95 ±4% rh
	Switching difference	Fixed, approx. 5% rh
Ambient conditions		
	Admissible ambient temperature	-20...60 °C (non-condensing)
Construction		
	Housing	Pure white, PA6
	Weight	0.19 kg
Standards and directives		
	Type of protection	IP 65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	Low-Voltage Directive 2014/35/EU	EN 61000-6-1, EN 61000-6-3

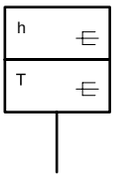
Overview of types

Type	Description
EGH103F001	Dew-point monitor 230 V~

[1)] *When activating relays, gates etc. with cos ϕ < 0.3, it is recommended to use RC circuitry in parallel to the coil. This reduces contact pitting and prevents high-frequency interference*

EGE 112: Duct transducer, enthalpy

EGE112F031



Features

- Measures the enthalpy and temperature in air ducts
- Measurement by means of fast capacitive measuring element
- Active measuring element
- Unaffected by flow speeds and normal contamination
- Mounting flange supplied

Technical data

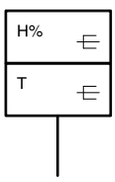
Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Power consumption	Max. 0.4 W (24 V=) | 0.8 VA (24 V~)
Outputs		
	Output signal	2 x 0...10 V (min. load 10 kΩ)
Parameters		
	Flow speed	Min. 3 m/s Max. 10 m/s
Time characteristic	Time constant in moving air (3 m/s)	3 minutes
Enthalpy	Measuring range	0...100 kJ/kg
	Measuring accuracy	3.5 kJ/kg (typ. at 21 °C)
Temperature	Measuring range	-20...80 °C
	Measuring accuracy	±0.5 °C (typ. at 25 °C)
Ambient conditions		
	Ambient temperature	-20...70 °C
Construction		
	Connection terminals	Screw terminal, max. 1.5 mm^2
	Cable inlet	M20 for cable Ø min. 5.8 mm, max. 10 mm
	Housing	Yellow/black
	Housing material	PA6
	Filter unit material	Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
	Sensor tube length	140 mm
	Weight	120 g
Standards and directives		
	Type of protection	Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Description
EGE112F031	Duct transducer, enthalpy and temperature, 2 x 0-10 V

EGH 110...112: Duct transducer, relative humidity and temperature

EGH11*F0*1



Features

- Measures the relative humidity and temperature in air ducts
- Measurement by means of fast capacitive measuring element
- Active and passive measuring element
- Immersion depth 140 mm
- Mounting flange supplied

Technical data

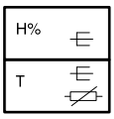
Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Peak inrush current	1.5 A, 4 ms
Parameters		
Humidity	Measuring range, humidity	0...100% rh, no condensation
	Measuring accuracy, humidity	Typ. ±2% (10...90% rh)
	Repeat accuracy	Typ. ±0.1% rh
	Gradual drift	Typ. < 0.5% rh/year
Temperature	Measuring range, temperature	-20...80 °C
	Measuring accuracy, temperature	±0.5 °C (typ. at 25 °C)
	Repeat accuracy	Typ. ±0.1 °C
	Gradual drift	Typ. < 0.04 °C/year
Time characteristic	In moving air (3 m/s)	2 minutes (t63)
	Readiness for operation	10 seconds (operational), 5 minutes (max. precision)
	Flow speed	Min: 0 m/s Max: 10 m/s
	Hysteresis	±1%
Ambient conditions		
	Ambient temperature	-20...70 C
Construction		
	Connection terminals	Screw terminals, max. 1.5 mm^2
	Cable inlet	M20 for cable with min. Ø 5 mm, max. Ø 10 mm
	Housing	Yellow/black
	Housing material	PA6
	Filter unit material	Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
	Sensor tube length	140 mm
	Weight	120 g
Standards and directives		
	Type of protection	Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Power consumption	Output signal
EGH110F041	Max. 1 W (24 V=)	2 × 4...20 mA (max. load 500 Ω)
EGH111F031	Max. 0.4 W (24 V=) | 0.8 VA (24 V~)	2 × 0...10 V (min. load 10 kΩ) + Ni1000
EGH112F031	Max. 0.4 W (24 V=) | 0.8 VA (24 V~)	2 × 0...10 V (min. load 10 kΩ)

EGH 120, 130: Room transducer, relative humidity and temperature

EGH1*0F0*1



Features

- Measurement by means of fast capacitive sensor
- Active measuring element
- Suitable for fitting directly to walls
- Converts the measured values into a continuous analogue signal (0...10 V or 4...20 mA)

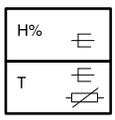
Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
Parameters		
Relative humidity	Measuring range	0...100% rh, no condensation
	Measuring accuracy	±2% between 10...90% rh (typ. at 21 °C)
Temperature	Measuring range	0...50 °C
	Measuring accuracy	±0.5 °C (typ. at 25 °C)
Ambient conditions		
	Admissible ambient temperature	-20...70 °C
Construction		
	Housing material	ASA
	Housing	Pure white
	Connection terminals	Screw terminals, max. 1.5 mm^2
	Weight	80 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Output signal	Power consumption
EGH120F041	2 x 4...20 mA	Max. 1 W (24 V=)
EGH130F031	2 x 0...10 V	Max. 0.3 W (24 V=) | 0.5 VA (24 V~)

EGH681F031



EGH 681: Room transducer, relative humidity and temperature, recessed

Features

- Measures the relative humidity and temperature in rooms
- Regulation of the room climate in combination with room automation systems
- Fast response time and high precision
- Including frame

Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
	Power consumption	Typ.0.3 W / 0.5 VA
Output signal		
	Output signal	0...10 V, load resistance at least 10 kΩ
Parameters		
	Measuring range, temperature	0...50° C
	Measuring range, humidity	0...100% rh
Ambient conditions		
	Ambient temperature	-20...70 °C
Construction		
	Housing	Pure white
	Housing material	Lower section: ABS Front plate: PC
	Frame design	Gira E2
	Weight	80 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581
	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)

Overview of types

Type	Description
EGH681F031	Room transducer, relative humidity and temperature, recessed

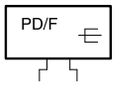
Flow and pressure sensors

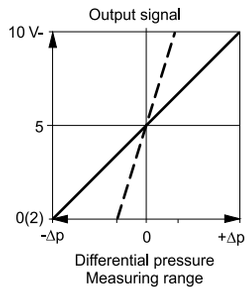
SAUTER flow and pressure sensors enable the accurate measurement of air pressures and flow speeds in rooms and ventilation ducts. This includes the measurement of duct pressures for precise control and monitoring of ventilation systems. Additionally, SAUTER flow and pressure sensors can also be used to measure room pressures in laboratories and clean rooms and for flow monitoring in fume cupboards.

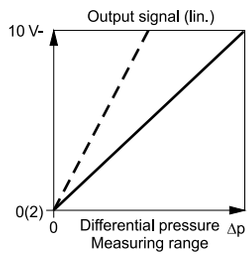
Overview of flow and pressure sensors

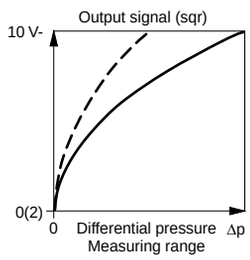
						
Type designation	EGP 100	XAFP 100	SVU 100	DSU, DSI	DSDU, DSDI	SGU 100
Variable	Δp	Δp	m/s	Δp	Δp	mm
Application						
Duct	•	•	–	–	–	–
Laboratories & clean rooms	•	•	–	–	–	–
Fume cupboards	•	•	•	–	–	•
Pressure monitoring in liquids, gases and vapours	–	–	–	•	•	–
Travel measurement	–	–	–	–	–	•
Further information	Page 82	Page 84	Page 85	Page 86	Page 88	Page 90

EGP100F*12









Gain Δp = 1
Gain Δp = 3

EGP 100: Differential pressure transducer

Features

- Exact measurement of positive, negative and differential pressures in gases
- Optimised for applications such as filter monitoring, room or duct pressure monitoring, level monitoring in fluids, actuating frequency converters for fan control and recording volume flow, especially for room air balancing in laboratories
- Can be ideally combined with XAFP 100 flow probe for precise measurement of volume flow
- Static dual-membrane pressure sensor on capacitive basis
- Can be fitted in any position
- Can be used for dusty air or air polluted with chemicals (not ATEX approved)
- Manufacturer's test certificate ex works
- The measuring range can be adapted optimally to the needs of the application
- Variable zero point and filter time constant to suppress pressure surges in the system
- Display shows the actual value and the signal progression (depending on type)
- Status LED for immediate indication of operating status (depending on type)
- Measuring range can be reduced to one third (depending on type)
- Fitted to either wall or DIN rail (EN 60715)
- Cover that does not require special tools to open

Technical data

Power supply		
	Power supply	24 V~/=, ±20%
Power consumption F**2	24 V~	3.0 VA
	24 V=	1.3 W
Power consumption F**1	24 V~	1.4 VA
	24 V=	0.4 W
Parameters		
	Admissible positive pressure	±10 kPa
	Influence of position[1]	±1% full span (FS) at 150 Pa, ±75 Pa, ±0,75% FS at 300 Pa, ±150 Pa
	Non-linearity	1% FS pressure-linear
	Zero point stability	< 0.3% FS
	Reproducibility	0.2% FS
	Pneumatic connection[2]	6.2 mm
	Parts in contact with media	PC/ABS blend, MQ, CuSn6, FR4
Ambient conditions		
	Temperature of medium	0...70 °C
	Admissible operating pressure p_{stat}[3]	±3 kPa
	Admissible ambient temperature	0...60 °C
	Admissible ambient humidity	5...95% rh, no condensation
Inputs/outputs		
	Output signal[4]	F*01: 0...10 V, load > 10 kΩ F*11: 0...10 V, load > 5 kΩ F*02/F*12: 0(2)...10 V, load < 500 Ω

[1] *The sensor is calibrated at the factory for vertical fitting. The influence of position must be taken into account if the unit is not fitted in the vertical position.*

[2] *Max. length of measuring wire (di = 6.2 mm): Lmax = 15 m for time constant < 0.5 s, Lmax = 60 m for time constant > 0.5 s*

[3] *The zero point should be recalibrated if the admissible operating pressure is exceeded*

[4] *With a load of < 500 Ω, a change-over to 0...20 mA or 4...20 mA occurs automatically. Output protected against short circuits and excess voltage up to 24 V~*

Filter time constant	F*01: 0.05...2 s F*02, F*11, F*12: 0.15...5.2 s

Construction

Pressure connection	Internal Ø 6 mm
Housing	PC/ABS
Cable gland	M16
Screw terminals	For electrical cables of up to 1.5 mm²

Standards and directives

Type of protection	IP65 (EN 60529)
Protection class	III (EN 60730-1)
EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

Output signal: Analogue output limited to 10.6 V. Measured values with an overrun of 6% of the measuring range can therefore be transferred

Variable characteristic/LED: Manual adjustment of measuring range with gain potentiometer. Signal curve: linear/root-extracted. Output signal: 0...10 V/2...10 V via DIP switches or with CASE Sensors software

Type	Measuring range	Display	Variable characteristic/LED	Weight (kg)
EGP100F101	±75 Pa, ±0,75 mbar	–	–	0.17
EGP100F102	±75 Pa, ±0,75 mbar	–	•	0.18
EGP100F111	±75 Pa, ±0,75 mbar	•	–	0.18
EGP100F112	±75 Pa, ±0,75 mbar	•	•	0.19
EGP100F201	±150, 1,5 mbar	–	–	0.17
EGP100F202	±150, 1,5 mbar	–	•	0.18
EGP100F211	±150, 1,5 mbar	•	–	0.19
EGP100F212	±150, 1,5 mbar	•	•	0.19
EGP100F301	0...150 Pa, 0...1.5 mbar	–	–	0.17
EGP100F302	0...150 Pa, 0...1.5 mbar	–	•	0.18
EGP100F311	0...150 Pa, 0...1.5 mbar	•	–	0.18
EGP100F312	0...150 Pa, 0...1.5 mbar	•	•	0.19
EGP100F401	0...300 Pa, 0...3.0 mbar	–	–	0.17
EGP100F402	0...300 Pa, 0...3.0 mbar	–	•	0.18
EGP100F411	0...300 Pa, 0...3.0 mbar	•	–	0.18
EGP100F412	0...300 Pa, 0...3.0 mbar	•	•	0.19

Accessories

Type	Description
0010240300	Connection set, 6 mm, complete
XAFP100F001	Flow probe to measure the air volume in ventilation ducts
CERTIFICAT001	Manufacturer's test certificate type M
CERTIFICAT999	Test for further device (from 2 pcs.)
0300360001	USB connection set

XAFP100F001

XAFP 100: Flow probe for ventilation ducts

Features

- Flow probe for precise and inexpensive recording of differential pressure signals in ventilation and air conditioning systems
- Efficient regulation of applications for demand-controlled ventilation in offices, laboratories, fume cupboards and clean rooms, by combining an air damper and an electronic/pneumatic volume flow controller
- In combination with a square root differential pressure sensor, air volume flows can be reliably recorded and monitored
- Optimised flow profile for accurate measurement of differential pressure signals
- Can be used in atmospheres containing aggressive substances
- Length (396 mm) can be shortened on site if necessary

Technical data

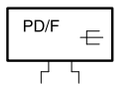
Parameters		
	Measurement tolerance	< 3%
	Range (mm)	DN 80...400
Admissible ambient conditions		
	Operating temperature	0...50 °C
	Admissible ambient humidity	< 85% rh, no condensation
Function		
	Function	Flow probe
Construction		
	Dimensions	65 × 40 × 396 mm (W × H × L)
	Bore	Ø 30...32 mm
Material	Flow probe	PA 6
	Seal	PE, physiologically safe
	Connecting tube	PU
Standards and directives		
Flow probe	Electrical	UL 7468
	Flammability	UL 94, IEC 60695-2-12, IEC 60695-2-13

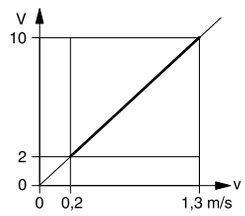
Overview of types

Type	Features
XAFP100F001	Flow probe for ventilation ducts

SVU 100: Air-flow transducer

SVU100F005





Features

- Precise and long-term stable recording of air inflow speeds in fume cupboards with a time constant of <100 ms
- Particularly suitable for fume cupboards with horizontal and vertical front sashes
- Air volume control according to needs for fume cupboards with horizontal and vertical front sashes
- Precise and long-term stable recording of air inflow speeds in fume cupboards
- Reliable detection of reversal of flow direction
- Integrated filter unit that protects against contamination of the sensor
- Dynamic pressure sensor based on thin-film technology
- Fitted to the fume cupboard simply and quickly

Technical data

Power supply		
	Power supply	24 V~, -15%/+20%, 50...60 Hz
	Power consumption	1 VA
Parameters		
	Measuring range	0...1 Pa
	Measuring span[1]	0...1.3 m/s
	Differential pressure	Approx. 0...1 Pa
	Time constant	< 0.1 s
	Air throughput rate	3 cm^3/min (at 1 m/s)
Ambient conditions		
	Admissible ambient temperature	5...55 °C
	Admissible ambient humidity	< 90% rh
Inputs/outputs		
	Output signal[2]	0...10 V
	Linearity	2% (based on the output signal)
Standards and directives		
	Type of protection	IP40 (EN 60529) with terminal cover
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3

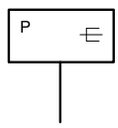
Overview of types

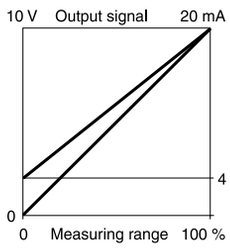
Type	Feature
SVU100F005	Linear to v [m/s]

Specified flow speed is based on ρ = 1.2 kg/m^3

[1] *Recommended measuring span 0.2...1.3 m/s (output 2...10 V)*
[2] *Output signal: Output protected against short circuits and excess voltage up to 24 V~*

DS*2**F002





DSU, DSI: Pressure transmitter

Features

- For measuring pressure in liquids, gases and vapours
- Sturdy device with ceramic diaphragm
- High precision
- High positive pressure protection
- High vibration resistance
- Low hysteresis
- Standard signal 2...10 V or 4...20 mA
- Pressure sensor made of stainless steel for aggressive media
- With standard plug as per DIN EN 175301-803-A

Technical data

Power supply		
	Power supply	See type list
	Electrical connection	DSI: Two-wire DSU: Three-wire
Parameters		
	Temperature dependence	Zero point 0.07% FS/K Measuring range 0.05% FS/K
	Admissible load	DSU: $U_b \geq 15$ V ≥ 5 kΩ $U_b \geq 20$ V ≥ 2 kΩ DSI: (U_b-6 V)/0.02 A
Ambient conditions		
	Admissible ambient temperature	0...60 °C
	Admissible temperature of medium	0...85 °C
Inputs/outputs		
	Hysteresis	< 0.5% FS
	Linearity	< 1% FS
Construction		
	Housing material	Chromium-nickel steel 1.4305
	Device plug	Plug connection 4-pin, standard plug DIN EN 175 01-803-A, cable gland M16
	Cable cross-section	Max. 1.5 mm^2
	Pressure connection	G ½"
	Weight	0.2 kg
Standards and directives		
	Type of protection	IP65 (EN 60529)
	Protection class	III (EN 61140)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 / EN 61000-6-2 EN 61000-6-3 / EN 61000-6-4 EN 60730
	PED 2014/68/EU	Subject to Art. 3.3 of PED without safety function

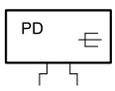
Overview of types

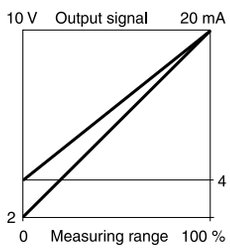
Type	Measuring range (bar)	Output signal	Power supply	Maximum pressure	Power consumption
DSU203F002	0...2.5 bar	0...10 V	24 V=/~	8 bar	24 V=/~, 0.5 W (VA)
DSU206F002	0...6 bar	0...10 V	24 V=/~	20 bar	24 V=/~, 0.5 W (VA)
DSU210F002	0...10 bar	0...10 V	24 V=/~	32 bar	24 V=/~, 0.5 W (VA)
DSU216F002	0...16 bar	0...10 V	24 V=/~	50 bar	24 V=/~, 0.5 W (VA)
DSU225F002	0...25 bar	0...10 V	24 V=/~	80 bar	24 V=/~, 0.5 W (VA)
DSI203F002	0...2.5 bar	4...20 mA	24 V=	8 bar	24 V=, 0.7 W
DSI206F002	0...6 bar	4...20 mA	24 V=	30 bar	24 V=, 0.7 W
DSI210F002	0...10 bar	4...20 mA	24 V=	32 bar	24 V=, 0.7 W
DSI216F002	0...16 bar	4...20 mA	24 V=	50 bar	24 V=, 0.7 W
DSI225F002	0...25 bar	4...20 mA	24 V=	80 bar	24 V=, 0.7 W

Accessories

Type	Description
0300360007	Capillary throttle, stainless steel, length 1 m, G½"-G½"
0300360015	Wall holder for DSU/DSI

DSD*10*F021





DSDU, DSDI: Differential pressure transmitter

Features

- For measuring pressure differences in liquids, gases and vapours
- Pressure measuring in non-aggressive fluids or gaseous media
- Sturdy device with ceramic diaphragm
- For use in filter technology, heating systems etc.
- Differential pressure measuring range from 0...6 bar
- Analogue signal 0...10 V or 4...20 mA
- 24 V~/= supply voltage
- With fitting bracket
- Standard plug as per DIN EN 175301-803-A

Technical data

Power supply		
	Power supply	24 V=/~, ±20%, (50...60 Hz)
	Electrical connection	Three-wire
	Power consumption	< 1.5 W (VA)
Parameters		
	Output signal	0...10 V Load: > 2 kΩ 4...20 mA Load: ≤ 700 Ω (V=), ≤ 400 Ω (V~)
	Accuracy[1]	≤ 1%
Ambient conditions		
	Admissible ambient temperature	-20...80°C
	Admissible temperature of medium	0...80°C (non-freezing media)
	Admissible ambient humidity	45...75% rh
	Burst pressure	64 bar (both sides)
Construction		
	Housing material	Brass
	Diaphragms	Ceramic
	Connecting thread	G ⅛" (female thread)
	Device plug	Plug connection 4-pin, standard plug DIN EN 175 01-803-A, cable gland M16
	Weight	0.62 kg
Standards and directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 61326-1, EN 61326-2-3
	PED 2014/68/EU	Fluid group II, article 4.3

Overview of types

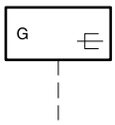
Type	Measuring range Δp	Output signal	Max. pressure (connection +)	Max. pressure (connection -)
DSDI101F021	0...1 bar	4...20 mA	10 bar	5 bar
DSDI103F021	0...2.5 bar	4...20 mA	21 bar	15 bar
DSDI106F021	0...6 bar	4...20 mA	21 bar	15 bar
DSDU101F021	0...1 bar	0...10 V	10 bar	5 bar
DSDU103F021	0...2.5 bar	0...10 V	21 bar	15 bar
DSDU106F021	0...6 bar	0...10 V	21 bar	15 bar

[1] *Including non-linearity and hysteresis in compensated temperature range 10...70°C*

Accessories

Type	Description
0300360005	Cutting ring fitting G⅛" to 6 mm pipe (2 pcs)
0300360006	Pneumatic fitting G⅛" to 6 mm hose (2 pcs)
0300360016	Throttle screws G⅛", G⅛" (2 pcs)

SGU100F01



SGU 100: Sash sensor

Features

- Infinitely-variable measurement of the position of the vertical front sash on laboratory fume cupboards
- Accurate detection of sash position, with no wear and tear
- Fast control of the air volume; no oscillation
- Easy fitting, preferably on the counterweight of the front sash
- Teach-in function for adjusting the travel of the front sash
- Easy to program using the SAUTER CASE Sensors software
- Integrated excess-travel alarm
- Power cable 2.5 m long, 7 × 0.32 mm^2, fixed to housing
- Fitted with halogen-free cable as standard
- Remote access and remote maintenance: Commissioning and service via bus or external push-button
- 3-colour LED status indicator
- Acoustic status and alarm elements (can be deactivated)

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±20%
	Power consumption 24 V~[1]	Typically: 2 VA, 0.75 W, inactive buzzer, max.: 4 VA, 1.5 W, active buzzer
	Power consumption 24 V=[2]	Typically: 0.6 W, inactive buzzer, max.: 1.1 W, active buzzer
Parameters		
	Linearity error	Max. 1.5% based on working range, e.g.: 2...10 V = 8 V
	Hardware response time[3]	< 100 ms
	Filter time constant	0...5, 22 s, variable using SAUTER CASE Sensors
Ambient conditions		
	Operating temperature	0...55 °C
	Storage and transport temperature	–20...70 °C
	Humidity	85% rh, no condensation
Inputs/outputs		
	Digital input	I_{out_source} max.: 1 mA, V_{out} max.: 18 V at $R_{load} = \infty$
	Alarm output	I_{sink} max.: 2 mA, open collector output, 100 mV at I_{sink} 2 mA, V_{in} max.: 24 V=, 20% at I_{sink} = 0 mA
	Voltage output[4]	0/2...10 V, 1 mA max., V_{out} max.: 11.5 V, can be parametrised, Default 2...10 V
	Typical overall error	2.5% (unlinearity, hysteresis, offset, amplified; based on working range)
	Temperature influence	< 0.04 %/K

[1] *Default is buzzer active*
[2] *Inactive/active buzzer: Default is buzzer active*
[3] *The set filter time constant must be added*
[4] *Protected against short circuits and excess voltage to 24~*

Construction

Weight	0.68 kg
Length of cable without bus termination[5]	Up to 200 m, ∅ 0.5 mm

Standards and directives

Type of protection	IP10 (EN 60529, IP20 (EN 60529)
Protection class	III (EN 60730)
Software	A (EN 60730)
EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Working range	Resolution of working stroke
SGU100F010	200...800 mm for bench-mounted fume cupboards (max. spring travel 1000 mm)	< 1 mm
SGU100F011	400...1600 mm for walk-in fume cupboards (max. spring travel 2000 mm)	< 2 mm

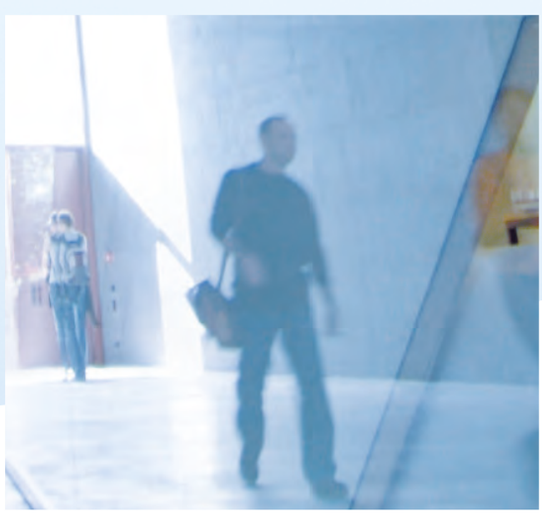
Accessories

Type	Description
0300360001	USB connection set

[5] *Cable length of bus termination on both sides 120 Ω: 200...500 m, ∅ 0.5 mm*

Single-room, heating and air-conditioning controllers

For all building situations: either stand-alone or networked.
SAUTER stand-alone controllers are ideally suited to dedicated applications such as heating, air-conditioning, ventilation, room control. They can be installed quickly. The intuitive operating concept ensures maximum comfort and guarantees, at the same time, the greatest possible energy efficiency in day-to-day operations. SAUTER's stand-alone controllers meet all the demands with regard to smooth functionality, yet enable the installation to be run economically.



Single-room, heating and air-conditioning controllers

Single-room control

equitherm heating control

flexotron controllers for ventilation and air-conditioning

VAV compact controllers

Room-temperature controllers

SAUTER single-room controllers combine easy operability with a modern design. The devices can be used in various applications on hotel, business or residential premises. These include individual temperature control for single rooms, apartments and zones in 2- and 4-pipe systems. The electronic room controllers from SAUTER are efficient, economical and easy to operate.

Overview of room-temperature controllers

		
Type designation	NRT300F0*1	NRT300F0*2
Application		
Air-conditioning controller	•	•
For 2-pipe installation	•	–
For 4-pipe installation	•	•
For 2/3-way zone valve	•	–
For 6-way ball valve	–	•
Outputs		
Continuous	• [1]	•
Quasi-continuous, 2-point	• [2]	–
3-point	• [3]	–
Control		
PI	•	•
Operating element		
Presence button	•	•
Further information	Page 95	Page 97

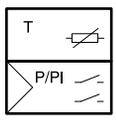
[1] *Applicable for type F061*
[2] *Applicable for type F041*
[3] *Applicable for type F041*

NRT 300: Electronic air-conditioning controller, heating/cooling, equiflex

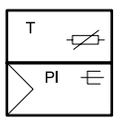
Features

- Air-conditioning controller for 2- and 4-pipe systems (heating, cooling, heating/cooling)
- Measurement of room temperature by either integrated or external temperature sensor
- Saves energy costs by means of presence/absence key and rotary knob on front
- Inputs for C/O signal, changeover between presence and absence, dew-point monitoring and setpoint shift
- Choice of P or PI control with 2-point, pulse-pause, 3-point or outputs (0...10 V)
- LED indicator
- Servicing level with adjustable control parameters
- Frost-protection facility
- Electrical connection in baseplate
- Electronics in attachable housing

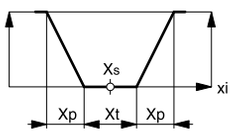
NRT300F0*1



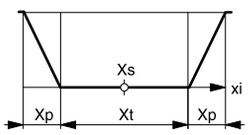
NRT300F041



NRT300F061



Sequence, dead zone normal



Sequence, dead zone extended

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	Approx. 2.5 VA
Parameters		
	Setting range X_s	10...30 °C
	Proportional band	2...20 K
	Integral action time	2...20 minutes or OFF (as P-controller)
	Period or running time of actuator	0.5...20 minutes
	Control parameters	Non-volatile
Dead zone X_t	Normal	0,4...5 K
	Extended	8 K
Sensor time constant for air	In room (0.1 m/s)	8 minutes
	In duct (0.5 m/s)	3 minutes
	In duct (3 m/s)	1 minutes
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	5...95% rh, no condensation
Inputs/outputs		
	Command variable w	0...10 V, R_i = 90 kΩ
	Influence of w	1.6 K/V
Function		
	Operating mode	Sequence (heating/cooling)
	Change-over functions[1)]	X_t, C/O, TP
Construction		
	Weight	0.1 kg
	Housing	Pure white (RAL 9010)
	Housing material	Fire-retardant thermoplastic
	Fitting	Wall fitting/recessed junction box
	Cable feed	At rear
	Screw terminals	For wire of up to 1 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)

[1)] *X_t = dead zone ON/OFF; C/O = summer/winter, (changeover); TP = dew point monitoring*

	Protection class	III (IEC 60730)
	Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1, EN 60730-2-9

Overview of types

Type	Output signal	Load on outputs
NRT300F041	Switched	0.5 A (0.9 A when external sensor fitted)
NRT300F061	Continuous	0...10 V, load > 5 kΩ; with overflow > 11 V (load-dependent)

NRT300F061: Suitable as a master controller for max. 10 × NRT 300: (slope S = P-band X_p; shift starting point FF = setpoint X_s; operating mode = sequence)

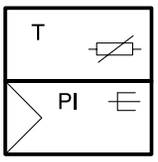
Accessories

Type	Description
AVF***	Motorised valve actuator (see product data sheet)
AVM***	Motorised valve actuator (see product data sheet)
AXM***	Motorised valve actuator (see product data sheet)
AXT2**	Thermal actuators for unit valves (see product data sheet)
EGH102F001	Dew-point monitor with sensor in housing
EGH102F101	Dew-point monitor with sensor on cable
0296724000	Sensor holder for wall mounting
0368139000	Rubber bung as sensor holder in ventilation duct
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 × 76 mm
EGT353F101	Cable temperature sensor; NTC 10k; -35...100 °C; L = 1.5 m
EGT353F103	Cable temperature sensor; NTC 10k; -35...100 °C; L = 3 m
EGT353F110	Cable temperature sensor; NTC 10k; -35...100 °C; L = 10m
EGT353F120	Cable temperature sensor; NTC 10k; -35...100 °C; L = 20m
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP30
0313409001	Holder for sensor cartridge in ventilation duct
0313501001	Housing with scale 10...30 °C

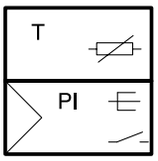
NRT 300: Electronic air-conditioning controller for 6-way ball valve, heating/cooling

Features

- Air-conditioning controller for 4-pipe systems (heating/cooling)
- Measurement of the room temperature either by integrated or external temperature sensor, e.g. in heated/chilled ceilings in hotels and residential and business spaces
- Saves energy costs by means of presence/absence key and rotary knob on front
- Inputs for changeover between presence and absence, dew point monitoring and setpoint shift
- P- /PI control (F063) or PI control (F062)
- LED indicator for presence, heating, cooling and dew point
- Servicing level with adjustable control parameters
- Frost-protection facility
- Electrical connection in baseplate
- Adjustable limiting of the heating volume flow



NRT300F062



NRT300F063

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	Approx. 2.5 VA
Parameters		
	Setting range X_s	10...30 °C
	Proportional band	2...22 K
	Integral action time	2...20 minutes or OFF (as P-controller)
	Control parameters	Non-volatile
Dead zone X_f	Normal	0.2...6 K
	Extended	8 K
Sensor time constant for air	In room (0.1 m/s)	8 minutes
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	5...95% rh, no condensation
Inputs		
	Setpoint shift w	0...10 V, Ri = 90 kΩ
	Dead zone	ON/OFF
	Dew point	ON/OFF
Function		
	Operating mode	Sequence (heating/cooling)
	Change-over functions[1)]	X_f, TP
Construction		
	Weight	0.1 kg
	Housing	Pure white (RAL 9010)
	Housing material	Flame-retardant thermoplastic
	Fitting	Wall mounting/recessed junction box
	Cable feed	At rear
	Screw terminals	For electrical cables of up to 1 mm²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (IEC 60730)

[1)] *X_f = dead zone ON/OFF; TP = dew point monitoring*

	Energy class	I = 1% as per EU 811/2013, 2010/30/EU, 2009/125/EC
CE conformity according to	EMC Directive 2014/30/EU	EN60730-1 EN60730-2-9

Overview of types

Type	Function	Output
NRT300F062	Regulation of heating/cooling with 6-way ball valve	1 x 10 V load > 5 kΩ; with overflow at 11 V (load-dependent)
NRT300F063	Heating/cooling changeover with 6-way ball valve; control with dynamic regulating valve	1 x 0...10 V load > 5 kΩ; with overflow > 11 V (load-dependent) 1 x switching 0.5 A (0.9 A with external sensor)

Accessories

Type	Description
AKM115SF132	Rotary actuator with SAUTER Universal Technology (SUT) for ball valve; 24 V
AKM115F122	Rotary actuator for ball valve 2-/3-pt; 24 V~
AXM***	Motorised valve actuator (see product data sheet)
AXS2**	Continuous thermal actuators for unit valves (see product data sheet)
EGH102F001	Dew-point monitor with sensor in housing
EGH102F101	Dew-point monitor with sensor on cable
0303124000	Recessed junction box
0313214001	Fixing kit (holder, heat-conducting paste, retaining strap)
0313347001	Cover plate, pure white, for 76 × 76 mm
EGT353F101	Cable temperature sensor; NTC 10k; -35...100 °C; L = 1.5 m
EGT353F103	Cable temperature sensor; NTC 10k; -35...100 °C; L = 3 m
EGT353F110	Cable temperature sensor; NTC 10k; -35...100 °C; L = 10m
EGT353F120	Cable temperature sensor; NTC 10k; -35...100 °C; L = 20m
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP30
0313501001	Housing with scale 10...30 °C

Surface temperature regulation

The systems and solutions from SAUTER set standards for convenient control of surface heating and cooling systems. The products stand for technologically advanced, precise and easy to operate installations. The systems provide modern solutions for single- and multi-family residences, hotels and public buildings, where the focus is on optimal comfort, easy operation and energy efficiency.

Overview of surface temperature regulation

			
Type designation	FXV 3***	TRT 317, 327	TRA 410, 421
Application			
Controller	–	–	–
Electrical distributor	•	–	–
Operating device	–	•	•
Circuits / zones			
6 channels	•	–	–
4 / 8 / 12 channels	–	–	–
Time channels / set-back mode	•	•	•
Power supply			
24 V	•	•	•
230 V	•	•	•
Battery 3V	–	–	–
Operation and indicator			
Display	–	–	•
Sensor buttons	–	–	–
Rotary knob	–	•	•
LED	•	–	–
Function			
Communication via wireless connection	–	–	–
Communication via wire connection	•	•	•
Network connection	–	–	•
Heating	•	•	•
Heating/cooling	•	•	•
Visualisation of the status	–	–	•
Access via app	–	–	–
Further information	Page 100	Page 102	Page 104

FXV3210F002

FXV

FXV 3***: Electric distributor for positioning signals

Features

- For easy wiring of up to 6 or 10 zones in a surface heating system
- For transferring switching signals from the unitary controllers for heating or heating/cooling
- Individual forwarding of time commands or night set-back to the appropriate actuators; max. 2 timer channels
- With pump and boiler control
- Pump logic with adjustable follow-on time for actuating the circulation pump
- Integrated valve protection function
- Input for temperature limiter or dew point monitor
- LED status indicator
- Pump control direction switching for NC/NO actuators
- For connecting up to 18 actuators
- Cable guidance, standard-compliant cord grip and screwless terminal connections
- Easy, intuitive wiring and installation

Technical data

Power supply		
	Power supply 230 V~	±10%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
	Distributor fuse 24 V	T2A
	Distributor fuse 230 V	T4AH
Parameters		
	Circuits/zones	6 or 10
	Timer channels/set-back	2
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible storage temperature	-20...70 °C
	Admissible ambient humidity	< 80% rh
Inputs/outputs		
Outputs	Number of actuators	6 channels:Max. 15 pcs. 10 channels:Max. 18 pcs.
	Pump connection	Max. 6 (2) A
	Boiler connection	Max. 6 (2) A
Inputs	Set-back	Potential-free contact input
	Heating/cooling	Potential-free contact input
	TB or dew point	Potential-free NC contact
Construction		
	Housing material	Flame-retardant ABS plastic, black RAL9005
	Cover	Transparent grey plastic
	Fitting	Mounted unit, DIN rail
Connection terminals / cable		
	Connection terminals	Terminals with spring technology for 0.2 to 1.5 mm² vertical cable entry
	Power cable	Solid: NYM-J/NYM-O (max. 5 × 1.5 mm²) Flexible: H03V2V2H2-F / H05V2V2H2-F
	Cable clamping device	Integrated in housing

Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	II (EN 60730)
CE conformity	EMC Directive 2014/30/EU	EN 60730-1 Type 1C
	Low-Voltage Directive 2014/35/EU	EN 60730-1 & -2-9 Type 1C

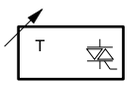
Overview of types

Type	Nominal voltage	Features	Channels	Weight
FXV3006F001	24 V~ / 230 V~	Heating, with decrease	6	0.482 kg
FXV3110F001	230 V~	Heating/cooling, with decrease and pump control	10	0.515 kg
FXV3110F002	24 V~	Heating/cooling, with decrease and pump control	10	0.515 kg
FXV3210F001	230 V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	0.55 kg
FXV3210F002	24 V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	0.534 kg

Accessories

Type	Description
0450573001	Transformer 230 / 24 V, 42 VA

TRT3**F21*



TRT 317, 327: Electronic room thermostat for heating and heating/cooling

Features

- Electronic room thermostat for 24 V or 230 V for heating or heating/cooling
- Silent-switching Triac output on 24 V types
- Easy to wire up
- NTC sensor
- With input for lowering the room temperature
- With input for heating/cooling changeover (TRT 327)
- With cooling lock function on versions for heating/cooling
- Modern design with ergonomic setpoint adjuster
- With restriction of temperature setting range
- Electrical connection in baseplate with screw terminals
- With automatic frost protection facility at 8 °C and valve protection function

Technical data

Power supply		
	Power supply	24 V~ / 230 V~
	Power consumption	< 0.3 W in idle state
	Fuse	In housing: 230 V = T2AH 24 V = T1A
Parameters		
	Number of actuators	AXT211/201: 230 V, max. 6 pcs. parallel 24 V, max. 4 pcs. parallel
	Setting range	10...28 °C
	Switching difference	±0.5 K
	Set-back	2 K
	Measuring element	NTC
Ambient conditions		
	Ambient temperature	0...50 °C
	Ambient humidity	5...80% rh, no condensation
Construction		
	Housing	Cover: White (RAL 9016) Lower section: Signal white (RAL 9003)
	Housing material	Thermoplastic PC + ABS
	Fitting	Wall, recessed junction box
Inputs/outputs		
	Switching element	230 V, relay 24 V, Triac
	Switch rating	230 V, 1.8 A
	ECO input	230 V, voltage detection 230 V 24 V, voltage detection 24 V
	Heating/cooling	230 V, voltage detection 230 V 24 V, voltage detection 24 V
Connection terminals / cable		
	Connection terminals	Screw terminals 0.22mm^2 to 1.5mm^2
	Switching difference	±0.5 K
	Cord grip	External

Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9

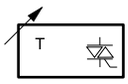
Overview of types

Type	Description	Voltage	Weight
TRT317F210	Heating, lowering, frost protection function	230 V~, ± 10 %, 50 Hz	0.09 kg
TRT317F212	Heating, lowering, frost protection function	24 V~, ± 20 %, 50 Hz	0.09 kg
TRT327F210	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	230 V~, ± 10 %, 50 Hz	0.135 kg
TRT327F212	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	24 V~, ± 10 %, 50 Hz	0.135 kg

Accessories

Type	Description
AXT2**	Thermal actuators (see product data sheet)

TRA4**F21*



TRA 410, 421: Electronic room thermostat for heating and heating/cooling with display

Features

- Electronic room thermostat for 24 V or 230 V for heating or heating/cooling with display
- Easy to read LCD with backlight on TRA 421
- Silent-switching Triac output (24 V types)
- Easy to wire up
- NTC sensor
- Time programme and pilot clock output integrated in TRA 421
- Optimised time programme for comfort control and energy saving
- Input for lowering the room temperature (TRA 410)
- Input for heating/cooling changeover (TRA 421)
- Input for external temperature sensor
- Cooling lock function on versions for heating/cooling
- Integrated "NC" and "NO" changeover
- Modern design with ergonomic setpoint adjuster
- Restriction of temperature setting range
- Automatic frost protection facility at 5 °C and valve protection facility

Technical data

Power supply		
	Power supply	See type list
	Power consumption	< 0.3 W in idle state
	Fuse	In housing: 230 V= T1AH 24 V= T1A
Parameters		
	Number of actuators	AXT 211/201: 230 V, max. 5 pcs. parallel 24 V, max. 4 pcs. parallel
	Setting range	5...30 °C
	Switching difference	±0.2 K
	Set-back	2 K or adjustable
	Measuring element	NTC 22k
Ambient conditions		
	Ambient temperature	0...50 °C
	Ambient humidity	5...80% rh, no condensation
Construction		
	Housing	Cover: White (RAL 9016) Lower section: Signal white (RAL 9003)
	Housing material	Thermoplastic PC + ABS
	Fitting	Wall, recessed junction box
Inputs/outputs		
	Switching element	230 V, relay 24 V, Triac
	Switch rating	230 V, 1 A 24 V, 1 A
	ECO input	230 V, voltage detection 230 V 24 V, voltage detection 24 V

	Heating/cooling	Input: 230 V, voltage detection 230 V 24 V, voltage detection 24 V
	Pilot timer	Output: 230 V, 100 mA 24 V, 100 mA

Connection terminals / cable		
	Connection terminals	Screw terminals 0.22 mm^2 to 1.5 mm^2
	Power cable	Solid: NYM-J/NYM-O (max. 5 × 1.5 mm^2) Flexible: H03V2V2H2-F / H05V2V2H2-F

Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9

Overview of types

Type	Description	Power supply	Weight
TRA410F210	Heating, lowering, frost protection function	230 V~, ±10%, 50 Hz	0.13 kg
TRA410F212	Heating, lowering, frost protection function	24 V~, ±20%, 50 Hz	0.13 kg
TRA421F210	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	230 V~, ±10%, 50 Hz	0.14 kg
TRA421F212	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	24 V~, ±10%, 50 Hz	0.14 kg

Accessories

Type	Description
AXT2**	Thermal actuators for unit valves (see product data sheet)
EGT554F103	Cable temperature sensor NTC 22k, –35...100 °C, IP67, length 3 m

Heating controller

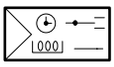
SAUTER heating controllers of the equitherm series are easy to operate, while ensuring that your installation meets the highest standards of energy-optimised operation. They can be networked with each other in large installations via the integrated Modbus communication facility. The applications for these heating controllers include weather-dependent boiler and/or supply temperature control and domestic hot water preparation, as well as heating control in local or district heating networks.

Overview of heating controllers

			
Type designation	EQJW 126	EQJW146F001	EQJW146F002
Application			
Solar	–	•	•
Boiler control	–	•	•
Supply temperature control	•	•	•
Heating of drinking water	–	•	•
Local/district heating	•	•	•
Operation			
Symbol display	•	•	–
Graphics display	–	–	•
Function			
Two control loops	–	•	•
Timetables	•	•	•
Communication			
Bus connection	•	•	•
Logbook	–	–	•
Further information	Page 107	Page 109	Page 109

EQJW 126: Heating controller with digital user interface, equitherm

EQJW126F001



Features

- PI supply temperature control by heating curve or 4-point characteristic
- Convenient to use with modern operating concept (turn and press) and large LCD
- Convenient weekly and annual switching programmes with optimisation of switching times
- Automatic summertime/wintertime changeover
- Min./max. limitation of supply temperature and max. limitation of return temperature
- Frost-protection facility and pump and valve anti-jamming function
- Function heating (floor-drying function)
- Room temperature switching using room temperature sensor
- Ni/Pt1000 inputs for the outside, supply, return flow and room temperature
- Relay outputs with varistor suppression for activating control units and pump
- Manual mode
- Electrical connection in baseplate
- Interface for various accessories such as modem, gateway, data logging module etc.

Technical data

Power supply		
	Power supply	230 V~, ±15%, 50...60 Hz
	Power consumption	Approx. 1.5 VA
Parameters		
Control parameters	Proportional band	0.1...50 K
	Integral action time	1...999 s
	Frost-protection temperature	3 °C
Temperature ranges	Normal temperature	0...40 °C
	Reduced temperature	0...40 °C
	Supply temperature	–5...150 °C
	Outside temperature	–50...50 °C
	Cycle time	Running time of the valve ÷ 15
	Running time of valve	30...300 s
Ambient conditions		
	Admissible ambient temperature	0...40 °C
	Admissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	–10...60 °C
Inputs/outputs		
	Number of inputs	3 analogue, Ni1000/Pt1000
	Number of outputs	3 relays
	Pump relay[1)]	1 × 2 A, 250 V~, cos ϕ > 0,5
	Actuator relay (3-point or 2-point)[2)]	2 × 2 A, 250 V~, cos ϕ > 0,5
Function		
Digital timer for weekly/annual switching programme	Backup power supply	Min. 24 h, typically 48 h
	Accuracy	< 1 s/d
Weekly switching programme	Number of switching commands	42 per week
	Min. switching interval	15 minutes
Annual switching programme	Number of switching commands	20
	Min. switching interval	1 d

1) *Start-up current max. 16 A (1 s)*
2) *Extra low voltage not admissible*

Interfaces and communication		
	Interface	RJ45
	Protocol	Modbus, device bus (TAP)
Construction		
	Weight	0.5 kg
	Dimensions	144 × 98 × 54 mm
	Housing	Light-grey
	Housing material	Fire-retardant thermoplastic
	Fitting	Wall, panel, top-hat rail
	Screw terminals	For electrical cables of up to 2.5 mm²
Standards and directives		
	Type of protection (when fitted in panels)	IP40 (EN 60529)
	Protection class	II (IEC 60730-1)
	Software class	A (IEC 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1

Overview of types

Type	Features
EQJW126F001	Heating controller with digital user interface

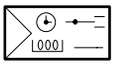
Accessories

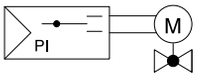
Type	Description
AVF***	Motorised valve actuator (see product data sheet)
AVM***	Motorised valve actuator (see product data sheet)
AXM***	Motorised valve actuator (see product data sheet)
EGT***	External temperature sensor Ni1000 (see product data sheet)
0440210001	Communication module for connecting EQJW 126/146 controllers to RS-232 (PC)
0440210002	Communication module for connecting EQJW 126/146 controllers to modem
0440210003	Communication module for connecting EQJW 126/146 controllers to RS-485 bus
0440210004	Communication module for connecting EQJW 126/146 controllers to RS-485 bus (master)
0440210005	ModBus-TCP gateway
0440210011	ModBus-GPRS gateway
0440210006	ModBus-MBus gateway
0440210007	Converter/repeater for RS-232 or RS-485 interfaces
0440210008	RS-485 overvoltage protection
0440210009	Data logging module for recording controller data
0440210010	Parameter storage module for transferring controller parameters

EQJW 146: Heating and district heating controller, equitherm

EQJW146F001

EQJW146F002





Features

- Weather-dependent supply temperature control by heating curve or 4-point characteristic and drinking water heating
- 29 system models, for example for district heating, single-stage boilers, drinking water heating with solar energy or buffer tank.
- Convenient to use with modern operating concept (turn and press) and large LCD
- Convenient weekly and annual switching programmes with optimisation of switching times
- Automatic summertime/wintertime changeover
- Min./max. limitation of supply temperature and max. limitation of return temperature
- Frost-protection facility and anti-jamming function for valve and pump
- Floor-drying function
- Function for protecting against legionellae
- Room temperature switching using room-temperature sensors
- Ni/PT1000 inputs for the outside, supply, drinking water, return flow and room temperature
- Relay outputs with varistor suppression for activating control units and pumps
- Manual mode
- Logbook (only EQJW146F002)
- Configurable input/output 0...10 V
- External demand processing, binary or analogue (0..10 V)
- Interface for various accessories such as modem, gateway, data logging module etc.

Technical data

Power supply		
	Power supply	230 V~, ±15%, 50...60 Hz
	Power consumption	Approx. 1.5 VA
Parameters		
Control characteristic	Supply temperature	PI control
	Drinking water temperature	2-point
Control parameters	Proportional band	0.1...50 K
	Integral action time	1...999 s
	Switching difference for drinking water	1...30 K
Temperature ranges	Normal temperature	0...40 °C
	Reduced temperature	0...40 °C
	Supply temperature	0...140 °C
	Return temperature	0...140 °C
	Outside temperature	–50...50 °C
	Temperature of drinking water	20...90 °C
	Frost-protection temperature	–15...3 °C
	Running time of valve	30...300 s
	Cycle time	Running time of the valve ÷ 15
Ambient conditions		
	Admissible ambient temperature	0...40 °C
	Admissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	–10...60 °C
Inputs/outputs		
	Number of outputs	7 relays
	Pump relay[1]	3 × 2 A, 250 V~, cos ϕ > 0,5

[1] *Start-up current max. 16 A (1 s)*

	Actuator relay[2]	4 × 2 A, 250 V~, cos ϕ > 0,5
	Continuous input/output[3]	1 × 0...10 V
	Number of inputs	2 digital, 8 analogue
	Analogue inputs	8 Ni1000/Pt1000

Function		
Timer	Backup power supply	Min. 24 h, typically 48 h
	Accuracy	< 1 s/d
Weekly switching programme	Number of programmes	3
	Number of switching commands	48 each
	Min. switching interval	15 minutes
Annual switching programme	Number of programmes	1 (for heating circuits)
	Number of switching commands	20 each
	Min. switching interval	1 d
Interfaces and communication		
Communication	Interface	RJ45
	Protocol	Modbus, device bus (TAP)
Construction		
	Weight	0.5 kg
	Dimensions	144 × 98 x 54 mm
	Housing	Light-grey
	Housing material	Fire-retardant thermoplastic
	Fitting	Wall, panel and top-hat rail
	Screw terminals	For cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP40 (EN 60529) (when fitted in panels)
	Protection class	II (IEC 60730-1)
	Software class	A (IEC 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1

Overview of types

Type	Features
EQJW146F001	Heating and district heating controller with symbol display
EQJW146F002	Heating and district heating controller with graphic display

Accessories

Type	Description
AVF***	Motorised valve actuator (see product data sheet)
AVM***	Motorised valve actuator (see product data sheet)
AXM***	Motorised valve actuator (see product data sheet)
EGT***	External temperature sensor Ni1000 (see product data sheet)
0440210001	Communication module for connecting EQJW 126/146 controllers to RS-232 (PC)
0440210002	Communication module for connecting EQJW 126/146 controllers to modem
0440210003	Communication module for connecting EQJW 126/146 controllers to RS-485 bus
0440210004	Communication module for connecting EQJW 126/146 controllers to RS-485 bus (master)
0440210005	ModBus-TCP gateway
0440210011	ModBus-GPRS gateway
0440210006	ModBus-MBus gateway
0440210007	Converter/repeater for RS-232 or RS-485 interfaces
0440210008	RS-485 overvoltage protection

[2] *Extra low voltage not admissible*

[3] *As input for requirement or outside temperature signal. As output for constant control or requirement request, load > 5 kΩ*

Type	Description
0440210009	Data logging module for recording controller data
0440210010	Parameter storage module for transferring controller parameters
0440210012	Cable converter for 2-conductor RS-485 interface

Controllers for ventilation and air-conditioning

SAUTER controllers for ventilation and air-conditioning cover all the possible applications for demand-based control of ventilation and air-conditioning systems. The large number of integrated standard applications meets the requirements for the modularity and the energy-efficient operation of your installations. A wide range of additional functions enable the establishment of complex control systems and the integration into a building automation system.

Overview of controllers for ventilation and air-conditioning

	flexotron800
Type designation	RDT 808, 815, 828
Control loops	
Cascade	•
P-controller	•
PI-controller	•
PID-controller	•
Function	
Time programme	•
Communication	
Number of inputs	5 / 8 / 16
Number of outputs	3 / 7 / 12
Modbus	•
BACnet	•
Serial interface for parameters and configuration	•
Application	
Supply temperature control	•
Supply air cascade control	•
Air-conditioning control	•
Further information	Page 113

RDT 808, 815, 828: Communicative controller for universal use, flexotron800

RDT828F222

Features

- Configurable controller for a wide range of applications for ventilation, air-conditioning and heating
- Many functions for sequences and monitoring
- Easy to operate with large, illuminated LCD and buttons
- Menus in 20 languages
- Weekly and annual switching programmes with summertime/wintertime change-over
- Configuration using display or PC tool
- RS-485 interfaces with Modbus/RTU or TCP/IP with BACnet/IP (B-ASC controller) or integrated web server

Technical data

Power supply		
	Power supply	24 V~, ±15%, 50...60 Hz 21...36 V=
	Dissipated power	Approx. 7.5 VA, 3.4 W Approx. 8 VA, 3.7 W TCP models
	Start-up current	28 A (2 ms)
Parameters		
	Integral action time	0...600 s
	Control characteristics	P, P/PI
	P-band X_p	0...300 K
Measuring ranges	Normal temperature	-50...115 °C
	Pressure sensor	-500...5000 Pa
	Auxiliary controller for setpoint/actual value	-50...115 °C
	Reduced temperature	-50...115 °C
	Humidity	0...100% rh
	CO_2	0...5000 ppm
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	−20...70 °C
Inputs/outputs		
	Digital inputs	Potential-free connection
	Analogue inputs	Ni1000, 0...10 V
	Input impedance	10 MΩ (for 0...10 V)
	Digital outputs	MOSFET each 2 A, 24 V~/V=, not protected against short circuit, max. 8 A total
	Analogue outputs	0...10 V, 2 mA, protected against short circuit
	Universal inputs	Ni1000 or 0...10 V Potential-free contacts
Function		
	Timer	24 h system clock Backup with battery
	Accuracy	< 2.5 s/d at 25 °C
	Backup power supply	Min. 24 h
Weekly switching programme	Number of switching commands	4/d individual
	Min. switching interval	15 minutes
Annual switching programme	Number of switching commands	24
	Min. switching interval	1 d

Timer channel	Number of switching commands	4/d individual
	Number of timer channels	5

Interfaces and communication		
	Interfaces	RS-485 TCP/IP (option)
	Protocol	Modbus/RTU (slave) BACnet/IP (B-ASC)

Construction		
	Weight	0.4 kg
	Dimensions W x H x D	148 × 123 × 60 mm (with terminals)
	Screw terminals	Pluggable terminals for connecting cables up to 1.5 mm²
	Fitting	DIN rail, switch panel (with accessories)

Standards and directives		
	Type of protection	IP20 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Description
RDT808F012	Universal controller, 8 inputs/outputs, without LCD, RS-485
RDT808F212	Universal controller, 8 inputs/outputs, with LCD, RS-485
RDT815F012	Universal controller, 15 inputs/outputs, without LCD, RS-485
RDT815F212	Universal controller, 15 inputs/outputs, with LCD, RS-485
RDT815F022	Universal controller, 15 inputs/outputs, without LCD, TCP interface
RDT815F222	Universal controller, 15 inputs/outputs, with LCD, TCP interface
RDT815F032	Universal controller, 15 inputs/outputs, without LCD, TCP interface and RS-485
RDT815F232	Universal controller, 15 inputs/outputs, with LCD, TCP interface and RS-485
RDT828F012	Universal controller, 28 inputs/outputs, without LCD, RS-485
RDT828F212	Universal controller, 28 inputs/outputs, with LCD, RS-485
RDT828F022	Universal controller, 28 inputs/outputs, without LCD, TCP interface
RDT828F222	Universal controller, 28 inputs/outputs, with LCD, TCP interface
RDT828F032	Universal controller, 28 inputs/outputs, without LCD, TCP interface and RS-485
RDT828F232	Universal controller, 28 inputs/outputs, with LCD, TCP interface and RS-485

Accessories

Type	Description
XYE460F002	flexotron800 demo case
0460240001	flexotron400/800 pluggable terminal strips
0460240011	Cabinet fitting kit for flexotron800
RDB800F002	Operating unit for flexotron800 V2
0300360001	USB-RS-485 converter
EGT388F102	External setpoint adjuster, room operating unit with potentiometer and temperature sensor

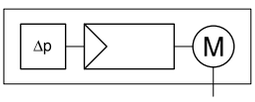
VAV compact controller for laboratory and pharmaceutical applications

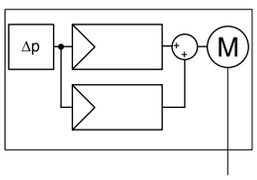
SAUTER VAV controllers enable the air volume to be regulated in accordance with demand in order to optimise energy consumption in ventilation systems. They are used in laboratories, clean rooms, hospital wards and operating theatres. In combination with additional sensors and monitoring facilities, they ensure that fume cupboards are regulated in accordance with the relevant standards.

Overview of VAV compact controllers

		
Type designation	ASV205BF132*, ASV215BF132*	ASV215BF152
Technical data		
Adm. dimensions of damper shaft (mm)	Ø 8...16	Ø 8...16
Running time (s)	30...105 60...105	3...15
Power supply (V)	24	24
Communication/protocol	RS-485 SLC / BACnet MS/TP	RS-485 SLC / BACnet MS/TP
Further information	Page 116	Page 119

ASV205BF132E





ASV205BF132E, ASV215BF132E: VAV compact controller

Features

- Supply and return air control for individual rooms such as offices, conference rooms and hotel rooms, in conjunction with a VAV box or a damper and flow probe
- Pressure control in supply and return air ducts for low-noise, energy-efficient air distribution
- Static measurement of differential pressure with MEMS sensor
- Can be used for measuring in areas with dirty or contaminated return air
- Low energy consumption and long serviceable life thanks to low-wear stepping motor
- Electromechanical torque-based switch-off for safe operation
- Extremely simple installation due to self-centring shaft adapter
- Disengageable gear unit for manual adjustment and positioning of damper
- Integrated second control loop for the following applications:[1]:
  - Duct pressure and zone control
  - Room climate regulation
- 2 x RS-485 bus interface on RJ12 and connection terminal
  - Up to 31 subscribers in a segment with SLC (SAUTER Local Communication) protocol
  - Communication within network via BACnet MS/TP
- Input and output signals for connecting:
  - Setpoints and actual values
  - Power outputs for reheaters and recoolers
  - EY-RU 3** digital room operating units
  - Analogue output
- Easy programming of the following applications using the SAUTER CASE VAV software[2]:
  - Volume flow control
  - Room pressure control
  - Duct pressure control
- Adjustable end values of the differential pressure measuring range[3]
  - 100...300 Pa
- Efficient control algorithm for fast control loops
- Priority control via switching contacts
- Zero point can be calibrated

Technical data

Power supply		
	Power supply[4]	24 V~, +/-20%, 50...60 Hz 24 V=, -10%/+20%
Power consumption at nominal voltage 50/60 Hz (~/=)	Power consumption during operation[5]	4.7 VA/2.5 W
	Power consumption when idle[6]	1.5 VA/0.7 W

[1] *Application support depending on hardware and software version in CASE VAV manual D100316836 (German), D100316957 (English), D100316878 (French)*
[2] *Application support depending on hardware and software version in CASE VAV manual D100316836 (German), D100316957 (English), D100316878 (French)*
[3] *Available measuring ranges depending on hardware/type*
[4] *24 V=: Analogue inputs that are not connected are rated 0 V. The nominal torque is achieved within the specified tolerances.*
[5] *Power specified without operating units FCCP 200, EY-RU 3**
[6] *Holding torque ASV205*: 4 Nm*
ASV215: 8 Nm*

Parameters		
Integrated damper actuator	Angle of rotation[7]	90°
	Admissible dimensions of damper shaft	Ø 8...16 mm, □ 6.5...12.7 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Surge-voltage resistance	500 V (EN 60730)
	Operating noise	< 35 dB (A)
Δp sensor	Measuring range Δp (gain = 1)[8]	0...500 Pa
	Linearity error	2% (at 25 °C)
	Time constant	0.2 s
	Influence of position[9]	< 1 Pa
	Reproducibility	0.2% FS
	Zero point stability	0.2% for 1 year
	Admissible positive pressure	±12.5 kPa
	Admissible operating pressure p_{stat}[10]	±7 kPa
	Low-pressure connections[11]	Ø i = 3.5...6 mm
Ambient conditions		
	Operating temperature	0...55 °C
	Storage and transport temperature	–20...55 °C
	Admissible humidity	< 85% rh, no condensation
Inputs/outputs		
	Analogue inputs	0...10 V (R_i = 100 kΩ)
	Analogue outputs	0...10 V, load > 10 kΩ
	Digital inputs[12]	Closed 1 V=, 1 mA, open > 2 V=
	Digital output	0.3 A at 24 V ~/=
	Resistive input	0 to 50 °C Ni1000 (DIN 43760), NTC10k (10k3A1), Pt1000 (EN 60751)
	Resolution	0.3 °C (Ni1000/Pt1000), 0.1 °C (NTC)
	Measuring difference	+/- 0.6 °C
	PWM	0.3 A at 24 V ~/= Period duration 1 s....15 minutes 0...100%
Interfaces and communication		
	RS-485 not electrically isolated	115 kBaud
	Communication protocols	SAUTER Local Communication (SLC), BACnet MS/TP, ¼ load
	Access method	Master/slave
	Topology	Line
	Number of participants[13]	31 (32) with SLC
	Bus termination	120 Ω (both ends)
Construction		
	Weight	0.8 kg
	Fitting	Self-centring spindle adapter
Standards and directives		
	Type of protection	IP00, IP30 (EN 60529) (with protection set)
	Protection class	III (EN 60730)

7) Maximum rotation angle 102° (without end stop)
8) Available measuring ranges depending on hardware/type
9) Zero adjustment recommended during commissioning
10) Short-term overload; zero adjustment of sensor is recommended
11) Recommended hardness of tubing < 40 Sha (e.g. silicone)
12) Digital inputs for external potential-free contacts (gold-plated recommended)
13) One participant is always also the parametering tool, hence the maximum number of 31 connectible devices

Conformity	Machine directive 2006/42/EC, appendix II 1.B
EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4, EN 61000-6-2

Overview of types

Type	Measuring range Δp	Running time for 90°	Torque	Holding torque
ASV205BF132E	0...300 Pa	30, 45, 60, 75, 90, 105 s	5 Nm	4 Nm
ASV215BF132E	0...300 Pa	60, 75, 90, 105 s	10 Nm	8 Nm

For a running time of 105 s and an ambient temperature of ≥ 55 °C, the specified torque is reduced by 0.5 Nm.

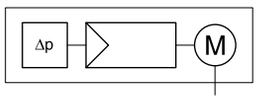
Current-free holding torque by means of interlocking in gear unit.

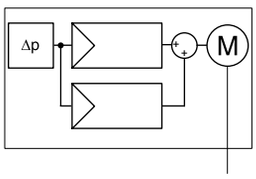
Accessories

Type	Description
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
XAFP100F001	Flow probe to measure the air volume in ventilation ducts
0300360001	USB connection set
0297867001	Reference pressure container
0430360100	IP30 protection set
0430360200	Replacement LP connector
0372129001	Torsion protection

ASV215BF152*: VAV compact controller for laboratory and pharmaceutical applications

ASV215BF152D





Features

- Controlling the return air in fume cupboards and controlling the supply and return air in laboratories, clean rooms, hospital wards and operating theatres using a VAV box or a damper and flow probe
- Static measurement of differential pressure based on the capacitive method of measurement
- Zero point can be calibrated using software
- Adjustable end values of the differential pressure measuring range[1)]
  - 50...150 Pa
  - 100...300 Pa
- Can be used for measuring in areas with dirty or contaminated return air
- Brushless DC motor guarantees minimum energy consumption and a long service life
- Electromechanical torque-based switch-off for safe operation
- Extremely simple installation due to self-centring shaft adapter
- Disengageable gear unit for manual adjustment and positioning of damper
- Easy programming of the following applications using SAUTER CASE Components:[2)]
  - Volume flow control
  - Room pressure control
  - Duct pressure control
  - Flow control for fume cupboards
- Efficient control algorithm for fast control loops
- Integrated second control loop for:[3)]
  - Room-pressure control: can be ideally combined with EGP 100 with symmetrical measuring range
  - Fume-cupboard control ideally combined with SVU 100, SGU 100 and FCCP 200
- 2 x RS-485 bus interface on RJ12 and connection terminal
  - Up to 31 subscribers in a segment with SLC (SAUTER Local Communication) protocol
  - Communication within network via BACnet MS/TP[4)]
  - Integration of EY-RU 3** digital room operating units
  - FCCP 200 display and alarm unit for fume-cupboard control or room monitoring
- Input and output signals for integrating:
  - Setpoints and actual values
  - Analogue output
  - Priority control via switching contacts

Technical data

Power supply		
	Torque	10 Nm
	Power supply[5)]	24 V~, ±20%, 50...60 Hz 24 V=, -10%/+20%
Power consumption at nominal voltage 50/60 Hz (~/=) after 3 s running time	Power consumption during operation	Approx. 19 VA/10 W (10 Nm) Approx. 20 VA/11 W with FCCP 200
	Power consumption when idle[6)]	Approx. 6 VA/2 W

1) *Available measuring ranges depending on hardware/type*
2) *Application support depending on hardware and software version in CASE VAV manual*
3) *Application support depending on hardware and software version in CASE VAV manual*
4) *Support of BACnet MS/TP interface*
5) *24 V=: Analogue inputs that are not connected are rated 0 V. The nominal torque is achieved within the specified tolerances.*
6) *Holding torque approx. 5 Nm*

Parameters		
	Torque	10 Nm
	Holding torque[7]	2 Nm
Integrated damper actuator	Angle of rotation[8]	90°
	Running time for 90°[9]	3...15 s
	Admissible dimensions of damper shaft	Ø 8...16 mm, □ 6.5...12.7 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Surge-voltage resistance	500 V (EN 60730)
	Operating noise	< 49 dB (A) at 3 s
Δp sensor	Measuring range Δp (gain = 1) Pressure range, types D / E[10]	0...150/300 Pa
	Linearity error	2% FS
	Time constant	0.1 s
	Influence of position[11]	Typically ±1 Pa
	Reproducibility	0.2% FS
	Zero point stability	0.2% FS (at 20 °C)
	Admissible positive pressure	±10 kPa
	Admissible operating pressure p_{stat}[12]	±3 kPa
	Low-pressure connections[13]	Ø i = 3.5...6 mm
Ambient conditions		
	Operating temperature	0...55 °C
	Storage and transport temperature	–20...55 °C
	Admissible humidity	< 85% rh, no condensation
Inputs/outputs		
	Analogue inputs[14]	0...10 V (R_i = 100 kΩ)
	Digital inputs[15]	Closed 1 V=, 1 mA, open > 2 V=
	Analogue outputs[16]	0...10 V, load > 10 kΩ max. cable length 30 m max. adm. external voltage ±24 V
	Digital output	0.3 A at 24 V ~/=
Interfaces and communication		
	RS-485 not electrically isolated	115 kBaud
	Communication protocols[17]	SAUTER Local Communication (SLC), BACnet MS/TP, ¼ load
	Access method	Master/slave
	Topology	Line
	Number of participants[18]	31 (32) with SLC
	Bus termination	120 Ω (both ends)
Construction		
	Weight	0.8 kg
	Fitting	Self-centring spindle adapter
Standards and directives		
	Type of protection	IP00, IP30 (EN 60529) (with protection set)
	Protection class	III (EN 60730)

7) Current-free holding torque by means of interlocking in gear unit
8) Maximum rotation angle 102° (without end stop)
9) Running time can be set via software
10) Available measuring ranges depending on hardware/type
11) Zero adjustment recommended during commissioning
12) Short-term overload; zero adjustment of sensor is recommended
13) Recommended hardness of tubing < 40 Sha (e.g. silicone)
14) Depending on the application, can be parameterised as an analogue input or output using SAUTER CASE Components
15) Digital inputs for external potential-free contacts (gold-plated recommended)
16) Depending on the application, can be parameterised as an analogue input or output using SAUTER CASE Components
17) Available protocols switched using software
18) One participant is always also the parametering tool, hence the maximum number of 31 connectible devices

Conformity	Machine directive 2006/42/EC, appendix II 1.B
EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4, EN 61000-6-2

Overview of types

Type	Measuring range Δp
ASV215BF152D	0...150 Pa
ASV215BF152E	0...300 Pa

Accessories

Type	Description
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
XAFP100F001	Flow probe to measure the air volume in ventilation ducts
0300360001	USB connection set
0297867001	Reference pressure container
0430360100	IP30 protection set
0430360200	Replacement LP connector
0372129001	Torsion protection

FCCP200F010

International Design Award

Focus Open 2016
Special Mention

FCCP 200: Fume-cupboard indicator and monitor

Features

- Measured value display and indication of operating statuses for a range of ambient conditions such as pressure, temperature, relative humidity etc. in combination with an EY-RU 504/505 room automation station or an ASV 2*5 VAV compact controller
- Monitoring fume cupboards as per EN 14175-2 to check that they are functioning correctly and that the ventilation is operated to provide maximum safety for the laboratory staff
  - Indication when the front sash is open > 500 mm
  - Switching the fume cupboard lighting on and off
  - Up to two function indicators for double-sided fume cupboards
  - Indication of day/night change-over
  - Audible alarm can be delayed or muted via configuration
- Demand-controlled regulation of fume cupboards as per EN 14175-6 in combination with the ASV 2*5 VAV compact controller
- Function indicator with visual and audible notification as per EN 14175-2
- Storage of all defined parameters with protection from power failure
- Interface for easy configuration of the connected VAV ASV 2*5
- Five freely configurable push-buttons[1)]
- Chemical-resistance glass surface
- Units that can be displayed: m/s, fps, l/s, m3/h, cfm, Pa, °C, °F, %rh, ppm

Technical data

Power supply		
	Power supply	5V; ±10%
	Power consumption	0.7 VA
Parameters		
Audible alarm	Sound pressure level	80 dB (A)
	Frequency	4 kHz
	Alarm duration[2)]	60 s
	Start-up delay	Adjustable from 0 to 3200 s
Optical alarm	Brightness	EN 842, punctiform
	Field of view	> 120°
Temperature sensor	Measuring range of temperature sensor[3)]	-5 ... +50°C
Admissible ambient conditions		
	Operating temperature	5...45 °C
	Admissible storage temperature	-20...+80 °C
	Admissible humidity without condensation	<5...85% rh
Construction		
	Dimensions W x H x D	169 × 36 × 12 mm
Standards and directives		
	Protection class	III
	Protection class (when installed)	IP41 installed vertically
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

1) *In combination with the EY-RU 504/505 room automation station and CASE Engine.*
2) *Can be set using software.*
3) *After it is installed, the temperature sensor must be calibrated using CASE Engine software during the commissioning.*

Overview of types

Type	Features
FCCP200F010	Fume cupboard monitor and indicator

Accessories

Type	Description
0300360001	USB connection set
0430600100	USB-C RJ12 cable FCCP 200

Valves, control valves, dampers, actuators

A high degree of flexibility provides optimum results.
With just a few basic types, SAUTER's valves and SUT actuators, with their in-built intelligence, cover all possible needs with regard to reliable and long-lasting control elements. The valve and the actuator, being perfectly matched to one another, form the basis for a high degree of control quality. With its integrated flow meter, SAUTER eValveco ensures hydronic balancing in the control of heating and cooling systems.

Valve specification – calculating with the new tools from SAUTER

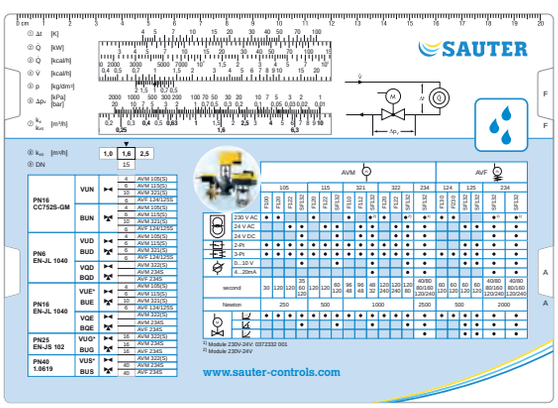
[1] **SAUTER valve slide rule**

SAUTER has further developed its practical valve slide rule. You can use it to specify the valve nominal diameter depending on the flow rate for liquids and saturated steam. You can order the slide rule at your sales partner or sales consultant.

SAUTER VALVEDIM software

[2] A tried and tested tool for convenient valve and actuator specification, SAUTER provides installers and project engineers with its SAUTER VALVEDIM PC software. The tool comprises three function levels:

1. Valve and actuator specification
   - using recommended values for a rough specification of the required versions and variables;
   - based on the existing or stipulated installation values for the definitive specification of the required versions and variables.
2. Selection of the valve and the suitable actuator based on characteristics.
3. Direct transfer of the results to the project documentation.
   You can download this free of charge from the SAUTER website ("Products" menu item).



[1]

[2]

Valve specification – manual calculation

Here you will find all the necessary information for the manual valve specification.

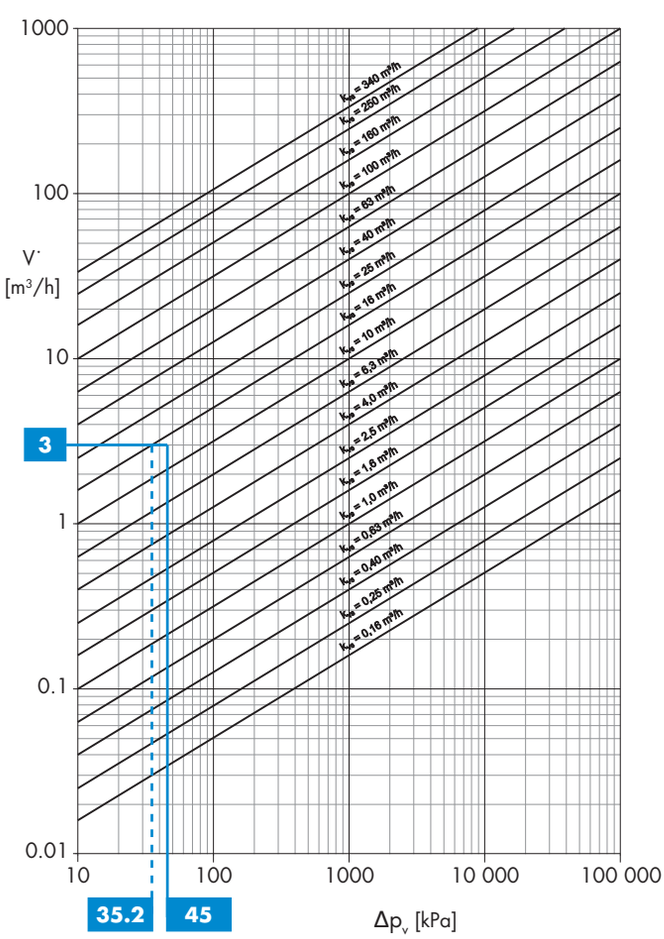
[1] **Variables, constants and formulas**

Variable	Description	Value	Unit
$\dot{V}$	Volume flow		m^3/h
$\dot{Q}_{zu}$	Supplied heat per unit of time (heat flow)		kW, kJ/h
$\dot{Q}_{ab}$	Removed heat per unit of time (heat flow)		kW, kJ/h
Δt	Temperature difference		K
c_w	Specific thermal capacity of water	4.19 $=1.164 \cdot 10^{-3}$	kJ/(kg·K) kWh/(kg·K)
ρ_w	Density of water	*Assuming:* ρ_w = *const.* =1000	kg/m^3
Δp_v	Pressure difference across the valve		bar, Pa
k_v	Calculated flow rate for the valve		m^3/h
k_{vs}	Actual flow rate for the valve at nominal stroke, selected according to table or chart		m^3/h

[2] **Calculation formula for k_v**

$$k_v = \dot{V} \cdot \sqrt{\frac{1\ \text{bar}}{\Delta p_v}}$$

[3] **Diagram**



Calculations

The following are given:

$\dot{Q}_{to}$ = 70 kW ≈ 250 000 kJ/h

Δt = 20 K

Δp_v = 45 mbar = 4.5 kPa (corresponds to 450 mm water column)

To be found:

$\dot{V}$, k_v

Approximate calculation of $\dot{V}$

Assumption: $\dot{Q}_{to} = \dot{Q}_{from}$

$$\dot{Q}_{to} = \dot{Q}_{from} = \dot{V} \cdot c_w \cdot \Delta t \cdot \rho_w$$

$$\Rightarrow \quad \dot{V} = \frac{\dot{Q}_{to}}{c_w \cdot \Delta t \cdot \rho_w}$$

$$\Rightarrow \quad \dot{V} = \frac{70}{1.164 \cdot 10^{-3} \cdot 20 \cdot 1\,000} \cdot \frac{\text{kW} \cdot (\text{kg} \cdot \text{K}) \cdot \text{m}^3}{\text{kWh} \cdot \text{K} \cdot \text{kg} \cdot \text{h}} \approx \mathbf{3\ m^3/h}$$

Calculation of kv

$$k_v = 3\ m^3/h \cdot \sqrt{\frac{1\ \text{bar}}{0.045\ \text{bar}}} \approx \mathbf{14.1\ m^3/h}$$

Determination of flow rate

Determination of k_v from the diagram

k_{vs} = 16 m^3/h

Example plotted: Given are the volume flow (3 m^3/h) and a desired Δp_v of 45 mbar, which results in a kv value of 14.1 m^3/h.
The kvs values entered are deliverable values. Selected: A valve with kvs = 16 m^3/h, which results in a pressure difference Δp_v of 35.2 mbar.

Valves, control valves, dampers, actuators

Unit valves and actuators for unit valves

Regulating valves and valve actuators

Multi-function valves

Ball valves and ball valve actuators

Control valves and rotary and damper actuators

Damper and rotary actuators

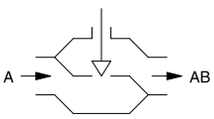
Unit valves

In combination with thermal actuators, unit valves are used to control radiators, air reheaters and recoolers and fan coil units.

Overview of unit valves

					
Type designation	VUL	BUL	VUT	BUT	BXL
Application					
Single-room control	•	•	•	•	•
Chilled ceiling, underfloor heating	•	•	•	•	•
Radiator	•	•	•	•	•
Underfloor device	•	•	•	•	•
Version					
2-way	•	–	•	–	–
3-way	–	•	–	•	•
Nominal diameter (DN)	10...20	10...20	10...20	10...20	25...40
Nominal pressure	PN 16	PN 16	PN 16	PN 16	PN 16
Combination options with actuator	AXT 211, AXS 215S, AXM 217(S)	AXT 211, AXS 215S, AXM 217(S)	AXT 211, AXT 201, AXT 215S, AXM 217(S)	AXT 211, AXT 201, AXT 215S, AXM 217	AXT 211, AXS 215S, AXM 217(S)
Further information	Page 130	Page 133	Page 138	Page 140	Page 141

VUL010F310



VUL: 2-way valve, PN16

Features

- Regulation of heating zones, air secondary-treatment units and fan coil units in combination with AXT 211, AXS 215S or AXM 217(S)
- Flat-sealing standard version or version with clamping-ring screw fitting for pipe Ø 15 mm with DN 10
- Valve with male thread as per DIN EN ISO 228-1, class B
- Stuffing box can be replaced under system pressure
- Control passage A–AB is closed when the spindle is moved in
- Closing procedure against the pressure
- Valve body made of nickel-plated cast brass for DN 10 and gun metal for DN 15 and DN 20
- Plug with EPDM soft seal
- Stainless-steel spindle
- Stuffing box with double O-ring seal

Technical data

Parameters		
	Nominal pressure	PN 16
	Valve characteristic	Equal-percentage
	Valve stroke[1]	4 mm
	Leakage rate	0.002% of K_{vs} value

Ambient conditions		
	Admissible operating temperature for valve	2...120 °C
	Admissible operating temperature for valve in combination with AXT 211, AXS 215 and AXM 217 (S)	100 °C at the valve
	Maximum operating pressure	Up to 120 °C, 16 bar

Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	VDI/VDE 2173
	Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Connection	Weight
VUL010F340	DN 10	0.16 m³/h	G½" B	0.19 kg
VUL010F330	DN 10	0.4 m³/h	G½" B	0.18 kg
VUL010F320	DN 10	0.63 m³/h	G½" B	0.18 kg
VUL010F310	DN 10	1 m³/h	G½" B	0.18 kg
VUL010F300	DN 10	1.6 m³/h	G½" B	0.18 kg
VUL015F310	DN 15	2.5 m³/h	G¾" B	0.28 kg
VUL015F300	DN 15	3.5 m³/h	G¾" B	0.28 kg
VUL020F300	DN 20	4.5 m³/h	G1" B	0.33 kg
VUL010F630	DN 10	0.4 m³/h	Clamping ring vers. Ø15 mm	0.18 kg
VUL010F620	DN 10	0.63 m³/h	Clamping ring vers. Ø15 mm	0.18 kg

[1] *The valve stroke is limited by the actuator*

Type	Nominal diameter	K_{vs} value	Connection	Weight
VUL010F610	DN 10	1 m^3/h	Clamping ring vers. Ø15 mm	0.18 kg
VUL010F600	DN 10	1.6 m^3/h	Clamping ring vers. Ø15 mm	0.18 kg

Accessories

Type	Description
0378133010	1 threaded sleeve, R⅜", flat-sealing, with cap nut and flat seal, G½ - R⅜
0378133015	1 threaded sleeve, R½", flat-sealing, with cap nut and flat seal, G¾ - R½
0378133020	1 threaded sleeve, R¾", flat-sealing, with cap nut and flat seal, G1 - R¾
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, G½
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G¾
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1
0378135010	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 10
0378145015	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 15, flat-sealing, ¾" B
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, 1" B
0378128001	Stuffing box for VUL valves, can be replaced under pressure

Combination of VUL with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	150	150	153
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	3-point	3-point	0/2...10 V, 0...5 V, 5...10 V, 0/4...20 mA
Running time	52 s	52 s	52 s

	Δp [bar]		
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	4.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	3.8	3.8	3.8
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1
Cannot be used to close with the pressure			

Pressure differences with thermal actuators

Actuator	AXT211F210 AXT211HF210	AXT211F212 AXT211HF212	AXT211F110 AXT211F110B AXT211F110M AXT211F190 AXT211HF110	AXT211F112	AXT211F112B AXT211F112M AXT211F192 AXT211HF112
Page	145	145	145	145	145
Voltage	230 V~	24 V~/=	230 V~	24 V~/=	24 V~/=
Control signal	2-point	2-point	2-point	2-point	2-point
Running time	33 s/mm	40 s/mm	33 s/mm	33 s/mm	40 s/mm

	Δp [bar]							
Closes against the pressure	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	4.0	6.0	4.0	6.0	4.0	6.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Cannot be used to close with the pressure								

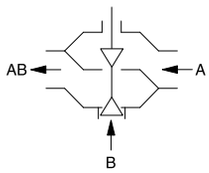
Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B
Page	149	149
Voltage	24 V~	24 V~
Control signal	0...10 V	0...10 V
Running time	30 s/mm	30 s/mm

	Δp [bar]		
Closes against the pressure	Δp_{max}	Δp_{max}	Δp_s
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	6.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	4.0	4.0	4.0
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1
Cannot be used to close with the pressure			

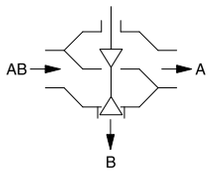
BUL: 3-way unit valve, PN 16

BUL015F310

BUL010F410



Control valve



Distribution valve

Features

- Flat-sealing standard version or version with clamping-ring screw fitting for pipe Ø 15 mm with DN 10
- Valve with male thread as per DIN EN ISO 228-1, class B
- Special model for fan coil units with cast-on by-pass T-piece
- Control passage A–AB is closed when the spindle is moved in
- Can be used as a control valve and, thanks to its tight-sealing third passage, as a distribution valve
- Nickel-plated valve body made of cast brass
- Plug with EPDM soft seal for control passage and mixing passage
- Stainless-steel spindle
- Stuffing box with double O-ring seal

Technical data

Parameters

Nominal pressure	PN 16
Valve characteristic, control passage	Equal-percentage
Valve characteristic, mixing passage	Linear
Valve stroke	3.7 mm
Leakage rate of control passage A-AB	0.0001% of K_{vs} value
Leakage rate of mixing passage B-AB	Approx. 0.1% of K_{vs} value

Ambient conditions

Admissible operating temperature for valve	2...120 °C
Admissible operating temperature for valve in combination with AXT 211, AXS 215 and AXM 217 (S)	100 °C at the valve
Operating pressure up to 120 °C	16 bar

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	VDI/VDE 2173
Pressure Equipment Directive	2014/68/EU (fluid group II) No CE label article 4.3

Overview of types

i *The BUL 3-way valve must not be used as a 2-way valve*

i *K_{vs} value: The K_{vs} value of the mixing passage (B-AB) is reduced by approx. 30%*

Type	Nominal diameter	K_{vs} value	Connection	Weight
BUL010F330	DN 10	0.4 m³/h	G½" B	0.30 kg
BUL010F320	DN 10	0.63 m³/h	G½" B	0.30 kg
BUL010F310	DN 10	1 m³/h	G½" B	0.30 kg
BUL010F300	DN 10	1.6 m³/h	G½" B	0.30 kg
BUL015F310	DN 15	2.5 m³/h	G¾" B	0.33 kg
BUL015F300	DN 15	4 m³/h	G¾" B	0.33 kg
BUL020F300	DN 20	5 m³/h	G1" B	0.36 kg
BUL010F430	DN 10	0.4 m³/h	G½" B	0.38 kg
BUL010F420	DN 10	0.63 m³/h	G½" B	0.38 kg
BUL010F410	DN 10	1 m³/h	G½" B	0.38 kg
BUL010F400	DN 10	1.6 m³/h	G½" B	0.38 kg
BUL015F410	DN 15	2.5 m³/h	G¾" B	0.42 kg
BUL015F400	DN 15	4 m³/h	G¾" B	0.42 kg

Type	Nominal diameter	K_{vs} value	Connection	Weight
BUL020F400	DN 20	5 m³/h	G1" B	0.50 kg
BUL010F630	DN 10	0.4 m³/h	Clamping ring vers. Ø 15 mm	0.38 kg
BUL010F620	DN 10	0.63 m³/h	Clamping ring vers. Ø 15 mm	0.38 kg
BUL010F610	DN 10	1 m³/h	Clamping ring vers. Ø 15 mm	0.38 kg
BUL010F600	DN 10	1.6 m³/h	Clamping ring	0.38 kg

*BUL0**F4**: Version with bypass T-piece*

Accessories

Type	Description
0378133010	1 threaded sleeve, R⅜", flat-sealing, with cap nut and flat seal, G½ - R⅜
0378133015	1 threaded sleeve, R½", flat-sealing, with cap nut and flat seal, G¾ - R½
0378133020	1 threaded sleeve, R¾", flat-sealing, with cap nut and flat seal, G1 - R¾
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, G½
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G¾
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1
0378135010	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 10
0378145015	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 15, flat-sealing, ¾" B
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, 1" B
0378126001	Stuffing box for BUL valves
0378126002	Stuffing box for BUL valves from index A

Combination of BUL with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	150	150	153
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	3-point	3-point	0/2...10 V, 0...5 V, 5...10 V, 0/4...20 mA
Running time	48 s	48 s	48 s
	Δp [bar]		
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.7	1.7	1.7
BUL015F310 BUL015F410	1.4	1.4	1.4

Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	150	150	153
BUL015F300 BUL015F400	1.2	1.2	1.2
BUL020F300 BUL020F400	1.0	1.0	1.0

As distribution valve	Δp_{max}	Δp_{max}	Δp_{max}
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.9	1.9	1.9
BUL015F310 BUL015F300 BUL020F300 BUL015F410 BUL015F400 BUL020F400	1.2	1.2	1.2

Pressure differences with thermal actuators

Actuator	AXT211F210 AXT211HF210	AXT211F212 AXT211HF212	AXT211F110 AXT211F110B AXT211F110M AXT211F190 AXT211HF110	AXT211F112 AXT211F112B AXT211F192 AXT211HF112	AXT211F112M
Page	145	145	145	145	145
Voltage	230 V~	24 V~/=	230 V~	24 V~/=	24 V~/=
Control signal	2-point	2-point	2-point	2-point	2-point
Running time	122 s	148 s	122 s	148 s	148 s

	Δp [bar]							
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.7	1.7	1.7	1.8	1.7	1.8	1.7	1.8
BUL015F310 BUL015F410	1.4	1.4	1.4	1.5	1.4	1.5	1.4	1.5
BUL015F300 BUL015F400	1.2	1.2	1.2	1.3	1.2	1.3	1.2	1.3
BUL020F300 BUL020F400	1.0	1.0	1.0	1.1	1.0	1.1	1.0	1.1
BUL010F420	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.8

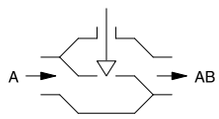
Actuator	AXT211F210 AXT211HF210	AXT211F212 AXT211HF212	AXT211F110 AXT211F110B AXT211F110M AXT211F190 AXT211HF110		AXT211F112 AXT211F112B AXT211F192 AXT211HF112		AXT211F112M	
Page	145	145	145		145		145	
As distribution valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.9	1.9	1.9	4.0	1.9	4.0	1.9	4.0
BUL015F310 BUL015F410	1.6	1.6	1.6	2.1	1.6	2.1	1.6	2.1
BUL015F300 BUL015F400	1.4	1.4	1.4	2.1	1.4	2.1	1.4	2.1
BUL020F300 BUL020F400	1.2	1.2	1.2	2.0	1.2	2.0	1.2	2.0

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B
Page	149	149
Voltage	24 V~	24 V~
Control signal	0...10 V	0...10 V
Running time	111 s	111 s

	Δp [bar]		
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.7	1.7	1.8
BUL015F310 BUL015F410	1.4	1.4	1.5
BUL015F300 BUL015F400	1.2	1.2	1.3
BUL020F300 BUL020F400	1.0	1.0	1.1

Actuator	**AXS215SF222** **AXS215SF222B**	**AXS215SF122** **AXS215SF122B**	
Page	149	149	
As distribution valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.9	1.9	4.0
BUL015F310 BUL015F410	1.6	1.6	2.1
BUL015F300 BUL015F400	1.4	1.4	2.1
BUL020F300 BUL020F400	1.2	1.1	1.2

VUT015F200



VUT: 2-way valve, PN 16

Features

- Regulation of fan coil units, air secondary-treatment units, heating zones and in combination with AXT 211, AXT 201, AXS 215S or AXM 217(S).
- Standard version flatsealing
- Adjustable Kvs value
- When the spindle is pressed in, the valve is closed
- Closing procedure against the pressure
- Valve with male thread as per DIN EN ISO 228-1, class B
- Valve body made of cast brass
- Nickel-plated brass spindle
- Plug with EPDM soft seal
- Stuffing box with O-ring seal

Technical data

Parameters		
	Nominal pressure	PN 16
	Valve characteristic	Almost linear
	Leakage rate	≤ 0.0001% of K_{vs} value
Admissible ambient conditions		
	Operating temperature	2...120 °C
	Operating pressure	Up to 120 °C, 16 bar
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)
	Pressure Equipment Directive	2014/68/EU (fluid group II) No CE label article 4.3

Overview of types

Type	Nominal diameter (DN)	K_{vs} range	Valve stroke (mm)	Connection	Weight (kg)
VUT010F200	10	0.2...1.6 m^3/h	3	G½ B	0.18
VUT010F210	10	0.2...1.0 m^3/h	3	G½ B	0.18
VUT010F220	10	0.2...0.63 m^3/h	3	G½ B	0.18
VUT015F200	15	1.0...3.5 m^3/h	4	G¾ B	0.28
VUT015F210	15	0.3...2.5 m^3/h	3	G¾ B	0.28
VUT020F200	20	1.0...4.5 m^3/h	4	G1 B	0.33

Combination of VUT with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	150	150	153
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	3-point	3-point	0/2...10 V, 0...5 V, 5...10 V, 0/4...20 mA
Running time	13 s/mm	13 s/mm	8 s/mm

	Δp [bar]		
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUT010F200 VUT010F210 VUT010F220	2.5	2.5	2.5
VUT015F200 VUT015F210	1.8	1.8	1.8
VUT020F200	1.0	1.0	1.0
Cannot be used to close with the pressure			

Pressure differences with thermal actuators

Actuator	AXT201F110	AXT201F112	AXT211F210 AXT211HF210	AXT211F212 AXT211HF212	AXT211F110 AXT211F110B AXT211F110M AXT211F190 AXT211HF110	AXT211F112 AXT211F112B AXT211F112M AXT211F192 AXT211HF112
Page	145	145	145	145	145	145
Voltage	230 V~	24 V~/=	230 V~	24 V~/=	230 V~	24 V~/=
Control signal	2-point	2-point	2-point	2-point	2-point	2-point
Running time	33 s/mm	40 s/mm	33 s/mm	40 s/mm	33 s/mm	40 s/mm

	Δp [bar]									
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUT010F200 VUT010F210 VUT010F220	2.3	2.3	2.3	2.3	2.5	2.5	2.5	2.5	2.5	2.5
VUT015F200 VUT015F210	1.6	1.6	1.6	1.6	1.8	1.8	1.8	1.8	1.8	1.8
VUT020F200	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Cannot be used to close with the pressure										

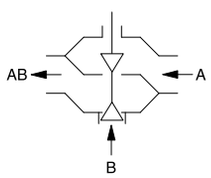
Pressure differences with thermal actuators

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B
Page	149	149
Voltage	24 V~	24 V~
Control signal	0...10 V	0...10 V
Running time	30 s/mm	30 s/mm

	Δp [bar]		
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_s**
VUT010F200 VUT010F210 VUT010F220	2.5	2.5	2.5
VUT015F200 VUT015F210	1.8	1.8	1.8
VUT020F200	1.0	1.0	1.0
Cannot be used to close with the pressure			

BUT015F210

BUT015F400



BUT: 3-way unit valve, PN 16 (el.)

Features

- Standard version flatsealing
- Special model for fan coil units with cast-on by-pass T-piece
- The control passage is closed when the spindle is moved in
- Used as a control valve
- Valve body in cast brass
- Nickel-plated brass spindle
- Plug with EPDM soft seal for control passage and mixing passage
- Stuffing box with O-ring seal
- Valve with male thread as per DIN EN ISO 228-1, class B

Technical data

Parameters

Nominal pressure	PN 16
Valve characteristic, control passage	Almost linear
Valve characteristic, mixing passage	Linear (not reduced)
Leakage rate of control passage A-AB	0.0001% of K_{vs}
Leakage rate of mixing passage B-AB	Approx. 0.1% of K_{vs}

Ambient conditions

Maximum operating pressure	≤ 120 °C, 16 bar
Operating temperature	2...120 °C

Overview of types

The BUT 3-way unit valve must not be used as a through valve or diverting valve; mixing passage is not reduced

Type	Nominal diameter (DN)	Valve stroke (mm)	K_{vs} value	Connection	Weight (kg)
BUT010F200	10	3	1 m³/h	G½ B	0.3
BUT010F400	10	3	1.6 m³/h	G½ B	0.38
BUT010F410	10	3	1 m³/h	G½ B	0.38
BUT010F420	10	3	0.63 m³/h	G½ B	0.38
BUT015F210	15	3	2.5 m³/h	G¾ B	0.33
BUT015F400	15	4	3.5 m³/h	G¾ B	0.42
BUT015F410	15	4	2.5 m³/h	G¾ B	0.42
BUT020F200	20	4	4.5 m³/h	G1 B	0.36
BUT020F400	20	4	4.5 m³/h	G1 B	0.5

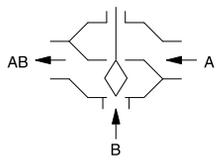
*BUT0**F4**: Version with bypass T-piece*

Accessories

Type	Description
0378133010	1 threaded sleeve, R⅜", flat-sealing, with cap nut and flat seal, G½ - R⅜
0378133015	1 threaded sleeve, R½", flat-sealing, with cap nut and flat seal, G¾ - R½
0378133020	1 threaded sleeve, R¾", flat-sealing, with cap nut and flat seal, G1 - R¾
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, G½
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G¾
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1

BXL: 3-way unit valve, PN 16

BXL025F200



Features

- Valve with male thread as per DIN EN ISO 228-1, class A
- Control passage A–AB open when the spindle is moved in
- Used as a control valve
- Valve body made of gun metal
- Plug with EPDM soft seal
- Stainless-steel spindle
- Stuffing box with double O-ring seal
- Version with cap nut and flat seal

Technical data

Parameters

Nominal pressure	PN 16
Valve characteristic, control passage	Linear
Valve characteristic, mixing passage	Complementary, reduced
Valve stroke	2.9 mm
Leakage rate, control passage	Approx. 0.05% of K_{vs} value
Leakage rate, mixing passage	Approx. 0.2% of K_{vs} value

Ambient conditions

Admissible operating temperature for valve	2...130 °C
Admissible operating temperature for valve in combination with AXT 211, AXS 215 and AXM 217 (S)	100 °C at the valve
Operating pressure	Max. 16 bar at 130 °C

Overview of types

i *The BXL 3-way valve must not be used as a 2-way valve*

Type	Nominal diameter	K_{vs} value	Weight
BXL025F200	DN 25	6.5 m^3/h	1.2 kg
BXL040F200	DN 40	9.5 m^3/h	2.35 kg

Accessories

Type	Description
0361824025	3 threaded sleeves, R 1", flat-sealing
0361824040	3 threaded sleeves, R 5/4", flat-sealing
0361825028	3 solder nipple, Ø 28; flat-sealing, DN 25
0361825035	3 solder nipple, Ø 35; flat-sealing, DN 40
0361825042	3 solder nipple, Ø 42; flat-sealing, DN 40

Combination of BXL with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	150	150	153
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	3-point	3-point	0/2...10 V, 0...5 V, 5...10 V, 0/4...20 mA
Running time	38 s	38 s	38 s
	Δp [bar]		
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BXL025F200	0.5	0.5	0.5
BXL040F200	2.0	2.0	2.0
Cannot be used as distribution valve			

Pressure differences with thermal actuators

Actuator	AXT211F210 AXT211F110B AXT211F110M	AXT211HF210 AXT211F110 AXT211F190 AXT211HF110	AXT211F212 AXT211HF212 AXT211F112B AXT211F112M AXT211HF112	AXT211F112 AXT211F192	AXS215SF222 AXS215SF222B AXS215SF122 AXS215SF122B
Page	145	145	145	145	149
Voltage	230 V~	230 V~	24 V~/=	24 V~/=	24 V~
Control signal	2-point	2-point	2-point	2-point	0...10 V
Running time	96 s	96 s	116 s	116 s	87 s
	Δp [bar]				
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BXL025F200	2.0	0.5	0.5	2.0	0.5
BXL040F200	2.0	2.0	2.0	2.0	2.0
Cannot be used as distribution valve					

Actuators for unit valves

SAUTER actuators for unit valves provide reliable and accurate control. Pulse-pause control (with pulse widths of a few seconds) or continuous activation guarantees accurate control characteristic.

Overview of actuators for unit valves

				
Type designation	AXT 201, 211	AXS 215S	AXM 217	AXM 217S
Technical data				
Max. nominal stroke (mm)	4.5	4.5/3	6.3	5.5
Max. pushing force (N)	125	125	120	120
Running time	3.5...4.5 minutes	30 s	13 s/mm	13 s/mm
Power supply (V)	24/230	24	24/230	24
Mode of operation				
Stroke indicator	•	•	–	–
Thermal	•	•	–	–
Motor	–	–	•	•
Control				
2-point	•	–	•	–
3-point	–	–	•	–
Positioner	–	•	–	•
Combination options with valve	VUL, BUL, VCL, VDL, VUT, BUT, BXL	VUL, BUL, VCL, VDL, VUT, BUT, BXL	VUL, BUL, VUT, BUT, BXL, VCL, VDL	VUL, BUL, VUT, BUT, BXL, VCL, VDL
Further information	Page 144	Page 148	Page 150	Page 152

AXT 201, 211: Thermal actuator for unit valves with stroke indicator

AXT201F110

Features

- Fitted to the valve using no force thanks to the Low-Force-Locking (LFL) connector
- Fitted onto valve with M30 x 1.5 thread with automatic adjustment of closing dimension
- Pushing force max. 125 N
- With 230 V or 24 V thermal expansion element
- Large visible position indicator
- NC "normally closed" and NO "normally open" models (with and without auxiliary contacts)
- Model with manual adjustment
- Silent and maintenance-free
- Modular electrical plug connection (various functions, cable lengths and types)
- Including bayonet nut made of plastic M30 × 1.5
- Suitable for retrofitting existing installations without an adapter
- Fitting in any position, including upside down

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±20%
	Power supply 230 V~	±15%, 50...60 Hz
	Power consumption during operation	2.5 W (230 V~), 3 W (24 =/~)
	Starting power 24 V~/=	5 W/5 VA
	Starting power 230 V~	40 W/40 VA
	Start-up current 24 V~	220 mA
	Start-up current 230 V~	150 mA
Parameters		
	Stroke	Max. 4.5 mm
Ambient conditions		
	Operating temperature at valve	100 °C max.
	Storage and transport temperature	–25...70 °C
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	< 85% rh, no condensation
Construction		
	Housing	Pure white (RAL 9010) or jet black (RAL 9005), high-gloss surface (FV-0 as per EN 60707 and V-0 as per UL94)
	Housing material	Fire-retardant plastic
	Power cable	Standard length 0.8 m (AXT201), 1 m (AXT211, H03...), PVC, 2 x 0.50 mm², white/black
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class 24 V	III (EN 60730-1)
	Protection class 230 V	II (EN 60730-1)
CE conformity according to	Electrical safety 2006/95/EC	Devices (cable type H03) EN 60335-1 Devices (cable type H05) EN 60730-1,-2-14
	EMC Directive 2014/30/EU	EN 61000-6-1/EN 61000-6-2 EN 61000-6-3/EN 61000-6-4

Overview of types

Type	Features
AXT201F110	White version 230 V, NC, neutral, incl. raised M30 × 1.5 bayonet nut, cable 0.8 m
AXT201F112	White version 24 V, NC, incl. raised M30 × 1.5 bayonet nut, cable 1 m
AXT211F100	White version 230 V, NC, without cable, pack of one
AXT211F100B	Black version 230 V, NC, without cable, pack of one
AXT211F102	White version 24 V, NC, without cable, pack of one
AXT211F102B	Black version 24 V, NC, without cable, pack of one
AXT211F110	White version 230 V, NC, cable 1 m
AXT211F110B	Black version 230 V, NC, cable 1 m
AXT211F110M	White version 230 V, NC, with manual adjustment, cable 1 m
AXT211F112	White version 24 V, NC, cable 1 m
AXT211F112B	Black version 24 V, NC, cable 1 m
AXT211F112M	White version 24 V, NC, with manual adjustment, cable 1 m
AXT211F190	White version 230 V, NC, packing unit 50 pcs, without cable
AXT211F192	White version 24 V, NC, packing unit 50 pcs, without cable
AXT211F200	White version 230 V, NO, without cable, pack of one
AXT211F202	White version 24 V, NO, without cable, pack of one
AXT211F210	White version 230 V, NO, cable 1 m
AXT211F212	White version 24 V, NO, cable 1 m
AXT211HF110	White version 230 V, NC, with auxiliary contacts, cable 1 m
AXT211HF210	White version 230 V, NO, with auxiliary contacts, cable 1 m
AXT211HF112	White version 24 V, NC, with auxiliary contacts, cable 1 m
AXT211HF212	White version 24 V, NO, with auxiliary contacts, cable 1 m

Technical details

i *Closing force in combination with SAUTER valves*

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, neutral, incl. raised M30 × 1.5 bayonet nut, cable 0.8 m, pack of one						
AXT201F110	230 V	4.5	90	NC	3.5	0.18
AXT201F112	24 V	4.5	90	NC	4.5	0.18

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, including M30 × 1.5 bayonet nut, cable 1 m, pack of one						
AXT211F110	230 V	4.5	115	NC	3.5	0.18
AXT211F210	230 V	4.5	110	NO	3.5	0.18
AXT211F112	24 V	4.5	115	NC	4.5	0.18
AXT211F212	24 V	4.5	110	NO	4.5	0.18

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
Black version, including M30 × 1.5 bayonet nut, cable 1 m, pack of one						
AXT211F110B	230 V	4.5	115	NC	3.5	0.18
AXT211F112B	24 V	4.5	115	NC	4.5	0.18

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, with auxiliary contacts, including M30 × 1.5 bayonet nut, cable 1 m, pack of one						
AXT211HF110	230 V	4.5	115	NC	3.5	0.21
AXT211HF210	230 V	4.5	110	NO	3.5	0.21
AXT211HF112	24 V	4.5	115	NC	4.5	0.21
AXT211HF212	24 V	4.5	110	NO	4.5	0.21

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, with manual adjuster, including M30 × 1.5 bayonet nut, cable 1 m, pack of one						
AXT211F110M	230 V	4.5	115	NC	3.5	0.18
AXT211F112M	24 V	4.5	115	NC	4.5	0.18

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, packing unit of 50 pieces, including M30 × 1.5 bayonet nut, without cable						
AXT211F190	230 V	4.5	115	NC	3.5	0.10
AXT211F192	24 V	4.5	115	NC	4.5	0.10

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
White version, including M30 × 1.5 bayonet nut, without cable, pack of one						
AXT211F100	230 V	4.5	115	NC	3.5	0.10
AXT211F200	230 V	4.5	110	NO	3.5	0.10
AXT211F102	24 V	4.5	115	NC	4.5	0.10
AXT211F202	24 V	4.5	110	NO	4.5	0.10

Type	Voltage	Max. stroke (mm)	Closing force (N)	NC/NO	Min. running time (minutes)	Weight (kg)
Black version, including M30 × 1.5 bayonet nut, without cable, pack of one						
AXT211F100B	230 V	4.5	115	NC	3.5	0.10
AXT211F102B	24 V	4.5	115	NC	4.5	0.10

Accessories

Connectors with different cable lengths for thermal actuator

Type	Description
0550602801	Plug with cable, white, 0.8 m, PVC H03VV, 2 x 0.50 mm²
0550602021	Plug with cable, white, 2 m, PVC H03VV, 2 x 0.50 mm²
0550602032	Plug with cable, white, 3 m, PVC H05VV, 2 x 0.75 mm²
0550602032B	Plug with cable, black, 3 m, PVC H05VV, 2 x 0.75 mm²
0550602042	Plug with cable, white, 4 m, PVC H05VV, 2 x 0.75 mm²
0550602052	Plug with cable, white, 5 m, PVC H05VV, 2 x 0.75 mm²
0550602052B	Plug with cable, black, 5 m, PVC H05VV, 2 x 0.75 mm²
0550602062	Plug with cable, white, 6 m, PVC H05VV, 2 x 0.75 mm²
0550602072	Plug with cable, white, 7 m, PVC H05VV, 2 x 0.75 mm²
0550602102	Plug with cable, white, 10 m, PVC H05VV, 2 x 0.75 mm²
0550602102B	Plug with cable, black, 10 m, PVC H05VV, 2 x 0.75 mm²
0550602152	Plug with cable, white, 15 m, PVC H05VV, 2 x 0.75 mm²
0550602152B	Plug with cable, black, 15 m, PVC H05VV, 2 x 0.75 mm²
0550602023	Plug with cable, halogen-free, white, 2 m, Hal F H05Z1Z1, 2 x 0.75 mm²
0550602053	Plug with cable, halogen-free, white, 5 m, Hal F H05Z1Z1, 2 x 0.75 mm²
0550602103	Plug with cable, halogen-free, white, 10 m, Hal F H05Z1Z1, 2 x 0.75 mm²

Connectors with integrated auxiliary contacts

Type	Description
0550484121	Plug, white, with integrated auxiliary contacts for NC actuator, 2 m cable, PVC H03VV, 4 x 0.50 mm²
0550484221	Plug, white, with integrated auxiliary contacts for NO actuator, 2 m cable, PVC H03VV, 4 x 0.50 mm²

Various accessories

Type	Description
0550240001	Removal-protection device for AXT/AXS211 (prevents the unauthorised removal of the plug and actuator)

Adapters & adapter sets

Type	Description
0550390001	Raised M30 × 1.5 bayonet nut (black), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 × 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm higher. Closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm
0550390101	Raised M28 × 1.5 bayonet nut (grey), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M28 × 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm higher. Closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Pettinaroli
0550390201	Raised M30 × 1.0 bayonet nut (white), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 × 1.0 threads and angle valves or valves of different manufacturers; dimension of actuator 5 mm higher. Closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Oventrop (up to 1997), Beulco (up to 2004)
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV, 34 mm
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm
0550394001	Adaptor for fitting to Giacomini valves, type R450, R452, R456 and range 60
0550399001	Adaptor set comprising: raised bayonet nut, black M30 × 1.5 (all manufacturers, M30 × 1.5); raised bayonet nut, grey M28 × 1.5 (all manufacturers, M28 × 1.5); raised bayonet nut, white M30 × 1.0 (e.g. Oventrop, Beulco); 2 × N-inserts (black) and 2 × S-inserts (white); Danfoss adaptor RA 2000 (Ø 22 mm); Giacomini adaptors

Connectors with continuous actuation (for 24 V version only)

Type	Description
0550423121	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white cable, PVC 3 x 0.22 mm²
0550423221	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white cable, PVC 3 x 0.22 mm²
0550423151	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white cable, PVC 3 x 0.22 mm²
0550423251	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white cable, PVC 3 x 0.22 mm²
0550423171	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 7 m white cable, PVC 3 x 0.22 mm²
0550423271	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 7 m white cable, PVC 3 x 0.22 mm²
0550423123	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white halogen-free cable, 3 x 0.22 mm²
0550423153	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white halogen-free cable, 3 x 0.22 mm²
0550423173	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3.2 mm stroke, 7 m white halogen-free cable, H03 3 x 0.22 mm²

Connectors with integrated LED, lights up in blue (for 24 V version only)

Type	Description
0550120022	White plug with integrated LED, lights up in blue, cable 2 m, PVC H03VV, 2 x 0.50 mm²
0550120052	White plug with integrated LED, lights up in blue, cable 5 m, PVC H03VV, 2 x 0.75 mm²

AXS 215S: Continuous actuator for unit valves, with stroke indicator

AXS215SF122

Features

- Fitted to the valve using no force thanks to the Low-Force-Locking (LFL) connector
- Fitted onto the valve with M30 × 1.5 thread, with automatic adjustment of closing dimension
- With 24 V~ thermal expansion element and accurate continuous input
- Large, visible position indicator
- NC "normally closed" and NO "normally open" versions
- Choice of direction of operation, 0(2)...10 V or 10...(2)0 V and split-range function, 0...4.5 V or 5.5...10 V
- Position monitoring with inductive, non-wearing sensor; does not require periodic recalibration
- Silent and maintenance-free
- Modular electrical plug connection (various cable lengths and types)
- Connected to valve with plastic bayonet connection
- Suitable for retrofitting existing installations without an adapter
- Fitting in any position, including upside down

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption during operation	3 W
	Starting power	Max. 5 W
	Start-up current	220 mA
	Stand-by current	Max. 6 mA
	Operating current	Max. 90 mA
Parameters		
	Stroke	4.5/3 mm (can be selected)
	Min. running time[1)]	Approx. 30 s/mm
	Control signal 1	0...10 V, $R_i \geq 100$ kΩ
Ambient conditions		
	Operating temperature at valve	100 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	< 85% rh, no condensation
Construction		
	Weight	0.21 kg
	Housing	High-gloss surface (FV-0 as per EN 60707 and V-0 as per UL94), pure white (RAL 9010) or jet black (RAL 9005)
	Housing material	Fire-retardant plastic
	Power cable	Standard length 2 m, H03VV, PVC or halogen-free, 3 x 0.22 mm², white or black
Standards and directives		
	Type of protection	IP54 (EN 60529)

[1)] *The total time for 100% stroke is approx. 3.5…4.5 minutes (warm-up time) in the cold state or approx. 150 seconds in control mode without a dead time, i.e. in stand-by mode, add a dead time of approx. 110 seconds*

	Protection class 24 V	III (EN 60730-1, EN 60730-2, EN 60730-14)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1/EN 61000-6-2 EN 61000-6-3/EN 61000-6-4

Overview of types

Closing force in combination with SAUTER valves

Type	Closing force	NC/NO
AXS215SF122	115 N	NC
AXS215SF122B	115 N	NC
AXS215SF222	110 N	NO
AXS215SF222B	110 N	NO

AXS215SF122, AXS215SF222: White version, including M30 x 1.5 bayonet nut, cable 2 m, pack of one

AXS215SF122B, AXS215SF222B: Black version, including M30 x 1.5 bayonet nut, cable 2 m, pack of one

Accessories

Connectors with continuous actuation (for 24 V AC version only)

Type	Description
0550423121	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white cable, PVC 3 x 0.22 mm²
0550423221	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white cable, PVC 3 x 0.22 mm²
0550423151	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white cable, PVC 3 x 0.22 mm²
0550423251	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white cable, PVC 3 x 0.22 mm²
0550423171	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 7 m white cable, PVC 3 x 0.22 mm²
0550423271	Continuous activation NO adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 7 m white cable, PVC 3 x 0.22 mm²
0550423123	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 2 m white halogen-free cable, 3 x 0.22 mm²
0550423153	Continuous activation NC adjustable: 0(2)...10 / 10...0(2) V, split-range unit 0...4.5 V or 5.5... 10 V, for 4.5 mm or 3 mm stroke, 5 m white halogen-free cable, 3 x 0.22 mm²

Various accessories

Type	Description
0550240001	Removal-protection device for AXT/AXS211 (prevents the unauthorised removal of the plug and actuator)

Adapters & adapter sets

Type	Description
0550390101	Raised M28 × 1.5 bayonet nut (grey), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M28 × 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm higher. Closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Pettinaroli
0550390201	Raised M30 × 1.0 bayonet nut (white), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 × 1.0 threads and angle valves or valves of different manufacturers; dimension of actuator 5 mm higher. Closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Oventrop (up to 1997), Beulco (up to 2004)
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV, 34 mm
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm
0550394001	Adaptor for fitting to Giacomini valves, type R450, R452, R456 and range 60
0550399001	Adaptor set comprising: raised bayonet nut, black M30 × 1.5 (all manufacturers, M30 × 1.5); raised bayonet nut, grey M28 × 1.5 (all manufacturers, M28 × 1.5); raised bayonet nut, white M30 × 1.0 (e.g. Oventrop, Beulco); 2 × N-inserts (black) and 2 × S-inserts (white); Danfoss adaptor RA 2000 (Ø 22 mm); Giacomini adaptors

AXM217F20

AXM 217: Motorised actuator for unit valves

Features

- Reliable actuation in efficient control systems
- For 2-point or 3-point controllers in conjunction with single-room control systems
- Stepping motor with electronic activation and cut-out
- Attached to valve with M30 × 1.5 thread
- Maintenance-free gear unit
- Suitable for retrofitting existing installations using the appropriate adapters
- Operating status indicated by integrated LED
- Fitting position vertically upright to horizontal, not suspended

Technical data

Parameters		
	Nominal stroke	6.3 mm
	Running time	13 s/mm
	Actuating power[1)]	120 N
	Sound pressure level	< 30 dB (A)
Ambient conditions		
	Max. operating temperature at valve	90 °C
	Admissible ambient temperature	0...50 °C
	Admissible ambient humidity	< 75% rh
Construction		
	Weight	0.15 kg
	Housing	Two piece, light grey (RAL 7035)
	Housing material	Plastic
	Thread	Nickel-plated brass M30 × 1.5
	Power cable	1.50 m long, 3 × 0,5 mm², light grey, insertable
Standards and directives		
	Type of protection	IP43 (EN 60529)
	EMC Directive 2014/30/EU	CE as per EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	CE as per EN 60730-1 and EN 60730-2-14

Overview of types

Type	Power supply	Power consumption	Protection class
AXM217F200	230 V~, ±10%, 50...60 Hz	6.5 VA, 2 W	II (IEC 60730)
AXM217F202	24 V=/~, ±15%, (50...60 Hz)	2.5 VA, 1.5 W	III (IEC 60730)

AXM217F202: Voltage 24V= with relay circuit only

Accessories

Type	Description
0550603001	Cable: 24 V, PVC, pluggable, 3 m long
0550603002	Cable: 24 V, PVC, pluggable, 7 m long
0550603003	Cable: 230 V, PVC, pluggable, 3 m long
0550603004	Cable: 230 V, PVC, pluggable, 7 m long
0550603005	Cable: 24 V, halogen-free, pluggable, 3 m long

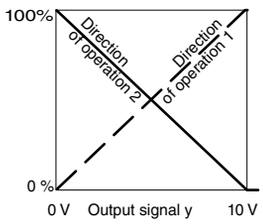
[1)] *Actuating power min. 100 N, max. 150 N*

Type	Description
0550603006	Cable: 24 V, halogen-free, pluggable, 7 m long
0550603007	Cable: 230 V, halogen-free, pluggable, 3 m long
0550603008	Cable: 230 V, halogen-free, pluggable, 7 m long
0371235001	Adaptor for fitting to Oventrop valves (M30 × 1)
0371356001	Adaptor for fitting to Beulco or Tobler underfloor-heating distributors (M30 × 1)
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV, 34 mm
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm
0371361001	Adapter for fitting to Herz valves, type Herz-TS'90 (M28 × 1.5)
0371363001	Adapter for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)

AXM 217S: Motorised actuator for unit valves with positioner

AXM217SF402

AXM217SF404



Features

- Stepping motor with electronic activation and cut-out
- Attached to valve with M30 × 1.5 thread
- Version with direction of operation 1 (direct acting) or 2 (reverse acting), adjustable
- Adjustable valve strokes
- Automatic stroke adjustment (AXM217SF404)
- Maintenance-free gear unit
- Suitable for retrofitting existing installations using the appropriate adapters
- Status and diagnostic indicator via integrated bi-colour LED
- Fitting position vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply	24 V~/=, ±15%, 50...60 Hz
	Power consumption	2.5 VA
Parameters[1]		
	Direction of operation	1 or 2 (adjustable)
	Nominal stroke	3.2 mm, 4.3 mm, 5.5 mm (adjustable) Automatic stroke adjustment (F404)
	Running time	8 s/mm
	Sound pressure level	< 30 dB(A)
	Control signal	0(2)...10 V; 5...10 V; 0...5 V R_i > 100 kΩ; 0(4)...20 mA R_i = 500 Ω
Ambient conditions		
	Admissible ambient temperature	0...50 °C, no condensation
	Max. operating temperature at valve	95 °C
	Storage and transport temperature	–20...65 °C
	Admissible ambient humidity	< 75% rh
Construction		
	Weight	0.15 kg
	Housing	Two-part, light grey (RAL7035)
	Housing material	Plastic
	Thread	Nickel-plated brass M30 × 1.5
	Power cable	1.50 m long, 3 × 0.5 mm², light grey, pluggable 3.0 m long, halogen-free (F404)
Standards and directives		
	Type of protection	IP43 (EN 60529)
	Protection class	III (IEC 60730)
CE conformity according to	EMC Directive 2014/30/EU	61000-6-1, 61000-6-2, 61000-6-3 and EN 61000-6-4

[1] *The direction of operation and the control voltage can be set using DIP switches; factory setting "2" (RA). Direction of operation 1: Control signal increasing = actuator moves out (valve VUT, VUL, VCL, VDL, BUL closes and valve BXL (control passage) opens). Direction of operation 2: Control signal increasing = actuator moves in (valve VUT, VUL, VCL, VDL, BUL opens and valve BXL (control passage) closes).*

Overview of types

Type	Features	Actuating power
AXM217SF402	Motorised actuator for unit valves with positioner	120 N
AXM217SF404	Motorised actuator for unit valves with positioner and automatic stroke adjustment	160 N

AXM217SF402: Actuating power min. 100 N, max. 150 N

Accessories

Type	Description
0550603009	Cable: 24 V, PVC, pluggable, 3 m long
0550603010	Cable: 24 V, PVC, pluggable, 7 m long
0550603011	Cable: 24 V, halogen-free, pluggable, 3 m long
0550603012	Cable: 24 V, halogen-free, pluggable, 7 m long
0371235001	Adaptor for fitting to Oventrop valves (M30 × 1)
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV, 34 mm
0371356001	Adaptor for fitting to Beulco or Tobler underfloor-heating distributors (M30 × 1)
0371361001	Adapter for fitting to Herz valves, type Herz-TS'90 (M28 × 1.5)
0371363001	Adapter for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm

Regulating valves

SAUTER regulating valves provide flexible combinations for all requirements. The wide product range at SAUTER comprises threaded valves made of DZR cast brass and flanged valves made of grey cast iron, ductile cast iron or cast steel, ensuring that you will find products that suit your requirements perfectly. These regulating valves can be used for the continuous control of hot and cold water in closed circuits.

Overview of regulating valves

				
Type designation	VUN	BUN	V6R	B6R
Application				
Preheater for ventilation & air-conditioning	•	•	•	•
Cooler for ventilation & air-conditioning	•	–	•	–
Steam humidifier for ventilation & air-conditioning	–	–	–	–
Reheater for ventilation & air-conditioning	•	•	•	•
Chilled ceiling, underfloor heating	•	•	–	–
Static heating	•	•	•	•
Cooling tower (open systems)	•	•	•	•
Multi-boiler system	•	–	•	–
Local heating	•	•	•	•
District heating	–	–	–	–
Version				
2-way	•	–	•	–
3-way	–	•	–	•
Female thread	–	–	•	•
Male thread	•	•	–	–
Nominal diameter (DN)	15...50	15...50	15...50	15...50
Nominal pressure	PN 16	PN 16	PN 16	PN 16
Combination options with actuator	AVM 105(S), AVM 115(S), AVF 124 AVF 125S AVM 321(S)	AVM 105(S), AVM 115(S), AVF 124 AVF 125S AVM 321(S)	AVM 234S, AVF 234S AVM 322(S)	AVM 234S, AVF 234S AVM 322(S)
Further information	Page 157	Page 160	Page 163 Page 378	Page 166 Page 380

				
Type designation	VUD	VQD	BUD	BQD
Application				
Preheater for ventilation & air-conditioning	•	•	•	•
Cooler for ventilation & air-conditioning	•	•	–	–
Steam humidifier for ventilation & air-conditioning	–	–	–	–
Reheater for ventilation & air-conditioning	•	•	•	•
Chilled ceiling, underfloor heating	•	•	•	•
Static heating	•	•	•	•
Cooling tower (open systems)	–	–	–	–
Multi-boiler system	•	•	•	•
Local heating	•	•	•	•
District heating	–	–	–	–
Version				
2-way	•	•	–	–
3-way	–	–	•	•
Flange	•	•	•	•
Nominal diameter (DN)	15...50	65...100	15...50	65...100
Nominal pressure	PN 6	PN 6	PN 6	PN 6
Combination options with actuator	AVM 105(S), AVM 115(S), AVM 321(S)	AVM 234S, AVM 322(S), AVF 234S	AVM 105(S), AVM 115(S), AVM321(S)	AVM 234S, AVM 322(S), AVF 234S
Further information	Page 169 Page 382	Page 185	Page 173 Page 384	Page 187

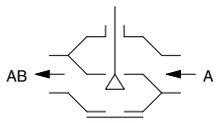
				
Type designation	VUE	VQE	BUE	BQE
Application				
Preheater for ventilation & air-conditioning	•	•	•	•
Cooler for ventilation & air-conditioning	•	•	–	–
Steam humidifier for ventilation & air-conditioning	–	–	–	–
Reheater for ventilation & air-conditioning	•	•	•	•
Chilled ceiling, underfloor heating	•	•	•	•
Static heating	•	•	•	•
Cooling tower (open systems)	–	–	–	–
Multi-boiler system	•	•	•	•
Local heating	•	•	•	•
District heating	–	–	–	–
Version				
2-way	•	•	–	–
3-way	–	–	•	•
Flange	•	•	•	•
Nominal diameter (DN)	15...50	65...100	15...50	65...100
Nominal pressure	PN 16/10	PN 16	PN 16/10	PN 16
Combination options with actuator	AVM 105, AVM 115, AVM 321(S)	AVM 234S, AVM 322(S), AVF 234S	AVM 105, AVM 115, AVM 321(S)	AVM 234S, AVM 322(S), AVF 234S
Further information	Page 386 Page 177	Page 190	Page 181 Page 388	Page 192

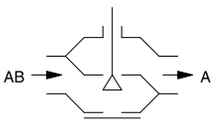
			
Type designation	VUG	BUG	VUP
Application			
Preheater for ventilation & air-conditioning	•	•	•
Cooler for ventilation & air-conditioning	•	–	•
Steam humidifier for ventilation & air-conditioning	•	–	–
Reheater for ventilation & air-conditioning	•	•	•
Chilled ceiling, underfloor heating	–	–	–
Static heating	•	•	•
Cooling tower (open systems)	–	–	–
Multi-boiler system	•	•	•
Local heating	•	•	•
District heating	•	•	•
Steam	•	–	•
Version			
2-way	•	–	•
3-way	–	•	–
Flange	•	•	•
Nominal diameter (DN)	15...150	15...150	40...150
Nominal pressure	PN 25/16	PN 25/16	PN 25
Combination options with actuator	AVM 234S, AVF 234S, AVN 224S, AVM 322(S)	AVM 234S, AVF 234S, AVN 224S, AVM 322(S)	AVM 234S, AVF 234S, AVN 224S, AVM 322(S)
Further information	Page 195 Page 390	Page 393	Page 199 Page 396

		
Type designation	VUS	BUS
Application		
Preheater for ventilation & air-conditioning	•	•
Cooler for ventilation & air-conditioning	•	–
Steam humidifier for ventilation & air-conditioning	•	•
Reheater for ventilation & air-conditioning	•	•
Chilled ceiling, underfloor heating	–	–
Static heating	•	•
Cooling tower (open systems)	–	–
Multi-boiler system	•	•
Local heating	•	•
District heating	•	•
Steam	•	–
Version		
2-way	•	–
3-way	–	•
Flange	•	•
Nominal diameter (DN)	15...150	15...150
Nominal pressure	PN 40	PN 40
Combination options with actuator	AVM 234S, AVF 234S, AVM 322(S)	AVM 234S, AVF 234S, AVM 322(S)
Further information	Page 201 Page 398	Page 400 Page 204

VUN: 2-way valve with male thread, PN 16

VUN032F300





Features

- Regulating valve free of silicone grease with male thread (DIN EN ISO 228-1) for cold or hot water in closed and open circuits
- In combination with valve actuators AVM 105(S), 115(S), 321(S) and AVF 124, 125S as a control unit
- Equal-percentage (F300) / linear (F200) characteristic, can be set with SUT valve actuators (SAUTER Universal Technology)
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure or with the pressure
- Stainless-steel spindle
- Valve body and valve seat in dezincification-resistant (DZR) cast brass
- Plug with glass-fibre-reinforced PTFE sealing ring made of dezincification-resistant (DZR) cast brass
- Stuffing box with wiper ring made of dezincification-resistant (DZR) cast brass and double O-ring seal made of EPDM

Technical data

Parameters

Nominal pressure	16 bar
Control ratio	> 50:1
Valve characteristic	F200 = linear F3*0 = equal percentage
Nominal stroke	8 mm
Leakage rate	≤ 0.02% of K_{vs} value

Ambient conditions

Operating temperature[1)]	−15...150 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar
Operating pressure up to 150 °C	10 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Connection	Weight
VUN015F350	DN 15	0.4 m³/h	G1" B	0.82 kg
VUN015F340	DN 15	0.63 m³/h	G1" B	0.82 kg
VUN015F330	DN 15	1 m³/h	G1" B	0.82 kg
VUN015F320	DN 15	1.6 m³/h	G1" B	0.82 kg
VUN015F310	DN 15	2.5 m³/h	G1" B	0.82 kg
VUN015F300	DN 15	4 m³/h	G1" B	0.82 kg
VUN020F300	DN 20	6.3 m³/h	G1¼" B	1 kg
VUN025F300	DN 25	10 m³/h	G1½" B	1.3 kg
VUN032F300	DN 32	16 m³/h	G2" B	1.74 kg
VUN040F300	DN 40	22 m³/h	G2¼" B	2.52 kg
VUN050F300	DN 50	28 m³/h	G2¾" B	3.44 kg
VUN050F200	DN 50	40 m³/h	G2¾" B	3.44 kg

Accessories

Type	Description
0361951015	1 screw fitting for male thread with flat seal, DN 15
0361951020	1 screw fitting for male thread with flat seal, DN 20
0361951025	1 screw fitting for male thread with flat seal, DN 25

[1)] *Use stuffing box heater at temperatures below 0 °C; use temperature adapter (accessory) at temperatures above 100 °C*

Type	Description
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adaptor required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of VUN with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUN015F350 VUN015F340 VUN015F330 VUN015F320 VUN015F310 VUN015F300	4.0	4.0	4.0	6.0	6.0
VUN020F300	4.0	4.0	4.0	5.0	5.0
VUN025F300	4.0	4.0	4.0	4.0	4.0
VUN032F300	3.0	3.0	3.0	3.5	3.5
VUN040F300	1.9	1.9	1.9	3.0	3.0
VUN050F300 VUN050F200	1.0	1.0	1.0	2.4	2.4
Cannot be used to close with the pressure					

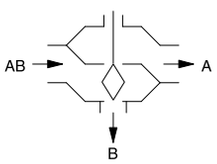
Actuator	AVM321F110 AVM321F112	AVM321SF132	AVF124F130 AVF124F230	AVF125SF132 AVF125SF232
Page	218	220	230	233
Actuating power	1000 N	1000 N	500 N	500 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA	3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s	60/120 s	60/120 s

	Δp [bar]					
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUN015F350 VUN015F340 VUN015F330 VUN015F320 VUN015F310 VUN015F300	10.0	10.0	6.0	16.0	6.0	16.0
VUN020F300	10.0	10.0	5.0	12.0	5.0	12.0
VUN025F300	10.0	10.0	4.0	8.0	4.0	8.0
VUN032F300	10.0	10.0	3.5	6.0	3.5	6.0
VUN040F300	6.0	6.0	3.0	3.5	3.0	3.5
VUN050F300 VUN050F200	4.0	4.0	2.4	2.4	2.4	2.4

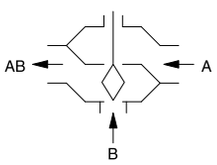
Closes with the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUN015F350 VUN015F340 VUN015F330 VUN015F320 VUN015F310 VUN015F300	6.0	6.0	4.0	16.0	4.0	16.0
VUN020F300	6.0	6.0	2.8	16.0	2.8	16.0
VUN025F300	5.0	5.0	2.8	8.0	2.8	16.0
VUN032F300	4.0	4.0	2.0	16.0	2.0	16.0
VUN040F300	2.5	2.5	1.5	16.0	1.5	16.0
VUN050F300 VUN050F200	2.0	2.0	0.8	16.0	0.8	16.0

At temperatures above 100°C, accessories are required

BUN032F300



Distribution valve



Control valve

BUN: 3-way valve with male thread, PN 16

Features

- Regulating valve free of silicone grease with male thread (DIN EN ISO 228-1) for cold and hot water in closed and open circuits
- In combination with valve actuators AVM 105(S), 115(S), 321(S) and AVF 124, 125S as a control unit
- Equal-percentage (F300) / linear (F200) characteristic, can be set with SUT valve actuators (SAUTER Universal Technology)
- The valve is closed when the spindle is moved out
- Can be used as a control valve or a distribution valve
- Stainless-steel spindle
- Valve body with valve seat made from dezincification-resistant cast brass (DZR)
- Plug with glass-fibre-reinforced PTFE sealing ring made from dezincification-resistant cast brass (DZR)
- Stuffing box with wiper ring made from dezincification-resistant cast brass (DZR) and double O-ring seal made from EPDM

Technical data

Parameters

Nominal pressure	16 bar
Valve characteristic, control passage	F200 = linear F3*0 = equal percentage
Valve characteristic, mixing passage	Linear
Control ratio	> 50:1
Leakage rate, control passage	≤ 0.05% of k_{vs} value
Leakage rate, mixing passage	≤ 1% of K_{vs} value
Nominal stroke	8 mm

Ambient conditions

Operating temperature[1]	-15...150 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar
Operating pressure up to 150 °C	10 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Connection	Weight
BUN015F330	DN 15	1 m³/h	G1" B	0.82 kg
BUN015F320	DN 15	1.6 m³/h	G1" B	0.82 kg
BUN015F310	DN 15	2.5 m³/h	G1" B	0.82 kg
BUN015F300	DN 15	4 m³/h	G1" B	0.82 kg
BUN020F300	DN 20	6.3 m³/h	G1¼" B	1 kg
BUN025F300	DN 25	10 m³/h	G1½" B	1.3 kg
BUN032F300	DN 32	16 m³/h	G2" B	1.74 kg
BUN040F300	DN 40	22 m³/h	G2¼" B	2.52 kg
BUN050F300	DN 50	28 m³/h	G2¾" B	3.44 kg
BUN050F200	DN 50	40 m³/h	G2¾" B	3.44 kg

Accessories

Type	Description
0361951015	1 screw fitting for male thread with flat seal, DN 15
0361951020	1 screw fitting for male thread with flat seal, DN 20
0361951025	1 screw fitting for male thread with flat seal, DN 25

[1] *Use stuffing box heater at temperatures below 0 °C; use temperature adapter (accessory) at temperatures above 100 °C*

Type	Description
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adaptor required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of BUN with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BUN015F330 BUN015F320 BUN015F310 BUN015F300	4.0	4.0	4.0	6.0	6.0
BUN020F300	4.0	4.0	4.0	5.0	5.0
BUN025F300	3.0	3.0	3.0	4.0	4.0
BUN032F300	2.0	2.0	2.0	3.7	3.7
BUN040F300	1.2	1.2	1.2	2.7	2.7
BUN050F300 BUN050F200	0.8	0.8	0.8	1.8	1.8
Cannot be used as distribution valve					

Actuator	AVM321F110 AVM321F112	AVM321SF132	AVF124F130 AVF124F230	AVF125SF132 AVF125SF232
Page	218	220	230	233
Actuating power	1000 N	1000 N	500 N	500 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA	3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s	60/120 s	60/120 s

	Δp [bar]					
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BUN015F330 BUN015F320 BUN015F310 BUN015F300	10.0	10.0	6.0	16.0	6.0	16.0
BUN020F300	10.0	10.0	5.0	9.5	5.0	9.5

Actuator	AVM321F110 AVM321F112	AVM321SF132	AVF124F130 AVF124F230		AVF125SF132 AVF125SF232	
Page	218	220	230		233	
BUN025F300	10.0	10.0	4.0	6.5	4.0	6.5
BUN032F300	10.0	10.0	3.7	4.3	3.7	4.3
BUN040F300	6.0	6.0	2.7	2.7	2.7	2.7
BUN050F300 BUN050F200	4.0	4.0	1.8	1.8	1.8	1.8

As distribution valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330 BUN015F320 BUN015F310 BUN015F300	6.0	6.0	4.0	16.0	4.0	16.0
BUN020F300	6.0	6.0	2.8	16.0	2.8	16.0
BUN025F300	5.0	5.0	2.8	16.0	2.8	16.0
BUN032F300	4.0	4.0	2.0	16.0	2.0	16.0
BUN040F300	2.5	2.5	1.5	16.0	1.5	16.0
BUN050F300 BUN050F200	2.0	2.0	0.8	16.0	0.8	16.0

At temperatures above 100°C, accessories are required

V6R: 2-way valve with female thread, PN 16 (el.)

V6R15F300

Features

- Regulating valve free of silicone grease with female thread DIN EN ISO 228-1 G for the control of cold/hot water in closed and open circuits
- In combination with valve actuators AVM 322, AVM 322S, AVM 234S, AVF 234S
- Equal-percentage or linear characteristic, can be set with SUT valve actuators (SAUTER Universal Technology) to linear or equal-percentage
- Control passage A–AB closed when the spindle is moved out
- Closing procedure against the pressure or with the pressure
- Valve body and seat made of gunmetal
- Stainless-steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters		
	Control ratio	> 50:1
	Leakage rate	≤ 0.05% of K_{vs} value
	Valve stroke	14 mm
	Nominal pressure	16 bar

Ambient conditions		
	Operating temperature[1]	–15...130 °C
	Operating pressure up to 120 °C	16 bar
	Operating pressure up to 130 °C	13 bar

Standards and directives		
	Pressure and temperature data	DIN 2401
	Flow parameters	VDI/VDE 2173

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
V6R15F350	DN 15	0.4 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F340	DN 15	0.63 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F330	DN 15	1 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F320	DN 15	1.6 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	G½"	1.2 kg
V6R15F300	DN 15	4 m³/h	equal-percentage	brass	G½"	1.2 kg
V6R15F200	DN 15	4 m³/h	linear	brass	G½"	1.2 kg
V6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	G1"	1.6 kg
V6R25F300	DN 25	10 m³/h	equal-percentage	brass	G1"	1.6 kg
V6R25F210	DN 25	6.3 m³/h	linear	brass	G1"	1.6 kg
V6R25F200	DN 25	10 m³/h	linear	brass	G1"	1.6 kg
V6R40F310	DN 40	16 m³/h	equal-percentage	brass	G1½"	3.4 kg

[1] *At temperatures below 0 °C, use stuffing box heater (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
V6R40F300	DN 40	25 m³/h	equal-percentage	brass	G1½"	3.4 kg
V6R40F210	DN 40	16 m³/h	linear	brass	G1½"	3.4 kg
V6R40F200	DN 40	25 m³/h	linear	brass	G1½"	3.4 kg
V6R50F300	DN 50	35 m³/h	equal-percentage	brass	G2"	4.6 kg
V6R50F200	DN 50	35 m³/h	linear	brass	G2"	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. seal, 2 pcs. required
0360391025	Screw fitting, DN 25, incl. seal, 2 pcs. required
0360391040	Screw fitting incl. seal, 2 pcs. required, Rp1½ - G1½
0360391050	Screw fitting incl. seal, 2 pcs. required, Rp2 - G2

*0217268***Stuffing box heater 15 W, light alloy housing, IP54, 3 × 0.75 mm² power cable, earth connector, length 1 m, ferrule*

Combination of V6R with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AVM234SF132	AVF234SF132	AVF234SF232	AVM322F120 AVM322F122	AVM322SF132
Page	228	235	235	218	220
Actuating power	2500 N	2000 N	2000 N	1000 N	1000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	28/56/84 s	28/56/84 s	28/56/84 s	120/240 s	120/80 s

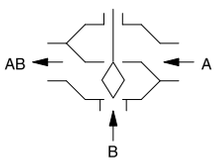
	Δp [bar]						
Closes against the pressure	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_{max}
V6R15F350 V6R15F340 V6R15F330 V6R15F320 V6R15F310 V6R15F300 V6R15F200 V6R25F310 V6R25F300 V6R25F210 V6R25F200	4.0	4.0	16.0	4.0	16.0	4.0	4.0
V6R40F310 V6R40F300 V6R40F210 V6R40F200	3.0	3.0	11.5	3.0	11.5	3.0	3.0
V6R50F300 V6R50F200	2.0	2.0	8.6	2.0	8.6	2.0	2.0

Actuator	AVM234SF132	AVF234SF132		AVF234SF232		AVM322F120 AVM322F122	AVM322SF132
Page	228	235		235		218	220
Closes with the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_{max}**
V6R15F350 V6R15F340 V6R15F330 V6R15F320 V6R15F310 V6R15F300 V6R15F200	3.0	3.0	16.0	3.0	16.0	4.0	4.0
V6R25F310 V6R25F300 V6R25F210 V6R25F200	2.0	2.0	16.0	2.0	16.0	4.0	4.0
V6R40F310 V6R40F300 V6R40F210 V6R40F200	1.5	1.5	16.0	1.5	16.0	3.0	3.0
V6R50F300 V6R50F200	1.0	1.0	16.0	1.0	16.0	2.0	2.0

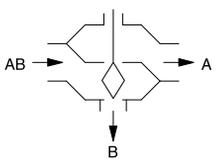
Accessories required: Mounting set 0372338001 for AVM 234 and AVF 234

Accessories required: Mounting set 0510240012 for AVM 322(S)

B6R25F300



Control valve



Distribution valve

B6R: 3-way valve with female thread, PN 16 (el.)

Features

- Regulating valve free of silicone grease with female thread DIN EN ISO 228-1 G for the control of cold/hot water in closed and open circuits
- In combination with valve actuators AVM 322, AVM 322S, AVM 234S, AVF 234S
- Equal-percentage or linear characteristic, can be set with SUT valve actuators (SAUTER Universal Technology) to linear or equal-percentage
- Control passage A–AB closed when the spindle is moved out
- Can be used as a control valve or a distribution valve
- Valve body and seat made of gunmetal
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM
- Stainless-steel spindle

Technical data

Parameters	
Control ratio	> 50:1
Leakage rate of control passage A-AB	≤ 0.05% of K_{vs} value
Leakage rate of mixing passage B-AB	≤ 1% of K_{vs} value
Valve stroke	14 mm
Valve characteristic, mixing passage	Linear

Ambient conditions	
Operating temperature[1)]	–15...130 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar

Standards and directives	
Pressure and temperature data	DIN 2401
Flow parameters	VDI/VDE 2173

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R15F330	DN 15	1 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F320	DN 15	1.6 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F300	DN 15	4 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F200	DN 15	4 m³/h	linear	brass	G½"	1.2 kg
B6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F300	DN 25	10 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F210	DN 25	6.3 m³/h	linear	brass	G1"	1.6 kg
B6R25F200	DN 25	10 m³/h	linear	brass	G1"	1.6 kg
B6R40F310	DN 40	16 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F300	DN 40	25 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F210	DN 40	16 m³/h	linear	brass	G1½"	3.4 kg

[1)] *At temperatures below 0 °C, use stuffing box heater (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R40F200	DN 40	25 m³/h	linear	brass	G1½"	3.4 kg
B6R50F300	DN 50	35 m³/h	equal-percentage	brass	G2"	4.6 kg
B6R50F200	DN 50	35 m³/h	linear	brass	G2"	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. seal, 3 pcs. required
0360391025	Screw fitting, DN 25, incl. seal, 3 pcs. required
0360391040	Screw fitting, DN 40, incl. seal, 3 pcs. required
0360391050	Screw fitting, DN 50, incl. seal, 3 pcs. required
0360429000	Adhesive label for distribution valve
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C

*0217268*** Stuffing box heater 15 W, light alloy housing, IP54, 3 × 0.75 mm² power cable, earth connector, length 1 m, ferrule*

0360429 Sheet with 21 adhesive labels for flow change; see combinations

Combination of B6R with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AVM234SF132	AVF234SF132	AVF234SF232	AVM322F120 AVM322F122	AVM322SF132
Page	228	235	235	218	220
Actuating power	2500 N	2000 N	2000 N	1000 N	1000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	28/56/84 s	28/56/84 s	28/56/84 s	120/240 s	120/80 s

	Δp [bar]						
As control valve	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_{max}
B6R15F330 B6R15F320 B6R15F310 B6R15F300 B6R15F200 B6R25F310 B6R25F300 B6R25F210 B6R25F200	4.0	4.0	16.0	4.0	16.0	4.0	4.0
B6R40F310 B6R40F300 B6R40F210 B6R40F200	3.0	3.0	11.5	3.0	11.5	3.0	3.0
B6R50F300 B6R50F200	2.0	2.0	8.6	2.0	8.6	2.0	2.0

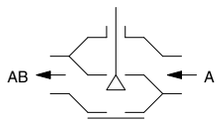
Actuator	AVM234SF132	AVF234SF132		AVF234SF232		AVM322F120 AVM322F122	AVM322SF132
Page	228	235		235		218	220
As distribution valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_{max}**
B6R15F330 B6R15F320 B6R15F310 B6R15F300 B6R15F200	3.0	3.0	16.0	3.0	16.0	4.0	4.0
B6R25F310 B6R25F300 B6R25F210 B6R25F200	2.0	2.0	16.0	2.0	16.0	4.0	4.0
B6R40F310 B6R40F300 B6R40F210 B6R40F200	1.5	1.5	16.0	1.5	16.0	3.0	3.0
B6R50F300 B6R50F200	1.0	1.0	16.0	1.0	16.0	2.0	2.0

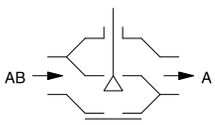
Accessories required: Mounting set 0372338001 for AVM 234 and AVF 234

Accessories required: Mounting set 0510240012 for AVM 322(S)

VUD: 2-way flanged valve, PN 6 (el.)

VUD032F300





Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 105(S), AVM 115(S), AVM 321(S) and AVF 124 and AVF 125(S) as a control unit
- Not suitable for steam or drinking water or potentially explosive atmospheres
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- Characteristic can be set with SUT (SAUTER Universal Technology) valve actuator to linear, equal-percentage or quadratic
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure or with the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters	
Nominal pressure	PN 6
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage F200	Linear
Valve characteristic, control passage F300	Equal-percentage
Control ratio of valve	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate	≤ 0.05% of K_{vs} value
Valve stroke	8 mm

Ambient conditions[1]	
Operating temperature[2]	−10...150 °C
Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VUD015F320	DN 15	1.6 m³/h	3.2 kg
VUD015F310	DN 15	2.5 m³/h	3.2 kg
VUD015F300	DN 15	4 m³/h	3.2 kg
VUD020F300	DN 20	6.3 m³/h	4.1 kg
VUD025F300	DN 25	10 m³/h	4.7 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
VUD032F300	DN 32	16 m³/h	7.3 kg
VUD040F300	DN 40	22 m³/h	8.6 kg
VUD050F300	DN 50	28 m³/h	11.2 kg
VUD050F200	DN 50	40 m³/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of VUD with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of VUD with electric actuator, actuating power 250 N, 500 N

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUD015F320 VUD015F310 VUD015F300 VUD020F300	4.0	4.0	4.0	6.0	6.0
VUD025F300	2.8	2.8	2.8	6.0	6.0
VUD032F300	2.1	2.1	2.1	5.2	5.2
VUD040F300	1.2	1.2	1.2	3.3	3.3
VUD050F300 VUD050F200	0.9	0.9	0.9	2.0	2.0
Cannot be used to close with the pressure					

Combination of VUD with electric actuator with spring return, actuating power 500 N

Actuator	AVF124F130 AVF124F230	AVF125SF132 AVF125SF232
Page	230	233
Actuating power	500 N	500 N
Control signal	3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	60/120 s	60/120 s

	Δp [bar]			
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUD015F320 VUD015F310 VUD015F300 VUD020F300 VUD025F300	6.0	6.0	6.0	6.0
VUD032F300	5.2	5.2	5.2	5.2
VUD040F300	3.3	3.3	3.3	3.3
VUD050F300 VUD050F200	2.0	2.0	2.0	2.0

Closes with the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUD015F320 VUD015F310 VUD015F300 VUD020F300	6.0	6.0	6.0	6.0
VUD025F300	5.0	6.0	5.0	6.0
VUD032F300	4.0	6.0	4.0	6.0
VUD040F300	2.5	6.0	2.5	6.0
VUD050F300 VUD050F200	1.5	6.0	1.5	6.0

At temperatures above 100°C, accessories are required

Combination of VUD with electric actuator, actuating power 1000 N

Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s

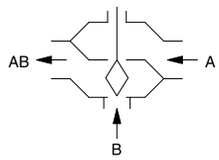
	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_{max}**
VUD015F320 VUD015F310 VUD015F300 VUD020F300 VUD025F300 VUD032F300 VUD040F300	6.0	6.0
VUD050F300 VUD050F200	4.0	4.0

Actuator	**AVM321F110** **AVM321F112**	**AVM321SF132**
Page	218	220
Closes with the pressure	**Δp_{max}**	**Δp_{max}**
VUD015F320 VUD015F310 VUD015F300 VUD020F300	6.0	6.0
VUD025F300	5.0	5.0
VUD032F300	4.0	4.0
VUD040F300	2.5	2.5
VUD050F300 VUD050F200	1.5	1.5

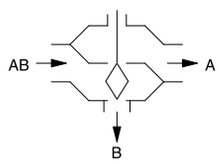
At temperatures above 100°C, accessories are required

BUD: 3-way flanged valve, PN 6 (el.)

BUD032F300



Control valve



Distribution valve

Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 105(S), AVM 115(S), AVM 321(S) and AVF 124 and AVF 125(S) as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- Characteristic can be set with SUT valve actuators to linear, equal-percentage or quadratic
- The control passage is closed when the spindle is moved out
- Used as control valve or as distribution valve
- Valve body with seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters		
	Nominal pressure	PN 6
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic, control passage F200	Linear
	Valve characteristic, control passage F300	Equal-percentage
	Valve characteristic, mixing passage	Linear
	Control ratio of valve	> 50:1
	Stuffing box	2 EPDM O-rings
	Leakage rate, control passage	< 0.05% of K_{vs} value
	Leakage rate, mixing passage	< 1% of K_{vs} value
	Valve stroke	8 mm

Ambient conditions[1]		
	Operating temperature[2]	−10...150 °C
	Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)
	PED 2014/68/EU	Fluid group II, liquid or steam pressure no CE label as per article 4.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
BUD015F320	DN 15	1.6 m³/h	3.2 kg
BUD015F310	DN 15	2.5 m³/h	3.2 kg
BUD015F300	DN 15	4 m³/h	3.2 kg
BUD020F300	DN 20	6.3 m³/h	4.1 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
BUD025F300	DN 25	10 m³/h	4.7 kg
BUD032F300	DN 32	16 m³/h	7.1 kg
BUD040F300	DN 40	22 m³/h	8.4 kg
BUD050F300	DN 50	28 m³/h	10.9 kg
BUD050F200	DN 50	40 m³/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of BUD with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of BUD with electric actuator, actuating power 250 N, 500 N

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
BUD015F320 BUD015F310 BUD015F300 BUD020F300	4.0	4.0	4.0	6.0	6.0
BUD025F300	2.8	2.8	2.8	6.0	6.0
BUD032F300	2.1	2.1	2.1	5.2	5.2
BUD040F300	1.2	1.2	1.2	3.3	3.3
BUD050F300 BUD050F200	0.9	0.9	0.9	2.0	2.0
Cannot be used as distribution valve					

Combination of BUD with electric actuator with spring return, actuating power 500 N

Actuator	AVF124F130 AVF124F230		AVF125SF132 AVF125SF232	
Page	230		233	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 0...10 V, 4...20 mA	
Running time	60/120 s		60/120 s	
	Δp [bar]			
As control valve	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BUD015F320 BUD015F310 BUD015F300 BUD020F300 BUD025F300	6.0	6.0	6.0	6.0
BUD032F300	5.2	5.2	5.2	5.2
BUD040F300	3.3	3.3	3.3	3.3
BUD050F300 BUD050F200	2.0	2.0	2.0	2.0
As distribution valve	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BUD015F320 BUD015F310 BUD015F300 BUD020F300	6.0	6.0	6.0	6.0
BUD025F300	5.0	6.0	5.0	6.0
BUD032F300	4.0	6.0	4.0	6.0
BUD040F300	2.5	6.0	2.5	6.0
BUD050F300 BUD050F200	1.5	6.0	1.5	6.0

At temperatures above 100 °C, accessories are required

Combination of BUD with electric actuator, actuating power 1000 N

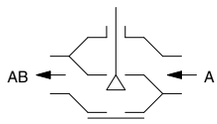
Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s
	Δp [bar]	
As control valve	**Δp_{max}**	**Δp_{max}**
BUD015F320 BUD015F310 BUD015F300 BUD020F300 BUD025F300 BUD032F300 BUD040F300	6.0	6.0
BUD050F300 BUD050F200	4.0	4.0
As distribution valve	**Δp_{max}**	**Δp_{max}**
BUD015F320 BUD015F310 BUD015F300 BUD020F300	6.0	6.0
BUD025F300	5.0	5.0

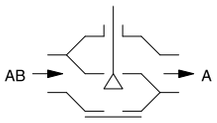
Actuator	**AVM321F110** **AVM321F112**	**AVM321SF132**
Page	218	220
BUD032F300	4.0	4.0
BUD040F300	2.5	2.5
BUD050F300 BUD050F200	1.5	1.5

At temperatures above 100 °C, accessories are required

VUE: 2-way flanged valve, PN 16/10 (el.)

VUE032F300





Features

- Continuous control of cold/hot water and low-pressure steam up to 115 °C in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 105(S), AVM 115(S), AVM 321(S) and AVF 124 and AVF 125(S) as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- Characteristic can be set with SUT (SAUTER Universal Technology) valve actuator to linear, equal-percentage or quadratic
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure or with the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters		
	Nominal pressure	PN 16/10
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic, control passage F200	Linear
	Valve characteristic, control passage F300	Equal-percentage
	Control ratio of valve	> 50:1
	Stuffing box	2 EPDM O-rings
	Leakage rate	< 0.05% of K_{vs} value
	Valve stroke	8 mm

Ambient conditions[1]		
	Operating temperature[2]	−10...150 °C
	Operating pressure	PN 16: Up to 120 °C, 16 bar At 150 °C, 14.4 bar PN 10: Up to 120 °C, 10 bar At 150 °C, 9 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)
	Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VUE015F350	DN 15	0.4 m³/h	3.2 kg
VUE015F340	DN 15	0.63 m³/h	3.2 kg

[1] *Humidity must not exceed 75%.*
[2] *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
VUE015F330	DN 15	1 m^3/h	3.2 kg
VUE015F320	DN 15	1.6 m^3/h	3.2 kg
VUE015F310	DN 15	2.5 m^3/h	3.2 kg
VUE015F300	DN 15	4 m^3/h	3.2 kg
VUE020F300	DN 20	6.3 m^3/h	4.1 kg
VUE025F300	DN 25	10 m^3/h	4.7 kg
VUE032F300	DN 32	16 m^3/h	7.3 kg
VUE040F300	DN 40	22 m^3/h	8.6 kg
VUE050F300	DN 50	28 m^3/h	11.2 kg
VUE050F200	DN 50	40 m^3/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of VUE with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of VUE with electric actuator, actuating power 250 N, 500 N

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300	4.0	4.0	4.0	6.0	6.0
VUE025F300	2.8	2.8	2.8	6.0	6.0
VUE032F300	2.1	2.1	2.1	5.2	5.2
VUE040F300	1.4	1.4	1.4	3.3	3.3
VUE050F300 VUE050F200	0.9	0.9	0.9	2.0	2.0
Cannot be used to close with the pressure					

Combination of VUE with electric actuator with spring return, actuating power 500 N

Actuator	AVF124F130 AVF124F230		AVF125SF132 AVF125SF232	
Page	230		233	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 0...10 V, 4...20 mA	
Running time	60/120 s		60/120 s	
	Δp [bar]			
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300	6.0	16.0	6.0	16.0
VUE020F300	6.0	11.0	6.0	11.0
VUE025F300	6.0	6.8	6.0	6.8
VUE032F300	5.2	5.2	5.2	5.2
VUE040F300	3.3	3.3	3.3	3.3
VUE050F300 VUE050F200	2.0	2.0	2.0	2.0
Closes with the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300	6.0	16.0	6.0	16.0
VUE025F300	5.0	16.0	5.0	16.0
VUE032F300	4.0	16.0	4.0	16.0
VUE040F300	2.5	16.0	2.5	16.0
VUE050F300 VUE050F200	1.5	16.0	1.5	16.0

At temperatures above 100°C, accessories are required

Combination of VUE with electric actuator, actuating power 1000 N

Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s
	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_{max}**
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300 VUE025F300 VUE032F300	10.0	10.0

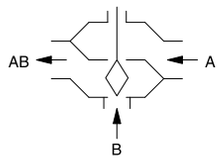
Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	218	220
VUE040F300	6.0	6.0
VUE050F300 VUE050F200	4.0	4.0

Closes with the pressure	Δp_{max}	Δp_{max}
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300	6.0	6.0
VUE025F300	5.0	6.0
VUE032F300	4.0	6.0
VUE040F300	2.5	2.5
VUE050F300 VUE050F200	1.5	1.5

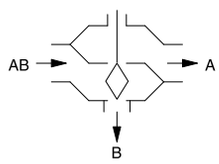
At temperatures above 100°C, accessories are required

BUE: 3-way flanged valve, PN 16/10 (el.)

BUE032F300



Control valve



Distribution valve

Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 105(S), AVM 115(S), AVM 321(S) and AVF 124 and AVF 125(S) as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- Equal-percentage characteristic with F300, can be set with SUT valve actuators (SAUTER Universal Technology) to linear or quadratic
- Valve passage A–AB is closed when the spindle is moved out
- Can be used as a control valve or a distribution valve
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters		
	Connection	PN 16/10
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic, control passage F200	Linear
	Valve characteristic, control passage F300	Equal-percentage
	Valve characteristic, mixing passage	Linear
	Control ratio of valve	> 50:1
	Stuffing box	2 EPDM O-rings
	Leakage rate, control passage	< 0.05% of K_{vs} value
	Leakage rate, mixing passage	< 1% of K_{vs} value
	Valve stroke	8 mm
Ambient conditions[1)]		
	Operating temperature[2)]	–10...150 °C
	Operating pressure	PN 16: Up to 120 °C, 16 bar At 150 °C, 14.4 bar PN 10: Up to 120 °C, 10 bar At 150 °C, 9 bar Between 120 °C and 150 °C, a linear interpolation can be performed
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)
	Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

1) *Humidity must not exceed 75%*
2) *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
BUE015F330	DN 15	1 m³/h	3.2 kg
BUE015F320	DN 15	1.6 m³/h	3.2 kg
BUE015F310	DN 15	2.5 m³/h	3.2 kg
BUE015F300	DN 15	4 m³/h	3.2 kg
BUE020F300	DN 20	6.3 m³/h	4.1 kg
BUE025F300	DN 25	10 m³/h	4.7 kg
BUE032F300	DN 32	16 m³/h	7.1 kg
BUE040F300	DN 40	22 m³/h	8.4 kg
BUE050F300	DN 50	28 m³/h	11.2 kg
BUE050F200	DN 50	40 m³/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of BUE with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Combination of BUE with electric actuator, actuating power 250 N, 500 N

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	209	209	212	210	212
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
	Δp [bar]				
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
BUE015F330 BUE015F320 BUE015F310 BUE015F300 BUE020F300	4.0	4.0	4.0	6.0	6.0
BUE025F300	2.8	2.8	2.8	6.0	6.0
BUE032F300	2.1	2.1	2.1	5.2	5.2
BUE040F300	1.4	1.4	1.4	3.3	3.3
BUE050F300 BUE050F200	0.9	0.9	0.9	2.0	2.0

Cannot be used as distribution valve

Combination of BUE with electric actuator with spring return, actuating power 500 N

Actuator	AVF124F130 AVF124F230	AVF125SF132 AVF125SF232
Page	230	233
Actuating power	500 N	500 N
Control signal	3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	60/120 s	60/120 s

	Δp [bar]			
As control valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F330 BUE015F320 BUE015F310 BUE015F300	6.0	16.0	6.0	16.0
BUE020F300	6.0	11.0	6.0	11.0
BUE025F300	6.0	6.8	6.0	6.8
BUE032F300	5.2	5.2	5.2	5.2
BUE040F300	3.3	3.3	3.3	3.3
BUE050F300 BUE050F200	2.0	2.0	2.0	2.0

As distribution valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE020F300	6.0	16.0	6.0	16.0
BUE025F300	5.0	16.0	5.0	16.0
BUE032F300	4.0	16.0	4.0	16.0
BUE040F300	2.5	16.0	2.5	16.0
BUE050F300 BUE050F200	1.5	16.0	1.5	16.0

Spring return: 18 ± 10 s

At temperatures above 100°C, accessories are required

Combination of BUE with electric actuator, actuating power 1000 N

Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	48/96 s	32/96 s

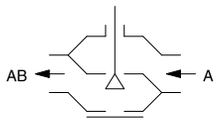
	Δp [bar]	
As control valve	Δp_{max}	Δp_{max}
BUE015F330 BUE015F320 BUE015F310 BUE015F300 BUE020F300 BUE025F300 BUE032F300	10.0	10.0
BUE040F300	6.0	6.0
BUE050F300 BUE050F200	4.0	4.0

Actuator	**AVM321F110** **AVM321F112**	**AVM321SF132**
Page	218	220
As distribution valve	**Δp_{max}**	**Δp_{max}**
BUE015F330 BUE015F320 BUE015F310 BUE015F300 BUE020F300	6.0	6.0
BUE025F300	6.0	5.0
BUE032F300	6.0	4.0
BUE040F300	2.5	2.5
BUE050F300 BUE050F200	1.5	1.5

At temperatures above 100°C, accessories are required

VQD: 2-way flanged valve, PN 6

VQD



Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 322(S), AVM 234S and AVF 234S as control unit
- Not suitable for steam or drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- Characteristic can be set with SUT (SAUTER Universal Technology) valve actuators to linear, equal-percentage or quadratic
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of stainless steel with metal-to-metal seal
- Stuffing box made of stainless steel with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters	
Nominal pressure	PN 6
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio of valve	> 30:1
Stuffing box	2 EPDM O-rings
Leakage rate	Class III as per DIN EN 60534-4 (0.001 x K_{vs})
Valve stroke	20 mm (DN 65...80) 40 mm (DN 100)

Ambient conditions[1]	
Operating temperature[2]	−10...150 °C
Operating pressure	Up to 120 °C 6 bar At 150 °C 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534, (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VQD065F300	DN 65	63 m³/h	18.0 kg
VQD080F300	DN 80	100 m³/h	25.3 kg
VQD100F300	DN 100	160 m³/h	37.1 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use stuffing box heater*

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378369101	Complete replacement stuffing box for DN 65...100

Combination of VQD with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of VQD with electric actuator, actuating power 1000 N

Actuator	AVM322F120 AVM322F122	AVM322SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	120/240 s	120/80 s

	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_{max}**
VQD065F300	2.5	2.5
VQD080F300	1.5	1.5
Cannot be used to close with the pressure		

Maximum media temperature: 100 °C

Combination of VQD with electric actuator, actuating power 2500 N, 2000 N

Actuator	AVM234SF132	AVF234SF132	AVF234SF232
Page	228	235	235
Actuating power	2500 N	2000 N	2000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 65, DN 80	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 100	80/160/240 s	80/160/240 s	80/160/240 s

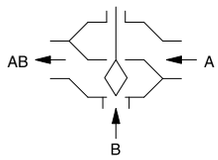
	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VQD065F300	1.2	3.0	5.1	3.0	5.1
VQD080F300	3.0	3.0	3.4	3.0	3.4
VQD100F300	2.0	2.0	2.2	2.0	2.2
Cannot be used to close with the pressure					

Spring return: AVF234SF132 normally closed (NC); AVF234SF232 normally open (NO)

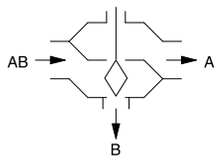
At temperatures above 130 °C, accessories are required

BQD: 3-way flanged valve, PN 6

BQD



Control valve



Distribution valve

Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 322(S), AVM 234S and AVF 234S as control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- Equal-percentage control passage characteristic, can be set with SUT (SAUTER Universal Technology) valve actuators to linear or quadratic
- Mixing passage, linear characteristic
- The control passage is closed when the spindle is moved out
- Used as control valve or as distribution valve
- Valve body with seat made of grey cast iron
- Stainless-steel spindle
- Plug made of stainless steel with metal-to-metal seal
- Stuffing box made of stainless steel with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters		
	Nominal pressure	PN 6
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic, control passage	Equal-percentage
	Valve characteristic, mixing passage	Linear
	Control ratio of valve	> 30:1
	Stuffing box	2 EPDM O-rings
	Leakage rate	Class III as per DIN EN 60534-4 (0.001 x K_{vs})
	Valve stroke	20 mm (DN 65...80) 40 mm (DN 100)

Ambient conditions[1]		
	Operating temperature[2]	−10...150 °C
	Operating pressure	Up to 120 °C 6 bar At 150 °C 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, (page 3)
	Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
BQD065F300	DN 65	63 m³/h	14.8 kg
BQD080F300	DN 80	100 m³/h	21 kg
BQD100F300	DN 100	160 m³/h	31 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use a stuffing box heater*

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...150 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378369101	Complete replacement stuffing box

Combination of BQD with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of BQD with electric actuator, actuating power 1000 N

Actuator	AVM322F120 AVM322F122	AVM322SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	120/240 s	120/80 s

	Δp [bar]	
As control valve	**Δp_{max}**	**Δp_{max}**
BQD065F300	2.5	2.5
BQD080F300	1.5	1.5

As distribution valve	**Δp_{max}**	**Δp_{max}**
BQD065F300	1.0	1.0
BQD080F300	0.7	0.7

At media temperature above 100 °C, accessories are required.

Combination of BQD with electric actuator, actuating power 2500 N, 2000 N

Actuator	AVM234SF132	AVF234SF132	AVF234SF232
Page	228	235	235
Actuating power	2500 N	2000 N	2000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 65, DN 80	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 100	80/160/240 s	80/160/240 s	80/160/240 s

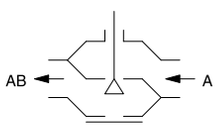
	Δp [bar]				
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BQD065F300	3.0	3.0	5.1	3.0	5.1
BQD080F300	3.0	3.0	3.4	3.0	3.4
BQD100F300	2.0	2.0	2.2	2.0	2.2

As distribution valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BQD065F300	1.0	1.0	6.0	1.0	6.0

Actuator	AVM234SF132	AVF234SF132		AVF234SF232	
Page	228	235		235	
BQD080F300	0.8	0.8	6.0	0.8	6.0
BQD100F300	0.5	0.5	6.0	0.5	6.0

At temperatures above 130 °C, accessories are required

VQE



VQE: 2-way flanged valve, PN 16

Features

- Continuous control of cold and hot water and low-pressure steam up to 115 °C in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 322(S), AVM 234S and AVF 234S as control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- Characteristic can be set with SUT (SAUTER Universal Technology) valve actuators to linear, equal-percentage or quadratic
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of stainless steel with metal-to-metal seal
- Stuffing box made of stainless steel with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters	
Nominal pressure	PN 16
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio of valve	> 30:1
Stuffing box	2 EPDM O-rings
Leakage rate	Class III as per DIN EN 60534-4 (0.001 x K_{vs})
Valve stroke	20 mm (DN 65...80) 40 mm (DN 100...150)

Ambient conditions[1]	
Operating temperature[2]	−10...150 °C
Operating pressure	Up to 120 °C 16 bar At 150 °C 14.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534- 3
Pressure Equipment Directive	97/23/EC (fluid group II) With CE label

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VQE065F300	DN 65	63 m³/h	23.8 kg
VQE080F300	DN 80	100 m³/h	30.2 kg
VQE100F300	DN 100	160 m³/h	41.3 kg
VQE125F300	DN 125	220 m³/h	62 kg
VQE150F300	DN 150	320 m³/h	89 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 130 °C*

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...150 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378369101	Complete replacement stuffing box

Combination of VQE with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Combination of VQE with electric actuators, actuating power 1000 N

Actuator	AVM322F120 AVM322F122	AVM322SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	120/240 s	120/80 s

	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_{max}**
VQE065F300	2.5	2.5
VQE080F300	1.5	1.5
Cannot be used to close with the pressure		

At media temperature above 100 °C, accessories are required.

Combination of VQE with electric actuators, actuating power 2500 N, 2000 N

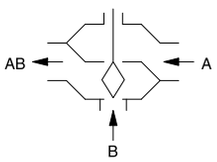
Actuator	AVM234SF132	AVF234SF132	AVF234SF232
Page	228	235	235
Actuating power	2500 N	2000 N	2000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 65, DN 80	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 100...150	80/160/240 s	80/160/240 s	80/160/240 s

	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VQE065F300	3.0	3.0	5.1	3.0	5.1
VQE080F300	3.0	3.0	3.4	3.0	3.4
VQE100F300	2.0	2.0	2.2	2.0	2.2
VQE125F300	1.5	1.4	1.4	1.4	1.4
VQE150F300	1.0	1.0	1.1	1.0	1.1
Cannot be used to close with the pressure					

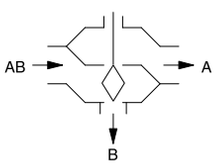
Spring return: AVF234SF132 normally closed (NC); AVF234SF232 normally open (NO)

At temperatures above 130 °C, accessories are required

BQE



Control valve



Distribution valve

BQE: 3-way flanged valve, PN 16

Features

- Continuous control of cold and hot water in closed circuits
- Water quality as per VDI 2035
- In combination with valve actuators AVM 322(S), AVM 234S and AVF 234S as control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- Equal-percentage control passage characteristic, can be set with SUT (SAUTER Universal Technology) valve actuators to linear or quadratic
- Mixing passage, linear characteristic
- The control passage is closed when the spindle is moved out
- Used as control valve or as distribution valve
- Valve body with seat made of grey cast iron
- Spindle and plug made of stainless steel; plug with metal-to-metal seal
- Stuffing box made of stainless steel with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters	
Nominal pressure	PN 16
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage	Equal-percentage
Valve characteristic, mixing passage	Linear
Control ratio of valve	> 30:1
Stuffing box	2 EPDM O-rings
Leakage rate	Class III as per DIN EN 60534-4 (0.001 x K_{vs})
Valve stroke	20 mm (DN 65...80) 40 mm (DN 100...150)

Ambient conditions[1]	
Operating temperature[2]	−10...150 °C
Operating pressure	Up to 120 °C 16 bar At 150 °C 14.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534, (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) With CE label

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
BQE065F300	DN 65	63 m³/h	19 kg
BQE080F300	DN 80	100 m³/h	24 kg
BQE100F300	DN 100	160 m³/h	34 kg
BQE125F300	DN 125	220 m³/h	52 kg
BQE150F300	DN 150	320 m³/h	76 kg

[1] *Humidity must not exceed 75%*
[2] *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 130 °C*

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...150 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378369101	Complete replacement stuffing box

Combination of BQE with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Combination of BQE with electric actuators, actuating power 1000 N

Actuator	AVM322F120 AVM322F122	AVM322SF132
Page	218	220
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA
Running time	120/240 s	120/80 s

	Δp [bar]	
As control valve	**Δp_{max}**	**Δp_{max}**
BQE065F300	2.5	2.5
BQE080F300	1.5	1.5

As distribution valve	**Δp_{max}**	**Δp_{max}**
BQE065F300	1.0	1.0
BQE080F300	0.7	0.7

At media temperature above 100 °C, accessories are required.

Combination of BQE with electric actuators, actuating power 2500 N, 2000 N

Actuator	AVM234SF132	AVF234SF132	AVF234SF232
Page	228	235	235
Actuating power	2500 N	2000 N	2000 N
Control signal	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 65, DN 80	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 100...150	80/160/240 s	80/160/240 s	80/160/240 s

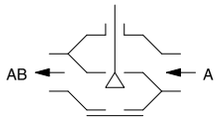
	Δp [bar]				
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BQE065F300	3.0	3.0	5.1	3.0	5.1
BQE080F300	3.0	3.0	3.4	3.0	3.4
BQE100F300	2.0	2.0	2.2	2.0	2.2
BQE125F300	1.5	1.4	1.4	1.4	1.4
BQE150F300	1.0	1.0	1.1	1.0	1.1

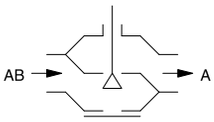
Actuator	AVM234SF132			AVF234SF132		AVF234SF232	
Page	228			235		235	
As distribution valve	**Δp_{max}**		**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BQE065F300	1.0		16.0	1.0	16.0	1.0	16.0
BQE080F300	0.8		16.0	0.8	16.0	0.8	16.0
BQE100F300 BQE125F300 BQE150F300	0.5		16.0	0.5	16.0	0.5	16.0

At temperatures above 130 °C, accessories are required.

VUG: 2-way flanged valve, PN 25/16 (el.)

VUG032F304





Features

- Continuous control of cold and hot water in closed circuits, and of steam
- In combination with valve actuators AVM 322(S), AVM 234S, AVN 224S and AVF 234S as a control unit
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar, except VUG065F316, nominal pressure 16 bar
- Not suitable for drinking water
- Complies with standard for control units as per DIN EN 14597[1)]
- Regulating valve, free of silicone grease, painted black
- Equal-percentage characteristic, can be set with SUT (SAUTER Universal Technology) valve actuators to linear or quadratic
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure or with the pressure
- Valve body made of ductile cast iron; seat and spindle of stainless steel
- Plugs of nominal diameter DN 15...50 made of stainless steel with glass-fibre-reinforced PTFE sealing ring
- Plugs of nominal diameter DN 65...150 made of stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Parameters		
	Nominal pressure	PN 16/25
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic	Equal-percentage
	Control ratio of valve	> 50:1
	Leakage rate at max. Δp_s	≤ 0.05% of K_{vs} value
Admissible ambient conditions		
	Operating temperature[2)]	−20...200 °C
	Operating pressure[3)]	PN 16: 30 °C, 16 bar At 120 °C, 16 bar At 200 °C, 14 bar PN 25: 30 °C, 25 bar At 120 °C, 25 bar At 200 °C, 21.7 bar
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534
	Test marks	TÜV ID: 13556

[1)] *The VUG065F316 valve does not have TÜV approval. It does not bear the test institute code and is classified under category I of the Directive on Pressure Equipment. This valve can be used with the AVN224SF*** actuator, but not as a safety device. Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C. Down to -10 °C, as per AD code of practice W 10, use water with anti-freeze and brine solution. For use as per DIN EN 14597. When valve is combined with AVN 224S, admissible media temperature is > 0 °C.*

[2)] *For cold water applications from -20...30 °C, the versions VUG***F3**S with a stuffing box containing silicone (e.g.: VUG015F304S) must be used. The valves VUG***F3**S do not comply with the standard for regulating units as per DIN EN 14597. VUG***F3**S are only available up to DN 125.*
Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C. Down to -10 °C, as per AD code of practice W 10, use water with anti-freeze and brine solution

[3)] *For operating pressure, see table: Pressure / temperature assignment*

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Connection	Weight
VUG015F374	DN 15	0.16 m³/h	20 mm	PN 25/16	4 kg
VUG015F364	DN 15	0.25 m³/h	20 mm	PN 25/16	4 kg
VUG015F354	DN 15	0.4 m³/h	20 mm	PN 25/16	4 kg
VUG015F344	DN 15	0.63 m³/h	20 mm	PN 25/16	4 kg
VUG015F334	DN 15	1 m³/h	20 mm	PN 25/16	4 kg
VUG015F324	DN 15	1.6 m³/h	20 mm	PN 25/16	4 kg
VUG015F314	DN 15	2.5 m³/h	20 mm	PN 25/16	4 kg
VUG015F304	DN 15	4 m³/h	20 mm	PN 25/16	4 kg
VUG020F304	DN 20	6.3 m³/h	20 mm	PN 25/16	5 kg
VUG025F304	DN 25	10 m³/h	20 mm	PN 25/16	5.6 kg
VUG032F304	DN 32	16 m³/h	20 mm	PN 25/16	9.1 kg
VUG040F304	DN 40	25 m³/h	20 mm	PN 25/16	11.2 kg
VUG050F304	DN 50	40 m³/h	20 mm	PN 25/16	13.8 kg
VUG065F316	DN 65	63 m³/h	40 mm	PN 16	25 kg
VUG065F304	DN 65	63 m³/h	40 mm	PN 25	25 kg
VUG080F304	DN 80	100 m³/h	40 mm	PN 25/16	37 kg
VUG100F304	DN 100	160 m³/h	40 mm	PN 25	50 kg
VUG125F304	DN 125	250 m³/h	40 mm	PN 25	75 kg
VUG150F304	DN 150	340 m³/h	40 mm	PN 25	100 kg

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Torsion protection DN 65...150
0560260001	Stuffing box for VUG/BUG for cold water application with grease containing silicone

Combination of VUG with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132	AVF234SF232	AVN224SF132 AVN224SF232
Page	218	220	228	235	235	238
Actuating power	1000 N	1000 N	2500 N	2000 N	2000 N	1100 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-pt., 0...10 V, 4...20 mA
Running time for DN 15...50	120/240 s	80/120 s	40/80/120 s	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 65...150	–	–	80/160/240 s	80/160/240 s	80/160/240 s	80/160/240 s

	Δp [bar]								
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUG015F374 VUG015F364 VUG015F354 VUG015F344 VUG015F334 VUG015F324 VUG015F314 VUG015F304 VUG020F304	16.0	16.0	16.0	16.0	25.0	16.0	25.0	16.0	25.0
VUG025F304	15.2	15.2	16.0	16.0	25.0	16.0	25.0	16.0	17.0
VUG032F304	9.4	9.4	16.0	16.0	21.0	16.0	21.0	10.5	10.5
VUG040F304	6.1	6.1	16.0	13.5	13.5	13.5	13.5	6.5	6.5
VUG050F304	4.0	4.0	11.0	8.5	8.5	8.5	8.5	4.0	4.0
VUG065F316	–	–	7.1	5.6	5.6	5.6	5.6	–	–
VUG065F304	–	–	7.1	5.6	5.6	5.6	5.6	3.0	3.0
VUG080F304	–	–	4.7	3.4	3.4	3.4	3.4	2.0	2.0
VUG100F304	–	–	3.0	2.2	2.2	2.2	2.2	1.1	1.1
VUG125F304	–	–	2.0	1.6	1.6	1.6	1.6	0.8	0.8
VUG150F304	–	–	1.5	1.2	1.2	1.2	1.2	0.6	0.6

Closes with the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUG015F374 VUG015F364 VUG015F354 VUG015F344 VUG015F334 VUG015F324 VUG015F314 VUG015F304 VUG020F304 VUG025F304 VUG032F304	6.0	6.0	6.0	6.0	25.0	6.0	25.0	6.0	25.0
VUG040F304	5.5	5.5	6.0	6.0	25.0	6.0	25.0	6.0	25.0
VUG050F304	3.5	3.5	6.0	6.0	25.0	6.0	25.0	4.0	25.0
VUG065F316	–	–	4.5	4.5	25.0	4.5	25.0	–	–
VUG065F304	–	–	4.5	4.5	25.0	4.5	25.0	2.6	25.0
VUG080F304	–	–	3.5	3.4	25.0	3.4	25.0	1.7	25.0

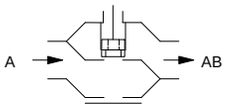
Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132		AVF234SF232		AVN224SF132 AVN224SF232	
Page	218	220	228	235		235		238	
VUG100F304	–	–	3.0	2.2	25.0	2.2	25.0	1.1	25.0
VUG125F304	–	–	–	1.6	25.0	1.6	25.0	0.8	25.0
VUG150F304	–	–	–	1.0	25.0	1.0	25.0	0.6	25.0

At temperatures above 130 °C, accessories are required

Combination with AVN 224S: with safety function as per DIN EN 14597

VUP: Pressure-relieved 2-way flanged valve, PN 25 (el.)

VUP040F304



Features

- Continuous control of cold and hot water in closed circuits, and of steam
- In combination with valve actuators AVM 322(S), AVM 234S, AVF 234S and AVN 224S as a control unit
- Water quality as per VDI 2035
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, with pressure compensation, galvanised and painted black
- Equal-percentage characteristic, can be set with SUT (SAUTER Universal Technology) valve actuators to linear or quadratic
- The valve is closed when the spindle is moved in
- Valve body made of ductile cast iron
- Valve seat, plug and spindle made of stainless steel
- Closing procedure only against the pressure
- Maintenance-free stuffing box in brass with spring-loaded PTFE-FKM-PTFE washer

Technical data

Parameters		
	Nominal pressure	PN 25
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic	Equal-percentage
	Control ratio	> 100:1
	Leakage rate at max. Δp_s	< 0.05% of K_{vs} value

Admissible ambient conditions		
	Operating temperature[1]	−20...200 °C
	Operating pressure	Up to 120 °C, 25 bar Up to 200 °C, 20 bar

Standards and directives		
	Test marks	TÜV ID: 6973

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUP040F304	DN 40	25 m³/h	14 mm	10 kg
VUP050F304	DN 50	40 m³/h	25 mm	14 kg
VUP065F304	DN 65	63 m³/h	25 mm	18 kg
VUP080F304	DN 80	100 m³/h	25 mm	25.5 kg
VUP100F304	DN 100	160 m³/h	40 mm	36.5 kg
VUP125F304	DN 125	250 m³/h	40 mm	56.5 kg
VUP150F304	DN 150	350 m³/h	40 mm	84.5 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C

[1] *Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C.*
Valve combined with AVN 224S: For use as per DIN EN 14597, the admissible media temperature is > 0 °C.

Type	Description
0378356001	Replacement pack for stuffing box DN 40...80
0378357001	Replacement pack for stuffing box DN 100...150

Combination of VUP with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132	AVF234SF232	AVN224SF132 AVN224SF232
Page	218	220	228	235	235	238
Actuating power	1000 N	1000 N	2500 N	2000 N	2000 N	1100 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-pt., 0...10 V, 4...20 mA
Running time for DN 40	84/168 s	56/84 s	28/56/84 s	28/56/84 s	28/56/84 s	28/56/84 s
Running time for DN 50...80	–	–	50/100/150 s	50/100/150 s	50/100/150 s	50/100/150 s
Running time for DN 100...150	–	–	80/160/240 s	80/160/240 s	80/160/240 s	80/160/240 s

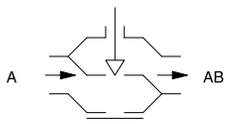
	Δp [bar]								
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VUP040F304	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
VUP050F304	–	–	25.0	25.0	25.0	25.0	25.0	20.0	25.0
VUP065F304	–	–	25.0	25.0	25.0	25.0	25.0	16.0	17.0
VUP080F304	–	–	25.0	25.0	25.0	25.0	25.0	12.0	15.0
VUP100F304	–	–	25.0	20.0	22.0	20.0	22.0	9.0	12.0
VUP125F304	–	–	19.0	14.0	20.0	14.0	20.0	6.0	6.0
VUP150F304	–	–	15.0	10.0	15.0	10.0	15.0	4.0	4.0

Cannot be used to close with the pressure

Combination with AVN 224S: with safety function as per DIN EN 14597

VUS: 2-way flanged valve, PN 40 (el.)

VUS040F305



Features

- Continuous control of cold, warm and hot water in closed circuits, and of steam
- In combination with valve actuators AVM 322(S), AVM 234S, AVN 224S and AVF 234S as a control unit
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Silicone-free regulating valve, matt black
- Not suitable for drinking water
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- The valve is closed when the spindle is moved in. Closing procedure only against the pressure
- Valve body made of cast steel; spindle, seat and plug of stainless steel
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer up to 220 °C, with graphite seal up to 260 °C

Technical data

Parameters	
Nominal pressure	PN 40
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio	> 50 : 1
Leakage rate	≤ 0.05% of K_{vs} value

Admissible ambient conditions	
Operating temperature[1]	−10...260 °C
Operating pressure	40 bar at -10...50 °C 36.3 bar at 120 °C 29.4 bar at 220 °C 27.8 bar at 260 °C

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUS015F375	DN 15	0.16 m³/h	20 mm	5.1 kg
VUS015F365	DN 15	0.25 m³/h	20 mm	5.1 kg
VUS015F355	DN 15	0.4 m³/h	20 mm	5.1 kg
VUS015F345	DN 15	0.63 m³/h	20 mm	5.1 kg
VUS015F335	DN 15	1 m³/h	20 mm	5.1 kg
VUS015F325	DN 15	1.6 m³/h	20 mm	5.1 kg
VUS015F315	DN 15	2.5 m³/h	20 mm	5.1 kg
VUS015F305	DN 15	4 m³/h	20 mm	5.1 kg
VUS020F305	DN 20	6.3 m³/h	20 mm	5.9 kg
VUS025F305	DN 25	10 m³/h	20 mm	6.8 kg
VUS032F305	DN 32	16 m³/h	20 mm	8.4 kg
VUS040F305	DN 40	25 m³/h	20 mm	10.6 kg
VUS050F305	DN 50	40 m³/h	20 mm	13.2 kg
VUS065F305	DN 65	63 m³/h	30 mm	18.6 kg
VUS080F305	DN 80	100 m³/h	30 mm	25.1 kg
VUS100F305	DN 100	160 m³/h	30 mm	36.4 kg

[1] *No stuffing box heater required down to -10 °C. Above 130 °C or 180 °C, use the relevant adapter (accessory). Above 200 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUS125F305	DN 125	220 m³/h	40 mm	56.4 kg
VUS150F305	DN 150	320 m³/h	40 mm	77.9 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 15...50
0378373002	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 65...100
0378373003	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 125...150

Combination of VUS with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

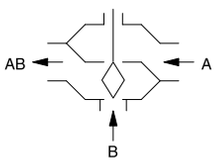
Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132	AVF234SF232
Page	218	220	228	235	235
Actuating power	1000 N	1000 N	2500 N	2000 N	2000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 15...50	120/240 s	80/120 s	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 65...100	–	–	60/120/180 s	60/120/180 s	60/120/180 s
Running time for DN 125, DN 150	–	–	80/160/240 s	80/160/240 s	80/160/240 s

	Δp [bar]						
Closes against the pressure	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUS015F375 VUS015F365 VUS015F355 VUS015F345 VUS015F335 VUS015F325 VUS015F315 VUS015F305 VUS020F305	35.0	35.0	40.0	40.0	25.0	40.0	25.0
VUS025F305	17.4	17.4	37.8	29.6	25.0	29.6	25.0
VUS032F305	12.2	12.2	28.7	22.5	21.0	22.5	21.0
VUS040F305	6.2	6.2	16.4	12.8	13.5	12.8	13.5
VUS050F305	3.7	3.7	10.5	8.2	8.5	8.2	8.5
VUS065F305	–	–	6.1	4.7	5.6	4.7	5.6
VUS080F305	–	–	3.9	3.0	3.4	3.0	3.4
VUS100F305	–	–	1.5	1.5	2.2	1.5	2.2
VUS125F305	–	–	1.0	1.0	1.6	1.0	1.6

Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132		AVF234SF232	
Page	218	220	228	235		235	
VUS150F305	–	–	0.7	0.7	1.2	0.7	1.2
Cannot be used to close with the pressure							

At temperatures above 130 °C, accessories are required

BUS015F2*5



BUS: 3-way flanged valve, PN 40 (el.)

Features

- Continuous control of cold/warm/hot water in HVAC installations in closed circuits
- In combination with valve actuators AVM 234S and AVF 234S as control unit
- Water quality as per VDI 2035
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, matt black
- Control passage, linear characteristic DN 15...100; adjustable with SUT (SAUTER Universal Technology) valve actuators to equal-percentage
- Control passage, equal-percentage characteristic, DN 125...150; adjustable with SUT actuators to linear or quadratic
- Mixing passage, linear characteristic
- The control passage is closed when the spindle is moved out
- For use only as a control valve
- Valve body made of cast steel
- Stainless-steel seat and plug
- Stainless-steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer up to 220 °C, with graphite seal up to 260 °C

Technical data

Parameters

Nominal pressure	PN 40
Connection	Flange as per EN 1092-2, form B
Control ratio	> 30 : 1
Valve characteristic, mixing passage	Linear
Leakage rate, control passage	≤ 0.05% of K_{vs} value
Leakage rate, mixing passage	≤ 1.0% of K_{vs} value

Ambient conditions

Operating temperature[1]	−10...260 °C
Operating pressure	40 bar at -10...50 °C 36.3 bar at 120 °C 29.4 bar at 220 °C 27.8 bar at 260 °C

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS015F225	DN 15	1.6 m³/h	Linear	20 mm	7.2 kg
BUS015F215	DN 15	2.5 m³/h	Linear	20 mm	7.2 kg
BUS015F205	DN 15	4 m³/h	Linear	20 mm	7.2 kg
BUS020F205	DN 20	6.3 m³/h	Linear	20 mm	8.4 kg
BUS025F205	DN 25	10 m³/h	Linear	20 mm	9.4 kg

[1] *No stuffing box heater required down to -10 °C. At temperatures below -10 °C and down to -60 °C, use special version with bellows seal (available on request, only to DN 100). Application: Water with anti-freeze (glycol up to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adapter (accessory). Above 220 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS032F205	DN 32	16 m³/h	Linear	20 mm	12.4 kg
BUS040F205	DN 40	25 m³/h	Linear	20 mm	15.5 kg
BUS050F205	DN 50	40 m³/h	Linear	20 mm	19.2 kg
BUS065F205	DN 65	63 m³/h	Linear	30 mm	27.6 kg
BUS080F205	DN 80	100 m³/h	Linear	30 mm	36.5 kg
BUS100F205	DN 100	160 m³/h	Linear	30 mm	61.2 kg
BUS125F305	DN 125	220 m³/h	Equal-percentage	40 mm	82.5 kg
BUS150F305	DN 150	320 m³/h	Equal-percentage	40 mm	113.5 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 15...50
0378373002	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 65...100
0378373003	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 125...150

Combination of BUS with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF132	AVF234SF232
Page	218	220	228	235	235
Actuating power	1000 N	1000 N	2500 N	2000 N	2000 N
Control signal	2-/3-point	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA	2-/3-point, 0...10 V, 4...20 mA
Running time for DN 15...50	120/240 s	80/120 s	40/80/120 s	40/80/120 s	40/80/120 s
Running time for DN 65...100	–	–	60/120/180 s	60/120/180 s	60/120/180 s
Running time for DN 125, DN 150	–	–	80/160/240 s	80/160/240 s	80/160/240 s

	Δp [bar]						
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUS015F225 BUS015F215 BUS015F205	35.0	35.0	40.0	40.0	40.0	40.0	40.0
BUS020F205	35.0	35.0	40.0	34.7	40.0	34.7	40.0
BUS025F205	17.4	17.4	37.8	29.6	37.0	29.6	37.0
BUS032F205	12.2	12.2	27.0	21.1	27.0	21.1	27.0
BUS040F205	6.2	6.2	16.4	12.8	16.0	12.8	16.0
BUS050F205	3.7	3.7	10.5	8.2	10.0	8.2	10.0
BUS065F205	–	–	6.1	4.7	6.1	4.7	6.1
BUS080F205	–	–	3.9	3.0	3.9	3.0	3.9

Actuator	**AVM322F120 AVM322F122**	**AVM322SF132**	**AVM234SF132**	**AVF234SF132**		**AVF234SF232**	
Page	218	220	228	235		235	
BUS100F205	–	–	2.5	1.9	2.5	1.9	2.5
BUS125F305	–	–	1.7	1.3	1.7	1.3	1.7
BUS150F305	–	–	1.2	0.9	1.2	0.9	1.2
Cannot be used as distribution valve							

At temperatures above 130 °C, accessories are required

Valve actuators

SAUTER actuators adapt themselves automatically to the valve. Their accurate control provides a high degree of energy efficiency and a low noise level. Furthermore, they can adjust the regulating valves themselves. To save energy, it is possible to include an electric cut-off. SAUTER valve actuators can be used for controllers with a switching or continuous output.

Overview of valve actuators

				
Type designation	AVM 105, 115	AVM 105S, 115S	AVM 215	AVM 215S
Technical data				
Max. nominal stroke (mm)	8	8	8...20 mm	10...20 mm
Max. pushing force (N)	250, 500	250, 500	500	500
Running time s	30, 120	35, 60, 120	7.5	7.5
Power supply (V)	24/230	24	230 V~	24 V ~/=
Control				
2-point	•	•	•	•
3-point	•	•	•	•
Positioner	–	•	–	•
Spring return	–	–	–	–
Combination options with valve	VUN/BUN, VUD/BUD, VUE/BUE	VUN/BUN, VUD/BUD, VUE/BUE	VUG/BUG, VUS/BUS to DN 025	VUG/BUG, VUS/BUS to DN 025
Further information	Page 209	Page 211	Page 213	Page 215

		
Type designation	AVM 321, 322	AVM 321S, 322S
Technical data		
Max. nominal stroke (mm)	8, 20	8, 20
Max. pushing force (N)	1000	1000
Running time	6, 12 s/mm	4, 12 s/mm
Power supply (V)	24 / 230	24 / (230)
Control		
2-point	•	•
3-point	•	•
Positioner	–	•
Spring return	–	–
Combination options with valve	VUD/BUD/VQD/BQD, VUE/BUE/VQE/BQE, VUG/BUG VUN/BUN, VUS/BUS, VUP, V6R/B6R	VUD/BUD/VQD/BQD, VUE/BUE/VQE/BQE, VUG/BUG, VUN/BUN, VUS/BUS, VUP, V6R/B6R
Further information	Page 217	Page 219

			
Type designation	AVM 234S	AVF 234S	AVN 224S
Technical data			
Max. nominal stroke (mm)	40	40	40
Max. pushing force (N)	2500	2000	1100
Running time	2, 4, 6, s/mm	2, 4, 6 s/mm	2, 4, 6 s/mm
Power supply (V)	24 / (230)	24 / (230)	24 / (230)
Control			
2-point	•	•	•
3-point	•	•	•
Positioner	•	•	•
Spring return	–	•	•
Combination options with valve	VQD/BQD, VQE/BQE, VUG/BUG, VUS/BUS, VUP, V6R/B6R	VQD/BQD, VQE/BQE, VUG/BUG, VUS/BUS, VUP, V6R/B6R	VQE/BQE, VUG/BUG, VUS/BUS, VUP, V6R/B6R
Further information	Page 227	Page 234	Page 237

AVM 105, 115: Valve actuator

AVM1*5F***

Features

- Activation of 2-way and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series
- For controllers with a switching (2-/3-point) output
- Synchronous motor with electronic control unit and time-dependent cut-off
- Direction of operation can be selected directly on the cable
- Maintenance-free gearbox with magnetic coupling
- Gear unit can be disengaged in order to position the valve by hand (hexagon key provided)
- Connection with valve spindle performed automatically
- Cap nut for valve fitting made of brass
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 230 V~	±15%, 50...60 Hz
Parameters		
	Actuator stroke[1]	0...8 mm
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature	–10...55 °C
	Temperature of medium	Max. 100 °C
	Admissible ambient humidity	5...95% rh, no condensation
Function		
	Control	2-/3-point
Construction		
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529), horizontal
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-14 Over-voltage category III Degree of contamination II
	Directive 2006/95/EC	EEC (II B)
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Actuating power (N)	Voltage	Running time (s)	Power consumption
AVM105F100	250	230 V~	30	2.4 W, 4.5 VA
AVM105F120	250	230 V~	120	2.0 W, 4.0 VA

[1] *Stroke 10 mm for AVM115F901*

Type	Actuating power (N)	Voltage	Running time (s)	Power consumption
AVM105F122	250	24 V~	120	1.6 W, 1.7 VA
AVM115F120	500	230 V~	120	2.0 W, 4.0 VA
AVM115F122	500	24 V~	120	1.6 W, 1.7 VA
AVM115F901	500	230 V~	160	2.0 W, 4.0 VA

AVM115F901: For SAUTER Valveco VCL040 and VCL050, inverse scale, inverse connection

Accessories

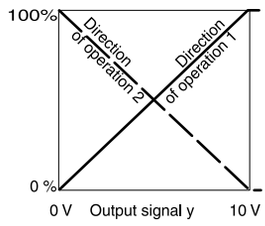
Type	Description
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372249001	Temperature adapter for AVM 321(S), media temperature > 100...130 °C
0372273001	Adapter for Siemens valve VVG/VXG 44, 48
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372320001	Hexagon key as visualisation for position indicator
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or actuators with end switch, incl. junction box

Auxiliary change-over contacts: Infinitely variable 0...100%, admissible load 5(2) A, 24...230 V

Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator

AVM 105S, 115S: Valve actuator with SAUTER Universal Technology (SUT)

AVM1*5SF***



Features

- Activation of 2-way and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series
- For controllers with a switching (2- and 3-point) or continuous (0...10 V) output
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Automatic recognition of applied control signal (continuous or switched)
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/equal-percentage) can be set on the actuator
- Automatic adaptation to valve stroke
- Maintenance-free gearbox
- Gear unit can be disengaged in order to position the valve by hand (hexagon key provided)
- Connection with valve spindle performed automatically after control voltage is applied
- Brass cap nut for fitting the valve
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	–10%...20%
Parameters		
	Actuator stroke[1]	0...8 mm
	Response time	200 ms
Positioner	Control signal	0...10 V, R_i > 100 kΩ
	Positional feedback signal	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Admissible ambient temperature	–10...55 °C
	Admissible ambient humidity	5...95% rh, no condensation
	Temperature of medium	Max. 100 °C
Construction		
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m, 5 × 0.75 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529), horizontal
	Protection class	III (IEC 60730)
CE conformity	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4

[1] *Stroke 10 mm for AVM115SF901*

Overview of types

Type	Actuating power (N)	Voltage	Running time	Power consumption
AVM105SF132	250	24 V~/=	35/60/120 s	4.8 W, 8.5 VA
AVM115SF132	500	24 V~/=	60/120 s	4.9 W, 8.7 VA
AVM115SF901	500	24 V~/=	80/160 s	4.9 W, 8.7 VA

AVM105SF132, AVM115SF132: Equal-percentage characteristic, can be converted to linear

AVM115SF901: For SAUTER Valveco VCL040 and VCL050, inverse scale, inverse connection

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372249001	Temperature adapter for AVM 321(S), media temperature > 100...130 °C
0372273001	Adapter for Siemens valve VVG/VXG 44, 48
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω

Auxiliary change-over contacts: Infinitely variable 0...100%, admissible load 5(2) A, 24...230 V

Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator

AVM 215: Valve actuator

AVM215F120R

Features

- Actuation of 2- and 3-way valves
- For controllers with a switching (2-/3-point) output
- Synchronous motor with electronic control unit and cut-off
- Maintenance-free gear unit
- Gear unit can be disengaged in order to position the valve by hand with the provided hexagon key (load-free)
- Connection with valve spindle performed semi-automatically
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply	230 V~ ±15%, 50...60 Hz
Parameters		
	Actuator stroke	8...20 mm
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature	-10...55 °C
	Temperature of medium	Max. 100 °C
	Admissible ambient humidity	5...85% rh, no condensation
Function		
	Control	2-/3-point
Construction		
	Weight	1 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm^2
Standards and directives		
	Type of protection	IP54 (EN 60529), horizontal
	Protection class	230 V: II (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14 Over-voltage category III Degree of contamination II
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Actuating power	Voltage	Running time	Power consumption
AVM215F120R	400 N	230 V~	7.5 s/mm	3.2 W 7.0 VA

Accessories

Type	Description
0510390030	Mounting kit for 8 mm stroke
0510390031	Mounting kit for 20 mm stroke
0510480003	Dual auxiliary switch for 8 mm stroke
0510480004	Dual auxiliary switch for 20 mm stroke

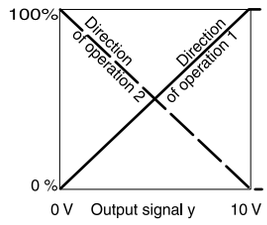
Type	Description
0372320001	Hexagon key as visualisation for position indicator
0510390032	Adapter set for V6R/B6R
0510390033	Adapter set for non-SAUTER valve IMI Hydronics TA-Fusion DN 32...50
0510390034	Adapter set for non-SAUTER valve IMI Hydronics TA-Fusion DN 65...80
0510390035	Adapter set for non-SAUTER valve IMI Hydronics CV DN 15...50
0510390036	Adapter set for non-SAUTER valve IMI Hydronics KTM512 DN 15...50
0510390037	Adapter set for non-SAUTER valve IMI Hydronics KTM512 DN 65...100
0510390039	Adapter set for non-SAUTER valve Danfoss VFS VEFS VL VF
0510390040	Adapter set for non-SAUTER valve Danfoss VRB VRG
0510390029	Adapter set for AVM215F***R, stroke 15 mm
0510390060	Adapter set for AVM 2*5 for Schneider V241/V341

Auxiliary change-over contacts: infinitely variable 0...100%, admissible load 3(1.5) A, 24...230 V

Accessory 0510390029 can also be used for SAUTER Valveco compact DN 40 and DN 50

AVM 215S-R: Valve actuator with SAUTER Universal Technology (SUT)

AVM215SF132



Features

- Actuation of 2- and 3-way valves
- For controllers with a switching (2- and 3-point) or continuous (0...10 V) output
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Automatic recognition of applied control signal (continuous or switched)
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/equal-percentage) can be set on the actuator
- Automatic adaptation to valve stroke
- Direction of operation can be selected directly on the cable
- Maintenance-free gear unit
- Gear unit can be disengaged in order to position the valve by hand with the hexagon key provided (load-free)
- Connection with valve spindle performed semi-automatically after control voltage is applied
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10%...+20%
Parameters		
	Actuator stroke	8...20 mm
	Response time	200 ms
Positioner	Control signal	0...10 V, Ri > 100 kΩ
	Positional feedback signal	0...10 V, load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Admissible ambient temperature	-10...55 °C
	Admissible ambient humidity	5...85% rh, no condensation
	Temperature of medium	Max. 100 °C
Construction		
	Weight	1 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
	Power cable	1.2 m, 5 × 0.5 mm^2
Standards and directives		
	Type of protection	IP54 (EN 60529) horizontal
	Protection class	III (IEC 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Actuating power	Voltage	Running time	Power consumption
AVM215SF132R	500 N	24 V~/=	7.5 s/mm 15 s/mm	3.5 W, 6.6 VA 2.7 W, 5.3 VA

Accessories

Type	Description
0510390030	Mounting kit for 8 mm stroke
0510390031	Mounting kit for 20 mm stroke
0510480003	Dual auxiliary switch for 8 mm stroke
0510480004	Dual auxiliary switch for 20 mm stroke
0372320001	Hexagon key as visualisation for position indicator
0510390032	Adapter set for V6R/B6R
0510390033	Adapter set for non-SAUTER valve IMI Hydronics TA-Fusion DN 32...50
0510390034	Adapter set for non-SAUTER valve IMI Hydronics TA-Fusion DN 65...80
0510390035	Adapter set for non-SAUTER valve IMI Hydronics CV DN 15...50
0510390036	Adapter set for non-SAUTER valve IMI Hydronics KTM512 DN 15...50
0510390037	Adapter set for non-SAUTER valve IMI Hydronics KTM512 DN 65...100
0510390039	Adapter set for non-SAUTER valve Danfoss VFS VEFS VL VF
0510390040	Adapter set for non-SAUTER valve Danfoss VRB VRG
0510390029	Adapter set for AVM215F***R, stroke 15 mm
0510390060	Adapter set for AVM 2*5 for Schneider V241/V341

Auxiliary change-over contacts: infinitely variable 0...100%, admissible load 3(1.5) A, 24...230 V

Accessory 0510390029 can also be used for SAUTER Valveco compact DN 40 and DN 50

AVM 321, 322: Valve actuator

AVM32*F1**

M

Features

- In ventilation air conditioning units[1] for actuation of 2- and 3-way valves of type series AVM 321: VUD, VUE, VUN, BUD, BUE, BUN and AVM 322: V6R, VQD, VQE, VUG, VUP, VUS, B6R, BQD, BQE, BUG, BUS
- For controllers with a switching output (2-point or 3-point control)
- Synchronous motor with electronic control unit and load-dependent cut-off
- Direction of operation and positioning time can be set using coding switches
- Crank handle for external manual adjustment with motor cut-off
- Low operating noise
- Simple assembly with valve; spindle is automatically connected after nominal voltage is applied
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Electrical parallel operation of five actuators
- Three-piece housing made of flame-retardant yellow/black plastic and seals with type of protection IP54
- Maintenance-free gearbox made of plastic; threaded spindle and gearbox base-plates made of steel
- Patented actuator-valve coupling
- Mounting column made of aluminium
- Fixing bracket made of cast light alloy for valve fitting with 20 mm stroke and made of plastic for valve fitting with 8 mm stroke
- Electrical connections (max. 1.5 mm²) with screw terminals
- Two break-out cable inlets for metric cable gland made of plastic M20 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10...20%
	Power supply 230 V~	±15%
Parameters		
	Nominal force[2]	1000 N
	Operating noise[3]	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Temperature of medium[4]	0...100 °C max.
Ambient conditions		
	Operating temperature	–10...55 °C
	Storage and transport temperature	–40...80 °C
	Humidity without condensation	5...85% rh
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730), III (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14 (AVM32*F110 and F120)

[1] *To be used outside HVAC applications only after consultation with the manufacturer*

[2] *Actuating power 1000 N under nominal conditions (24 V or 230 V, 25 °C ambient temperature, 50 Hz). With boundary conditions (19.2 V~ / 28.8 V~ / 21.6 V= / 28.8 V=, -10 °C / 55 °C, 60 Hz) and positioning time, the actuating/tensile force is minimised to 800 N*

[3] *Operating noise with the slowest positioning time, measuring distance 1 m*

[4] *At media temperature > 100 °C appropriate accessory must be used (temperature adapter); at media temperature < 0 °C appropriate accessory must be used (stuffing box heater)*

Over-voltage categories	III
Degree of contamination	II
Max. altitude	2000 m
Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Nominal voltage	Nominal stroke	Positioning time (s/mm)	Power consumption	Dimensions W x H x D	Weight
AVM322F120	230 V~	20 mm	6 (12)	< 2.4 W, < 4.0 VA	160 × 241 × 88 mm	1.6 kg
AVM322F122	24 V~/=	20 mm	6 (12)	< 2.0 W, < 3.0 VA	160 × 241 × 88 mm	1.6 kg
AVM321F110	230 V~	8 mm	12 (6)	< 2.4 W, < 4.0 VA	160 × 187 × 88 mm	1.5 kg
AVM321F112	24 V~/=	8 mm	12 (6)	< 2.0 W, < 3.0 VA	160 × 187 × 88 mm	1.5 kg

*AVM32*F1*2: CSA-certified actuators on request (only for devices with supply voltage 24 V~/=)*

Power consumption: at nominal voltage and with movement; for more power consumption data, see table "Power consumption for supply voltage"

Accessories

AVM 321, 322

Type	Description
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free

AVM 321

Type	Description
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0510480003	Dual auxiliary switch for 8 mm stroke

AVM 322

Type	Description
0372336180	Temperature adaptor for media temperature > 100...150 °C
0372336240	Temperature adaptor for media temperature > 130...200 °C
0510240012	Mounting set V6... / B6... up to 20 mm stroke
0510390006	Adapter set for non-SAUTER valves (Siemens) with stroke up to 20 mm and spindle diameter of 10 mm
0510390007	Adapter set for non-SAUTER valves (JCI): VBD-4xx4 DN 15...40, VBD-4xx8 DN 15...40, VBF-2xx4, VBF2xx8, VBB-2xxx, VG82xx VG84xx, VG88xx VG89xx
0510390008	Adapter set for non-SAUTER valves (Honeywell): V5025A DN 15...80, V5049A or B DN 15...65, V5050A DN 15...80, V5095A DN 15...80, V5328A DN 15...80, V5329A DN 15...80
0510390009	Adapter set for non-SAUTER valves (LDM): RV113 R/M, DN15-80
0510390010	Adapter set for ITT-Dräger: PSVF DN 15...32, PSVD DN 15...32, SVF DN 15...32, SVD DN 15...32
0510390012	Adapter set for non-SAUTER valves (Belimo): H6..R DN15...65, H7..R DN 15...65, H4..R DN 15...50, H5..B DN 15...50, H6..N DN 15...65, H7..N DN 15...65
0510390028	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510480004	Dual auxiliary switch for 20 mm stroke

AVM 321S, 322S: Valve actuator

AVM32*SF132

Features

- In ventilation air conditioning units for actuating 2- and 3-way valves of type series AVM 321S: VUD, VUE, VUN, BUD, BUE, BUN and AVM 322S: V6R, VQD, VQE, VUG, VUP, VUS, B6R, BQD, BQE, BUG, BUS
- For controllers with constant output (0...10 V / 4...20 mA) or switching output (2-point or 3-point control)
- BLDC motor (brushless DC) with SUT (SAUTER Universal Technology) electronic control unit of the third generation and electronic load-dependent cut-off
- Automatic detection of applied control signal (continuous or switching), operating indicator using bi-colour LED
- Automatic adaptation to the stroke of the valve, between 8 and 20 mm
- Low operating noise
- With the built-in absolute distance measurement system, the position is always maintained in the case of power failure
- The direction of operation, characteristic (linear/equal percentage), positioning time and control signal (voltage/current) can be adjusted via coding switches
- Integrated forced operation can be set via coding switches (with selectable direction of operation)
- Easy re-initialisation using a coding switch
- Crank handle for external manual adjustment with motor cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Electrical parallel operation of five actuators
- Parameterisation option via the BUS interface
- Three-piece housing made of flame-retardant yellow/black plastic and seals with type of protection IP54
- Maintenance-free gearbox made of plastic; threaded spindle and gearbox base-plates made of steel
- Patented actuator-valve coupling
- Mounting column made of aluminium
- Fixing bracket made of cast light alloy for valve fitting with 20 mm stroke and made of plastic for valve fitting with 8 mm stroke
- Electrical connections (max. 1.5 mm²) with screw terminals
- Two break-out cable inlets for metric cable glands made of plastic M20 × 1.5
- Fitting vertically upright to horizontal, not suspended
- Nominal thrust 1000 N

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10...20%
	Power supply 230 V~	±15%
	Power consumption	< 1.7 W, < 3.5 VA (at nominal voltage, with movement)
Parameters		
	Nominal force[1)]	1000 N
	Operating noise[2)]	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Temperature of medium[3)]	0...100 °C

1) Actuating power 1000 N under nominal conditions (24 V, 25 °C ambient temperature, 50 Hz). With boundary conditions (19.2 V~ / 28.8 V~ / 21.6 V= / 28.8 V=, -10 °C / 55 °C, 60 Hz) and positioning time, the actuating/tensile force is minimised to 800 N

2) Noise level with the slowest positioning time, measuring distance 1m

3) At media temperature > 100 °C appropriate accessory must be used (temperature adapter); at media temperature < 0 °C appropriate accessory must be used (stuffing box heater)

	Nominal voltage	24 V~/=
	Characteristic	Linear/equal percentage
	Control signal y[4]	0...10 V, $R_i \geq 50$ kΩ 4...20 mA, $R_i \leq 50$ Ω
	Positional feedback signal y_0	0...10 V, load ≥ 5 kΩ
	Starting point U_0	0 or 10 V
	Starting point I_0	4 or 20 mA
	Control span ΔU	10 V
	Control span ΔI	16 mA
	Hysteresis X_{sh}	160 mV 0.22 mA
Ambient conditions		
	Operating temperature	−10...55 °C
	Storage and transport temperature	−40...80 °C
	Humidity without condensation	5...85 % rh
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	III (EN 60730-1), EN 60730-2-14
CE conformity according to	EMC Directive 2014/30/EU	EN 610000-6-1, EN 610000-6-2, EN 610000-6-3, EN 610000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14 (AVM32*F110 and F120)
	Over-voltage categories	III
	Degree of contamination	II
	Max. altitude	2000 m
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Nominal voltage	Nominal stroke	Positioning time (s/mm)	Dimensions W x H x D	Weight
AVM321SF132	24 V~/=	8 mm	12 (4)	160 × 187 × 88 mm	1.5 kg
AVM322SF132	24 V~/=	20 mm	6 (4)	160 × 241 × 88 mm	1.6 kg

CSA-certified actuators on request

Accessories

AVM 321S, 322S

Type	Description
0500570003	Constant 230 V module
0500420001	Split-range unit module
0500420002	4...20 mA feedback module
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free

[4] *Positional feedback signal: also for 2- or 3-point, depending on type of connection*

AVM 321S

Type	Description
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0510480003	Dual auxiliary switch for 8 mm stroke

AVM 322S

Type	Description
0500240001	Temperature adaptor for media temperature > 100...180 °C
0500240002	Temperature adaptor for media temperature > 130...240 °C
0510240012	Mounting set V6... / B6... up to 20 mm stroke
0510390006	Adapter set for non-SAUTER valves (Siemens) with stroke up to 20 mm and spindle diameter of 10 mm
0510390007	Adapter set for non-SAUTER valves (JCI): VBD-4xx4 DN 15...40, VBD-4xx8 DN 15...40, VBF-2xx4, VBF2xx8, VBB-2xxx, VG82xx VG84xx, VG88xx VG89xx
0510390008	Adapter set for non-SAUTER valves (Honeywell): V5025A DN 15...80, V5049A or B DN 15...65, V5050A DN 15...80, V5095A DN 15...80, V5328A DN 15...80, V5329A DN 15...80
0510390009	Adapter set for non-SAUTER valves (LDM): RV113 R/M, DN15-80
0510390010	Adapter set for ITT-Dräger: PSVF DN 15...32, PSVD DN 15...32, SVF DN 15...32, SVD DN 15...32
0510390012	Adapter set for non-SAUTER valves (Belimo): H6..R DN15...65, H7..R DN 15...65, H4..R DN 15...50, H5..B DN 15...50, H6..N DN 15...65, H7..N DN 15...65
0510390028	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510480004	Dual auxiliary switch for 20 mm stroke

AVM322F12*R

AVM 322-R: Retrofit actuator

Features

- In ventilation and air conditioning units[1] For actuation of 2- and 3-way valves
- For controllers with a switching output (2-point or 3-point control)
- Synchronous motor with electronic control unit and load-dependent cut-off
- Direction of operation and positioning time can be set using coding switches
- Crank handle for external manual adjustment with motor cut-off
- Low operating noise
- Simple assembly with valve; spindle is automatically connected after nominal voltage is applied
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Electrical parallel operation of five actuators
- Three-piece housing made of flame-retardant yellow/black plastic and seals with type of protection IP54
- Maintenance-free gearbox made of plastic; threaded spindle and gearbox base-plates made of steel
- Patented actuator-valve coupling
- Electrical connections (max. 1.5 mm²) with screw terminals
- Two break-out cable inlets for metric cable gland made of plastic M20 × 1.5
- Fitting position vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10...20%
	Power supply 230 V~	±15%
Parameters		
	Nominal force[2]	1000 N
	Operating noise[3]	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Temperature of medium[4]	0...100 °C max.
Ambient conditions		
	Operating temperature	−10...55 °C
	Storage and transport temperature	−40...80 °C
	Humidity without condensation	5...85% rh
Construction		
	Dimensions W x H x D	160 × 114 × 88
	Weight	0.94
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730), III (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14 (AVM322F120R)
	Over-voltage categories	III

[1] *To be used outside HVAC applications only after consultation with the manufacturer*

[2] *Actuating power 1000 N under nominal conditions (24 V or 230 V, 25 °C ambient temperature, 50 Hz). With boundary conditions (19.2 V~ / 28.8 V~ / 21.6 V= / 28.8 V=, -10 °C / 55 °C, 60 Hz) and positioning time, the actuating/tensile force is minimised to 800 N*

[3] *Operating noise with the slowest positioning time, measuring distance 1 m*

[4] *At media temperature > 100 °C appropriate accessory must be used (temperature adapter); at media temperature < 0 °C appropriate accessory must be used (stuffing box heater)*

Degree of contamination	II
Max. altitude	2000 m
Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Nominal voltage	Power consumption	Positioning time (s/mm)	Nominal stroke
AVM322F120R	230 V~	< 2.4 W, < 4.0 VA	6 (12)	20 mm
AVM322F122R	24 V~/=	< 2.4 W, < 4.0 VA	6 (12)	20 mm

Power consumption: at nominal voltage and with movement; for more power consumption data, see table "Power consumption for supply voltage"

Accessories

Type	Description
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free
0510390020	Mounting kit, SAUTER valves VUD/BUD DN 65-80 VUE/BUE DN 65-80 VUG/BUG DN 15-50, VUP DN 40
0510390021	Mounting kit, SAUTER V6/B6 and Retrofit valves V6R/B6R DN 15-50, V6F/B6F DN 15-50, V6G/B6G DN 15-50, V6S/B6S DN 15-50
0510390022	Adapter set for non-SAUTER valves (Siemens) VVF21 DN 25-80, VXF21 DN 25-80, VVF31 DN 15-80, VXF31 DN 15-80, VVF40 DN 15-80, VXF40 DN 15-80, VVF41 DN 50
0510390023	Adapter set for non-SAUTER valves (JCI) VBD-4xx4 DN 15 ... 40, VBD-4xx8 DN 15 ... 40, VBF-2xx4, VBF2xx8, VBB-2xxx, VG82xx VG84xx, VG88xx VG89xx
0510390024	Adapter set for non-SAUTER valves (Honeywell) V5025A DN 15... 80, V5049A or B DN 15...65, V5049B DN 15...65, V5050A DN 15 ... 80, V5095A DN 15...80
0510390025	Adapter set for non-SAUTER valves (LDM) RV113 R/M DN 15-80
0510390026	Adapter set for ITT-Dräger PSVF DN 15...32, PSVD DN 15...32, SVF DN 15...32, SVD DN 15...32
0510390027	Adapter set for non-SAUTER valves (Belimo) H6..R DN 15...65, H7..R DN 15...65, H4..B DN 15...50, H5..B DN 15...50, H6..N DN 15...65, H7..N DN 15..65
0510390028	Adapter set for non-SAUTER valves, Frese Optima Compact flanged valves DN 50...80, stroke 20 mm

AVM322SF132R

AVM 322S-R: Retrofit actuator

Features

- In ventilation and air conditioning units[1] For actuation of 2- and 3-way valves
- For controllers with constant output (0...10 V / 4...20 mA) or switching output (2-point or 3-point control)
- BLDC motor (brushless DC) with SUT (SAUTER Universal Technology) electronic control unit of the third generation and electronic load-dependent cut-off
- Automatic detection of applied control signal (continuous or switching), operating indicator using bi-colour LED
- Automatic adaptation to the stroke of the valve, between 8 and 20 mm
- Low operating noise
- With the built-in absolute distance measurement system, the position is always maintained in the case of power failure
- The direction of operation, characteristic (linear/equal percentage), positioning time and control signal (voltage/current) can be adjusted via coding switches
- Integrated forced operation can be set via coding switches (with selectable direction of operation)
- Easy re-initialisation using a coding switch
- Crank handle for external manual adjustment with motor cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Electrical parallel operation of five actuators
- Parameterisation option via the BUS interface
- Three-piece housing made of flame-retardant yellow/black plastic and seals with type of protection IP54
- Maintenance-free gearbox made of plastic; threaded spindle and gearbox base-plates made of steel
- Patented actuator-valve coupling
- Electrical connections (max. 1.5 mm²) with screw terminals
- Two break-out cable inlets for metric cable glands made of plastic M20 × 1.5
- Fitting position vertically upright to horizontal, not suspended
- Nominal actuating power 1,000 N

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10...20%
	Power consumption	< 1.7 W, < 3.5 VA (at nominal voltage, with movement)
Parameters		
	Positioning time (s/mm)	6 (4)
	Nominal force[2]	1,000 N
	Nominal stroke	20 mm
	Operating noise[3]	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Temperature of medium[4]	0...100 °C
	Nominal voltage	24 V~/=
	Characteristic	Linear/equal percentage

[1] *To be used outside HVAC applications only after consultation with the manufacturer*

[2] *Actuating power 1,000 N under nominal conditions (24 V, 25 °C ambient temperature, 50 Hz); With boundary conditions (19.2 V~ / 28.8 V~ / 21.6 V= / 28.8 V=, -10 °C / 55 °C, 60 Hz) and positioning time, the actuating/tensile force is minimised to 800 N*

[3] *Noise level with the slowest positioning time, measuring distance 1 m*

[4] *At media temperature > 100 °C appropriate accessory must be used (temperature adapter); at media temperature < 0 °C appropriate accessory must be used (stuffing box heater)*

	Control signal y[5]	0...10 V, $R_i \geq 50$ kΩ 4...20 mA, $R_i \leq 50$ Ω
	Positional feedback signal y_0	0...10 V, load ≥ 5 kΩ
	Starting point U_0	0 or 10 V
	Starting point I_0	4 or 20 mA
	Control span ΔU	10 V
	Control span ΔI	16 mA
	Hysteresis X_{sh}	160 mV 0.22 mA
Ambient conditions		
	Operating temperature	−10...55 °C
	Storage and transport temperature	−40...80 °C
	Humidity without condensation	5...85% rh
Construction		
	Dimensions W x H x D	160 × 114 × 88
	Weight	0.94
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730-1), EN 60730-2-14
CE conformity according to	Low-Voltage Directive 2014/35/EU	EN 610000-6-1, EN 610000-6-2, EN 610000-6-3, EN 610000-6-4
	Over-voltage categories	III
	Degree of contamination	II
	Max. altitude	2,000 m
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Description
AVM322SF132R	Retrofit actuator

Accessories

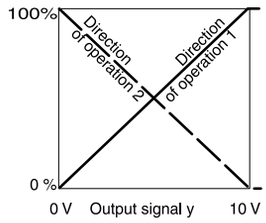
Type	Description
0500420001	Split-range unit module
0500420002	4...20 mA feedback module
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0510390020	Mounting kit, SAUTER valves VUD/BUD DN 65-80 VUE/BUE DN 65-80 VUG/BUG DN 15-50, VUP DN 40
0510390021	Mounting kit, SAUTER V6/B6 and Retrofit valves V6R/B6R DN 15-50, V6F/B6F DN 15-50, V6G/B6G DN 15-50, V6S/B6S DN 15-50
0510390022	Adapter set for non-SAUTER valves (Siemens) VVF21 DN 25-80, VXF21 DN 25-80, VVF31 DN 15-80, VXF31 DN 15-80, VVF40 DN 15-80, VXF40 DN 15-80, VVF41 DN 50

[5] *Positional feedback signal: also for 2- or 3-point, depending on type of connection*

Type	Description
0510390023	Adapter set for non-SAUTER valves (JCI) VBD-4xx4 DN 15 ... 40, VBD-4xx8 DN 15 ... 40, VBF-2xx4, VBF2xx8, VBB-2xxx, VG82xx VG84xx, VG88xx VG89xx
0510390024	Adapter set for non-SAUTER valves (Honeywell) V5025A DN 15... 80, V5049A or B DN 15...65, V5049B DN 15...65, V5050A DN 15 ... 80, V5095A DN 15...80
0510390025	Adapter set for non-SAUTER valves (LDM) RV113 R/M DN 15-80
0510390026	Adapter set for ITT-Dräger PSVF DN 15...32, PSVD DN 15...32, SVF DN 15...32, SVD DN 15...32
0510390027	Adapter set for non-SAUTER valves (Belimo) H6..R DN 15...65, H7..R DN 15...65, H4..B DN 15...50, H5..B DN 15...50, H6..N DN 15...65, H7..N DN 15..65
0510390028	Adapter set for non-SAUTER valves, Frese Optima Compact flanged valves DN 50...80, stroke 20 mm

AVM 234S: SUT valve actuator with positioner

AVM234SF132



Features

- Activation of 2-way and 3-way valves of the VQD/BQD and VQE/BQE series, as well as VUG/BUG, VUS/BUS, VUP and V6R/B6R
- For controllers with constant output (0...10 V or 4...20 mA) or switching output (2-point or 3-point control)
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented system)
- Automatic detection of applied control signal (constant or switched); indicated by two LEDs
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/quadratic/equal-percentage) can be set on the actuator
- Automatic adaptation to the stroke of the valve (min. valve stroke 8 mm, max. valve stroke 49 mm). The measured stroke is saved and is not lost even in the event of a power failure
- Direction of operation can be selected via screw terminals when making the electrical connection
- Crank handle for external manual adjustment with motor cut-off and as trigger for a re-initialisation
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Power supply 230 V with module or direct connection for 24 V~ / 24 V=; continuous activation also admissible with 230 V
- Maintenance-free gear unit made of sintered steel; gearbox base-plate made of steel
- Mounting column made of stainless steel; mounting bracket made of cast light alloy for fitting the valve
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three pre-scored cable inlets for M20 × 1.5 (2×) and M16 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15% (with accessories)
	Power consumption[1]	24 V~/24 V= 10 W/20 VA 230 V~ (with accessories) 13 W/28 VA
Parameters		
	Running time	2/4/6 s/mm
	Actuating power	2500 N
	Actuator stroke	0...49 mm
	Response time for 3-point	200 ms
Positioner	Control signal 1	0...10 V, R_i >100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV
Ambient conditions		
	Admissible ambient temperature	–10...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
	Temperature of medium[2]	Max. 130 °C (180 °C or 240 °C with accessories)

[1] *Choose transformers for this value, otherwise malfunctions may occur*
[2] *For higher temperatures of the medium (180 °C or 240 °C), use an adapter (see accessories)*

Construction

Weight	4.1 kg
Housing	Two-part, yellow
Housing material	Fire-retardant plastic

Standards and directives

Type of protection	IP66 (EN 60529)
Protection class	III (IEC 60730)
EMC Directive 2014/30/EU[3)]	EN 61000-6-2, EN 61000-6-4
Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
Over-voltage categories	III
Degree of contamination	III

Overview of types

Actuator for valves: VQD/BQD, VQE/BQE, VUG/BUG, VUP, VUS/BUS

Actuator with assembly kit (see accessories) for valves: V6R, B6R

Type	Features
AVM234SF132	Valve actuator with SUT positioner
AVM234SF132-5	Valve actuator, positioner 24V~ for DN 15...50, V6*/B6*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules can be added for 2-point/3-point and continuous activation; additional power 2 VA

Type	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage

Auxiliary change-over contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A

Potentiometer

Type	Description
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V

Adapters for high temperatures

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)

Mounting set for AVM234SF132 on SAUTER valves (no adapter needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm
0372338003	Conversion kit from AV*2*4SF132-5 to standard actuator AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard actuator AV*2*4SF132

Adapter set for non-SAUTER valves

Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Ø 14 mm spindle
0372377001	Johnson Controls DN 15...150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke

[3)] *EN 61000-6-2: (HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A)*

Type	Description
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 15...32
0372389002	ITT-Dräger, DN 40...50
0378263001	End stop (needed for V/BXD, V/BXE DN 15...50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1,5
0386263002	Cable screw fitting M20 × 1.5
0372461001	Forced operation for AV×2×4S
0372387001	SAUTER Satchwell VZF1727 mounting set
0510390052	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510390053	Adapter set for non-SAUTER valves (Frese), stroke 40/43 mm

*Adapter: Not needed for version AV*2*4SF132-6*

Potentiometer 130 Ω: This potentiometer must only be used as a voltage divider.

AVF124F130

AVF124F130

AVF124F230

AVF 124: Valve actuator with spring return

Features

- Activation of 2- and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series, DN 15 to DN 50.
- For controllers with a switching output (3-point control)
- Spring return moves the unit to the end position in the event of a power failure or when a limit controller is activated
- Stepping motor with electronic control unit and electronic, force-dependent cut-off
- Maintenance-free gear unit
- LED display
- Coding switch for changing the running time
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply	230 V~, ±15%, 50...60 Hz
	Power consumption	4 W, 7.6 VA
Parameters		
	Running time of motor	60/120 s
	Running time of spring	18 s ±10
	Actuating power	500 N
	Actuator stroke	0...8 mm
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature	5...60 °C
	Temperature of medium	Max. 100 °C
	Admissible ambient humidity	< 95% rh, no condensation
Construction		
	Weight	2.4 kg
	Housing	Lower section black, cover transparent
	Housing material	Fire-retardant plastic
	Materials for gearbox and fitting bracket	Pressure-cast zinc
Standards and directives		
	Type of protection[1)]	IP54 as per EN 60529
	Protection class	II (IEC 60730)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	III
	Software	A (EN 60730)
	Mode of operation	Type 1 AA (200 ms, EN 60730)

Overview of types

Type	Reset function
AVF124F130	Actuator spindle retracted
AVF124F230	Actuator spindle extended

[1)] *Type of protection IP54 only with cable gland*

AVF124F130: Valve normally closed (NC) with: VUD, BUD, VUE, BUE, VUN, BUN

AVF124F230: Valve normally open (NO) with: VUD, BUD, VUE, BUE, VUN, BUN

Accessories

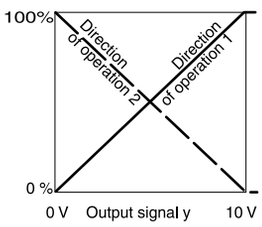
Type	Description
0370881001	Auxiliary change-over contacts, single
0370882001	Auxiliary change-over contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary change-over contacts, single, combined with pot. 1000 Ω auxiliary change-over contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V
0372249001	Temperature adapter for AVM 321(S), media temperature > 100...130 °C
0372460001	Cable screw fitting (plastic M20 × 1,5) incl. locking nut and seal

Auxiliary change-over contacts: Infinitely variable, admissible load 2(1) A, 12...250 V~, min. load 250 mA, 12 V~

AVF125SF132

AVF125SF132

AVF125SF232



AVF 125S: SUT valve actuator with spring return

Features

- Activation of 2-way and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series
- For controllers with switching (2- and 3-point) or continuous output (0...10 V, 4...20 mA)
- Spring return moves the unit to the end position in the event of a power failure or when a limit controller is activated
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Automatic recognition of applied control signal (continuous or switched)
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/quadratic/equal-percentage) can be set on the actuator
- Direction of operation can be selected via screw terminals when making the electrical connection
- Maintenance-free gear unit
- LED display
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	5 W, 8.4 VA
	Power consumption on starting[1]	30 VA (max. 1 s)
Parameters		
	Running time of motor	60/120 s
	Running time of spring	18 s ±10
	Actuating power	500 N
	Actuator stroke	0...8 mm
Positioner	Control signal 1	0...10 V, R_i = 100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Admissible ambient temperature	–10...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
	Temperature of medium	Max. 100 °C
Construction		
	Weight	2.4 kg
	Housing	Lower section black, cover transparent
	Housing material	Fire-retardant plastic
	Materials for gearbox and fitting bracket	Pressure-cast zinc
Standards and directives		
	Type of protection[2]	IP54 as per EN 60529
	Protection class	III (IEC 60730)

[1] *Only in the event of a restart or after a spring return*
[2] *Type of protection IP54 only with M20 cable gland*

EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
Software	A (EN 60730)
Mode of operation	Type 1 AA (200 ms, EN 60730)
Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

For valves with equal-percentage characteristic; can be changed to linear

Type	Reset function
AVF125SF132	Actuator spindle retracted
AVF125SF232	Actuator spindle extended

AVF125SF132: Actuator spindle normally retracted; valve normally closed (NC) with: VUD, BUD, VUE, BUE, VUN, BUN

AVF125SF232: Actuator spindle normally extended; valve normally open (NO) with: VUD, BUD, VUE, BUE, VUN, BUN

Accessories

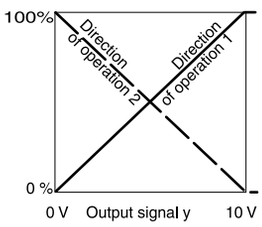
Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0370881001	Auxiliary change-over contacts, single
0370882001	Auxiliary change-over contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary change-over contacts, single, combined with pot. 1000 Ω auxiliary change-over contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V
0372249001	Temperature adapter for AVM 321(S), media temperature > 100...130 °C
0372460001	Cable screw fitting (plastic M20 × 1,5) incl. locking nut and seal

Auxiliary change-over contacts: Infinitely variable, admissible load 2(1) A, 12...250 V~, min. load 250 mA, 12 V~

AVF234SF132

AVF234SF132

AVF234SF232



AVF 234S: SUT valve actuator with spring return

Features

- Activation of 2-way and 3-way valves of the VQD/BQD, VQE/BQE, VUG/BUG, VUP, VUS/BUS and V6R/B6R series
- For controllers with switching (2- and 3-point) and continuous output (0...10 V, 4...20 mA)
- Spring return moves to end position in the event of a power failure/interruption or when a limit controller is activated
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented system)
- Automatic detection of applied control signal (constant or switched); indicated by two LEDs
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/quadratic/equal-percentage) can be set on the actuator
- Automatic adaptation to the stroke of the valve (min. valve stroke 8 mm, max. valve stroke 49 mm). The measured stroke is saved and is not lost even in the event of a power failure
- Direction of operation can be selected via screw terminals when making the electrical connection
- Crank handle for external manual adjustment with motor cut-off and as trigger for a re-initialisation
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Power supply 230 V with module or direct connection for 24 V~ or 24 V=; continuous activation also admissible with 230 V
- Maintenance-free gear unit made of sintered steel; gearbox base-plate made of steel
- Spring pack and mounting column made of stainless steel; mounting bracket made of cast light alloy for valve fitting
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three pre-scored cable inlets for M20 × 1.5 (2×) and M16 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15% (with accessories)
	Power consumption[1]	24 V~/24 V= 10 W, 20 VA 230 V~ (with accessory) 13 W/28 VA
Parameters		
	Running time of motor	2/4/6 s/mm
	Running time of spring[2]	15...30 s
	Actuating power	2000 N
	Response time for 3-point	200 ms
	Number of spring returns	> 40,000
Positioner	Control signal 1	0...10 V, R_i = 100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback 0...10 V	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV

[1] *Choose transformers for this value, otherwise malfunctions may occur*
[2] *Return time equates to a stroke of 14...40 mm and does not depend on the set running time*

Ambient conditions

Admissible ambient temperature	-10...55 °C
Admissible ambient humidity	< 95% rh, no condensation
Temperature of medium[3]	Max. 130 °C (180 °C or 240 °C with accessories)

Construction

Housing	Two-part, yellow
Housing material	Fire-retardant plastic

Standards and directives

Type of protection	IP66 (EN60529)
Protection class	III (IEC 60730)
EMC Directive 2014/30/EU[4]	EN 61000-6-2, EN 61000-6-4
Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
Over-voltage categories	III
Degree of contamination	III

Overview of types

Type	Stroke	Weight	Direction of operation of spring
AVF234SF132	14...40 mm	5.6 kg	Spindle retracted
AVF234SF132-5	14 mm	5.6 kg	Spindle retracted
AVF234SF232	0...40 mm	5.6 kg	Spindle extended

- *AVF234SF132: Valve normally closed (NC) with: VQD/BQD, VQE/BQE, VUG/BUG, BUS; valve normally open (NO) with: VUS, VUP*
- *AVF234SF132-5: Valve normally closed (NC) with: V6R, B6R*
- *AVF234SF232: Valve normally open (NO) with: VQD/BQD, VQE/BQE, VUG/BUG, BUS; valve normally closed (NC) with: VUS, VUP*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules can be added for 2-point/3-point and continuous activation; additional power 2 VA

Type	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage

Auxiliary change-over contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A

Potentiometer

Type	Description
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V

Adapters for high temperatures

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)

Assembly kit for AVF234SF*32 on SAUTER valves (no adapter needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm

[3] *Adapter is needed for higher temperatures (180 °C or 240 °C) (see accessories)*
[4] *EN 61000-6-2: HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A*

Type	Description
0372338003	Conversion kit from AV*2*4SF132-5 to standard actuator AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard actuator AV*2*4SF132

Adapter set for non-SAUTER valves

Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Ø 14 mm spindle
0372377001	Johnson Controls DN 15...150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 15...32
0372389002	ITT-Dräger, DN 40...50
0378263001	End stop (needed for V/BXD, V/BXE DN 15...50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1,5
0386263002	Cable screw fitting M20 × 1.5
0372387001	SAUTER Satchwell VZF1727 mounting set
0372461001	Forced operation for AV×2×4S
0510390052	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510390053	Adapter set for non-SAUTER valves (Frese), stroke 40/43 mm

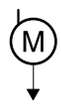
*Adapter: Not needed for version AV*2*4SF132-6*

Potentiometer 130 Ω: This potentiometer must only be used as a voltage divider.

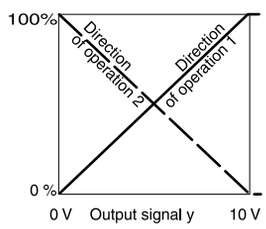
AVN 224S: SUT valve actuator with safety function

AVN224SF132

AVN224SF132



AVN224SF232



Features

- Actuation of 2-way or 3-way valves of type series VUG/BUG and VUP as per DIN EN 14597
- For controllers with constant output (0...10 V or 4...20 mA) and switching output (2-point or 3-point control)
- Valve actuator with safety function (as per DIN EN 14597) and pushing force of 1100 N, in normally closed (NC) or normally open (NO) version
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, force-dependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented system)
- Automatic recognition of applied control signal (constant or switched); indicated by two LEDs
- Coding switches for selecting characteristic and running time
- Type of characteristic (linear/quadratic/equal-percentage) can be set on the actuator
- Automatic adaptation to the valve stroke (min. valve stroke 8 mm, max. valve stroke 49 mm); the measured stroke is stored and is not lost in the event of a power failure
- Direction of operation can be selected via screw terminals when making the electrical connection
- Push-buttons on outside of housing for manual adjustment with motor cut-off and as trigger for re-initialisation
- Numerous adapters enable the unit to be fitted onto non-SAUTER valves
- Maintenance-free gear unit made of sintered steel; gearbox base-plate made of steel
- Spring pack and mounting column made of stainless steel; mounting bracket made of cast light alloy for valve fitting
- Electrical connections (max. 2.5 mm^2) with screw terminals
- Three break-out cable inlets for M20 × 1.5 (2×) and M16 × 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15%, 50...60 Hz (with accessories)
	Power consumption	24 V~/24 V= 10 W, 18 VA 230 V~ (with accessories) 11 W / 24 VA
Parameters		
	Running time of motor	2/4/6 s/mm
	Running time of spring[1)]	15...30 s
	Actuating power	1100 N
	Number of spring returns	> 40 000
	Response time for 3-point	200 ms
Positioner	Control signal 1	0...10 V, R_i = 100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V, load > 2.5 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV
Ambient conditions		
	Admissible ambient temperature	-10...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
	Temperature of medium	Max. 130 °C

[1)] *Spring return time equates to a stroke of 14...40 mm and does not depend on the set running time*

Construction

Housing	Two-part, yellow
Housing material	Flame-retardant plastic

Standards and directives

Type of protection	IP66 (EN60529)
Protection class	III (IEC 60730)
EMC Directive 2014/30/EU[2]	EN 61000-6-2, EN 61000-6-4
Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
Over-voltage categories	III
Degree of contamination	III
PED 2014/68/EU, cat. IV[3]	Category IV, fluid group II, liquid or steam pressure modules B+D
Test marks	TÜV ID: 0000018388

Overview of types

Type	Actuator stroke	Weight	Direction of operation of spring
AVN224SF132	0...40 mm	5.6 kg	Spindle retracted
AVN224SF232	0...40 mm	5.6 kg	Spindle extended

AVN224SF132: Valve normally closed (NC) with: VUG, BUG (as per DIN EN 14597); valve normally open (NO) with: VUP

AVN224SF232: Valve normally open (NO) with: VUG, BUG; valve normally closed (NC) with: VUP (as per DIN EN 14597)

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules can be added for 2-point/3-point and continuous activation; additional power 2 VA

Type	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage

Auxiliary change-over contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A

Potentiometer

Type	Description
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V

Adapters for high temperatures

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)

Mounting set for AVN224SF*32 onto SAUTER valves (no adapter needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm
0372338003	Conversion kit from AV*2*4SF132-5 to standard actuator AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard actuator AV*2*4SF132

[2] *EN 61000-6-2: HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A*

[3] *Only for valves VUP, VUG and BUG. See PDS for the valves.*

Adapter set for non-SAUTER valves

Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Ø 14 mm spindle
0372377001	Johnson Controls DN 15...150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 15...32
0372389002	ITT-Dräger, DN 40...50
0378263001	End stop (needed for V/BXD, V/BXE DN 15...50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1,5
0386263002	Cable screw fitting M20 × 1.5
0372387001	SAUTER Satchwell VZF1727 mounting set
0372461001	Forced operation for AVx2xS
0510390052	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510390053	Adapter set for non-SAUTER valves (Frese), stroke 40/43 mm

*Adapter: Not needed for version AV*2*4SF132-6*

Potentiometer 130 Ω: This potentiometer must only be used as a voltage divider.

Dynamic regulating valves

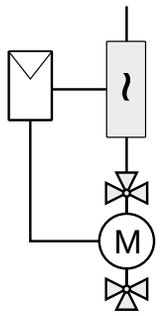
The automatic hydronic balancing of water distribution networks using dynamic SAUTER valves provides correct supply to air-conditioning, cooling and heating devices. These include fan-coil units, chilled ceilings, central underfloor heating systems, air recirculation devices and segments of installations. The SAUTER regulating valves reduce temperature variations in the room and thus enable more precise and efficient use of energy.

Overview of dynamic regulating valves

				
Type designation	UVC 106: eValveco	UVC 102, 103: eValveco	VDL010...032Fxxx: Valveco compact	VDL040...050Fxxx: Valveco compact
Application				
Preheater for ventilation & air-conditioning, cooler	–	•	•	•
Chilled ceiling, underfloor heating	•	–	•	•
Static heating	–	•	•	•
Version				
2-way	–	•	•	•
3-way	–	•	–	–
6-way	•	–	–	–
Female thread	–	•	–	•
Male thread	•	•	•	–
Flange	–	–	–	–
Temperature measurement	•	•	–	–
Electronic control	•	•	–	–
Modbus RTU	•	•	–	–
Nominal pressure	PN 16	PN 16	PN 25	PN 25
Combination options with actuator	integrated	integrated	AXT211, AXS215, AXM217	AVM215
Further information	Page 241	Page 243	Page 245	Page 245

UVC 106: Dynamic flow control system with 6-way ball valve, eValveco

UVC106MF0*5



Features

- Pressure-independent variable flow control
- Integrated flow measurement with feedback
- Easy integration into every building management system
- Variable flow rate setpoint for heating and cooling modes
- For chilled ceilings with changeover (4-pipe)

Technical data

Electronic power supply		
	Power supply	24 V~, ±20%, 50 Hz
	Power consumption during operation	3 W (4 VA)
	Power consumption when idle	1.5 W (2 VA)
	Peak inrush current	6.4 A
	Input signal	Y_1:0...10 V= (0.17 mA), split-range 0.5...4.5 V= heating 5.5...9.5 V= cooling Ri ≥ 60 kΩ
	Feedback signal[1]	X_1:0...10 V= (max. 2 mA)
	Feedback signal resolution	Approx. 100 mV
Parameters		
	Setpoint adjustment	Analogue (Y_1) or via Modbus
	Type of sensor	TTM ultrasonic sensor, no moving parts
	Unit of measurement[2]	[m^3/h], l/s, l/min, gpm (UK), gpm (US)
	Measuring accuracy	±3% of actual value
	Minimum controllable flow[3]	3 l/h
	Readiness for operation	3...5 minutes after switching on
Valve and actuator	Nominal pressure	PN16
	Differential pressure Δp[4]	Max. 2 bar (200 kPa)
	Medium[5]	Water (glycol-free)
	Temperature of medium	5...90 °C
	Leakage rate in % of K_{vs}	0.001 %
	Control characteristic	Equal-percentage (factory setting) or linear
Interfaces and communication		
	Bus connector	STP cable, 1 × double twisted
BMS integration	Protocol	Modbus/RTU, slave
	Connection[6]	RS-485, double twisted cable (with shared lead)
	Cable type	Shielded 2-core cable, STP or FTP
	Baud rate	9600, 19200, 38400 baud
	Terminating resistor	At both ends 120 Ω
Construction		
	Power cable	PVC cable, 7 × 0.5 mm^2 (length 1 m)

[1] *In relation to the measured actual flow*
[2] *Unit in [ ]: Factory setting*
[3] *In relation to the measured actual flow*
[4] *No minimum differential pressure required*
[5] *In accordance with VDI 2035 sheet 2*
[6] *Not electrically isolated*

	Housing material	Flow sensor:ABS Actuator:Flame retardant plastic 6-way ball valve:CW617N Flow meter:CW617N
	Connection	DN 15 ISO228/1:5 × G½" + 1 × G¾" DN 25 ISO228/1:6 × G1"

Ambient conditions		
	Admissible ambient temperature	10...45 °C
	Admissible storage temperature	-20...50 °C
	Admissible ambient humidity	Max. 90% rh, non-condensing

Standards and directives		
	Type of protection[7]	IP54 (EN 60529), horizontal
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-3-2 (2014) EN 61000-3-3 (2013) EN 61000-6-1 (2007) EN 61000-6-3 (2007) (A1: 2011 / AC: 2012)
	PED 2014/68/EU	Fluid group II, no CE label

Overview of types

Type	Description	Flow range	K_{vs} value	Weight
UVC106MF015	Electronic flow control valve with 6-way ball valve, DN 15	0...1400 l/h	1.4 m^3	2.5 kg
UVC106MF025	Electronic flow control valve with 6-way ball valve, DN 25	0...2500 l/h	2.5 m^3	4 kg

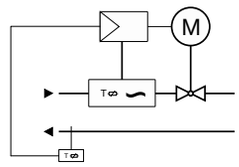
[7] *See fitting instructions P1000xxxx*

UVC 102, 103: Dynamic flow control system with 2-way or 3-way valve and energy monitoring, eValveco

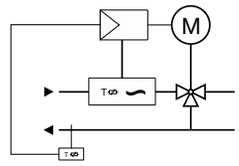
Features

- Pressure-independent variable flow control
- Dynamic hydronic balancing at full and partial load
- Energy monitoring
- Integrated flow measurement with feedback and temperature measurement
- Remote commissioning and troubleshooting
- With integrated LCD and operating panel
- Available as 2-way or 3-way ball valve version, DN15 ... DN50
- For variable-flow HVAC systems

UVC102



UVC103



Technical data

Electronic power supply		
	Power supply	U_v: 24 V~ (±20%) 50 Hz
	Power consumption during operation	2.5 W (3 VA)
	Power consumption when idle	1.0 W (1.5 VA)
	Peak inrush current	6.4 A
	Input signal	Y_1: 0...10 V= Ri ≥ 60 kΩ
	Feedback signal[1]	X_1: 0...10 V= (max. 2 mA)
	Feedback signal resolution	Approx. 100 mV
Volume flow control		
	Setpoint adjustment	Analogue (Y_1) or via Modbus or operating panel
	Type of sensor	TTM ultrasonic sensor, no moving parts
	Unit of measurement[2]	[m^3/h], l/s, l/min, gpm (UK), gpm (US)
	Measuring accuracy[3]	±3% of actual value
	Minimum controllable flow	17...70 l/h
	Readiness for operation	5-10 minutes after switching on
Valve and actuator		
	Nominal pressure	PN16 (16 bar)
	Differential pressure Δp	Max. 2.4 bar
	Medium[4]	Water (glycol-free)
	Temperature of medium	5 °C...90 °C
	Leakage rate in % of K_{vs}	0.001 %
Temperature sensor		
	Measuring element	Pt500 as per EN 60751, Class B
Interfaces and communication		
	Bus connector	STP cable, 2x double twisted
BMS integration	Protocol	Modbus/RTU, slave
	Connection	RS-485 double twisted cable (with shared lead)
	Cable type	Shielded 2-core cable, STP or FTP
	Baud rate	9600, 19 200 or 38 400
	Terminating resistor	120 Ω both sides

[1] *In relation to the measured actual flow*
[2] *Unit in [ ]: Factory setting*
[3] *In relation to the measured actual flow*
[4] *In accordance with VDI 2035 sheet 2*

Flow meter design		
	Housing material	Polypropylene, steel Water-bearing parts: Pressed brass DN 15 CW617N, DN 20 - 50 CW602N (DZR), bronze, EPDM seal, stainless steel, EN-JM1130 fitting as per EN1562
	LCD	Backlit liquid crystal display, 2x16 characters
Ambient conditions		
	Admissible ambient temperature	10...45 °C
	Admissible storage temperature	-20...50 °C
	Admissible ambient humidity	Max. 90% rh, no condensation
Standards and directives		
	Type of protection[5]	IP54 (EN 60529), horizontal
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-3 (2007) EN 61000-3-2 (2006) EN 61000-3-3 (1995) + am1 (2001) EN 61000-6-1 (2005)
	PED 2014/68/EU	Fluid group II, no CE label

Overview of types

Type	Description	Weight
UVC102MF015	2-way ultrasonic energy regulating valve DN 15	3.5 kg
UVC102MF020	2-way ultrasonic energy regulating valve DN 20	5.1 kg
UVC102MF025	2-way ultrasonic energy regulating valve DN 25	5.2 kg
UVC102MF032	2-way ultrasonic energy regulating valve DN 32	5.5 kg
UVC102MF040	2-way ultrasonic energy regulating valve DN 40	6.8 kg
UVC102MF050	2-way ultrasonic energy regulating valve DN 50	7.5 kg
UVC103MF015	3-way ultrasonic energy regulating valve DN 15	3.6 kg
UVC103MF020	3-way ultrasonic energy regulating valve DN 20	5.1 kg
UVC103MF025	3-way ultrasonic energy regulating valve DN 25	5.4 kg
UVC103MF032	3-way ultrasonic energy regulating valve DN 32	5.7 kg
UVC103MF040	3-way ultrasonic energy regulating valve DN 40	7.1 kg
UVC103MF050	3-way ultrasonic energy regulating valve DN 50	8 kg

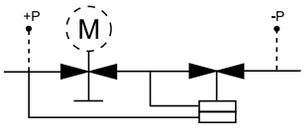
Additional technical data

Parameters, fitting notes, control, general information	Applicable EN, DIN, AD, TRD and accident prevention regulations

[5] *See fitting instructions P100017043*

VDL 010...050: 2-way regulating valve for dynamic hydronic balancing, PN 25, Valveco compact

VDL015F210



VDL040F201

Features

- Regulating valve with three functions: Control, preset maximum volume flow, automatic flow regulation
- Range 30...11500 l/h
- Easy to preset the max. required volume flow
- Versions with and without pressure measurement nipple
- The valve is closed when the spindle is moved in
- Closing procedure against the pressure
- Slight adaptation of the proven SAUTER actuator technology
- Regulating valve with female (DN 10...DN 32) or male thread (DN 40 and DN 50) as per DIN EN ISO 228-1
- Flat-sealing regulating valve
- Differential pressure across the control unit is kept constant; valve authority 1
- Valve body and plug made of dezincification-resistant (DZR) brass
- Stainless-steel spindle
- Temperature range of medium 0...120 °C

Technical data

Parameters		
	Nominal pressure	25 bar
	Maximum operating pressure	PN 25
	Valve characteristic	Linear
	Leakage rate	0.01%
Ambient conditions		
	Admissible operating temperature for valve	0...120 °C
	Admissible operating temperature for valve in combination with AXT 211, AXS 215, AXM 217 (S) and AVM 215 (S)	100 °C at the valve
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, page 3

Overview of types

Type	Nominal diameter (DN)	Volume flow range (l/h)	Control range min Δp...max Δp (kPa)	Valve stroke (mm)	Connection / tolerance class	Pressure measurement nipple	Weight (kg)
VDL010F200	10	65...370	14...800	5	G½" B	–	0.36
VDL010F201	10	65...370	14...800	5	G½" B	•	0.45
VDL010F210	10	30...200	14...800	2.5	G½" B	–	0.36
VDL010F211	10	30...200	14...800	2.5	G½" B	•	0.45
VDL015F200	15	100...575	14...800	2.5	G¾" B	–	0.38
VDL015F200H	15	220...1330	8...800	5	G¾" B	–	0.38
VDL015F201	15	100...575	14...800	2.5	G¾" B	•	0.47
VDL015F210	15	65...370	14...800	5	G¾" B	–	0.38
VDL015F201H	15	220...1330	8...800	5	G¾" B	•	0.47
VDL015F211	15	65...370	14...800	5	G¾" B	•	0.47
VDL015F220	15	30...200	14...800	2.5	G¾" B	–	0.38
VDL015F221	15	30...200	14...800	2.5	G¾" B	•	0.47

Type	Nominal diameter (DN)	Volume flow range (l/h)	Control range min Δp...max Δp (kPa)	Valve stroke (mm)	Connection / tolerance class	Pressure measurement nipple	Weight (kg)
VDL020F200	20	220...1330	15...800	5	G1" B	–	0.4
VDL020F201	20	220...1330	15...800	5	G1" B	•	0.5
VDL020F210	20	160...990	15...800	4	G1" B	–	0.4
VDL020F210H	20	300...1800	8...800	5.5	G1" B	–	0.4
VDL020F211	20	160...990	15...800	4	G1" B	•	0.5
VDL020F211H	20	300...1800	8...800	5.5	G1" B	•	0.5
VDL020F220	20	100...575	14...800	2.5	G1" B	–	0.4
VDL020F221	20	100...575	14...800	2.5	G1" B	•	0.5
VDL025F200	25	600...3609	8...800	5.5	G1¼" B	–	1.02
VDL025F201	25	600...3609	8...800	5.5	G1¼" B	•	1.12
VDL025F210	25	280...1800	8...800	5.5	G1¼" B	–	0.51
VDL025F211	25	280...1800	8...800	5.5	G1¼" B	•	0.62
VDL032F200	32	550...4001	8...800	5.5	G1½" B	–	1.17
VDL032F201	32	550...4001	8...800	5.5	G1½" B	•	1.27
VDL040F201	40	1370...9500	8...800	15	G1½" B	•	3.28
VDL050F201	50	1400...11500	8...800	15	G2" B	•	3.71

Valves DN 40 and DN 50 with female thread

Valves DN 10...DN 32 with male thread

Accessories

Type	Description
0378133010	1 threaded sleeve, R⅜", flat-sealing, with cap nut and flat seal, G½ - R⅜
0378133015	1 threaded sleeve, R½", flat-sealing, with cap nut and flat seal, G¾ - R½
0378133020	1 threaded sleeve, R¾", flat-sealing, with cap nut and flat seal, G1 - R¾
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, G½
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G¾
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0510390029	Adapter set for AVM215F***R, stroke 15 mm
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0361951020	1 screw fitting for male thread with flat seal, G1¼ - Rp¾
0361951025	1 screw fitting for male thread with flat seal, G1½ - Rp1
0360391040	Screw fitting incl. seal, 2 pcs. required, Rp1½ - G1½
0360391050	Screw fitting incl. seal, 2 pcs. required, Rp2 - G2
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of VDL with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AXM217F200	AXM217F202	AXM217SF402 AXM217SF404
Page	150	150	153
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	3-point	3-point	0/2...10 V, 0...5 V, 5...10 V, 0/4...20 mA
Running time	13 s/mm	13 s/mm	8 s/mm

	Δp [bar]					
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VDL010F200 VDL010F201 VDL010F210 VDL010F211 VDL015F200 VDL015F200H VDL015F201 VDL015F210 VDL015F201H VDL015F211 VDL015F220 VDL015F221 VDL020F200 VDL020F201 VDL020F210 VDL020F210H VDL020F211 VDL020F211H VDL020F220 VDL020F221 VDL025F210 VDL025F211	8.0	6.0	8.0	6.0	8.0	6.0
VDL025F200 VDL025F201 VDL032F200	8.0	8.0	8.0	8.0	8.0	8.0
Cannot be used to close with the pressure						

Actuator	**AXT211F110 AXT211F110M AXT211F190 AXT211HF110**	**AXT211F110B**	**AXT211F112 AXT211F112B AXT211F112M AXT211F192 AXT211HF112**
Page	145	145	145
Voltage	230 V~	230 V~	24 V~/=
Control signal	2-point	2-point	2-point
Running time	33 s/mm	33 s/mm	40 s/mm

	Δp [bar]					
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VDL010F200 VDL010F201 VDL010F210 VDL010F211 VDL015F200 VDL015F201 VDL015F210 VDL015F211 VDL015F220 VDL015F221 VDL020F200 VDL020F201 VDL020F210 VDL020F211 VDL020F220 VDL020F221	8.0	6.0	4.0	4.0	8.0	6.0
VDL015F200H VDL015F201H VDL020F210H VDL020F211H VDL025F210 VDL025F211	8.0	6.0	–	–	8.0	6.0
VDL025F200 VDL025F201 VDL032F200	8.0	8.0	–	–	8.0	8.0
Cannot be used to close with the pressure						

In combination with VDL010F20, VDL015F21* and VDL020F20*: The volume flow range is reduced by 10%.*

Actuator	**AXS215SF122** **AXS215SF122B**
Page	149
Voltage	24 V~
Control signal	0...10 V
Running time	30 s/mm

	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_s**
VDL010F200 VDL010F201 VDL010F210 VDL010F211 VDL015F200 VDL015F200H VDL015F201 VDL015F210 VDL015F201H VDL015F211 VDL015F220 VDL015F221 VDL020F200 VDL020F201 VDL020F210 VDL020F210H VDL020F211 VDL020F211H VDL020F220 VDL020F221 VDL025F210 VDL025F211	8.0	6.0
VDL025F200 VDL025F201 VDL032F200	8.0	8.0
Cannot be used to close with the pressure		

In combination with VDL010F20, VDL015F21* and VDL020F20*: The volume flow range is reduced by 10%.*

Actuator	**AVM215F120R**	**AVM215SF132R**
Page	213	215
Voltage	230 V~	24 V~/=
Control signal	2-/3-pt.	0...10 V
Running time	7.5 s/mm	7.5 s/mm

	Δp [bar]			
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VDL040F201 VDL050F201	8.0	8.0	8.0	8.0
Cannot be used to close with the pressure				

Ball valves

The body of the ball valves from SAUTER is made of top-quality DZR brass. This enables the continuous control of cold or hot water in closed circuits, such as in domestic hot water systems. The dezincification-resistant, chrome-plated brass ball with its polished surface ensures the best possible control precision.

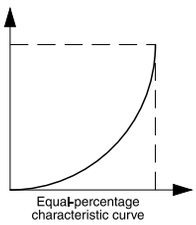
Overview of regulating ball valves

				
Type designation	VKR	VKRA	BKR	BKRA
Application				
Single-room control	•	•	•	•
Preheater for ventilation & air-conditioning	•	•	•	•
Preheater, cooler for ventilation & air-conditioning	•	•	•	•
Reheater for ventilation & air-conditioning	•	•	•	•
Chilled ceiling	•	•	•	•
Static heating	•	•	•	•
Multi-boiler system	•	•	•	•
Local heating	•	•	•	•
Version				
2-way	•	•	–	–
3-way	–	–	•	•
Female thread	•	–	•	–
Male thread	–	•	–	•
Nominal diameter (DN)	15...50	15...50	15...50	15...50
Nominal pressure	PN 40	PN 40	PN 40	PN 40
Combination options with actuator	AKM 105(S) AKM 115(S), AKF 112, AKF 113(S)	AKM 105(S) AKM 115(S) AKF 112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF 112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF 112 AKF 113(S)
Further information	Page 252	Page 256	Page 260	Page 263

Overview of cut-off and changeover ball valves

					
Type designation	VKAI	VKAA	BKLI	BKTI	BKTA
Application					
Single-room control	•	•	•	•	•
Preheater for ventilation & air-conditioning	•	•	•	•	•
Preheater, cooler for ventilation & air-conditioning	•	•	•	•	•
Reheater for ventilation & air-conditioning	•	•	•	•	•
Version					
2-way	•	•	–	–	–
3-way	–	–	•	•	•
Female thread	•	–	•	•	–
Male thread	–	•	–	–	•
Nominal diameter (DN)	15...50	15...50	15...50	15...50	15...50
Nominal pressure	PN 40	PN 40	PN 40	PN 40	PN 40
Combination options with actuator	AKM 105(S) AKM 115(S) AKF 112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF 112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF112 AKF 113(S)	AKM 105(S) AKM 115(S) AKF112 AKF 113(S)
Further information	Page 266	Page 268	Page 270	Page 272	Page 274

VKR040F300



Equal-percentage characteristic curve

VKR: 2-way regulating ball valve with female thread, PN 40

Features

- 2-way regulating ball valve for continuous control of cold and hot water in closed circuits
- In combination with valve actuators AKM 105(S), 115(S) and AKF 112, 113(S) as a control unit
- Equal-percentage ball valve characteristic; control contour in the ball directly integrated
- Characteristic can be set with SUT rotary actuator (SAUTER Universal Technology) to linear or quadratic
- Spindle with large sliding surface and PTFE glide ring
- Low torque due to collar mounted on O-ring
- Ball valve with female thread as per ISO 7/1 Rp or NPT
- Body made of DZR (dezincification-resistant) cast brass
- Spindle made of DZR brass with PTFE glide ring
- Ball made of DZR brass, chrome-plated and polished surface
- Spindle seal with double O-ring made of EPDM
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters

Nominal pressure	40 bar
Valve characteristic	Equal-percentage
Control ratio of ball valve	500:1
Control ratio with actuator	> 50:1
Leakage rate	0.001% of K_{vs} value
Angle of rotation	90°

Ambient conditions

Operating temperature[1)]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C)

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)

Overview of types

Type	Nominal diameter	Connection ISO 7/1 Rp	K_{vs} value	Weight
VKR015F350-FF	DN 15	Rp ½"	1 m³/h	0.29 kg
VKR015F340-FF	DN 15	Rp ½"	1.6 m³/h	0.29 kg
VKR015F330-FF	DN 15	Rp ½"	2.5 m³/h	0.29 kg
VKR015F320-FF	DN 15	Rp ½"	4 m³/h	0.29 kg
VKR015F310-FF	DN 15	Rp ½"	6.3 m³/h	0.29 kg
VKR015F300-FF	DN 15	Rp ½"	10 m³/h	0.29 kg
VKR020F320-FF	DN 20	Rp ¾"	4 m³/h	0.32 kg
VKR020F310-FF	DN 20	Rp ¾"	6.3 m³/h	0.32 kg
VKR020F300-FF	DN 20	Rp ¾"	10 m³/h	0.32 kg
VKR025F320-FF	DN 25	Rp 1"	6.3 m³/h	0.49 kg
VKR025F310-FF	DN 25	Rp 1"	10 m³/h	0.49 kg
VKR025F300-FF	DN 25	Rp 1"	16 m³/h	0.49 kg
VKR032F320-FF	DN 32	Rp 1¼"	10 m³/h	0.73 kg

[1)] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Type	Nominal diameter	Connection ISO 7/1 Rp	K_{vs} value	Weight
VKR032F310-FF	DN 32	Rp 1¼"	16 m³/h	0.73 kg
VKR032F300-FF	DN 32	Rp 1¼"	25 m³/h	0.73 kg
VKR040F320-FF	DN 40	Rp 1½"	16 m³/h	1.1 kg
VKR040F310-FF	DN 40	Rp 1½"	25 m³/h	1.1 kg
VKR040F300-FF	DN 40	Rp 1½"	40 m³/h	1.1 kg
VKR050F320-FF	DN 50	Rp 2"	25 m³/h	1.76 kg
VKR050F310-FF	DN 50	Rp 2"	40 m³/h	1.76 kg
VKR050F300-FF	DN 50	Rp 2"	63 m³/h	1.76 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of VKR with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the ball valve) at which the actuator reliably closes the ball valve using the return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Pressure differences

Actuator	AKM105F100 AKM105F120	AKM105F122	AKM105SF132	AKM115F120	AKM115F122	AKM115SF132	AKM115SF152
Page	282	282	285	282	98	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30/120 s	30/120 s	35/60/120 s	120 s	120 s	35/60/120 s	6 s
Operating voltage	230 V~	24 V~	24 V~/V=	230 V~	24 V~	24 V~/V=	24 V~/V=

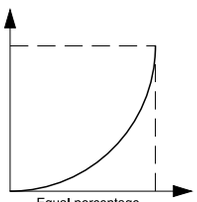
	Δp [bar]						
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VKR015F350-FF VKR015F340-FF VKR015F330-FF VKR015F320-FF VKR015F310-FF VKR015F300-FF VKR020F320-FF VKR020F310-FF VKR020F300-FF VKR025F320-FF VKR025F310-FF VKR025F300-FF	1.8	1.8	1.8	3.5	3.5	3.5	3.5
VKR032F320-FF VKR032F310-FF VKR032F300-FF VKR040F320-FF VKR040F310-FF VKR040F300-FF VKR050F320-FF VKR050F310-FF VKR050F300-FF	1.2	1.2	1.2	2.4	2.4	2.4	2.4

Cannot be used to close with the pressure

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VKR015F350-FF VKR015F340-FF VKR015F330-FF VKR015F320-FF VKR015F310-FF VKR015F300-FF VKR020F320-FF VKR020F310-FF VKR020F300-FF VKR025F320-FF VKR025F310-FF VKR025F300-FF	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4
VKR032F320-FF VKR032F310-FF VKR032F300-FF VKR040F320-FF VKR040F310-FF VKR040F300-FF VKR050F320-FF VKR050F310-FF VKR050F300-FF	2.4	3.5	2.4	3.5	2.4	3.5	2.4	3.5
Cannot be used to close with the pressure								

VKRA0**F300



VKRA: 2-way regulating ball valve with male thread, PN 40

Features

- 2-way regulating ball valve for continuous control of cold and hot water in closed circuits
- In combination with valve actuators AKM 105(S), 115(S) and AKF 112, 113(S) as a control unit
- Equal-percentage ball valve characteristic; control contour in the ball directly integrated
- Characteristic can be set with SUT rotary actuator (SAUTER Universal Technology) to linear or quadratic
- Spindle with large sliding surface and PTFE glide ring
- Low torque due to collar mounted on O-ring
- Ball valve with male thread as per ISO 228-1 G..B
- Body made of DZR (dezincification-resistant) cast brass
- Spindle made of DZR brass with PTFE glide ring
- Ball made of DZR brass, chrome-plated and polished surface
- Spindle seal with double O-ring made of EPDM
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters

Nominal pressure	40 bar
Valve characteristic	Equal-percentage
Control ratio of ball valve	500:1
Control ratio with actuator	> 50:1
Leakage rate	Waterproof as per EN 60534-4 L/1, better than class 5
Angle of rotation	90°

Ambient conditions

Operating temperature[1)]	−10...130 °C, no condensation
Operating pressure	Liquids: 40 bar (-10...50 °C), 35 bar Gases: 20 bar

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)

Overview of types

Type	Nominal diameter	Connection ISO 228-1	K_{vs} value	Weight
VKRA015F350	DN 15	G 1" B	1 m³/h	0.36 kg
VKRA015F340	DN 15	G 1" B	1.6 m³/h	0.36 kg
VKRA015F330	DN 15	G 1" B	2.5 m³/h	0.36 kg
VKRA015F320	DN 15	G 1" B	4 m³/h	0.36 kg
VKRA015F310	DN 15	G 1" B	6.3 m³/h	0.36 kg
VKRA020F320	DN 20	G 1¼" B	4 m³/h	0.44 kg
VKRA020F310	DN 20	G 1¼" B	6.3 m³/h	0.44 kg
VKRA020F300	DN 20	G 1¼" B	10 m³/h	0.44 kg
VKRA025F320	DN 25	G 1½" B	6.3 m³/h	0.57 kg
VKRA025F310	DN 25	G 1½" B	10 m³/h	0.57 kg
VKRA025F300	DN 25	G 1½" B	16 m³/h	0.57 kg
VKRA032F320	DN 32	G 2" B	10 m³/h	0.84 kg

[1)] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Type	Nominal diameter	Connection ISO 228-1	K_{vs} value	Weight
VKRA032F310	DN 32	G 2" B	16 m³/h	0.84 kg
VKRA032F300	DN 32	G 2" B	25 m³/h	0.84 kg
VKRA040F320	DN 40	G 2¼" B	16 m³/h	1.29 kg
VKRA040F310	DN 40	G 2¼" B	25 m³/h	1.29 kg
VKRA040F300	DN 40	G 2¼" B	40 m³/h	1.29 kg
VKRA050F320	DN 50	G 2¾" B	25 m³/h	1.98 kg
VKRA050F310	DN 50	G 2¾" B	40 m³/h	1.98 kg
VKRA050F300	DN 50	G 2¾" B	63 m³/h	1.98 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0361951020	1 screw fitting for male thread with flat seal, G1¼ - Rp¾
0361951025	1 screw fitting for male thread with flat seal, G1½ - Rp1
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of VKRA with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the ball valve) at which the actuator reliably closes the ball valve using the return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Pressure differences

Actuator	AKM105F100 AKM105F120	AKM105F122	AKM105SF132	AKM115F120	AKM115F122	AKM115SF132	AKM115SF152
Page	282	282	285	282	98	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30/120 s	30/120 s	35/60/120 s	120 s	120 s	35/60/120 s	6 s
Operating voltage	230 V~	24 V~	24 V~/V=	230 V~	24 V~	24 V~/V=	24 V~/V=

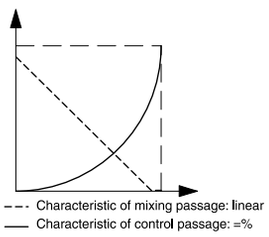
	Δp [bar]						
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VKRA015F350 VKRA015F340 VKRA015F330 VKRA015F320 VKRA015F310 VKRA020F320 VKRA020F310 VKRA020F300 VKRA025F320 VKRA025F310 VKRA025F300	1.8	1.8	1.8	3.5	3.5	3.5	3.5
VKRA032F320 VKRA032F310 VKRA032F300 VKRA040F320 VKRA040F310 VKRA040F300 VKRA050F320 VKRA050F310 VKRA050F300	1.2	1.2	1.2	2.4	2.4	2.4	2.4

Cannot be used to close with the pressure

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VKRA015F350 VKRA015F340 VKRA015F330 VKRA015F320 VKRA015F310 VKRA020F320 VKRA020F310 VKRA020F300 VKRA025F320 VKRA025F310 VKRA025F300	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4
VKRA032F320 VKRA032F310 VKRA032F300 VKRA040F320 VKRA040F310 VKRA040F300 VKRA050F320 VKRA050F310 VKRA050F300	2.4	3.5	2.4	3.5	2.4	3.5	2.4	3.5
Cannot be used to close with the pressure								

BKR025F310



BKR: 3-way regulating ball valve with female thread, PN 40

Features

- 3-way regulating ball valve for continuous control of cold and hot water in closed circuits
- As a control unit in combination with valve actuators AKM105(S), 115(S) and AKF112, 113(S)
- Control contour integrated directly in the ball
- Control passage characteristic can be set to linear or quadratic with SUT rotary actuator
- Low torque due to collar mounted on O-ring
- Spindle with large sliding surface and PTFE ring
- Ball valve with female thread as per ISO 7/1 Rp or NPT
- Body made of DZR (dezincification-resistant) cast brass
- Spindle made of DZR brass with PTFE glide ring
- Ball made of DZR brass, chrome-plated and polished surface
- Spindle seal with double O-ring made of EPDM
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters

Nominal pressure	40 bar
K_{vs} value, mixing passage	-10...-30% through the control passage
Valve characteristic, control passage	Equal-percentage
Valve characteristic, mixing passage	Linear
Control ratio of ball valve	500:1
Control ratio with actuator	Approx. 50:1
Leakage rate, control passage	0.001% of K_{vs} value
Leakage rate, mixing passage	< 1%
Angle of rotation	90°

Ambient conditions

Operating temperature[1)]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C)

Overview of types

Type	Nominal diameter	Connection ISO 7/1 Rp	K_{vs} value, control passage	Weight
BKR015F340-FF	DN 15	Rp ½"	1.6 m³/h	0.31 kg
BKR015F330-FF	DN 15	Rp ½"	2.5 m³/h	0.31 kg
BKR015F320-FF	DN 15	Rp ½"	4 m³/h	0.31 kg
BKR015F310-FF	DN 15	Rp ½"	6.3 m³/h	0.33 kg
BKR020F320-FF	DN 20	Rp ¾"	4 m³/h	0.4 kg
BKR020F310-FF	DN 20	Rp ¾"	6.3 m³/h	0.4 kg
BKR025F310-FF	DN 25	Rp 1"	10 m³/h	0.63 kg
BKR032F310-FF	DN 32	Rp 1¼"	16 m³/h	0.97 kg
BKR040F310-FF	DN 40	Rp 1½"	25 m³/h	1.4 kg
BKR050F310-FF	DN 50	Rp 2"	40 m³/h	2.67 kg

[1)] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of BKR with electrical actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

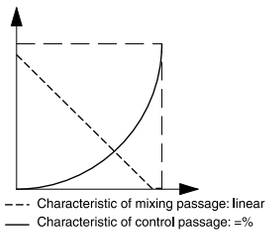
Actuator	AKM105F100 AKM105F120	AKM105F122	AKM115F120	AKM115F122	AKM105SF132	AKM115SF132	AKM115SF152
Page	282	282	282	98	285	98	287
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm	4 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30/120 s	30/120 s	120 s	120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	230 V~	24 V~	230 V~	24 V~	24 V~/V=	24 V~/V=	24 V~/V=
	Δp [bar]						
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BKR015F340-FF BKR015F330-FF BKR015F320-FF BKR015F310-FF BKR020F320-FF BKR020F310-FF BKR025F310-FF	1.8	1.8	2.0	2.0	1.8	2.0	2.0
BKR032F310-FF BKR040F310-FF BKR050F310-FF	1.2	1.2	2.0	2.0	1.2	2.0	2.0
Cannot be used as distribution valve							

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
As control valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BKR015F340-FF BKR015F330-FF BKR015F320-FF BKR015F310-FF BKR020F320-FF BKR020F310-FF BKR025F310-FF	2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4
BKR032F310-FF BKR040F310-FF BKR050F310-FF	2.0	3.5	2.0	3.5	2.0	3.5	2.0	3.5
Cannot be used as distribution valve								

BKRA: 3-way regulating ball valve with male thread, PN 40

BKRA0**F3*0



Features

- 3-way regulating ball valve for continuous control of cold and hot water in closed circuits
- As a control unit in combination with valve actuators AKM105(S), 115(S) and AKF112, 113(S)
- Control contour integrated directly in the ball
- Control passage characteristic can be set to linear or quadratic with SUT rotary actuator
- Low torque due to collar mounted on O-ring
- Spindle with large sliding surface and PTFE ring
- Ball valve with male thread as per ISO 228-1 G..B
- Body made of DZR (dezincification-resistant) cast brass
- Spindle made of DZR brass with PTFE glide ring
- Ball made of DZR brass, chrome-plated and polished surface
- Spindle seal with double O-ring made of EPDM
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters	
Nominal pressure	40 bar
K_{vs} value, mixing passage	-10...-30% through the control passage
Valve characteristic, control passage	Equal-percentage
Valve characteristic, mixing passage	Linear
Control ratio of ball valve	500:1
Control ratio with actuator	Approx. 50:1
Leakage rate, control passage	Waterproof as per EN 60534-4 L/1, better than class 4
Leakage rate, mixing passage	< 1% of the K_{vs} value
Angle of rotation	90°

Ambient conditions	
Operating temperature[1)]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C) Gases: 20 bar

Overview of types

Type	Nominal diameter	Connection ISO 228-1	K_{vs} value, control passage	Weight
BKRA015F340	DN 15	G 1" B	1.6 m³/h	0.41 kg
BKRA015F330	DN 15	G 1" B	2.5 m³/h	0.41 kg
BKRA015F320	DN 15	G 1" B	4 m³/h	0.41 kg
BKRA015F310	DN 15	G 1" B	6.3 m³/h	0.45 kg
BKRA020F320	DN 20	G 1¼" B	4 m³/h	0.52 kg
BKRA020F310	DN 20	G 1¼" B	6.3 m³/h	0.4 kg
BKRA025F310	DN 25	G 1½" B	10 m³/h	0.75 kg
BKRA032F310	DN 32	G 2" B	16 m³/h	1.2 kg
BKRA040F310	DN 40	G 2¼" B	25 m³/h	1.84 kg
BKRA050F310	DN 50	G 2¾" B	40 m³/h	2.83 kg

[1)] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0361951020	1 screw fitting for male thread with flat seal, G1¼ - Rp¾
0361951025	1 screw fitting for male thread with flat seal, G1½ - Rp1
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of BKRA with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	AKM105F100 AKM105F120	AKM105F122	AKM115F120	AKM115F122	AKM105SF132	AKM115SF132	AKM115SF152
Page	282	282	282	98	285	98	287
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm	4 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30/120 s	30/120 s	120 s	120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	230 V~	24 V~	230 V~	24 V~	24 V~/V=	24 V~/V=	24 V~/V=
	Δp [bar]						
As control valve	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BKRA015F340 BKRA015F330 BKRA015F320 BKRA015F310 BKRA020F320 BKRA020F310 BKRA025F310	1.8	1.8	2.0	2.0	1.8	2.0	2.0
BKRA032F310 BKRA040F310 BKRA050F310	1.2	1.2	2.0	2.0	1.2	2.0	2.0

Cannot be used as distribution valve

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
As control valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BKRA015F340 BKRA015F330 BKRA015F320 BKRA015F310 BKRA020F320 BKRA020F310 BKRA025F310	2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4
BKRA032F310 BKRA040F310	2.0	3.5	2.0	3.5	2.0	3.5	2.0	3.5
BKRA050F310	1.0	3.5	2.0	3.5	2.0	3.5	2.0	3.5
Cannot be used as distribution valve								

VKAI040F300

VKAI: 2-way cut-off ball valve with female thread, PN 40

Features

- 2-way cut-off ball valve for use in closed circuits in heating, ventilation and air conditioning systems
- As a cut-off device and control unit for 2-point control in combination with valve actuators AKM 105(S), 115(S) and AKF 112, 113(S)
- Fast changeover in 6 s with valve actuator AKM115SF152
- Low torque due to collar mounted on O-ring
- Ball valve with female thread as per ISO 7/1 Rp
- Body made of dezincification-resistant cast brass
- Ball made of dezincification-resistant brass, chrome-plated and polished surface
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters

Nominal pressure	40 bar
Leakage rate	0.0001 x K_{vs} value
Angle of rotation	90°

Ambient conditions

Operating temperature[1]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C)

Overview of types

Type	Nominal diameter (DN)	Connection ISO 7/1 Rp	K_{vs} value	Weight
VKAI015F300	DN 15	Rp ½"	15 m^3/h	0.275 kg
VKAI020F300	DN 20	Rp ¾"	22 m^3/h	0.37 kg
VKAI025F300	DN 25	Rp 1"	22 m^3/h	0.456 kg
VKAI032F300	DN 32	Rp 1¼"	35 m^3/h	0.7 kg
VKAI040F300	DN 40	Rp 1½"	68 m^3/h	1.12 kg
VKAI050F300	DN 50	Rp 2"	96 m^3/h	1.75 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1

[1] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Type	Description
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of VKAI with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Actuator	AKM105F100	AKM105F120	AKM105F122	AKM105SF132	AKM115F120	AKM115F122	AKM115SF132	AKM115SF152
Page	282	282	282	285	282	98	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30 s	120 s	120 s	35/60/120 s	120 s	120 s	35/60/120 s	6 s
Operating voltage	230 V~	230 V~	24 V~	24 V~/V=	230 V~	24 V~	24 V~/V=	24 V~/V=
	Δp [bar]							
	Δp_{max}	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VKAI015F300 VKAI020F300 VKAI025F300	1.8	1.8	1.8	1.8	3.5	3.5	3.5	3.5
VKAI032F300 VKAI040F300 VKAI050F300	1.2	1.2	1.2	1.2	2.4	2.4	2.4	2.4

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
VKAI015F300 VKAI020F300 VKAI025F300	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4
VKAI032F300 VKAI040F300 VKAI050F300	2.4	5.4	2.4	5.4	2.4	5.4	2.4	5.4

VKAA0**F300

VKAA: 2-way cut-off ball valve with male thread, PN 40

Features

- 2-way cut-off ball valve for use in closed circuits in heating, ventilation and air conditioning systems
- As a cut-off device and control unit for 2-point control in combination with valve actuators AKM 105(S), 115(S) and AKF 112, 113(S)
- Fast changeover in 6 s with valve actuator AKM115SF152
- Low torque due to collar mounted on O-ring
- Ball valve with male thread as per ISO 228-1 G..B
- Body made of dezincification-resistant cast brass
- Ball made of dezincification-resistant brass, chrome-plated and polished surface
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters	
Nominal pressure	40 bar
Leakage rate	Waterproof as per EN 60534-4 L/1, better than class 5
Angle of rotation	90°

Ambient conditions	
Operating temperature	−10...130 °C, no condensation
Operating pressure	Liquids: 40 bar (-10...50 °C) 35 bar (130 °C) Gases: 20 bar

Overview of types

Type	Nominal diameter (DN)	Connection ISO 228-1	K_{vs} value	Weight
VKAA015F300	DN 15	G 1" B	9 m^3	0.36 kg
VKAA020F300	DN 20	G 1¼" B	17 m^3	0.55 kg
VKAA025F300	DN 25	G 1½" B	22 m^3	0.57 kg
VKAA032F300	DN 32	G 2" B	35 m^3	0.84 kg
VKAA040F300	DN 40	G 2¼" B	68 m^3	1.29 kg
VKAA050F300	DN 50	G 2¾" B	96 m^3	1.98 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0361951020	1 screw fitting for male thread with flat seal, G1¼ - Rp¾
0361951025	1 screw fitting for male thread with flat seal, G1½ - Rp1
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0560332015	Strainer in gun metal, −10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, −10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, −10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, −10...150 °C, mesh aperture 0.8 mm, G1¼

Type	Description
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of VKAA with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Actuator	AKM105F100	AKM105F120	AKM105F122	AKM105SF132	AKM115F120	AKM115F122	AKM115SF132	AKM115SF152
Page	282	282	282	285	282	98	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30 s	120 s	120 s	35/60/120 s	120 s	120 s	35/60/120 s	6 s
Operating voltage	230 V~	230 V~	24 V~	24 V~/V=	230 V~	24 V~	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
VKAA015F300 VKAA020F300 VKAA025F300	1.8	1.8	1.8	1.8	3.5	3.5	3.5	3.5
VKAA032F300 VKAA040F300 VKAA050F300	1.2	1.2	1.2	1.2	2.4	2.4	2.4	2.4

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VKAA015F300 VKAA020F300 VKAA025F300	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4
VKAA032F300 VKAA040F300 VKAA050F300	2.4	5.4	2.4	5.4	2.4	5.4	2.4	5.4

BKLI: 3-way change-over ball valve (L) with female thread, PN 40

BKLI025F300

Features

- 3-way change-over ball valve with L-bore for use in closed circuits in heating, ventilation and air conditioning systems
- For changing over volume flows in combination with valve actuators AKM 105(S), 115(S) and AKF112, 113(S).
- Fast changeover in 6 s with valve actuator AKM115SF152
- Low torque due to collar mounted on O-ring
- Spindle with friction ring and double O-ring seal
- Ball valve with female thread as per ISO 7/1 Rp
- Body made of dezincification-resistant cast brass
- Ball made of dezincification-resistant brass, chrome-plated and polished surface
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035
- French drinking water approval ACS

Technical data

Parameters	
Nominal pressure	40 bar
Leakage rate, through passage	0.0001 x K_{vs} value
Leakage rate, bypass	0.0001 x K_{vs} value
Angle of rotation	90°

Ambient conditions	
Operating temperature[1]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C)

Overview of types

Type	Nominal diameter (DN)	Connection ISO 7/1 Rp	K_{vs} value, control passage	Weight
BKLI015F300	DN 15	Rp ½"	5 m³/h	0.306 kg
BKLI020F300	DN 20	Rp ¾"	9 m³/h	0.375 kg
BKLI025F300	DN 25	Rp 1"	9 m³/h	0.604 kg
BKLI032F300	DN 32	Rp 1¼"	13 m³/h	0.949 kg
BKLI040F300	DN 40	Rp 1½"	25 m³/h	1.364 kg
BKLI050F300	DN 50	Rp 2"	37 m³/h	2.215 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40

[1] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Type	Description
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of BKLI with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Actuator	AKM105F100	AKM105F120	AKM105F122	AKM115F120	AKM115F122	AKM105SF132	AKM115SF132	AKM115SF152
Page	282	282	282	282	98	285	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	4 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30 s	120 s	120 s	120 s	120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	230 V~	230 V~	24 V~	230 V~	24 V~	24 V~/V=	24 V~/V=	24 V~/V=
	Δp [bar]							
	Δp_{max}	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BKLI015F300 BKLI020F300 BKLI025F300	1.8	1.8	1.8	2.0	2.0	1.8	2.0	2.0
BKLI032F300 BKLI040F300 BKLI050F300	1.2	1.2	1.2	2.0	2.0	1.2	2.0	2.0

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=
	Δp [bar]			
	Δp_{max}	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BKLI015F300 BKLI020F300 BKLI025F300 BKLI032F300 BKLI040F300 BKLI050F300	2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4

BKTI: 3-way change-over ball valve (T) with female thread, PN 40

BKTI025F300

Features

- 3-way change-over ball valve with T-bore for use in closed circuits in heating, ventilation and air conditioning systems
- For changing over volume flows in combination with valve actuators AKM 105(S), 115(S) and AKF112, 113(S).
- Fast changeover in 6 s with valve actuator AKM115SF152
- Low torque due to collar mounted on O-ring
- Spindle with friction ring and double O-ring seal
- Ball valve with female thread as per ISO 7/1 Rp
- Body made of dezincification-resistant cast brass
- Ball made of dezincification-resistant brass, chrome-plated and polished surface
- Strainer and screw fitting available as accessories
- Water quality as per VDI2035
- French drinking water approval ACS

Technical data

Parameters	
Nominal pressure	40 bar
Leakage rate, through passage	0.0001 x K_{vs} value
Leakage rate, bypass	< 0.01 x K_{vs} value
Angle of rotation	90°

Ambient conditions	
Operating temperature[1]	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C)

Overview of types

Type	Nominal diameter	Connection ISO 7/1 Rp	K_{vs} value, control passage	Weight
BKTI015F300	DN 15	Rp ½"	12 m³/h	0.306 kg
BKTI020F300	DN 20	Rp ¾"	16 m³/h	0.375 kg
BKTI025F300	DN 25	Rp 1"	16 m³/h	0.604 kg
BKTI032F300	DN 32	Rp 1¼"	25 m³/h	0.949 kg
BKTI040F300	DN 40	Rp 1½"	49 m³/h	1.364 kg
BKTI050F300	DN 50	Rp 2"	73 m³/h	2.215 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40

[1] *At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.*

Type	Description
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of BKTI with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Actuator	AKM105F100	AKM105F120	AKM105F122	AKM115F120	AKM115F122	AKM105SF132	AKM115SF132	AKM115SF152
Page	282	282	282	282	98	285	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	4 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30 s	120 s	120 s	120 s	120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	230 V~	230 V~	24 V~	230 V~	24 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
BKTI015F300 BKTI020F300 BKTI025F300	1.8	1.8	1.8	2.0	2.0	1.8	2.0	2.0
BKTI032F300 BKTI040F300 BKTI050F300	1.2	1.2	1.2	2.0	2.0	1.2	2.0	2.0

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BKTI015F300 BKTI020F300 BKTI025F300 BKTI032F300 BKTI040F300 BKTI050F300	2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4

BKTA: 3-way change-over ball valve (T) with male thread, PN 40

BKTA0**F300

Features

- 3-way change-over ball valve with T-bore for use in closed circuits in heating, ventilation and air conditioning systems
- For changing over volume flows in combination with valve actuators AKM 105(S), 115(S) and AKF112, 113(S).
- Fast changeover in 6 s with valve actuator AKM115SF152
- Low torque due to collar mounted on O-ring
- Spindle with friction ring and double O-ring seal
- Ball valve with male thread as per ISO 228-1 G..B
- Body made of dezincification-resistant cast brass
- Ball made of dezincification-resistant brass, chrome-plated and polished surface
- Strainer and screw fitting available as accessories
- Water quality as per VDI2035
- French drinking water approval ACS

Technical data

Parameters	
Nominal pressure	40 bar
Leakage rate, through passage	Waterproof as per EN 60534-4 L/1, better than class 4
Leakage rate, bypass	< 1% of the K_{vs} value
Angle of rotation	90°

Ambient conditions	
Operating temperature	−10...130 °C, no condensation
Operating pressure	40 bar (-10...50 °C) 35 bar (130 °C) Gases: 20 bar

Overview of types

Type	Nominal diameter	Connection ISO 228-1	K_{vs} value, control passage	Weight
BKTA015F300	DN 15	G 1" B	8 m³/h	0.45 kg
BKTA020F300	DN 20	G 1¼" B	13 m³/h	0.68 kg
BKTA025F300	DN 25	G 1½" B	13 m³/h	0.75 kg
BKTA032F300	DN 32	G 2" B	25 m³/h	1.2 kg
BKTA040F300	DN 40	G 2¼" B	49 m³/h	1.84 kg
BKTA050F300	DN 50	G 2¾" B	73 m³/h	2.83 kg

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B
0510240011	Adaptor required when temperature of the medium < 5 °C
0510420001	Adaptor required when temperature of the medium > 100 °C
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0361951020	1 screw fitting for male thread with flat seal, G1¼ - Rp¾
0361951025	1 screw fitting for male thread with flat seal, G1½ - Rp1
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50

Type	Description
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1
0560332032	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1¼
0560332040	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1½
0560332050	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G2

Combination of BKTA with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.*

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Actuator	AKM105F100	AKM105F120	AKM105F122	AKM105SF132	AKM115F120	AKM115F122	AKM115SF132	AKM115SF152
Page	282	282	282	285	282	98	98	287
Rotational torque	4 Nm	4 Nm	4 Nm	4 Nm	8 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-pt., 0...10 V, 4...20 mA
Running time	30 s	120 s	120 s	35/60/120 s	120 s	120 s	35/60/120 s	6 s
Operating voltage	230 V~	230 V~	24 V~	24 V~/V=	230 V~	24 V~	24 V~/V=	24 V~/V=
	Δp [bar]							
	Δp_{max}	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
BKTA015F300 BKTA020F300 BKTA025F300	1.8	1.8	1.8	1.8	2.0	2.0	2.0	2.0
BKTA032F300 BKTA040F300 BKTA050F300	1.2	1.2	1.2	1.2	2.0	2.0	2.0	2.0

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
BKTA015F300 BKTA020F300 BKTA025F300 BKTA032F300 BKTA040F300 BKTA050F300	2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4

6-way ball valves

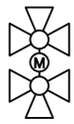
The 6-way ball valve from SAUTER is a compact and precise alternative for regulating heated/chilled ceilings and fan coils in 4-pipe systems. It doubles as a regulating and changeover ball valve. While conventional solutions operate with up to four 2-way valves, four actuators and two controllers, now only one 6-way ball valve and an actuator are required. Their compact construction enables the devices to be installed in false ceilings without difficulty.

Overview of 6-way ball valves

Type designation	B2KL
Application	
Single-room control	•
Preheater for ventilation & air-conditioning	•
Preheater, cooler for ventilation & air-conditioning	•
Reheater for ventilation & air-conditioning	•
Chilled ceiling	•
Static heating	•
Multi-boiler system	•
Local heating	•
Version	
Nominal pressure	PN 16
Combination options with actuator	AKM 115(S) AKM 112, AKF 113(S)
Further information	Page 277

B2KL: 6-way ball valve with male thread, PN 16

B2KL015F400



Features

- 6-way ball valve for changeover or steady control of heating and cooling circuits in a 4-pipe system
- Body made of moulded brass CW602N (dezincification-resistant) or CW617N
- With male thread as per ISO 228
- K_{vs} selection with exchangeable orifice plates
- In combination with valve actuators AKM 115(S) and AKF 112, 113(S) as a control unit
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035

Technical data

Parameters		
	Nominal pressure	PN16
	Valve characteristic	Quasi-linear
	Leakage rate	Class A as per EN 12266-1
	Total angle of rotation	90° (valve closed at 45°)
Ambient conditions		
	Operating temperature	5...90 °C
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, page 3
	PED 2014/68/EU	Fluid group II, liquid No CE label as per article 4.3

Overview of types

Type	Nominal diameter	Connection	K_{vs} value without orifice plate	Material	Weight
B2KL015F401	DN 15	G¾"B	1.25 m³/h	Moulded brass CW602N	0.98 kg
B2KL015F400	DN 15	G¾"B	1.25 m³/h	Moulded brass CW617N	0.98 kg
B2KL020F411	DN 20	G¾"B	2.8 m³/h	Moulded brass CW602N	1.87 kg
B2KL020F400	DN 20	G1"B	4.25 m³/h	Moulded brass CW617N	1.77 kg

K_{vs} value without orifice plate. K_{vs} values can be adapted using orifice plates.

Orifice plates for setting the K_{vs} value

Orifice plates for B2KL015F400 and B2KL015F401	
K_{vs} value	Part number
0.25 m³/h	Set 0589540001 Delivered with 6-way ball valve
0.4 m³/h	
0.63 m³/h	
1 m³/h	

Orifice plates for B2KL020F411	
K_{vs} value	Part number
0.7 m^3/h	Set 0589540002 Delivered with 6-way ball valve
1 m^3/h	
1.6 m^3/h	
2.1 m^3/h	

Orifice plates for B2KL020F400	
K_{vs} value	Part number
0.25 m^3/h	0580240102
0.4 m^3/h	0580240104
0.65 m^3/h	0580240106
1 m^3/h	0580240110
1.3 m^3/h	0580240113
1.6 m^3/h	0580240116
2.5 m^3/h	0580240125
3.45 m^3/h	0580240134

Accessories

Type	Description
0378133015	1 threaded sleeve, R½", flat-sealing, with cap nut and flat seal, G¾ - R½
0378133020	1 threaded sleeve, R¾", flat-sealing, with cap nut and flat seal, G1 - R¾
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G¾
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp½
0580240002	Insulation shell for B2KL015F4**
0580240003	Insulation shell for B2KL020F411
0378133115	2 flat-sealing screw fittings G1"-G½"
0378133120	2 flat-sealing screw fittings G1"-G¾"
0378133125	2 flat-sealing screw fittings G1"-G1"
0580090001	Pliers for changing orifice plate on B2KL015F4** and B2KL020F411
0580240001	Fitting bracket for B2KL015F4** and B2KL020F411
0560332015	Strainer in gun metal, –10...150 °C, mesh aperture 0.5 mm, G½
0560332020	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G¾
0560332025	Strainer in gun metal, –10...150 °C, mesh aperture 0.8 mm, G1

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

***Definition of Δp_s:** Maximum admissible pressure drop in the event of a malfunction (pipe break after the ball valve) at which the actuator reliably closes the ball valve using the return spring.*

***Definition of Δp_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Actuator	AKM115F120	AKM115F122	AKM115SF132
Page	282	98	98
Rotational torque	8 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V
Running time	120 s	120 s	35/60/120 s
Operating voltage	230 V~	24 V~	24 V~/V=

	Δp [bar]		
	Δp_{max}	Δp_{max}	Δp_{max}
B2KL015F401 B2KL015F400 B2KL020F411 B2KL020F400	2.0	2.0	2.0

Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Page	288	288	288	289
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

	Δp [bar]							
	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
B2KL015F401 B2KL015F400 B2KL020F411 B2KL020F400	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Actuators for ball valves

SAUTER actuators for ball valves adapt themselves automatically to the ball valves and enable them to be controlled accurately. The actuators are switched off as a function of the torque. These SAUTER actuators are suitable for operating 2- and 3-way ball valves. Furthermore, they can be used for controllers with switching or continuous outputs.

Overview of actuators for ball valves

			
Type designation	AKM 105, 115	AKM105SF132 AKM115SF132	AKM115SF152
Technical data			
Adjustable characteristic	Equal-percentage	Equal-percentage, linear, quadratic	Equal-percentage, linear, quadratic
Running time (s)	30, 120	35, 60, 120	6
Return time (s)	–	–	–
Power supply (V)	24, 230	24	24
Control			
2-point	•	•	•
3-point	•	•	•
Positioner	–	•	•
High-speed	–	–	•
Spring return	–	–	–
Combination options with ball valve	VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL
Further information	Page 282	Page 284	Page 286

		
Type designation	AKF 112, 113	AKF 113S
Technical data		
Adjustable characteristic	–	–
Running time (s)	90	90
Return time (s)	15	15
Power supply (V)	24, 230	24, 230
Control		
2-point	•	•
3-point	•	•
Positioner	–	•
High-speed	–	–
Spring return	•	•
Combination options with ball valve	VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL
Further information	Page 288	Page 289

AKM115F12

AKM 105, 115: Rotary actuator for ball valve

Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, (AKM115) and 6-way ball valve B2KL
- For controllers with a switching output (2-/3-point control)
- Assembly with ball valves without the use of tools
- Synchronous motor with electronic activation and cut-out
- Maintenance-free gear unit
- Gear unit can be disengaged in order to position the ball valve manually (using the lever)
- Bracket and bayonet ring made of glass-fibre-reinforced plastic for fitting onto ball valve
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 230 V~	±15%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
Parameters		
	Power cable	1.2 m, 3 × 0.75 mm^2
	Response time	Min. 200 ms
	Angle of rotation	90°
Ambient conditions		
	Admissible ambient temperature	–10...55 °C
	Admissible ambient humidity	5...95% rh, no condensation
	Temperature of medium[1]	Max. 100 °C
Function		
	Control	2-/3-point
Construction		
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
Standards and directives		
	Type of protection[2]	IP54 (EN 60529), horizontal
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
	Over-voltage categories	III
	Degree of contamination	II
CE conformity according to	Directive 2006/95/EC	EN 60730-1/EN 60730-2-14
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Voltage	Running time	Rotational torque	Power consumption
AKM105F100	230 V~	30 s	4 Nm	2.4 W, 4.5 VA
AKM105F120	230 V~	120 s	4 Nm	2.0 W, 4.0 VA
AKM105F122	24 V~	120 s	4 Nm	1.6 W, 1.7 VA
AKM115F120	230 V~	120 s	8 Nm	2.0 W, 4.0 VA
AKM115F122	24 V~	120 s	8 Nm	1.6 W, 1.7 VA

[1] *At media temperatures < 5 °C or > 100 °C, appropriate accessory must be used*
[2] *See fitting instructions P100001578*

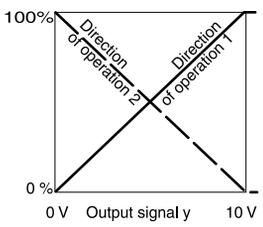
Accessories

Type	Description
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or drives with limit switch, incl. junction box
0510420001	Adaptor required when temperature of the medium > 100 °C
0510240011	Adaptor required when temperature of the medium < 5 °C
0510480001	Auxiliary change-over contacts, single
0510480002	Auxiliary change-over contacts, double

Auxiliary change-over contacts: Infinitely variable 0...100%, admissible load 5(2) A, 24...230 V

AKM 105S, 115S: Rotary actuator with SAUTER Universal Technology (SUT) for ball valve

AKM115SF132



Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, (AKM115S) and 6-way ball valve B2KL
- For controllers with constant output (0...10 V) or switching output (2-/3-point control)
- Assembly with ball valve without the use of tools
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit
- Electronic force-dependent motor cut-off
- Automatic recognition of applied control signal (continuous or switched)
- Coding switch for selection of characteristic and running time (35 s, 60 s, 120 s)
- Type of characteristic (linear/quadratic/equal-percentage) can be set on the actuator
- Direction of operation can be selected directly on the cable
- Maintenance-free gear unit
- Gear unit can be disengaged in order to position the ball valve manually (using the lever)
- Bracket and bayonet ring made of glass-fibre-reinforced plastic for fitting onto ball valve

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	-10%...20%
	Power consumption	4.9 W/8.7 VA
Parameters		
	Running time[1]	35/60/120 s
	Angle of rotation	90°
	Response time	200 ms
	Power cable	1.2 m, 5 × 0.5 mm^2
Positioner	Positioning signal y	0...10 V, R_i > 100 kΩ
	Positional feedback signal	0...10 V; load > 10 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Temperature of medium[2]	Max. 100 °C
	Admissible ambient temperature	-10...55 °C
	Admissible ambient humidity	5...95% rh, no condensation
Construction		
	Fitting	Vertically upright to horizontal, not upside down
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
Standards and directives		
	Type of protection	IP54 as per EN 60529
	Protection class	III as per IEC 60730

[1] *For a running time of 35 s, the torque is halved*
[2] *At media temperatures < 5 °C or > 100 °C, appropriate accessory must be used*

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3 EN 61000-6-4
	Directive 2006/95/EC	Machine directive (EN 1050)

Overview of types

Type	Rotational torque
AKM105SF132	4 Nm
AKM115SF132	8 Nm

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0510420001	Adaptor required when temperature of the medium > 100 °C
0510240011	Adaptor required when temperature of the medium < 5 °C
0510480001	Auxiliary change-over contacts, single
0510480002	Auxiliary change-over contacts, double

Auxiliary change-over contacts: Infinitely variable 0...100%, admissible load 5(2) A, 24...230 V

AKM115SF152

AKM 115S F152: High-speed rotary actuator with SAUTER Universal Technology (SUT) for ball valve

Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA and 6-way ball valve B2KL
- For controllers with constant output (0...10 V/4...20 mA) or switching output (2-/3-point control)
- Assembly with ball valve without the use of tools
- Brushless motor with electronic activation and cut-out
- Intelligent adaptation of rotation angle, incl. feedback adjustment
- Electronic force-dependent cut-off
- Direction of rotation selected with DIP switch
- Pulse length correction in 3-point operation, i.e. internal adjustment of start-up time
- Gear unit can be disengaged in order to position the ball valve manually (using the lever)
- Maintenance-free
- Free configuration using the CASE Drive PC tool
- Bracket and bayonet ring made of glass-fibre-reinforced plastic for fitting onto ball valve

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	–10%...20%
	Power consumption	6.5 W, 9 VA (at nominal voltage)
Parameters		
	Rotational torque	8 Nm
	Noise during operation (unloaded)	< 49 dB(A)
	Response time	10 ms
	Angle of rotation	90°
	Running time	6 s
	Characteristic	linear
Positioner	Positioning signal y	0...10 V/2...10 V, R_i = 100 kΩ, 0...20 mA/4...20 mA, R_i = 500 kΩ
	Positional feedback signal y_0	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V or 2 or 10 V
	Starting point I_0	0 or 20 mA or 4 or 20 mA
	Control span ΔU	10 V
	Switching range X_{sh}	100 mV
	Control span ΔI	20 mA
	Switching range X_{sh}	0.1 mA
Ambient conditions		
	Operating temperature	–20...55 °C
	Temperature of medium[1]	Max. 100 °C
	Storage and transport temperature	–30...65 °C
	Admissible ambient humidity	5...85% rh, no condensation
Construction		
	Fitting	Vertically upright to horizontal
	Dimensions W x H x D	70 × 138 × 127 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic

[1] *At media temperature > 100 °C, appropriate accessory must be used*

	Power cable	1.2 m, 6 × 0.5 mm²

Standards and directives		
	Type of protection	IP54 (EN 60529), horizontal
	Protection class	III (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
AKM115SF152	High-speed rotary actuator with SAUTER Universal Technology for ball valve

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or drives with limit switch, incl. junction box
0372462001	CASE Drives PC tool for configuring the drives by computer
0510420001	Adaptor required when temperature of the medium > 100 °C
0510240011	Adaptor required when temperature of the medium < 5 °C

AKF 112, 113: Rotary actuator with spring return for control ball valves

AKF112F122

Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA and 6-way ball valve B2KL
- For controllers with a switching output (2-/3-point control)
- Returns to the starting position in the event of a power failure or the activation of a safety device
- Electronic torque-dependent cut-off
- Direction of rotation can be selected during fitting

Technical data

Power supply		
	Power supply 230 V~	±10%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
Parameters		
	Torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Power cable	0.9 m, 0.75 mm² (fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Admissible ambient temperature	–32...55 °C
	Admissible ambient humidity	5...95% rh
Construction		
	Weight	1.2 kg
	Housing	Two-piece
	Housing material	Cast aluminium
Standards and directives		
	Type of protection	IP54 as per EN 60529 IP42 depending on fitting position
	Protection class 230 V	II (EN 60730)
	Protection class 24 V	III (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3
Only for AKF120F120	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	II

Overview of types

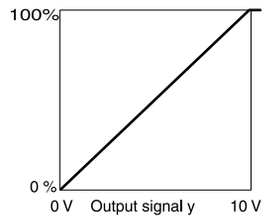
Type	Power consumption	Control function	Voltage
AKF112F120	4.5 W, 7.0 VA	2-point	230 V~
AKF112F122	3.5 W, 5.0 VA	2-point	24 V~/24...48 V=
AKF113F122	3.5 W, 5.0 VA	3-point	24 V~/24...48 V=

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B

AKF 113S: Rotary actuator with spring return and positioner

AKF113SF122



Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA and 6-way ball valve B2KL
- For controllers with a continuous output (0...10 V)
- Returns to the starting position in the event of a power failure or the activation of a safety device
- Electronic torque-dependent cut-off
- Direction of rotation can be selected during fitting

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
	Power consumption during operation	3.5 W, 5 VA
	Power consumption when idle	2.5 W, 2.5 VA
Parameters		
Positioner	Positioning signal y	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Admissible load	> 10 kΩ
	Starting point U_0	0 V
	Control span ΔU	10 V
	Switching range X_{sh}	0.2 V
	Torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Power cable	0.9 m, 4 × 0.75 mm² (fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Admissible ambient temperature	–32...55 °C
	Admissible ambient humidity	< 95% rh
Construction		
	Weight	1.3 kg
	Housing	Two-piece
	Housing material	Cast aluminium
Standards and directives		
	Type of protection	IP54 as per EN 60529
	Protection class	III as per IEC 60730
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3

Overview of types

Type	Features
AKF113SF122	Rotary actuator with spring return and positioner

Accessories

Type	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B

Control valves and butterfly valves

SAUTER control valves are used to control heating and cooling systems. The 3-way version is suitable for controlling and change-over functions, while the 4-way version is employed for higher temperatures in the return circuit. SAUTER butterfly valves are very versatile and are used for control and shut-off functions. Because they close absolutely tightly, they reduce energy consumption.

Overview of control valves and butterfly valves

			
Type designation	M3R, M4R	MH32F, MH42F	DEF
Application			
Preheater for ventilation & air-conditioning	•	•	–
Static heating	•	•	–
Cooling tower	–	–	•
Multi-boiler system	–	–	•
Version			
Control valve	•	•	–
Butterfly valve	–	–	•
Technical data			
Nominal diameter (DN)	15...50	20...150	25...200
Nominal pressure	PN 10	PN 6	PN 16
Combination options with actuator	AR30 W, ASM 105, 115, 124 ADM 322(S)	AR30 W, ASM 105, 115, 124 ADM 322(S)	AR30 W, A44 W, ASF 122, 123 ASM 124(S) ASM 134(S) ADM 322(S)
Further information	Page 291	Page 293	Page 296

M3R, M4R: Control valve with threaded connection, PN 10

M3R015F200

M3R0**F200

M4R0**F200

Features

- M3R: 3-way valves with nominal diameters DN 15...50
- M4R: 4-way valves with nominal diameters DN 20...50
- Used in combination with the ADM 322 and ASM 105, 115, 124 motorised actuators
- Manual adjustment by means of lever and end stops
- Brass body and gate
- ABS lever
- Double O-ring of EPDM ensures the tightness of the seal at the spindle

Technical data

Parameters		
	Nominal pressure	10 bar
	Angle of rotation	90°
	Valve characteristic	Linear
Ambient conditions		
	Operating temperature	2...110 °C
	Operating pressure	Max. 10 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Leakage rate in % of K_{vs}	Weight
M3R015F200	DN 15 (Rp½)	2.5 m³/h	1 %	0.8 kg
M3R020F200	DN 20 (Rp¾)	6 m³/h	1 %	0.7 kg
M3R025F200	DN 25 (Rp1)	12 m³/h	1 %	1.2 kg
M3R032F200	DN 32 (Rp1¼)	18 m³/h	1 %	1.2 kg
M3R040F200	DN 40 (Rp1½)	26 m³/h	1 %	2.2 kg
M3R050F200	DN 50 (Rp2)	40 m³/h	1 %	2.3 kg
M4R020F200	DN 20 (Rp¾)	6 m³/h	1.5 %	0.8 kg
M4R025F200	DN 25 (Rp1)	12 m³/h	1.5 %	1.2 kg
M4R032F200	DN 32 (Rp1¼)	18 m³/h	1.5 %	1.3 kg
M4R040F200	DN 40 (Rp1½)	26 m³/h	1.5 %	2.3 kg
M4R050F200	DN 50 (Rp2)	40 m³/h	1.5 %	2.5 kg

*M3R0**F200: 3-way valve: Body, cover, front gate and spindle made of brass*

*M4R0**F200: 4-way valve: Body, cover, front gate and spindle made of brass*

Accessories

Type	Description
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 124
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 105, 115

Combination of M3R/M4R with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after control valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Actuator	ASM105F100	ASM105F120	ASM105F122	ASM105SF132	ASM115F120	ASM115F122	ASM115SF132
Page	310	310	310	312	310	310	312
Rotational torque	5 Nm	5 Nm	5 Nm	5 Nm	10 Nm	10 Nm	10 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	120 s	35/60/120 s	120 s	120 s	60/120 s
Operating voltage	230 V~	230 V~	24 V~	24 V =/~	230 V~	24 V~	24 V =/~

	Δp [bar]						
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
M3R015F200	2.0	2.0	2.0	2.0	–	–	–
M3R020F200 M4R020F200	1.0	1.0	1.0	1.0	–	–	–
M3R025F200 M3R032F200 M3R040F200 M3R050F200 M4R025F200 M4R032F200 M4R040F200 M4R050F200	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Cannot be used as distribution valve

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM322SF122 ADM322SF152	ASM124F120 ASM124F122	ASM124SF132
Page	302	304	316	321
Rotational torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 V~/=	24 V=/~ / 230 V	24 V=/~ / 230 V

	Δp [bar]			
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
M3R015F200	2.0	2.0	–	–
M3R020F200 M3R025F200 M4R020F200 M4R025F200	1.0	1.0	–	–
M3R032F200 M3R040F200 M3R050F200 M4R032F200 M4R040F200 M4R050F200	1.0	1.0	1.0	1.0

Cannot be used as distribution valve

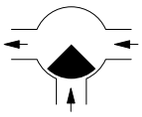
Accessories required: Assembly materials; see accessories. With ASM 124, it is not possible to fit auxiliary contacts or a potentiometer

MH32F, MH42F: Control valve with flange connection, PN 6

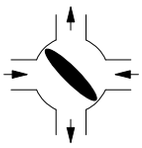
MH32F40F200

MH32F**F200

MH42F**F200



3-way control valve



4-way control valve

Features

- MH32F: 3-way valves with nominal diameters DN 20...150
- MH42F: 4-way valves with nominal diameters DN 32...50
- Can be combined with the ADM 322 and ASM 105, 115, 124 motorised actuators
- Manual adjustment via lever
- Body made of grey cast iron; brass gate
- Spindle made of brass up to DN 25 and stainless steel from DN 32
- Stuffing box with double O-ring guarantees the tightness of the seal at the spindle

Technical data

Parameters		
	Nominal pressure	6 bar
	Angle of rotation	90°
	Valve characteristic	Linear

Ambient conditions		
	Operating temperature	2...110 °C
	Operating pressure	Max. 6 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Leakage rate in % of K_{vs}	Weight
MH32F20F200	DN 20	12 m³/h	1 %	2.7 kg
MH32F25F200	DN 25	18 m³/h	1 %	3.5 kg
MH32F32F200	DN 32	28 m³/h	1 %	4.6 kg
MH32F40F200	DN 40	44 m³/h	1 %	5.6 kg
MH32F50F200	DN 50	66 m³/h	1 %	7.9 kg
MH32F65F200	DN 65	100 m³/h	1 %	9.2 kg
MH32F80F200	DN 80	150 m³/h	1 %	14.2 kg
MH32F100F200	DN 100	225 m³/h	1 %	19 kg
MH32F125F200	DN 125	310 m³/h	1 %	25.8 kg
MH32F150F200	DN 150	420 m³/h	1 %	35.5 kg
MH42F32F200	DN 32	28 m³/h	1.5 %	5.7 kg
MH42F40F200	DN 40	44 m³/h	1.5 %	7.1 kg
MH42F50F200	DN 50	66 m³/h	1.5 %	8.3 kg

MH32F20...25: 3-way valve: Zinc cover, brass spindle

MH32F32...150: 3-way valve: Cover of grey cast iron, spindle of stainless steel

MH42F32...50: 4-way valve: Cover of grey cast iron, spindle of stainless steel

Accessories

Type	Description
0360392020	Welding flange, DN 20, smooth, PN 6, incl. asbestos-free seal
0360392025	Welding flange, DN 25, smooth, PN 6, incl. asbestos-free seal
0360392032	Welding flange, DN 32, smooth, PN 6, incl. asbestos-free seal
0360392040	Welding flange, DN 40, smooth, PN 6, incl. asbestos-free seal
0360392050	Welding flange, DN 50, smooth, PN 6, incl. asbestos-free seal
0360392065	Welding flange, DN 65, smooth, PN 6, incl. asbestos-free seal
0360392080	Welding flange, DN 80, smooth, PN 6, incl. asbestos-free seal

Type	Description
0360392100	Welding flange, DN 100, smooth, PN 6, incl. asbestos-free seal
0360392125	Welding flange, DN 125, smooth, PN 6, incl. asbestos-free seal
0360392150	Welding flange, DN 150, smooth, PN 6, incl. asbestos-free seal
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 124
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 105, 115
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42

Combination of MH32F/MH42F with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Max. admissible pressure drop in the event of a malfunction (pipe break after control valve) at which the actuator reliably closes the control valve using the return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Pressure differences

Actuator	ASM105F100	ASM105F120	ASM105F122	ASM105SF132	ASM115F120	ASM115F122	ASM115SF132
Page	310	310	310	312	310	310	312
Rotational torque	5 Nm	5 Nm	5 Nm	5 Nm	10 Nm	10 Nm	10 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point	2-/3-point, 0...10 V
Running time	30 s	120 s	120 s	35/60/120 s	120 s	120 s	60/120 s
Operating voltage	230 V~	230 V~	24 V~	24 V =/~	230 V~	24 V~	24 V =/~
	Δp [bar]						
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
MH32F20F200 MH32F25F200 MH32F32F200 MH32F40F200	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MH32F50F200 MH32F65F200 MH32F80F200	–	–	–	–	0.5	0.5	0.5
Cannot be used as distribution valve							

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM322SF122 ADM322SF152	ASM124F120 ASM124F122	ASM124SF132
Page	302	304	316	321
Rotational torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 V~/=	24 V=/~ / 230 V	24 V=/~ / 230 V
	Δp [bar]			
As control valve	Δp_{max}	Δp_{max}	Δp_{max}	Δp_{max}
MH32F20F200 MH32F25F200 MH32F32F200 MH32F40F200 MH42F32F200 MH42F40F200	1.0	1.0	1.0	1.0

Actuator	**ADM322F120** **ADM322F122** **ADM322HF120** **ADM322HF122** **ADM322PF120** **ADM322PF122**	**ADM322SF122** **ADM322SF152**	**ASM124F120** **ASM124F122**	**ASM124SF132**
Page	302	304	316	321
MH32F50F200 MH32F65F200 MH32F80F200 MH32F100F200 MH32F125F200 MH32F150F200 MH42F50F200	0.5	0.5	0.5	0.5
Cannot be used as distribution valve				

Accessories required: Assembly materials; see accessories. With ASM 124, it is not possible to fit auxiliary contacts or a potentiometer

DEF100F200

DEF: Tight-sealing butterfly valve, PN 16

Features

- For cutting off and regulating water and low-pressure steam up to 110 °C
- Butterfly valve with 3-way brass bearing bush as spindle bearing
- Fits PN 6, PN 10 and PN 16 flanges
- Can be combined with motorised actuators of the ADM 322 and A44W type or damper actuators with spring return of the ASM 124, 134 and ASF 122, 123 type
- Damper body made of grey cast iron
- Collar made of ethylene-propylene rubber
- Butterfly disc made of stainless steel
- Spindle made of stainless steel with two O-rings

Technical data

Parameters

Nominal pressure	16 bar
Valve characteristic	Linear
Angle of rotation	90°
Leakage rate[1]	< 0,0001% of the K_{vs} value

Ambient conditions

Operating temperature	–10...130 °C
Maximum operating pressure	16 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
DEF025F200	DN 25	36 m³/h	1 kg
DEF032F200	DN 32	40 m³/h	1.15 kg
DEF040F200	DN 40	50 m³/h	2.75 kg
DEF050F200	DN 50	85 m³/h	3.05 kg
DEF065F200	DN 65	215 m³/h	4.05 kg
DEF080F200	DN 80	420 m³/h	4.3 kg
DEF100F200	DN 100	800 m³/h	4.85 kg
DEF125F200	DN 125	1010 m³/h	7.2 kg
DEF150F200	DN 150	2100 m³/h	9.5 kg
DEF200F200	DN 200	4000 m³/h	12 kg

Accessories

Type	Description
0361632***	Two welding flanges, complete PN 6 as per EN 1092-1 DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150, DN 200
0361633***	Two welding flanges, complete PN 10 (DN 25...100) as per EN 1092-1 and PN 16 (DN 25...200) as per EN 1092-1 DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150, DN 200
0361634200	2 welding flanges complete PN 10 (DN 200) as per EN 1092-1
0378110001	Assembly parts; DEF DN 25...65 for A44
0378111001	Assembly parts; DEF DN 80...125 for A44
0378112001	Assembly parts; DEF DN 150...200 for A44
0378113001	Assembly parts; DEF DN 25...100 for ASF122/123
0372455001	Assembly part; DEF DN25...65 for ASM 124/134
0372455002	Assembly part; DEF DN80...100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150...200 for ASM 134

[1] *At Δp 1.5 bar*

Type	Description
0510240014	ADM322 fitting kit with DEF DN20...65
0510240015	ADM322 fitting kit with DEF DN80...100

Ordering information: DN 25 = /025, DN 100 = /100

Combination of DEF with electric actuators

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Max. admissible pressure drop in the event of a malfunction (pipe break after the damper) at which the actuator reliably closes the damper using the return spring.*

Definition of Δp_{max}: *Max. admissible pressure drop in control mode at which the actuator reliably opens and closes the damper.*

Pressure differences

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM322SF122 ADM322SF152	ASM124F120 ASM124F122	ASM124SF132
Page	302	304	316	321
Rotational torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 0...10 V	2-/3-point	2-/3-point, 0...10 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 V~/=	24 V=/~ / 230 V	24 V=/~ / 230 V
	Δp [bar]			
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
DEF025F200 DEF032F200 DEF040F200 DEF050F200	10.0	10.0	10.0	10.0
DEF065F200	7.0	7.0	7.0	7.0
DEF080F200	4.0	4.0	4.0	4.0
DEF100F200	2.0	2.0	2.0	2.0
Cannot be used to close with the pressure				

Actuator	ASF122F120 ASF122F220	ASF122F122	ASF122F222	ASF123F122	ASF123SF122
Page	326	326	326	326	328
Rotational torque	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
Control signal	2-point	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~	24V~	24V~	24V~

	Δp [bar]									
Closes against the pressure	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**	**Δp_{max}**	**Δp_s**
DEF025F200 DEF032F200 DEF040F200 DEF050F200	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
DEF065F200	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
DEF080F200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
DEF100F200	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cannot be used to close with the pressure										

Actuator	A44W2F001	A44W2F020	A44W2SF001	ASM134SF132	ASM134F130
Page	306	306	309	321	318
Rotational torque	30 Nm	30 Nm	30 Nm	30 Nm	30 Nm
Control signal	3-point	3-point	0...10 V; 4...20 mA	0...10 V	3-point
Running time	120 s	120 s	120 s	120/240 s	120/240 s
Operating voltage	230 V~	24 V~	24V~	24 V~	230 V~

	Δp [bar]				
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
DEF025F200 DEF032F200 DEF040F200 DEF050F200	16.0	16.0	16.0	–	–
DEF065F200	16.0	16.0	16.0	7.0	7.0
DEF080F200 DEF100F200	10.0	10.0	10.0	7.0	7.0
DEF125F200	6.0	6.0	6.0	7.0	7.0
DEF150F200	5.0	5.0	5.0	6.0	6.0
DEF200F200	3.0	3.0	3.0	2.0	2.0
Cannot be used to close with the pressure					

Accessories required: Assembly parts; see accessories

Damper and rotary actuators

SAUTER damper and rotary actuators provide a torque- and time-dependent cut-off facility for efficient energy use. They operate air dampers, shut-off dampers and multi-leaf dampers. The overload protection and the end position detector in the rotary actuators ensures the efficient use of energy. SAUTER rotary actuators can be used for controllers with a switching or continuous output.

Overview of damper and rotary actuators

				
Type designation	ADM322F12*	ADM322SF1*2	A44, W0...W2	A44, W0S...W2S
Technical data				
Torque (Nm)	15	15	25, 30	25, 30
Running time for 90°/(s)	120 (240)	30, 60	30, 60, 120	30, 60, 120
Power supply (V~)	24, 230	24	24, 230	24
Control				
3-point	•	•	•	–
Positioner	–	•	–	•
Further information	Page 301	Page 303	Page 306	Page 308

				
Type designation	ASM 105, 115	ASM 105S, 115S F132	ASM 105S, 115S F152	ASM 124
Technical data				
Torque (Nm)	5, 10	5, 10	5, 10	18
Running time (s)	30, 120	35, 60, 120	3, 6	120
Voltage (V)	24, 230	24	24	24, 230
Control				
2-point	•	•	•	•
3-point	•	•	•	•
Positioner	–	•	•	–
High-speed	–	–	•	–
Spring return	–	–	–	–
Further information	Page 310	Page 312	Page 314	Page 316

				
Type designation	ASM 134	ASM 124S, 134S	ASF 112, 113	ASF 113S
Technical data				
Torque (Nm)	30	15, 30	7	7
Running time (s)	120, 240	60, 120, 240	90	90
Voltage (V)	230	24, 230	24	24
Control				
2-point	–	•	•	–
3-point	•	•	•	–
Positioner	–	•	–	•
High-speed	–	–	–	–
Spring return	–	–	•	•
Further information	Page 318	Page 320	Page 322	Page 324

		
Type designation	ASF 122, 123	ASF 123S
Technical data		
Torque (Nm)	18	18
Running time (s)	90	90
Voltage (V)	24, 230	230
Control		
2-point	•	–
3-point	•	–
Positioner	–	•
High-speed	–	–
Spring return	•	•
Further information	Page 326	Page 328

ADM 322: Rotary actuator

ADM322F12*

M

Features

- For operating control units such as control valves, butterfly valves etc.
- For controllers with a switching output (2-point or 3-point control)
- 15 Nm nominal torque and holding torque
- Synchronous motor with electronic control unit and load-dependent cut-off
- Low operating noise
- Direction of operation and running time can be set using coding switches
- Gear unit can be disengaged for manual adjustment
- Electrical parallel operation of up to five actuators possible
- Numerous adapters enable the unit to be fitted onto defined non-SAUTER control valves
- Maintenance-free gearbox made of plastic and steel, and gearbox base-plates made of steel
- Mounting columns made of aluminium

Technical data

Power supply		
	Power supply 24 V~	± 20%, 50...60 Hz
	Power supply 24 V=	-10%...20%
	Power supply 230 V~	± 15%
	Connections (screw terminals)	Max. 1.5 mm^2
ADM322(H, P)F120	Power consumption	< 2.2 W
ADM322(H, P)F122	Power consumption	< 2.5 W
Parameters		
	Operating noise[1)]	< 30 dB(A) (loaded)
	Running time for 90°	120 (240) s
	Response time	< 200 ms
	Angle of rotation	Max. 95°
	Rotational torque and holding torque	15 Nm
Ambient conditions		
	Operating temperature	−20...55 °C
	Storage and transport temperature	−40...80 °C
	Humidity without condensation	5...85% rh
Construction		
	Dimensions W x H x D	194 × 116 × 86 mm
	Weight	1.5
	Fitting position	Vertically upright to horizontal, not fitted upside down
	Housing	Three-part
	Housing material	Flame retardant yellow/black plastic
	Cable inlet	With break-outs, for metric screw fittings M20×1.5
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730-1), EN 60730-2-14 III (EN 60730-1), EN 60730-2-14
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-14

1) *Operating noise with the slowest running time*

Over-voltage categories	III
Degree of contamination	II
Max. altitude	2000 metres
Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Nominal voltage	Version
ADM322F120	230 V	–
ADM322F122	24 V~/=	–
ADM322HF120	230 V~	Auxiliary contacts
ADM322HF122	24 V ~/=	Auxiliary contacts
ADM322PF120	230 V~	Potentiometer
ADM322PF122	24 V~/=	Potentiometer

Accessories

Type	Description
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42
0510240014	ADM322 fitting kit with DEF DN20...65
0510240015	ADM322 fitting kit with DEF DN80...100
0510390002	Adapter set for control valve, Honeywell, DZ/ZR valves only
0510390003	Adapter set for control valve, Danfoss
0510390004	Adapter set for control valve, Caleffi
0510390005	Adapter set for control valve, Coster

ADM 322S: Rotary actuator with positioner

ADM322SF1*2

Features

- For operating control units such as control valves, butterfly valves etc.
- For controllers with a continuous output
- 15 Nm nominal torque and holding torque
- ADM322SF122: Synchronous motor with electronic control unit and load-dependent cut-off
- ADM322SF152: Brushless DC motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, load-dependent cut-off
- Low operating noise
- Automatic recognition of applied control signal
- With the built-in absolute distance measurement system, the position is always maintained in the case of power failure
- The direction of operation, running time and control signal (voltage/current) can be adjusted via coding switches
- High-speed variant ADM322SF152 with 30 s or 60 s for angle of rotation 90°
- Gear unit can be disengaged for manual adjustment
- Easy re-initialisation using a coding switch
- Electrical parallel operation of up to five actuators possible
- Numerous adapters enable the unit to be fitted onto defined non-SAUTER control valves
- ADM322SF152: Integrated forced operation can be set via coding switches (with selectable direction of operation)
- Maintenance-free gearbox made of plastic and steel, and gearbox base-plates made of steel
- Mounting columns made of aluminium

Technical data

Power supply		
	Power supply 24 V~	± 20%, 50...60 Hz
	Power supply 24 V=	-10%...20%
	Connections (screw terminals)	Max. 1.5 mm^2
ADM322SF122	Power consumption	< 2.5 W
ADM322SF152	Power consumption	< 2.3 W
Parameters		
	Operating noise[1)]	< 30 dB(A) (loaded)
	Response time	< 200 ms
	Angle of rotation	Maximum 95°
	Rotational torque and holding torque	15 Nm
ADM322SF122 positioner	Control signal y	0...10 V, R_i ≥ 50 kΩ, 0...20 mA, R_i ≤ 50 Ω 2...10 V (4...20 mA)
	Positional feedback signal y_0	0...10 V; load ≥ 5 kΩ
	Starting point U_0	0 or 10 V
	Starting point I_0	0 or 20 mA
	Control span ΔU	10 V
	Switching range X_{sh}	130 mV, 0.26 mA
	Control span ΔI	20 mA
	Max. admissible line resistance	3 Ω
ADM332SF152 positioner	Control signal y	0...10 V, R_i ≥ 50 kΩ, 4...20 mA, R_i ≤ 50 Ω
	Positional feedback signal y_0	0...10 V; load ≥ 5 kΩ
	Starting point U_0	0 or 10 V
	Starting point I_0	4 or 20 mA

[1)] *Operating noise with the slowest running time*

	Control span ΔU	10 V
	Switching range X_{sh}	130 mV, 0.26 mA
	Control span ΔI	20 mA
	Max. admissible line resistance	3 Ω

Ambient conditions

	Operating temperature	−20...55 °C
	Storage and transport temperature	−40...80 °C
	Humidity without condensation	5...85 %rh

Construction

	Dimensions W x H x D	194 × 166 × 86 mm
	Weight	1.5 kg
	Fitting position	Vertically upright to horizontal, not fitted upside down
	Housing	Three-part
	Housing material	Flame retardant yellow/black plastic
	Cable inlet	With break-outs, for metric screw fittings M20×1.5

Standards and directives

	Type of protection	IP54 (EN 60529)
	Protection class	III (EN 60730-1), EN 60730-2-14
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-2 EN 61000-3 EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	II
	Max. altitude	2000 m
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100

Overview of types

Type	Running time for 90°	Nominal voltage
ADM322SF122	120	24 V~/=
ADM322SF152	30 (60)	24 V~/=

Accessories

Type	Description
0510600001	Cable module, 1.2 m, 3-wire, PVC
0510600002	Cable module, 1.2 m, 3-wire, halogen-free
0510600003	Cable module, 1.2 m, 6-wire, PVC
0510600004	Cable module, 1.2 m, 6-wire, halogen-free
0510600005	Cable module, 5 m, 3-wire, PVC
0510600006	Cable module, 5 m, 3-wire, halogen-free
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42
0510240014	ADM322 fitting kit with DEF DN20...65
0510240015	ADM322 fitting kit with DEF DN80...100
0510390002	Adapter set for control valve, Honeywell, DZ/ZR valves only
0510390003	Adapter set for control valve, Danfoss
0510390004	Adapter set for control valve, Caleffi
0510390005	Adapter set for control valve, Coster

ADM322SF152 only

Type	Description
0500420002	4...20 mA feedback module
0500570003	Constant 230 V module
0510220001	CASE Drives configuration tool

A44W*F0**

A44 W0...W2: Motorised actuator

Features

- Operation of control units such as air dampers, gates, butterfly valves etc.
- For controllers with a switching output (3-point)
- Synchronous motor with limit switch
- Maintenance-free gear unit
- Positions the control unit to any intermediate position
- Cable gland M20 × 1.5
- Crank for manual adjustment

Technical data

Power supply		
	Power supply 230 V~	±15%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
Parameters		
	Angle of rotation[1]	90°
Ambient conditions		
	Admissible ambient temperature[2]	–20...60 °C
	Admissible ambient humidity	5...95% rh
	Storage and transport temperature	–30...70 °C
Construction		
	Screw terminals	For electrical cables of up to 1.5 mm²
	Housing material	Light-metal alloy, cover made of fire-retardant plastic
Standards and directives		
	Type of protection[3]	IP43 (EN 60529)
CE conformity according to	EMC directive	for 230 V
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

i *Admissible damper surface area: The recommended admissible damper area applies to equal-sided, smooth-running air dampers*

Type	A44W0F001	A44W0F020	A44W1F001	A44W1F020	A44W2F001	A44W2F020
Rotational torque (Nm)	25	25	30	30	30	30
Holding torque (Nm)	22	22	30	30	30	30
Running time for 90° (s)	30	30	60	60	120	120
Admissible damper surface area (m²)	8	8	10	10	10	10
Power consumption with 60 Hz	10.4 W	10.4 W	10.4 W	10.4 W	4.8 W	4.8 W

[1] *Angle of rotation of end shaft is adjustable from min. 30° to max. 320° by means of a switching cam (starting point is freely selectable). If a potentiometer is fitted: Observe angle of rotation of potentiometer*

[2] *At temperatures under 0 °C, use heating resistor (accessory)*

[3] *Type of protection IP43 only in conjunction with M20 × 1.5 cable gland. Type of protection IP55 with steel or aluminium cover (accessory) and M20 × 1.5 cable gland*

Type	A44W0F001	A44W0F020	A44W1F001	A44W1F020	A44W2F001	A44W2F020
Power consumption at 50 Hz	9.2 W	9.2 W	9.2 W	9.2 W	3.8 W	3.8 W
Voltage	230 V~	24 V~	230 V~	24 V~	230 V~	24 V~
Weight (kg)	2.5	2.5	2.5	2.5	2.2	2.2

Accessories

Potentiometer with rigid coupling: Obligatory for certain TÜV-approved burner control systems

Pluggable auxiliary change-over contacts: Switching cam 180° ON or 180° OFF can be positioned at any point over the entire angle of rotation (360°)

Type	Description
0188614000	Fixing bracket for wall mounting
0274605000	Angled ball joint for clamping lever with M10 nut
0294967000	Pivot pin for clamping lever
0370205001	Heating resistor 5 W, 230 V~
0370205002	Heating resistor 5 W, 24 V~
0370396000	3 insertable auxiliary change-over contacts, 10(2) A 250 V~
0370479000	Steel hood + manual adjuster, hammer enamel finish RAL 1020
0370486000	Clamping lever, complete (including square hub)
0370493000	2 auxiliary contacts Min. load: 100 mA, 24 V~
0370628000	Adaptor plate including 4 M6 countersunk screws for replacing A33 W. with A44 W.
0370638000	Straight ball joint for clamping lever with nut (M10)
0370715001	Cover made of die-cast aluminium with rubber seal, type of protection IP55
0371290001	Cover, black, made of die-cast aluminium with display window, rubber seal, position indicator and scale, type of protection IP55
0372460001	Cable screw fitting (plastic M20 × 1,5) incl. locking nut and seal
0370640001	Potentiometer 2000 Ω, 1.0 W with friction coupling
0370640002	Potentiometer 130 Ω, 1.0 W with friction coupling
0370640006	Potentiometer 1000 Ω, 1.0 W with friction coupling
0370641001	Dual-operation potentiometer 130/2000 Ω, 1.0 W with friction coupling
0370641002	Dual-operation potentiometer 2000/2000 Ω, 1.0 W with friction coupling
0370641006	Dual-operation potentiometer 130/140 Ω, 1.0 W with friction coupling
0370644001	Rotation-angle cog set 90° or 180°, with coupling
0370644002	Rotation-angle cog set 120° or 150°, with coupling
0370645006	Potentiometer 1000 Ω, 1.0 W with rigid coupling
0370645007	Potentiometer 5000 Ω, 1.0 W with rigid coupling
0370646001	Rotation-angle cog set 90°, without coupling
0370646002	Rotation-angle cog set 120°, without coupling
0378110001	Assembly parts; DEF DN 25...65 for A44
0378111001	Assembly parts; DEF DN 80...125 for A44
0378112001	Assembly parts; DEF DN 150...200 for A44

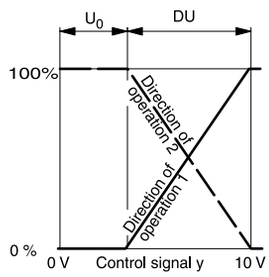
0370396000: (3 auxiliary contacts) Min. load: 100 mA, 24 V~

0370479000: (steel hood + manual adjuster) olive yellow, hammer enamel finish RAL 1020

0370493000: (2 auxiliary contacts) Min. load: 100 mA, 24 V~

A44 W0S...W2S: Motorised actuator with positioner

A44W*SF001



Features

- Operation of control units such as air dampers, gates, butterfly valves etc.
- For controllers with continuous output (0...10 V/0...20 mA)
- Synchronous motor with limit switch and integrated positioner
- Maintenance-free gear unit
- Moves the control unit to any intermediate position
- Direction of operation can be selected with switch
- Cable gland M20 × 1.5
- Crank for manual adjustment

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption when idle	3 VA
	Power consumption with 60 Hz	A44WS02, A44W1S → 13.4 W A44W2S → 7.8 W at standstill → 3 VA
Parameters		
Positioner	Control signal 0...10 V	R_i = 30 kΩ
	Control signal 0...20 mA	R_i = 50 kΩ
	Positional feedback 0...10 V	Permissible load ≥ 2.5 kΩ
	Positional feedback 0...620 mV	Permissible load ≥ 100 kΩ
	Starting point U_0	0.4...9.1 V
	Control span ΔU	1...10 V
	Switching range X_{sh}	4% of ΔU
	Angle of rotation[1)]	30°...320° (90° nominal)
Ambient conditions		
	Admissible ambient temperature	–5...50 °C
	Admissible ambient humidity	5...95% rh
	Storage and transport temperature	–30...70 °C
Construction		
	Housing material	Light-metal alloy, cover made of fire-retardant plastic
	Screw terminals	For electrical cables of up to 1.5 mm²
Standards and directives		
	Type of protection[2)]	IP43 (EN 60529)
	EMC Directive 2014/30/EU	EN 61000-6-1/EN 61000-6-3 EN 61000-6-4

1) Angle of rotation of end shaft is 90° (factory set). Changing the arrangement to 180° is possible by reversing the cogs and readjusting the limit switches. Refer to fitting instruction MV 505228

2) Type of protection IP43 only in conjunction with M20 × 1.5 cable gland. Type of protection IP55 is attained with steel or aluminium cover (accessory) and M20 × 1.5 cable gland.

Overview of types

i *Admissible damper surface area: The recommended admissible damper area applies to equal-sided, smooth-running air dampers*

Type	Rotational torque (Nm)	Holding torque (Nm)	Running time for 90° (s)	Admissible damper surface area (m²)	Power consumption (W)	Weight (kg)
A44W0SF001	25	22	30	8	12.2	2.7
A44W1SF001	30	30	60	10	12.2	2.7
A44W2SF001	30	30	120	10	6.8	2.4

Accessories

Type	Description
0188614000	Fixing bracket for wall mounting
0274605000	Angled ball joint for clamping lever with M10 nut
0294967000	Pivot pin for clamping lever
0370479000	Steel hood + manual adjuster, hammer enamel finish RAL 1020
0370486000	Clamping lever, complete (including square hub)
0370493000	2 auxiliary contacts Min. load: 100 mA, 24 V~
0370628000	Adaptor plate including 4 M6 countersunk screws for replacing A33 W. with A44 W.
0370638000	Straight ball joint for clamping lever with nut (M10)
0371290001	Cover, black, made of die-cast aluminium with display window, rubber seal, position indicator and scale, type of protection IP55
0372460001	Cable screw fitting (plastic M20 × 1,5) incl. locking nut and seal
0378110001	Assembly parts; DEF DN 25...65 for A44
0378111001	Assembly parts; DEF DN 80...125 for A44
0378112001	Assembly parts; DEF DN 150...200 for A44

ASM105F122

ASM 105, 115: Damper actuator

Features

- For controllers with switching output (2- and 3-point)
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Synchronous motor with electronic activation and cut-out
- Maintenance-free
- Suitable for all fitting positions

Technical data

Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 8...16 mm, □ 6,5...12.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature[1]	–20...65 °C
	Admissible ambient humidity	5...85% rh, no condensation
Function		
	Control	2-/3-point
Construction		
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Directive 2006/95/EC	EN 1050
	Low-Voltage Directive 2014/35/EU[2]	EN 60730-1, EN 60730-2-14 Over-voltage category III Degree of contamination II

Overview of types

Type	Rotational torque and holding torque	Running time for 90°	Power supply	Power consumption
ASM105F100	5 Nm	30 s	230 V~	2.4 W, 5.4 VA
ASM105F120	5 Nm	120 s	230 V~	2.0 W, 5.0 VA
ASM105F122	5 Nm	120 s	24 V~	1.6 W, 1.7 VA
ASM115F120	10 Nm	120 s	230 V~	2.0 W, 5.0 VA
ASM115F122	10 Nm	120 s	24 V~	1.6 W, 1.7 VA

[1] *Operating time approx. 80% up to 65 °C, 100% up to 55 °C*
[2] *Only for ASM1*5F1*0*

Accessories

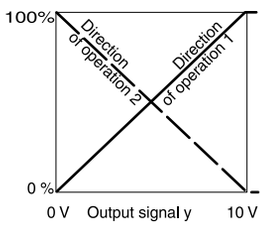
Type	Description
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 105, 115
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
0372320001	Hexagon key as visualisation for position indicator
0372459100	External switching, 230 V version for parallel operation with A*M or actuators with limit switch, incl. junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or drives with limit switch, incl. junction box

Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V

Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator

ASM 105S, 115S F132: Damper actuator with SAUTER Universal Technology (SUT)

ASM105SF132



Features

- For controllers with switching (2- and 3-point) or continuous output (0...10 V)
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Stepping motor with electronic activation and cut-out
- Maintenance-free
- Intelligent adaptation of rotation angle, incl. feedback adjustment
- Free configuration using the CASE Drive PC tool
- Suitable for all fitting positions

Technical data

Power supply		
	Power supply 24 V~	±20%, 51...60 Hz
	Power supply 24 V=	±20%
Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 8...16 mm, □ 6,5...12.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Positioner	Control signal y	0...10 V, R_i > 100 kΩ
	Positional feedback signal y_0	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Admissible ambient temperature	–20...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
Construction		
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 5 × 0.5 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	III (IEC 60730)
CE conformity	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-3 EN 61000-6-4
	Directive 2006/95/EC	EN 1050

Overview of types

Type	Rotational torque and holding torque (Nm)	Running time for 90°	Power consumption
ASM105SF132	5	35/60/120 s	5.0 W, 9.0 VA
ASM115SF132	10	60/120 s	4.8 W, 8.7 VA

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 105, 115
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
0372320001	Hexagon key as visualisation for position indicator
0372462001	CASE Drives PC tool for configuring the drives by computer

Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V

Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator

ASM 105S, 115S F152: High-speed damper actuator with SAUTER Universal Technology (SUT)

ASM115SF152

Features

- For controllers with switching (2- and 3-point) or continuous output (0...10 V)
- Brushless motor with electronic activation and cut-out
- Intelligent adaptation of rotation angle
- Electronic force-dependent cut-off
- Direction of rotation selected with DIP switches ↺ and ↻
- Pulse length correction in 3-point operation, i.e. internal adjustment of start-up time
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Free configuration using the CASE Drive PC tool
- Maintenance-free
- Fitting: Vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	+20%, –10%
Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	⌀ 8...16 mm, □ 6,5...12.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Noise during operation (unloaded)	< 49 dB(A)
	Response time	10 ms (electrically compensated)
Positioner	Control signal y	0...10 V/2...10 V, R_i = 100 kΩ
	Control signal y	0...20 mA/4...20 mA, R_i = 500 kΩ
	Positional feedback signal y_0	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V/2 or 10 V
	Starting point I_0	0 or 20 mA/4 or 20 mA
	Control span ΔU	10 V
	Switching range X_{sh}	100 mV
	Control span ΔI	20 mA
	Switching range X_{sh}	0.1 mA
Ambient conditions		
	Operating temperature	–20...55 °C
	Storage and transport temperature	–30...65 °C
	Admissible ambient humidity	5...85% rh, no condensation
Construction		
	Dimensions W x H x D	70 × 63 × 133 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 6 × 0.5 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	III (EN 60730)
CE conformity	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types

i *Torque and holding torque: Holding torque is typically 1.5 Nm when the actuator is without power*

Type	Rotational torque and holding torque	Running time for 90°	Power consumption
ASM105SF152	5 Nm	3 s	6.0 W, 8.5 VA
ASM115SF152	10 Nm	6 s	6.5 W, 9.0 VA

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or drives with limit switch, incl. junction box
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 105, 115
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
0372462001	CASE Drives PC tool for configuring the drives by computer

ASM124F12

ASM 124: Damper actuator

Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with switching (2- and 3-point) output
- Synchronous motor with electronic activation and cut-out
- Maintenance-free gear unit
- Electronic end position detector and motor cut-off
- Self-centring spindle adapter for fitting onto damper spindle
- Gear unit can be disengaged to position the damper and for manual adjustment
- Suitable for all fitting positions
- Threaded holes (M5) for fitting to bracket
- Version with halogen-free cable on demand

Technical data

Power supply		
	Power supply 230 V~	±15%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
Parameters		
	Torque and holding torque	18 Nm
	Running time for 90°	120 s
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 12...20 mm, □ 10...16 mm
	Admissible damper shaft (hardness)	max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature	–20...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
Construction		
	Weight	1.2 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm²
Standards and directives		
	Type of protection	IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529)
	Protection class 230 V	II (EN 60730)
	Protection class 24 V	III (EN 60730)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	II
	Mode of operation	Type 1 AB (EN 60730) Type 1 C (EN 60730)
	Software	A (EN 60730)

Overview of types

Type	Voltage	Power consumption
ASM124F120	230 V~	2.9 W, 5.6 VA
ASM124F122	24 V~	2.3 W, 2.4 VA

Power consumption when idle:

ASM124F120: 0.5 W, 5.1 VA

ASM124F122: 0.03 W, 0.4 VA

Accessories

Type	Description
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 124
0370059000	Clamping lever for shaft, Ø 8...18 mm
0370990001	Auxiliary change-over contacts, single
0370990002	Auxiliary change-over contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, fitting strip
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059
0372455001	Assembly part; DEF DN25...65 for ASM 124/134
0372455002	Assembly part; DEF DN80...100 for ASM 124; DN125 for ASM 134

Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V

ASM134F130

M

ASM 134: Damper actuator

Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with a switching (3-point) output
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Stepping motor with electronic activation and cut-out
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Maintenance-free
- Version with halogen-free cable on demand

Technical data

Power supply		
	Power supply	230 V~, ±15%, 50 Hz
	Power consumption	3.7 W, 4.7 VA
Parameters		
	Torque and holding torque	30 Nm
	Running time for 90°	120/240 s
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 12...20 mm, □ 10...16 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Ambient conditions		
	Admissible ambient temperature	–20...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
Construction		
	Weight	1.8 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm²
Standards and directives		
	Type of protection	IP40 (EN 60529) IP54 (EN 60529) IP55 (EN 60529)
	Protection class	II (IEC 60730)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	III
	Mode of operation	Type 2 B (EN 60730)
	Software	A (EN 60730)

Overview of types

Type	Power consumption during operation	Power consumption when idle
ASM134F130	3,7 W, 4,7 VA	1,1 W, 2,7 VA

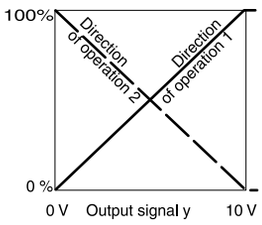
Accessories

Type	Description
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 124
0370990001	Auxiliary change-over contacts, single
0370990002	Auxiliary change-over contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, fitting strip
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059
0372455001	Assembly part; DEF DN25...65 for ASM 124/134
0372455002	Assembly part; DEF DN80...100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150...200 for ASM 134

Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V

ASM 124S, 134S: Damper actuator with SAUTER Universal Technology (SUT)

ASM1*4SF132



Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with switching (2- and 3-point) or continuous output (0...10 V)
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Stepping motor with electronic activation and cut-out
- Maintenance-free
- Intelligent adaptation of rotation angle, incl. feedback adjustment
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Version with halogen-free cable on demand

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=[1]	±20%
Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB(A)
	Response time	200 ms
Positioner	Control signal	0...10 V, R_i > 100 kΩ
	Positional feedback signal	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Ambient conditions		
	Admissible ambient temperature	–20...55 °C
	Admissible ambient humidity	< 95% rh, no condensation
Construction		
	Weight	1.6 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 2 × 0.75 mm²
Standards and directives		
	Type of protection	IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529)
	Protection class	III (IEC 60730)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Mode of operation	Type 1 AB (EN 60730) Type 1 C (EN 60730)
	Software	A (EN 60730)

[1] *24 V= only for control signals 0...10 V*

Overview of types

Type	Rotational torque	Holding torque	Running time for 90°	Power consumption	Admissible damper shaft
ASM124SF132	15 Nm	15 Nm	60, 120 s	2.4 W, 4.4 VA	Ø 12...20 mm, □ 10...16 mm
ASM134SF132	30 Nm	30 Nm	120, 240 s	2.4 W, 4.3 VA	Ø 12...20 mm, □ 10...16 mm

Power consumption when idle:

ASM124SF132: 0.25 W, 0.46 VA

ASM134SF132: 0.26 W, 0.48 VA

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM 124
0370059000	Clamping lever for shaft, Ø 8...18 mm
0370990001	Auxiliary change-over contacts, single
0370990002	Auxiliary change-over contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, fitting strip
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059
0372455001	Assembly part; DEF DN25...65 for ASM 124/134
0372455002	Assembly part; DEF DN80...100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150...200 for ASM 134

Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V

ASF112F122

ASF 112, 113: Damper actuator with spring return

Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with switching (2- and 3-point) output
- Self-centring spindle adapter
- Manual adjustment using hexagon socket, including locking of gear unit
- Maintenance-free
- Suitable for all fitting positions

Technical data

Power supply		
	Power supply 230 V~	±10%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
Parameters		
	Torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 6.4...20.5 mm, □ 6.4...13 mm
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Admissible ambient temperature	–32...55 °C
	Admissible ambient humidity	5...95% rh, no condensation
Construction		
	Housing	Cast aluminium
	Power cable	0.9 m, 0.75 mm²
Standards and directives		
	Type of protection	IP54 (EN 60529), suspended IP42 (EN 60529), not suspended
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Degree of contamination	II
	Over-voltage categories	III

Overview of types

Type	Control function	Voltage	Power consumption	Weight
ASF112F120	2-point	230 V~	4.5 W, 7.0 VA	1.2 kg
ASF112F122	2-point	24 V~/24...48 V=	3.5 W, 5.0 VA	1.2 kg
ASF112F220	2-point	230 V~	4.5 W, 7.0 VA	1.3 kg
ASF112F222	2-point	24 V~/24...48 V=	3.5 W, 5.0 VA	1.3 kg
ASF113F122	3-point	24 V~/24...48 V=	3.5 W, 5.0 VA	1.2 kg

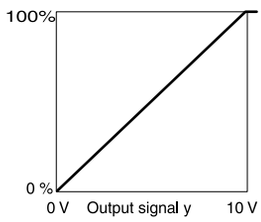
ASF112F220, ASF112F222: Double auxiliary contacts 6(2) A; 24...250 V~ with cable 0.9 m; 6 x 0.75 mm²

Accessories

Type	Description
0372245001	Lever adaptor for converting rotation into stroke
0372245002	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B

ASF 113S: Damper actuator with spring return and positioner

ASF113SF122



Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with a continuous output (0...10 V)
- Self-centring spindle adapter
- Manual adjustment using hexagon socket, including locking of gear unit
- Maintenance-free
- Suitable for all fitting positions

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
	Power consumption	3.5 W, 5.0 VA
Parameters		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Torque	7 Nm
	Holding torque	7 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 6.4...20.5 mm, □ 6.4...13 mm
	Admissible damper surface area[1]	1.5 m^2
Positioner	Control signal	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Admissible load	> 10 kΩ
	Switching range X_{sh}	0.2 V
Setting range	Starting point U_0	0 V
	Control span ΔU	10 V
Ambient conditions		
	Admissible ambient temperature	–32...55 °C
	Admissible ambient humidity	< 95% rh
Construction		
	Weight	1.3 kg
	Housing	Cast aluminium
	Power cable	0.9 m, 4 × 0.75 mm^2
Standards and directives		
	Type of protection	IP54 (EN60529), suspended IP 42 (EN 60529), not suspended
	Protection class	III (IEC 60730)
	Degree of contamination	II
	Over-voltage categories	III
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3

Overview of types

Type	Features
ASF113SF122	Damper actuator with spring return and positioner

[1] *Recommended value for smooth-running air dampers*

Accessories

Type	Description
0372245001	Lever adaptor for converting rotation into stroke
0372245002	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B

ASF122F122

ASF 122, 123: Damper actuator with spring return

Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with switching (2- and 3-point) output
- Self-centring spindle adapter
- Manual adjustment using hexagon socket, including locking of gear unit
- Wear-free brushless motor
- Maintenance-free
- Change direction of rotation by simply turning the actuator
- Suitable for all fitting positions

Technical data

Power supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 230 V~	±10%, 50...60 Hz
	Power supply 24...48 V=	±20%
Parameters		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Torque and holding torque	18 Nm
	Angle of rotation	Max. 90°
	Admissible damper shaft	Ø 8...25 mm, □ 6...18 mm
Ambient conditions		
	Admissible ambient temperature	−32...55 °C
	Admissible ambient humidity	5...95% rh
Construction		
	Housing	Cast aluminium
	Power cable	0.9 m, 0.75 mm²
Standards and directives		
	Type of protection	IP54 (EN60529), suspended IP42 (EN 60529), not suspended
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	II

Overview of types

Type	Control function	Voltage	Power consumption	Weight
ASF122F120	2-point	230 V~	6 W, 8 VA	2 kg
ASF122F122	2-point	24 V~/24...48 V=	5 W, 7 VA	2 kg
ASF122F220	2-point	230 V~	6 W, 8 VA	2.1 kg
ASF122F222	2-point	24 V~/24...48 V=	5 W, 7 VA	2.1 kg
ASF123F122	3-point	24 V~/24...48 V=	5 W, 7 VA	2 kg

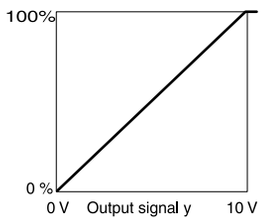
ASF122F220, ASF122F222: With double auxiliary contacts 6(2) A; 24...250 V~; with cable 0.9 m; 6 x 0.75 mm²

Accessories

Type	Description
0370997001	Lever adaptor for converting rotation into stroke
0370998001	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0378113001	Assembly parts; DEF DN 25...100 for ASF122/123

ASF 123S: Damper actuator with spring return and positioner

ASF123SF122



Features

- For operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers
- For controllers with a continuous output (0...10 V)
- Self-centring spindle adapter
- Manual adjustment using hexagon socket, including locking of gear unit
- Wear-free brushless motor
- Maintenance-free
- Change direction of rotation by simply turning the actuator
- Suitable for all fitting positions

Technical data

Power supply		
	Power supply 24...48 V=	±20%
	Power consumption	5.4 W, 7.5 VA
Parameters		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Torque and holding torque	18 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 8...25 mm, □ 6...18 mm
Positioner	Control signal	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Admissible load	> 10 kΩ
	Switching range X_{sh}	0.2 V
Setting range	Starting point U_0	0 V
	Control span ΔU	10 V
Ambient conditions		
	Admissible ambient temperature	–32...55 °C
	Admissible ambient humidity	< 95% rh
Construction		
	Weight	2 kg
	Housing	Cast aluminium
	Power cable	0.9 m, 4 × 0.75 mm²
Standards and directives		
	Type of protection[1)]	IP54 (EN60529), suspended IP42 (EN 60529), not suspended
	Protection class	III (IEC 60730)
	EMC Directive 2014/30/EU	EN 61000-6-2, EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-14
	Over-voltage categories	III
	Degree of contamination	II

Overview of types

Type	Features
ASF123SF122	Damper actuator with spring return and positioner

[1)] *Depending on fitting position, ensure IP54*

Accessories

Type	Description
0370997001	Lever adaptor for converting rotation into stroke
0370998001	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0378113001	Assembly parts; DEF DN 25...100 for ASF122/123

Pneumatic control and regulating equipment

The best possible control quality for clean rooms and high-security laboratories.

Safe, flexible and robust systems are essential in providing accurate air-conditioning and contamination control in clean rooms and high-security laboratories. Pneumatic control systems from SAUTER ensure reliability in every situation as they lead the way in terms of control quality and stability in room pressure maintenance.

Pneumatic control and regulating equipment

Relays and magnetic valves

Single-room control

centair controller system

Accessories

RUEP5F00

RUEP: Electropneumatic relay

Features

- Electromagnetic change-over valve
- Valve body made of brass, valve disc with soft seal made of FKM
- Cable gland for cables Ø 6...7 mm and connecting cables up to 1.5 mm^2
- Compressed air connection on upper part of valve G 1/8" A, male thread

Technical data

Power supply		
	Admissible operating time	100 %
	Power consumption	5 W (5.5 VA)
Parameters		
	Nominal flow rate[1)]	6.3 m^3_n/h
	Leakage rate	0.6 l/h (Δp = 1 bar)
	Differential pressure	1.7 bar
Ambient conditions		
	Admissible ambient temperature	0...55 °C
	Admissible ambient humidity	< 90% rh
Construction		
	Connecting thread	Rp⅛"
	Weight	0.34 kg
Standards and directives		
	Type of protection	IP65 (EN 60529)
	Low-Voltage Directive 2014/35/EU	EN 61010-1, EN 50178

Overview of types

Type	Control signal
RUEP5F001	230 V~, ±15%, 50...60 Hz
RUEP5F002	24 V~, ±20%, 50...60 Hz

RUEP5F002: Also suitable for 24 V DC=, ±20%

Accessories

Type	Description
0274469000	Polyamide screw-in elbow with R⅛" male thread
0277717000	Polyamide screw fitting with R⅛" male thread
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail EN 60715-C 20
0296938000	Fixing bracket for wall mounting
0381140001	Polyamide screw fitting with R⅛" female thread

[1)] *Flow of air at 1 bar in relation to atmosphere*

Single-room controllers

Pneumatic single-room controllers from SAUTER enable the room temperature to be controlled precisely. The preferred room temperature can be set using the setpoint adjuster. Single-room controllers are used for continuous temperature control in air-conditioning units or for activating VAV controllers and unit valves.

Overview of single-room controllers

			
Type designation	TKP, TKFP, TKSP	TSP, TSFP, TSSP	RLP 100
Temperature measurement			
Room	–	•	–
Duct	•	–	–
Volume flow control			
1-duct	–	–	•
2-duct	–	–	•
Room-pressure controller	–	–	–
Control characteristics			
P-controller	•	•	–
PI-controller	–	–	•
Certification			
Explosion protection as per ATEX certification	–	–	• [1]
Further information	Page 335	Page 337	Page 339

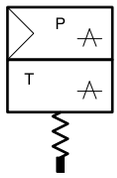
[1] *Only for certain product types; see RLP 100 fitting instructions*

			
Type designation	RLP100F910, F916, F918	RLP100F903, F908	RLP100F901, F915, F924
Temperature measurement			
Room	–	–	–
Duct	–	–	–
Volume flow control			
1-duct	–	•	–
2-duct	•	–	–
Room-pressure controller	–	–	•
Control characteristics			
P-controller	–	–	–
PI-controller	•	–	•
Certification			
Explosion protection as per ATEX certification	•	•	•
Further information	Page 341	Page 343	Page 349

TKP, TKFP, TKSP: Pneumatic duct temperature controllers

Features

- Oil-filled external measuring sensor for recording the duct temperature
- Measuring sensor can be located up to 1.5 m away
- P control characteristic
- Setpoint adjuster with ± scale and settable stops for limiting the setpoint



Technical data

Specifications

Supply pressure	1.3 bar ±0.1
Setting range[1]	17...27 °C
Output pressure	0.2...1.0 bar
P band X_p	approx. 2 K
Linearity error	2%
Time constant in moving air (0.5 m/s)	approx. 2.5 min

Permissible ambient conditions

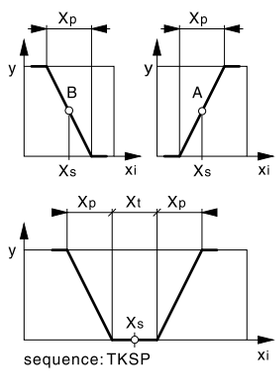
Admissible ambient temperature	0...55 °C

Structural design

Housing material	thermoplastic
Housing	72 × 72 mm, pure white
Weight	0.17 kg

Standards and directives

Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment



Overview of types

i *Control function: Fixed-schedule control requires an external command signal of 0...1.2 bar (e.g. RXP 81). Setpoint shift ±6K. Setpoint increase: 0.6...1.2 bar = 0...6 K. Setpoint decrease: 0.6...0 bar = 0...–6 K*

i *Air recovery l_n/h: To prevent excessive blow-off noise, this value should not be exceeded*

Type	TKP80AF117	TKP80BF117	TKP81AF117	TKP81BF117	TKFP81AF117	TKFP81BF117	TKSP80F117
Control function	Fixed value	Fixed value	Fixed value	Fixed value	Fixed value/schedule	Fixed value/schedule	Sequence
Control action	A	B	A	B	A	B	A and B
Air capacity	33 l_n/h	33 l_n/h	200 l_n/h	200 l_n/h	200 l_n/h	200 l_n/h	2 × 33 l_n/h
Air consumption	33 l_n/h	33 l_n/h	20 l_n/h	20 l_n/h	20 l_n/h	20 l_n/h	66 l_n/h
Air recovery	50 l_n/h	50 l_n/h	34 l_n/h	34 l_n/h	34 l_n/h	34 l_n/h	50 l_n/h
External restrictor required	1 piece	1 piece	0 piece	0 piece	0 piece	0 piece	2 piece
Dead zone X_t (sequence)	–	–	–	–	–	–	2 K

Accessories

Type	Description
0296724000	Sensor holder for wall mounting
0303212000	Rubber grommet for holding the capillary tube when passing through into ventilation ducts; T < 50 °C
0297302000	Fixing bracket for controller

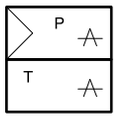
[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

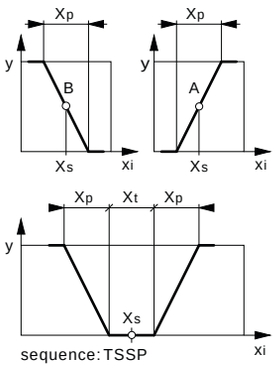
Type	Description
0228234001	Setpoint adjuster (pure white) with raised bridge
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297416001	Housing lid (pure white), screw-type, without setpoint adjuster
0297418032	Housing lid (pure white), screw-type, with setpoint adjuster, scale 17...27 °C

Housing cover: when ordered together with a controller, the housing is already changed in the factory

TSP, TSFP, TSSP: Pneumatic room-temperature controller

TS****F117





Features

- Sturdy bimetal sensor
- P control characteristic
- Setpoint adjuster with +/- scale and adjustable stops for limiting the setpoint

Technical data

Parameters		
	Supply pressure[1]	1.3 bar ±0.1
	Output pressure	0.2...1.0 bar
	Setting range	17...27 °C
	P band X_p	Approx. 2 K
	Time constant in moving air (0.2 m/s)	Approx. 7 minutes
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs/outputs		
	Linearity error	2%
Construction		
	Housing	72 × 72 mm
	Housing material	Thermoplastic, pure white
	Weight	0.1 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Control function: "Fixed value + schedule" requires an external command signal of 0...1.2 bar. Setpoint shift ±6 K. Setpoint increase: 0.6...1.2 bar = 0...6 K. Setpoint decrease: 0.6...0 bar = 0...-6 K

Air recovery: To prevent excessive bleed-off noise, this value should not be exceeded

Type	Control function	Control action	Air capacity	Air consumption	Air recovery	External restrictor required	Dead zone X_t (sequence)
TSP80AF117	fixed value	A	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSP80BF117	fixed value	B	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSP81AF117	fixed value	A	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSP81BF117	fixed value	B	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSSP80F117	fixed value	A and B	2 × 33 l_n/h	66 l_n/h	50 l_n/h	2 piece	2 K

TSSP80F117: Heating/cooling sequence

Accessories

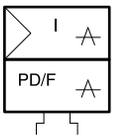
Type	Description
0228234001	Setpoint adjuster (pure white) with raised bridge
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation
0297441000	Cover plate, pure white, for various recessed junction boxes
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0303124000	Recessed junction box

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

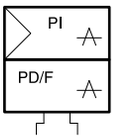
Type	Description
0297416001	Housing lid (pure white), screw-type, without setpoint adjuster
0297418032	Housing lid (pure white), screw-type, with setpoint adjuster, scale 17...27 °C
0297555001	Cover plate (pure white), for large recessed junction boxes (e.g. USA)
0297560001	Cover plate (pure white), for panels, for covering large apertures
0297557000	Wall insulation, prevents false readings due to draughts from the wall
0369573001	Surface junction box, pure white
0369573002	Surface junction box, black

RLP 100: Pneumatic volume-flow controller

RLP100F003



RLP100F003, RLP100F914



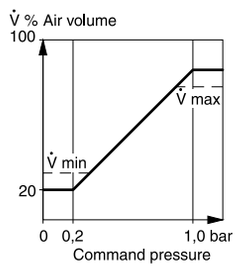
RLP100F123

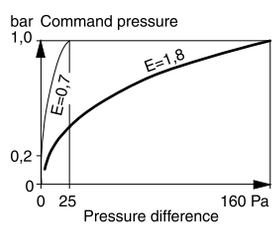
Features

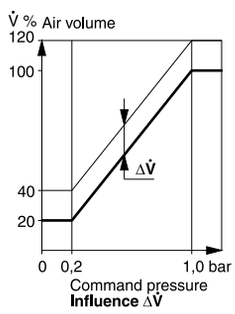
- Suitable for use in potentially explosive atmospheres in zone 1 II 2 G T6
- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Controls constant, switchable or variable air volumes
- High-precision, static differential pressure sensor with large measuring range (1...160 Pa)
- Front plate printed with circuit diagrams for easy identification of the controller functions
- Compressed-air connections with Rp⅛" female thread
- Special measuring connection for detecting the volume flow
- Low-pressure connections with dual-diameter connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 2 inputs
  - Command variable
  - Setpoint shift $\Delta\dot{V}$
- 2 outputs
  - Actual value
  - Control of damper actuator
- 1 adjuster for calibrating the sensor measuring range
- 3 setpoint adjusters for maximum and minimum limitation of volume flow and for limiting the setpoint shift $\Delta\dot{V}$ to max. ±20%

Technical data

Parameters		
	Output pressure	0.2...1.0 bar
	Setting range, volume flow	20...100% $\dot{V}$
	Measuring range Δp	6.4...160 Pa (factory setting), can be reduced to 1...25 Pa
	Response sensitivity	0.1 Pa
	Supply pressure[1]	1.3 bar ±0.1
	Integral action time	1 s (F123)
	Input, setpoint shift w	20...100% $\dot{V}$ ≙ 0.2...1.0 bar
	Operating range P_{stat}	0...3000 Pa
	Low-pressure connections	3000 Pa
	Air consumption	44 l_n/h (F123 = 90 l_n/h)
	Air consumption l_n/h with setpoint shift $\Delta\dot{V}$	60
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs/outputs		
	Linearity and accuracy of root extraction[2]	2%
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Fitting	Wall/top-hat rail (rail as per EN 60715)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP30







[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *The percentages given are based on 100% volume flow*

Overview of types

Air capacity: The integration time can be extended for dynamically unfavourable control loops (accessory 0297653)

Type	Direction of operation	Setpoint shift Δ V̇	Air capacity
RLP100F003	B/A	3...20% V̇	330 l_n/h
RLP100F123	A	–	900 l_n/h
RLP100F914	A	3...20% V̇	330 l_n/h

RLP100F003: For supply air and return air (integral indoor-air control)

RLP100F123: For return air with aggressive gases (PI fume-cupboard control)

RLP100F914: For return air with aggressive gases, with interface relay (integral indoor-air control)

Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297653000	Resistance 10 Ω, for air capacity 180 ln/h (not for F123)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297772001	Screw-in connector M4 with seal for soft hose, internal -Ø 4 mm
0297838001	Manometer bracket for 2 XMP manometers
0297091000	Cover for unused manometer apertures
0297680001	Specification V̇ min., V̇ max. set and labelled
0297680002	Influence E set and labelled
0297870001	Bracket for fixing to ceilings, floors or in panels

0297354000: F003, F123, F914 - 5 of each required

0297680001: Not for F123

0297762 001: Can be plugged into soft plastic hose, inner Ø 4 mm. If the attenuation is insufficient, instead of the Ø 0.8 mm restrictor, the Ø 0.5 mm restrictor can be used. (Accessory 0274571; this is not suitable for RLP 100 F908, F914, F123)

0274571 000: Can be plugged into soft plastic hose, inner Ø 4 mm. Suitable for extreme cases when the Ø 0.8 mm restrictor (accessory 0297762) does not provide sufficient attenuation. Not suitable for volume flow controllers (RLP 100 F914, F123) and transducers (RLP 100 F908) where the "+" and "-" low pressure line is constantly supplied with a very small quantity of air, because the pressure signals in the lower measuring range are falsified and the positioning time of 1…2 s (RLP 100 F123) is not achieved.

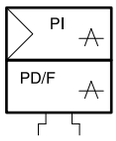
0297838 001: Also supplied: 2 screws, 1 reduction nipple (0297596) for hose with inner Ø 1.7 / Ø 4; 1 connection nipple (0297112) with seal M4/plug nipple for hose with inner Ø 1.7; 1 m hose with inner Ø 1.7. Use cover 0297091 for unused pressure-gauge aperture.

RLP100F910, F916, F918: Dual-channel volume flow controller

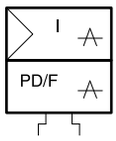
Features

- Optimum use of energy thanks to RLP 100 2-channel controller in combination with room operating units of the TSP, TSFP and TSSP series
- Compatible with practically all currently-available mixing boxes
- Suitable for use in potentially explosive atmospheres in zone 1 II 2 G T6
- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Controls constant, switchable or variable air volumes
- High-precision, static differential pressure sensor with large measuring range
- Front plate printed with circuit diagrams for easy identification of the controller functions
- Compressed-air connections with Rp⅛" female thread
- Special measuring connection for detecting the volume flow
- Low-pressure connections with dual-diameter connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 2 inputs
  - Command variable
  - Day/night change-over or heating/cooling signal
- 3 outputs
  - Actual value of volume flow
  - Activates two damper actuators, heating and cooling
- 1 adjuster for calibrating the sensor measuring range
- 2 setpoint adjusters for maximum and minimum limitation of the volume flow

RLP100F91



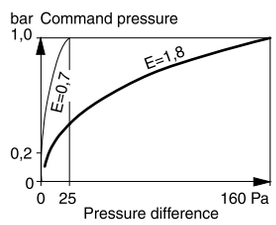
RLP100F910, RLP100F916

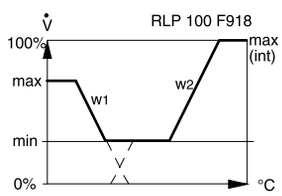


RLP100F918

Technical data

Parameters		
Admissible pressure	Low-pressure connections	3000 Pa
	Supply pressure	1.3 bar ±0.1
	Operating range P_{stat}	0...3000 Pa
	Response sensitivity	0.1 Pa
	Input for setpoint shift w1, w2; 20...100% V̇	0.2...1.0 bar
	Measuring range Δp (factory setting)	6.4...160 Pa, can be reduced to 1...25 Pa
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs/outputs		
	Setting range for setpoint	20...100% V̇
	Output pressures	0.2...1.0 bar
	Linearity and accuracy of root extraction	2% of 100% V̇
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Fitting	To walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP30





Overview of types

Type	RLP100F910	RLP100F916	RLP100F918
Features	Constant-air-volume controller (PI) for full-range actuators	Constant VAV controller (PI) for sequential actuators	VAV controller (I) for full-range actuators
Air capacity, connection 2, cooling	400 l_n/h	100 l_n/h	120 l_n/h
Air capacity, connection 7, heating	400 l_n/h	18 l_n/h	80 l_n/h
Air consumption	53 l_n/h	60 l_n/h	80 l_n/h
P-band (fixed)	100%	400%	–

Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297870001	Bracket for fixing to ceilings, floors or in panels

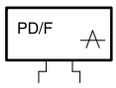
0297354000: 5 pieces required

0297762 001: Can be plugged into soft plastic hose, inner Ø 4 mm. If attenuation is insufficient, instead of the Ø 0.8 mm restrictor, the Ø 0.5 mm restrictor can be used (accessory 0274571; this restrictor is not suitable for RLP100F908, F914, F123).

0274571 000: Can be plugged into soft plastic hose, inner Ø 4 mm. Suitable for extreme cases when the Ø 0.8 mm restrictor (accessory 0297762) does not provide sufficient attenuation. Not suitable for volume flow controllers (RLP100F914, F123) and transducers (RLP100F908) where the "+ and -" low pressure line is constantly supplied with a very small quantity of air, because the pressure signals in the lower measuring range are falsified and the positioning time of 1…2 s (RLP100F123) is not achieved.

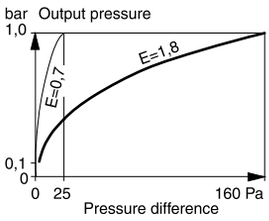
RLP100F903, F908: Pneumatic air-volume transducer

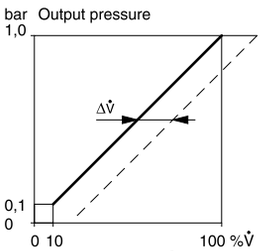
RLP100F90



Features

- Root-extracted output signal as command variable for extended control loops
- Special version available for measuring aggressive gases
- Suitable for use in potentially explosive atmospheres in zone 1 II 2 G T6
- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- High-precision, static differential pressure sensor with large measuring range
- Front plate printed with circuit diagrams for easy identification of the controller functions
- Compressed-air connections with Rp⅛" female thread
- Special measuring connection for detecting the volume flow
- Low-pressure connections with dual-diameter connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 1 input
  - Setpoint shift ΔV̇
- 1 output
  - Actual value of volume flow
- 1 adjuster for calibrating the sensor measuring range
- 1 setpoint adjuster for limiting the setpoint shift ΔV̇ to max. ±20%





Influence of the ΔV̇ adjuster on the actual value

Technical data

Parameters		
	Supply pressure[1]	1.3 bar ±0.1
	Measuring range Δp[2]	1.6...160 Pa
	Response sensitivity	0.1 Pa
	Measuring range, volume flow	10...100% V̇
	Air capacity	320 l_n/h
	Air consumption	38 l_n/h
	Operating range P_{stat}	0...3000 Pa
	Output pressure	0.1...1.0 bar
	Low-pressure connections	3000 Pa
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs/outputs		
	Input for setpoint shift ΔV̇	3...20% V̇
	Linearity, accuracy of root extraction 20...100% V̇	2% of $\dot{V}_{100}$
	Linearity, accuracy of root extraction 10...20% V̇	4% of $\dot{V}_{100}$
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Fitting	To walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP30

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Factory setting (E = 1.8), can be reduced to 1...25 Pa (E = 0.7) using E adjuster*

Overview of types

Type	Features
RLP100F903	VAV transducer
RLP100F908	VAV transducer for corrosive gases

Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297870001	Bracket for fixing to ceilings, floors or in panels

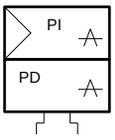
0297354000: 3 pieces required

0297762 001: Can be plugged into soft plastic hose, inner Ø 4 mm. If attenuation is insufficient, instead of the Ø 0.8 mm restrictor, the Ø 0.5 mm restrictor can be used (accessory 0274571; this restrictor is not suitable for RLP100F908, F914, F123).

0274571 000: Can be plugged into soft plastic hose, inner Ø 4 mm. Suitable for extreme cases when the Ø 0.8 mm restrictor (accessory 0297762) does not provide sufficient attenuation. Not suitable for volume flow controllers (RLP100F914, F123) and transducers (RLP100F908) where the "+" and "-" low pressure line is constantly supplied with a very small quantity of air, because the pressure signals in the lower measuring range are falsified and the positioning time of 1…2 s (RLP100F123) is not achieved.

RLP100F901, F915, F924: Pneumatic room-pressure controller

RLP100F9**



Features

- Suitable for use in potentially explosive atmospheres in zone 1 II 2 G T6
- Room-pressure control in tightly-sealed rooms, e.g. clean rooms or laboratories (up to BSL-4)
- Fast and accurate control system in conjunction with the RLP 100 pneumatic air volume controllers
- Precise static sensor; can also be used in areas with contaminated room air
- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Front plate of controller is printed with diagrams for fast identification of the functions
- Compressed-air connections with Rp⅛" female thread
- Special measuring connection for detecting the room pressure
- Low-pressure connections with dual-diameter connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 1 input
  - Remote setpoint adjustment
- 2 outputs
  - Actual value for room pressure
  - Command signal for air-volume controller (air volume shift)
- Setpoint adjuster for room pressure (minimum limitation for room pressure for remote setpoint adjustment) and adjuster for T_n and X_p

Technical data

Parameters		
Admissible pressure	Low-pressure connections	±3000 Pa
	Supply pressure[1]	1.3 bar ±0.1
	Output pressure	0.2...1.0 bar
	Integral action time	0...15 s (0...100%)
	Remote setpoint adjustment	0.2...1.0 bar
	Air capacity	400 l_n/h
	Air consumption	50 l_n/h
	Linearity error	1%
Ambient conditions		
	Admissible ambient temperature	0...55 °C
	Admissible operating pressure p_{stat}	±3000 Pa
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Fitting	To walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP30

Overview of types

Type	Setting range	P-band 0...100% ≙	Response sensitivity
RLP100F901	-20...20 Pa	0...40 Pa	0.1 Pa
RLP100F915	-50...50 Pa	0...100 Pa	0.25 Pa
RLP100F924	-180...-35/35...180 Pa	0...145 Pa	0.36 Pa

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Accessories

Type	Description
XMP50/50PF001	Manometer, scale –50...50 Pa/–20...20 Pa
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297838001	Manometer bracket for 2 XMP manometers
0297091000	Cover for unused manometer apertures
0297867001	Reference pressure container
0297870001	Bracket for fixing to ceilings, floors or in panels

0297354000: 3 pieces required

0297838 001: Also supplied: 1 reduction nipple (0297596) for hose with inner Ø 1.7 / Ø 4.0; 1 connection nipple (0297112) with seal M4/plug nipple for hose with inner Ø 1.7; 1 m hose with inner Ø 1.7 and 2 screws. Use cover 0297091 for unused pressure-gauge aperture. The pressure gauge to indicate the room pressure must be connected to the actual value connection M.

Solutions for laboratories and clean rooms

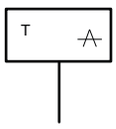
SAUTER solutions for fume cupboards provide safe, demand-led control of air flows in laboratories. Because of their ATEX certification, these systems can also be used in potentially explosive atmospheres.

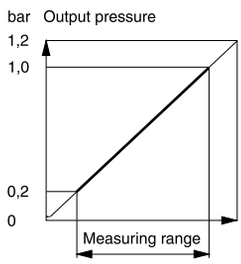
Overview of solutions for laboratories and clean rooms

		
Type designation	TUP2**F001	RLP100F901, F915, F924
Product name	centair	
Function	Pneumatic temperature transducer for duct fitting	Pneumatic room-pressure controller
Temperature measurement		
Room	–	–
Duct	•	–
Volume flow control		
1-duct	•	–
2-duct	•	–
Room-pressure controller	–	•
Control characteristics		
P-controller	n.a.	–
PI-controller	n.a.	•
Certification		
Explosion protection as per ATEX certification	–	•
Further information	Page 348	Page 349

TUP 214...262F001: Pneumatic temperature transducer for duct fitting, centair

TUP2**F001





Features

- Pneumatic temperature measurement and/or regulation of liquid or gaseous media in tanks, boilers or piping in conjunction with pneumatic control facilities (centair)
- Immersion stem made of nickel filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air connections with Rp 1/8" female thread
- Nozzle-ball system

Technical data

Parameters		
	Supply pressure via ext. restrictor[1]	1.3 ±0.1 bar (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity, air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.5 m/s)	3.2 minutes
	In moving air (3 m/s)	1.6 minutes
	In water without protective tube	12 s
	In water with protective tube	70 s
	Protective tube, heat-conducting paste	25 s

Ambient conditions		
	Admissible ambient temperature	0...70 °C

Overview of types

Type	TUP214F001	TUP224F001	TUP242F001	TUP262F001
Measuring range	-20...40 °C	5...35 °C	0...120 °C	80...200 °C
Total length of stem	304 mm	304 mm	214 mm	214 mm
Active length of stem	201 mm	201 mm	112 mm	112 mm
Admissible sensor temperature	-25...70 °C	-25...70 °C	-25...150 °C	-25...210 °C
Weight	0.16 kg	0.16 kg	0.15 kg	0.15 kg
Effect of temperature at instrument head	0.07 K/K	0.07 K/K	0.12 K/K	0.12 K/K

Accessories

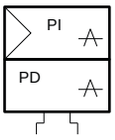
Type	Description
0391011300	Thermowell, LW 7, of brass, 300 mm for TUP 214, 224, thread R½, 10 bar
0391011200	Thermowell, LW 7, of brass, 225 mm for TUP 242, 262, thread R½, 10 bar
0391022300	Thermowell, LW 7, of stainless steel, 300 mm for TUP 214, 224, thread G½ male, 40 bar
0391022200	Thermowell, LW 7, of stainless steel, 225 mm for TUP 242, 262, thread G½ male, 40 bar
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0364264000	Welding sleeve of stainless steel, with female thread G½", flat seal of copper and PTFE (for aggressive media)
0297631000	Flange of thermoplastic for direct fitting to the ventilation duct

Thermowells: See product data sheet on thermowells

[1] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers. For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

RLP100F901, F915, F924: Pneumatic room-pressure controller

RLP100F9**



Features

- Suitable for use in potentially explosive atmospheres in zone 1 II 2 G T6
- Room-pressure control in tightly-sealed rooms, e.g. clean rooms or laboratories (up to BSL-4)
- Fast and accurate control system in conjunction with the RLP 100 pneumatic air volume controllers
- Precise static sensor; can also be used in areas with contaminated room air
- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Front plate of controller is printed with diagrams for fast identification of the functions
- Compressed-air connections with Rp⅛" female thread
- Special measuring connection for detecting the room pressure
- Low-pressure connections with dual-diameter connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 1 input
  - Remote setpoint adjustment
- 2 outputs
  - Actual value for room pressure
  - Command signal for air-volume controller (air volume shift)
- Setpoint adjuster for room pressure (minimum limitation for room pressure for remote setpoint adjustment) and adjuster for T_n and X_p

Technical data

Parameters		
Admissible pressure	Low-pressure connections	±3000 Pa
	Supply pressure[1]	1.3 bar ±0.1
	Output pressure	0.2...1.0 bar
	Integral action time	0...15 s (0...100%)
	Remote setpoint adjustment	0.2...1.0 bar
	Air capacity	400 l_n/h
	Air consumption	50 l_n/h
	Linearity error	1%
Ambient conditions		
	Admissible ambient temperature	0...55 °C
	Admissible operating pressure p_{stat}	±3000 Pa
Construction		
	Housing material	Glass-fibre-reinforced thermoplastic
	Fitting	To walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP30

Overview of types

Type	Setting range	P-band 0...100% ≙	Response sensitivity
RLP100F901	-20...20 Pa	0...40 Pa	0.1 Pa
RLP100F915	-50...50 Pa	0...100 Pa	0.25 Pa
RLP100F924	-180...-35/35...180 Pa	0...145 Pa	0.36 Pa

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Accessories

Type	Description
XMP50/50PF001	Manometer, scale –50...50 Pa/–20...20 Pa
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297838001	Manometer bracket for 2 XMP manometers
0297091000	Cover for unused manometer apertures
0297867001	Reference pressure container
0297870001	Bracket for fixing to ceilings, floors or in panels

0297354000: 3 pieces required

0297838 001: Also supplied: 1 reduction nipple (0297596) for hose with inner Ø 1.7 / Ø 4.0; 1 connection nipple (0297112) with seal M4/plug nipple for hose with inner Ø 1.7; 1 m hose with inner Ø 1.7 and 2 screws. Use cover 0297091 for unused pressure-gauge aperture. The pressure gauge to indicate the room pressure must be connected to the actual value connection M.

HSUP: Pneumatic humidity transducer for wall fitting

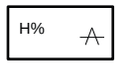
HSUP1F001

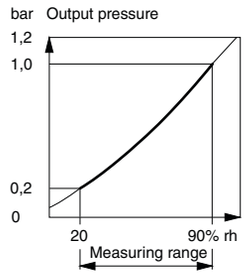
Features

- Part of the centair system family
- Converts the measured relative humidity into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air is connected via a plug nipple for soft plastic tubing Ø 4 mm (internal)
- Nozzle-ball system

Technical data

Parameters		
	Supply pressure via ext. restrictor[1]	1.3 bar ±0.1 (Ø 0.2 mm)
	Air capacity, air consumption	33 l_n/h
	Linearity error	< 2%
	Time constant in moving air (0.2 m/s)	Approx. 10 minutes
	Temperature influence	-0.5% rh/K
	Measuring range	20...90% rh
	Output pressure	0.2...1.0 bar
	Hysteresis	5% rh
Ambient conditions		
	Admissible ambient temperature	10...40 °C
Structural design		
	Material	Thermoplastic
	Housing cover	Front plate pure white (RAL 9010), frame grey-white (RAL 9002)
	Weight	0.17 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art 3.3 for pressure equipment





Overview of types

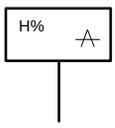
Type	Description
HSUP1F001	Pneumatic humidity transducer for wall fitting

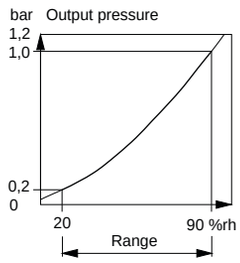
Accessories

Type	Description
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation
0303124000	Recessed junction box
0310315000	Surface junction box

[1] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers; For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

HTP151F001





HTP: Pneumatic humidity transducer for duct fitting

Features

- Converts the measured relative humidity into a pneumatic standard signal of 0.2...1.0 bar
- Measuring element consisting of a temperature-compensated humidity sensor with a stabilised synthetic textile strip
- Compressed-air connection Rp⅛"
- Nozzle-ball system

Technical data

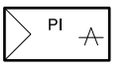
Parameters		
	Supply pressure via ext. restrictor[1]	1.3 bar ±0.1 (Ø 0.2 mm)
	Air capacity, air consumption	33 l_n/h
	Hysteresis	4% rh
	Linearity error	See characteristic
	Time constant in moving air (0.2 m/s)	Approx. 3 minutes
	Measuring range	20...90% rh
	Output pressure	0.2...1.0 bar
	Temperature influence	Compensated
	Max. air speed	10 m/s
Ambient conditions		
	Admissible ambient temperature	0...70 °C
Construction		
	Material	Sensor tube of glass-fibre-reinforced thermoplastic
	Fitting	Flange with seal for duct and wall
	Weight	0.3 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art 3.3 for pressure equipment

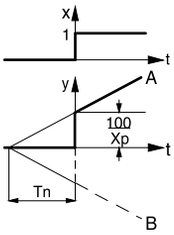
Overview of types

Type	Description
HTP151F001	Pneumatic humidity transducer for duct fitting, centair

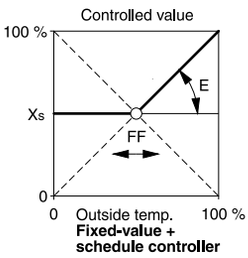
[1] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 on the RCP and RPP 20 standard controllers; for regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

RCP 10, 11: PI controller, centair[fi]





PI-controller



Fixed-value + schedule controller

Features

- Fixed-value PI controller
- Fixed-value schedule PI controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed air connections, Rp 1/8" female thread
- Inputs for
  - Remote setpoint adjustment
  - Controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive

Technical data

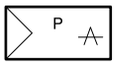
Specifications		
	Supply pressure[1)]	1.3 bar ±0.1
	Setting range X_s	0...100%
	Remote setpoint adjustment	0...100%
	P band X_p	0...100% (X_{P3})
	Integral action time	1...15 min (T_n)
	Air consumption[2)]	30 l_n/h
	Air capacity	400 l_n/h
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs and outputs		
	Output pressures	0.2...1.0 bar
	Input pressures	0.2...1.0 bar
Structural design		
	Material	Housing, insert and front door made of thermoplastic
	Fitting	On wall or switch panel
	Weight	0.7 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

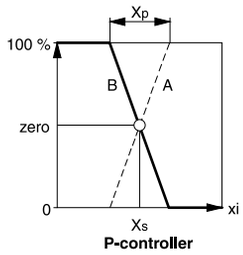
Overview of types

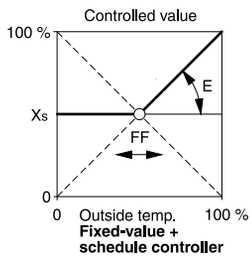
Type	Features	Influence E	Shift starting point FF
RCP10F001	PI fixed-value controller	–	–
RCP11F001	PI fixed-value slave controller	0.25...3	0...100%

1) *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

2) *Without a transducer (air consumption for transducer connection 4, an additional 33 l_n/h)*







RCP 20, 21: P controller, centair[fi]

Features

- Fixed-value P-controller
- Fixed-value schedule P controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter $X_s$can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed-air connection Rp ⅛" female thread
- Inputs for
  - Remote setpoint adjustment
  - Controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive

Technical data

Specifications		
	Supply pressure[1)]	1.3 bar ±0.1
	Setting range X_s	0...100%
	Remote setpoint adjustment	0...100%
	P band X_p	0...100% (X_{P3})
	Zero point	0...100%
	Air capacity[2)]	400 l_n/h
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs and outputs		
	Output pressures	0.2...1.0 bar
	Input pressures	0.2...1.0 bar
Structural design		
	Material	Housing, insert and front door made of thermoplastic
	Fitting	Wall/switch panel
	Weight	0.7 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

1) For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants

2) On RCP20 with limiter B, only 200 l_n/h

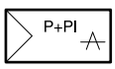
Overview of types

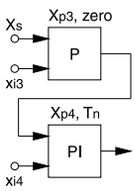
i *Air consumption: without a transducer (air consumption for transducer connection 3, an additional 33 l_n/h)*

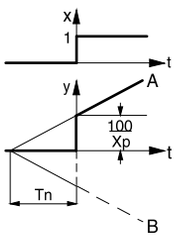
Type	Features	Air consumption	Limiter B	Influence E	Shift starting point FF
RCP20F001	PI fixed-value controller, min. limiter	40 l_n/h	0...100%	–	–
RCP21F001	PI fixed-value slave controller	60 l_n/h	–	0.25...3	0...100%

Accessories

Type	Description
0297103000	Scale bag for RCP adjuster







PI-controller

RCP 30, 31: P+PI cascade controller, centair[fi]

Features

- P+PI cascade controller
- P+PI cascade schedule controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter X_S can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed-air connection Rp ⅛" female thread
- Inputs for
  - Remote setpoint adjustment
  - Main controlled variable
  - Auxiliary controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive

Technical data

Specifications		
	Supply pressure[1)]	1.3 bar ±0.1
	Air capacity	400 l_n/h
	Setting range X_s	0...100%
	Remote setpoint adjustment	0...100%
	P band X_p	0...100% (X_{P3}, X_{P4})
	Integral action time	1...15 min (T_n)
	Zero point	0...100%
	Limiter B	0...100%
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Inputs and outputs		
	Input pressures	0.2...1.0 bar
	Output pressures	0.2...1.0 bar
Structural design		
	Material	Housing, insert and front door made of thermoplastic
	Fitting	Wall/switch panel
	Weight	0.7 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

[1)] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Overview of types

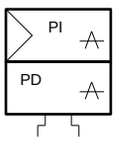
i *Air consumption: without a transducer (air consumption for transducer connection 3 and 4, an additional 33 l_n/h each)*

Type	Features	Air consumption	Influence E	Shift starting point FF
RCP30F001	P+PI cascade fixed-value controller	70 l_n/h	–	–
RCP31F001	P+PI cascade fixed-value slave controller	90 l_n/h	0.25...3	0...100%

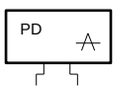
Accessories

Type	Description
0297103000	Scale bag for RCP adjuster

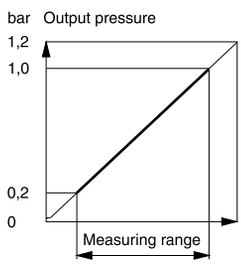
RUP1**F0001



RUP105F001



RUP140F001



RUP: Differential pressure controller/transducer, centair

Features

- Conversion of measured differential pressures into a pneumatic standard signal of 0.2...1.0 bar by a pressure sensor
- PI-controller
- Easy to use, PI-controller not operational when used only as a transducer
- Differential pressure measuring ranges up to 500 Pa and 4000 Pa
- Front plate printed with circuit diagrams for easy identification of the controller functions
- Compressed-air connections with Rp⅛" female thread
- Nozzle-ball system

Technical data

Parameters		
Controller	Supply pressure	1.3 bar ±0.1
	Air capacity	100 l_n/h
	Air consumption	50 l_n/h
Transducer	Supply pressure[1)]	1.3 bar ±0.1 (via ext. restrictor Ø 0.2 mm)
	Air consumption	33 l_n/h
	Air capacity	33 l_n/h
	Output pressure	0.2...1.0 bar
	P-band (fixed)	400%
	Setpoint	0...100%
	Integral action time	0.5...3 s
	Remote setpoint adjustment	0.2...1.0 bar
	Linearity error	2%
	Hysteresis	0.5%
	Low-pressure connections	100 mbar (permissible pressure)
Ambient conditions		
	Admissible ambient temperature	0...55 °C
Construction		
	Housing material	Thermoplastic
	Fitting	Wall/top-hat rail
	Weight	0.15 kg

Overview of types

Type	Measuring range (Pa)
RUP105F001	0...500 Pa
RUP140F001	0...4000 Pa

Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm

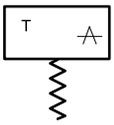
0297354000: 3 pieces required

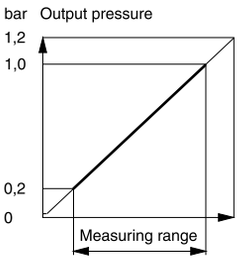
[1)] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 on the RCP and RPP 20 controllers; for regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

TMUP: Mean temperature transducer, centair[fi]

Features

- Mean temperature measurement and/or regulation in ventilation ducts in conjunction with pneumatic control facilities (centair®)
- Capillary tube (10 m long) filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Nozzle-ball system
- Compressed-air connection with Rp ⅛" female thread





Technical data

Specifications		
	Supply pressure via ext. restrictor[1)]	1.3 ±0.1 bar (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity, air consumption	33 l_n/h
	Linearity error	< 2%
	Effect of temperature at instrument head	0.08 K/K
	Admissible sensor temperature	–25...70 °C
Time constant	In moving air (0.5 m/s)	1.0 min
	In moving air (3 m/s)	0.5 min
Permissible ambient conditions		
	Admissible ambient temperature	0...70 °C
Structural design		
	Capillary tube	10 m
	Weight	0.36 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

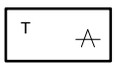
Overview of types

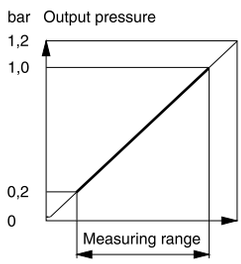
Type	Measuring range
TMUP210F001	–20...40 °C
TMUP220F001	5...35 °C

Accessories

Type	Description
0303167000	Five holders for fitting the capillary tube

[1)] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers;*
For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants





TSUP: Room temperature transducer, centair[fi]

Features

- Converts the measured room temperature into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air is connected via a push-on nipple for soft plastic tubing Ø 4 mm (internal)
- Nozzle-ball system

Technical data

Specifications		
	Supply pressure via ext. restrictor[1)]	1.3 ±0.1 bar (Ø 0.2 mm)
	Measuring range	5...35 °C
	Output pressure	0.2...1.0 bar
	Air capacity, air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.2 m/s)	5 min
Permissible ambient conditions		
	Admissible ambient temperature	0...70 °C
Structural design		
	Material	Thermoplastic
	Housing cover	Front plate pure white (RAL 9010), frame grey-white (RAL 9002)
	Weight	0.17 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type
TSUP1F001

Accessories

Type	Description
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation
0303124000	Recessed junction box
0310315000	Surface junction box

[1)] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 on the RCP and RPP 20 standard controllers; for regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/de/pneumatic_plants*

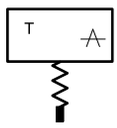
TWUP: Outside-temperature transducer

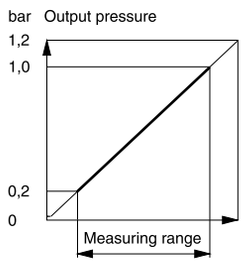
Features

- Part of the centair® family of systems
- Capillary tube and sensor cartridge are filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Nozzle-ball system

Technical data

Specifications		
	Supply pressure via ext. restrictor[1]	1.3 bar ±0.1 (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity, air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.5 m/s)	3.2 min
	In moving air (3 m/s)	1.6 min
	In water without protective tube	12 s
	In water with protective tube	70 s
	Protective tube, heat-conducting paste	25 s
	Effect of temperature at instrument head	0.1 K/K
Permissible ambient conditions		
	Admissible ambient temperature	0...70 °C
	Admissible sensor temperature	–25...70 °C
Structural design		
	Capillary tube	1.5 m
	Weight	0.24 kg
	Sensor cartridge Ø mm	Ø 9 mm





Overview of types

Type	Measuring range
TWUP210F001	–20...40 °C
TWUP220F001	5...35 °C

Accessories

Type	Description
0364440120	Thermowell, LW 15, made of brass, 120 mm long, with R½" thread, max. pressure 16 bar; additional bushing for retaining holder 0364140 is required
0364258120	Protective tube LW 15 of stainless steel, 120 mm long, with G½" thread, max. pressure 25 bar; additional bushing for tension-relief piece 0364140 is required
0364140000	Tension-relief piece for use when fitted in protective tubes
0303212000	Rubber grommet for holding the capillary tube when passing through into ventilation ducts; T < 50 °C

Protective tubes: see product data sheet on protective tubes

[1] *The restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers*
For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants

XMP: Manometer for indicating measured values, centair[fi]

Features

- Several versions for indicating various variables and measuring ranges
- Manometers are suitable for fitting into the standard controllers of the RCP series
- The accessories enable the manometers to be fitted into various controllers or panels
- Removable plexiglass cover for adjusting the indicator
- Connected via G 1/8" male thread or push-on nipple Ø 2.3 mm

Technical data

Specifications		
	Measuring accuracy	Class 1, 6
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
	Operating pressure	max. 1.4 bar (XMP 0/16 max. 1.6 bar)
Structural design		
	Weight	0.05 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

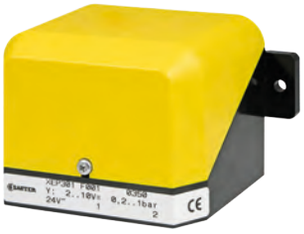
Type	Scale range	Auxiliary scale	Feature
XMP020/40F001	–20...40 °C	0.2...1.0 bar	Temperature
XMP5/35TF001	5...35 °C	0.2...1.0 bar	Temperature
XMP0/120TF001	0...120 °C	0.2...1.0 bar	Temperature
XMP80/200F001	80...200 °C	0.2...1.0 bar	Temperature
XMP20/90FF001	20...90% rh	0.2...1.0 bar	Rel. humidity
XMP0/20AFF002	0...20 g/Kg	0.2...1.0 bar	Abs. humidity
XMP0/5NDF001	0...5.0 mbar	0.2...1.0 bar	Low pressure
XMP5/10NDF001	5...10 mbar	0.2...1.0 bar	Low pressure
XMP0/100EF001	0...100%	0.2...1.0 bar	Standard signal
XMP0/16BF001	0...1.6 bar	–	Output pressure

XMP50/50PF001: Manometer for the RLP100F901/F915 room-pressure controllers; indicates the room pressure; double scale –20...20 Pa/–50...50 Pa = 0.2...10 bar. The preferred range is selected by marking a field on the scale.

Accessories

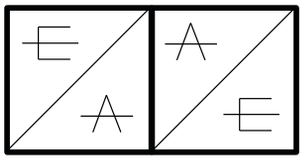
Type	Description
0297044000	Fitting kit for mounting in panels

XEP: e/p and p/e converter



XEP301FF001

XEP1***



XEP301F0**

Features

- Coupling component between electronic and pneumatic control units
- Electronic activation of pneumatic actuators in HVAC installations
- For converting electrical signals into pneumatic ones and vice versa
- Available with or without electric amplifier for use in combination with equipment with low air capacities
- XEP 301 has an electric amplifier and a p/e converter for bi-directional conversion of signals
- Easy to integrate pneumatic standard signals on the automation level
- Compressed-air connections with Rp⅛" female thread
- Thermoplastic housing suitable for fitting to walls or DIN rail (EN 60715)

Technical data

Parameters		
	Supply pressure[1]	1.3 bar ±0.1
	Control action	A (acts directly)
Admissible ambient conditions		
	Admissible humidity	< 90% rh
Standards and directives		
	Conformity	Directive 97/23/EC Art 3.3 for pressure equipment
	Type of protection	IP54 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
For XEP10F001	EMC directive	Not EN 61000-6-2

Overview of types

Type	Voltage	Input signal	Output signal	Air capacity	Weight
XEP1F001	–	2...10 V	0.2...1.0 bar	19 l_n/h	0.24 kg
XEP1F002	–	4...20 mA	0.2...1.0 bar	19 l_n/h	0.24 kg
XEP10F001	–	2...10 V	0.2...1.0 bar	400 l_n/h	0.26 kg
XEP10F002	–	4...20 mA	0.2...1.0 bar	400 l_n/h	0.26 kg
XEP110F001	24 V~/=	2...10 V	0.2...1.0 bar	400 l_n/h	0.27 kg
XEP110F011	24 V~/=	0...10 V	0.2...1.0 bar	400 l_n/h	0.27 kg
XEP301F001	24 V~/=	2...10 V 0.2...1.0 bar	0.2...1.0 bar 2...10 V	16 l_n/h	0.26 kg
XEP301F011	24 V~/=	0...10 V, 0.2...1.0 bar	0.2...1.0 bar = 0...10 V	16 l_n/h	0.26 kg

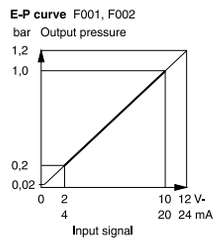
Air capacity, XEP 1: Supply is normally via a built-in restrictor in connection 1. If air is constantly recovered from RCP, RLP (connection 6), connection 1 must be closed.

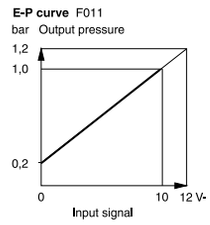
Air capacity, XEP 301: Supply is normally via another bleed-off SAUTER device with a restrictor Ø 0.14 mm (e.g. RLP). For autonomous operation with a line restrictor (e.g. XP 4) or for circuits supplied by a TSFP 80 (restrictor Ø 0.2 mm), the following applies: air capacity = air consumption = 33 ln/h, linearity error 2%, zero-point shift approx. +3%, adjustable (see fitting instructions at www.sauter-controls.com).

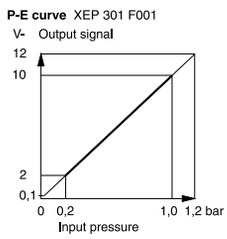
XEP 1...10: e/p converter without electric pre-amplifier

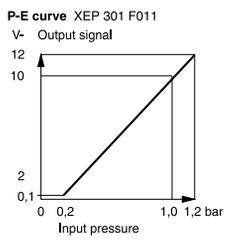
XEP 110: e/p converter with electric pre-amplifier

XEP 301: e/p converter with electric pre-amplifier and additional p/e converter









[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

	XEP 1, XEP 10	XEP 110	XEP 301
Power supply 24 V~ Power supply 24 V=	– –	±20%, 50...60 Hz ±20%	±20%, 50...60 Hz +20%/-10%
Power consumption	–	2 VA	2 VA
Input resistance	F001 590 Ω F002 120 Ω	100 kΩ	100 kΩ
Temperature influence	±0.04%/K	±0.02%/K	±0.05%/K
Admissible ambient temperature	0...55 °C	0...50 °C	0...55 °C
Linearity error e/p	< 2%	1%	1%[2)]
Air consumption	20 l_n	20 l_n	16 l_n[3)]
Linearity error p/e	–	–	0.3%
Admissible load p/e	–	–	> 5 kΩ

Accessories

Type	Description
0274700000	Fixing bracket for AVP 142, AV 43, AV 44 P (includes connection kit to the actuator)
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0370560011	Cable screw fitting PG 11, plastic, for cable of Ø 9...11 mm

2) *See notes on XEP 301 air capacity*
3) *See notes on XEP 301 air capacity*

XGP2: Pneumatic control-pressure transmitter with low capacity

Features

- Adjustment knob with exchangeable scales and two stops for limiting the range or locking the setting

Technical data

Specifications		
	Supply pressure[1]	1.3 ±0.1 bar
	Output pressure	0...1.2 bar
	Air capacity, air consumption with restrictor Ø 0.14 mm	16 l_n/h
	Air capacity, air consumption with restrictor Ø 0.2 mm	33 l_n/h
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Assembly		
	Weight	0.029 kg
	Fitting	in panels or recessed
Standards and directives		
	Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

Type	Setting range	Scale range
XGP2F001	0...1.2 bar	5...35 C°
XGP2F002	±0.1 bar	±3.75 °C

XGP2F001. Setting range: zero point variable from 0.2...1.0 bar; factory setting 0.6 bar

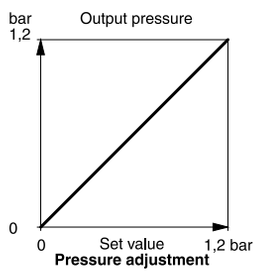
XGP2F001. Scale range: rear 0...120 °C; 20...90% rh included; % scale; division 5; division 6

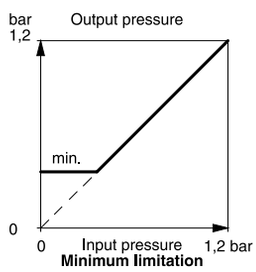
XGP2F002. Scale range: rear ±8.75% rh; inscribable tapered scale included

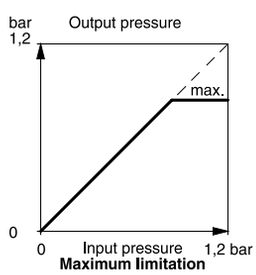
Accessories

Type	Description
0303124000	Recessed junction box
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*







XGP 2L: Pneumatic control-pressure transmitter

Features

- Integrated minimum or maximum limitation of control pressure
- Adjustment knob with exchangeable scales and two stops for limiting the range or locking the setting

Technical data

Specifications		
	Supply pressure[1]	1.3 ±0.1 bar
	Output pressure	0...1.2 bar
	Setting range[2]	0...1.2 bar
	Air capacity	400 l_n/h
	Air consumption[3]	7 l_n/h
Permissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Assembly		
	Weight	0.09 kg
	Fitting	in panels or recessed
Standards and directives		
	Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

Type
XGP2LF001

Accessories

Type	Description
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail EN 60715-C 20
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Scale: 0…1.2 bar, arc increases in thickness. Rear scale: 0…1.2 bar, arc decreases in thickness. There is an additional inscribable scale (0…100%) underneath the standard scale.*

[3] *40 l_n/h with open measuring connection (improves responsiveness)*

XP: Pneumatic line restrictor

XP22F001

XP41F001

XP4F002

Features

- Provides an air supply when no other air supply is available

Technical data

Parameters		
	Supply pressure[1]	1.3 ±0.1 bar
	Nominal flow rate	33 l_n/h
	Restrictor Ø mm[2]	0.2

Admissible ambient conditions		
	Admissible ambient temperature	0...70 °C

Overview of types

Type	Type of connection	Weight
XP22F001	Copper tubes, hard plastic pipes Ø 6 mm (external)	0.09 kg
XP41F001	Hard plastic tubing Ø 4 mm (internal)	0.01 kg
XP4F002	Soft plastic tubing Ø 4 mm (internal)	0.005 kg

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *The restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers*

XFRP5F001

XFRP 5: Pressure-reducing station

Features

- Removes dust, water and oil from the compressed air
- Optical indicator for the level of contamination of the sub-micron filter
- Precise pressure controller for maintaining the supply pressure
- Integrated safety valve protects pneumatic controllers against overload
- Fine filter with separation factor of 99.999% for particles down to 0.01 µm
- Residual oil content: 1 mg/m³

Technical data

Parameters		
	Setting range	0.2...1.7 bar
	Air capacity	20 m^3_n/h (max.)
	Air consumption	75 l_n/h
	Max. upstream pressure[1]	8 bar
	Min. upstream pressure	2 bar
	Pressure gauge display	0...2.5 bar
Admissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Construction		
	Weight	2.2 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art 3.3 for pressure equipment

Overview of types

Type	Condition ex works
XFRP5F001	Fitted
XFRP5F002	Not fitted

Accessories

Type	Description
0277938000	Shut-off ball valve made of brass
0381003001	Fine filter with contamination indicator and double connector for fitting to sub-micron filter
0297651000	Pressure control valve with flat seal, bleed-off at 1.7 bar
0297652000	Assembly kit
0381002001	Sub-micron filter with contamination indicator
0381007001	Pressure controller with 2 manometer connections
0381008001	Manometer 0...2.5 bar, accuracy class 1.6

[1] *For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

XRP: Pneumatic relay, pluggable

1:1

XRP101F001

XRP102/104F001

XRP103F001

Features

- Auxiliary relay with low air capacity for converting/decoupling pneumatic pressure signals
- Bleed-off nozzle/deflector system

Technical data

Parameters		
	Supply pressure[1]	1.3 ±0.1 bar
	Air recovery	50 l_n/h (max.)
	Admissible input pressure	0...1.4 bar
	Admissible output pressure	0...1.4 bar
Admissible ambient conditions		
	Admissible ambient temperature	0...55 °C
Standards and directives		
	Conformity	Directive 97/23/EC Art 3.3 for pressure equipment

Overview of types

Type	Features	Air capacity, air consumption	Input pressure	Output pressure	Weight
XRP101F001	Interface relay	33 l_n/h	0.2...1.0 bar	0.2...1.0 bar	0.022 kg
XRP102F001	Reversing relay	19 l_n/h	0.2...1.0 bar	1.0...0.2 bar	0.05 kg
XRP103F001	Sequence relay	33 l_n/h	0.6...1.0 bar	0.2...1.0 bar	0.01 kg
XRP104F001	Seq.-reversing relay	33 l_n/h	0.2...0.6 bar	1.0...0.2 bar	0.05 kg

XRP103F001: Starting point can be set between 0.2 and 0.6 bar; factory setting is 0.6 bar

XRP104F001: Starting point can be set between 0.6 and 1.0 bar; factory setting is 0.6 bar

Accessories

Type	Description
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail EN 60715-C 20

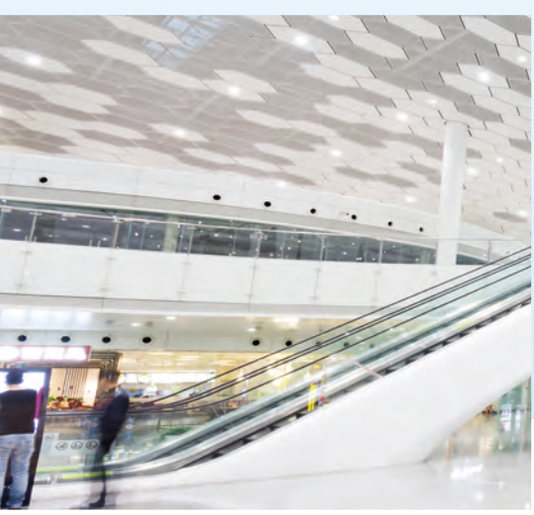
Accessories do not apply to XRP 103

[1] *Supplied via ext. restrictor ∅ 0.2 mm (XRP102F001 reversing relay: internal restrictor ∅ 0.15 mm)*
When used with RLP VAV controllers, the restrictor and the air consumption do not apply
Up to three RLP units can be connected to a relay
For regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants

Pneumatic actuators and valves

A strong combination: pneumatic actuators and valves benefiting from SAUTER's years of experience.

The pneumatic combinations from SAUTER are always the first choice whenever fast or high pushing forces are required.



Pneumatic actuators and valves

Pneumatic actuators

Regulating valves (combined with actuator)

Accessory devices

Pneumatic actuators

Pneumatic actuators from SAUTER achieve high pushing forces, enabling fast control. They accurately control dampers or valves with a minimum air requirement. The automatic coupling of the actuators enables fast assembly times.

Overview of pneumatic actuators

				
Type designation	AK31 P	AK41...43 P	AVP 142	AVP 242...244
Technical data				
Control pressure (bar)	0...1.2	0...1.2	0...1.2	0...1.2
Effective area (cm^2)	30	40...160	180	180...500
Maximum pressure (bar)	1.5	1.5	1.5	1.5
Certification				
Explosion protection as per ATEX certification	•	• (AK41 P)	–	–
Further information	Page 373	Page 374	Page 376	Page 377

AK31 P: Pneumatic actuator

AK31P*F001

Features

- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Rolling diaphragms made of silicone; drive spindle in stainless steel with M8 male thread
- Plug nipple for connecting plastic tubing with an internal diameter of 4 mm

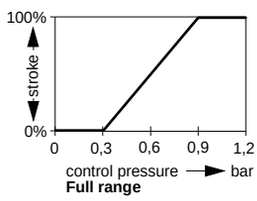
Technical data

Parameters		
	Control pressure[1]	0...1.2 bar
	Maximum pressure	1.5 bar
	Effective area	30 cm²
	Stroke	50 mm
	Lever length for 90°	35 mm
	Running time for 100% stroke[2]	5 s
Ambient conditions		
	Admissible ambient temperature	–5...60 °C
Construction		
	Housing material	Fire-retardant plastic
Standards and directives		
	Type of protection	IP20

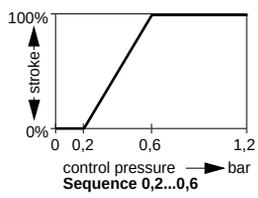
Overview of types

i *Admissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased actuating force required to overcome the slat seals must be taken into account for tightly sealed air dampers in accordance with DIN 1946*

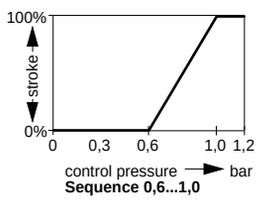
Type	AK31P1F001	AK31P2F001	AK31P3F001
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.3...0.9 bar
Pushing force at 0 bar	70 N	40 N	160 N
Pushing force at 1.2 bar	70 N	160 N	40 N
Torque 0 bar	1.8 Nm	1 Nm	4 Nm
Torque 1.2 bar	1.8 Nm	4 Nm	1 Nm
Admissible damper surface area	0.6 m²	0.3 m²	0.3 m²
Air consumption for 100% stroke	0.3 l_n	0.2 l_n	0.2 l_n
Weight	0.3	0.32	0.32



AK31P1F001



AK31P2F001



AK31P3F001

Accessories

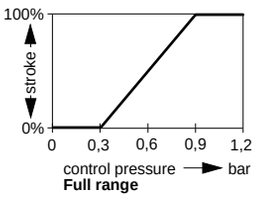
Type	Description
0274587000	Fixing bracket
0274589000	Straight ball joint with 2 nuts (M8)
0274593000	Angled ball joint with 2 nuts (M8)
0370039000	Coupling nut (M8), 2 lock nuts (M8)
0370040000	Threaded rod (M8), length 500 mm
0370059000	Clamping lever for shaft, Ø 8...18 mm

[1] *Required to achieve the actuating power; for regulations concerning the quality of the supply air, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

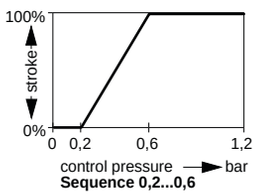
[2] *Based on the centair air flow rate (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm*

AK 41...43 P: Pneumatic actuator

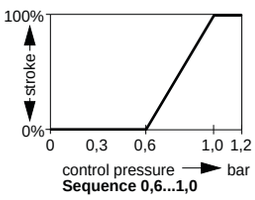
AK42PF003



AK41...43 P



AK41P2F003



AK41P3F003

Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Compliant with EN 13463-1 and EN 1127-1 (Ex II 2 G T6) with actuators of the AK 41 P and AK 42 P series
- Rolling diaphragms made of silicone; drive spindle in stainless steel with M8 male thread
- Plug nipple for connecting plastic tubing with an internal diameter of 4 mm (AK41)
- Compressed-air connection with Rp⅛" female thread (AK42, 43)

Technical data

Parameters		
	Control pressure	0...1.2 bar
	Maximum pressure	1.5 bar
Ambient conditions		
	Admissible ambient temperature[1]	–10...70 °C
Construction		
	Housing material	Fire-retardant thermoplastic (AK41, 42), light metal (AK43)
Standards and directives		
	Type of protection	IP20
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Admissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased actuating force required to overcome the slat seals must be taken into account for tightly sealed air dampers in accordance with DIN 1946

Running time for 100% stroke: Based on the centair air flow rate (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm

Type	AK41P1F003	AK41P2F003	AK41P3F003	AK42PF003	AK43PF002
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.6...1.0 bar	0.3...0.9 bar	0.3...0.9 bar
Pushing force at 0 bar	100 N	60 N	200 N	200 N	400 N
Pushing force at 1.2 bar	100 N	200 N	60 N	200 N	400 N
Torque 0 bar	3 Nm	2 Nm	6 Nm	10 Nm	20 Nm
Torque 1.2 bar	3 Nm	6 Nm	2 Nm	10 Nm	20 Nm
Admissible damper surface area	1 m²	0.6 m²	0.6 m²	3 m²	6 m²
Stroke	63 mm	63 mm	63 mm	100 mm	100 mm
Effective area	40 cm²	40 cm²	40 cm²	80 cm²	160 cm²
Air consumption for 100% stroke	0.5 l_n	0.4 l_n	0.5 l_n	1.7 l_n	3.5 l_n
Running time for 100% stroke	7 s	6 s	7 s	20 s	35 s
Explosion protection	•	•	•	•	–
Lever length for 90°	40 mm	40 mm	40 mm	70 mm	70 mm
Weight	0.55 kg	0.55 kg	0.6 kg	1.4 kg	4.8 kg

[1] *When used in fresh air ducts, temporarily -20 °C*

Accessories

Type	Description
XSP31	Pneumatic positioner (see product data sheet)
XAP1	Auxiliary contact unit (see product data sheet)
XAP2	Potentiometer unit (see product data sheet)
0274354000	Rod 600 mm long, Ø 10 mm, with ball joint

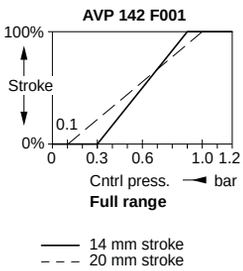
For AK 41, AK 42

Type	Description
0226518003	Assembly kit for XAP with AK41, separate delivery
0226519003	Assembly kit for XAP with AK42, separate delivery
0226521002	Assembly kit for XSP 31 with AK41, separate delivery
0226522002	Assembly kit for XSP 31 with AK42, separate delivery
0274586000	Straight ball joint with 2 nuts (M8) for XSP 31 with AK41
0274587000	Fixing bracket
0274589000	Straight ball joint with 2 nuts (M8)
0274593000	Angled ball joint with 2 nuts (M8)
0274595000	Fixing bracket with screw (M8 × 30)
0274597000	Adaptor with nut (M8)
0370039000	Coupling nut (M8), 2 lock nuts (M8)
0370040000	Threaded rod (M8), length 500 mm

For AK 43

Type	Description
0226520003	Assembly kit for XAP, separate delivery
0226523002	Assembly kit for XSP 31, separate delivery
0274596000	Fixing bracket with screw (M10 × 40)
0274598000	Adaptor with nut (M10)
0274605000	Angled ball joint for clamping lever with M10 nut

AVP142F001



AVP 142: Pneumatic valve actuator

Features

- Actuation of 2-way and 3-way valves of the V6R/B6R series for continuous control facilities or for OPEN/CLOSE control
- Silicone-free, therefore usable in many applications
- Long-term stable NBR diaphragm
- The direction of operation can be reversed by fitting drive unit to the fixing bracket the opposite way round
- Stroke indicator enables the position of the actuator to be determined quickly
- Compressed-air connection with Rp ⅛" female thread

Technical data

Parameters		
	Control pressure[1]	0...1.2 bar
	Maximum pressure	1.5 bar
	Effective area	180 cm²
	Valve with 14mm stroke: span	0.6 bar
	Valve with 14 mm stroke: air consumption	0.8 l_n/stroke
	Valve with 20 mm stroke: span	0.9 bar
	Valve with 20 mm stroke: air consumption	1.1 l_n/stroke

Ambient temperature		
	Admissible ambient temperature	–15...50 °C
	Temperature at the diaphragm	max. 70 °C

Construction		
	Weight	2 kg
	Housing material	Housing of glass-fibre-reinforced plastic; fixing bracket of light metal

Overview of types

Type	Description
AVP142F001	Pneumatic valve actuator

Assembly materials for the V6R and B6R valve series

Type of actuator	XSP31	XEP
AVP142	0226504002	0274700 000

Accessories

Type	Description
XSP31F001	Pneumatic positioner (see product data sheet)
XEP	Electro-pneumatic converter for continuous signals (see product data sheet)

Electro-pneumatic converter: Of the accessories, only one positioner (XSP 31) and one electro-pneumatic converter (XEP) can be fitted; if the XSP 31 is fitted, the XEP must be screwed onto the side of the bracket.

Positioner: Can be used for minimum or maximum limitation of the stroke

[1] *Required to achieve the actuating power; for regulations concerning the quality of the supply air, particularly at low ambient temperatures*

AVP 242...244: Pneumatic valve actuators

AVP242F0*1

AVP243F0*1

AVP24*F0*1

Features

- Activation of 2-way and 3-way valves of the VUD/BUD, VQD/BQD, VUE/BUE, VQE/BQE, VUG/BUG, VUS/BUS and VUP series for continuous control facilities or for open/close control
- Silicone-free, therefore usable in many applications
- Long-term stable NBR diaphragm
- The direction of operation can be reversed by fitting the unit to the bracket the opposite way round
- Stroke indicator enables the position of the actuator to be determined quickly
- Compressed-air connection with Rp ⅛" female thread
- Patented actuator–valve coupling enables the two units to be connected quickly and easily

Technical data

Parameters		
	Control pressure	0...1.2 bar
	Maximum pressure	1.5 bar
	Control span	0.6 bar

Ambient temperature		
	Admissible ambient temperature	-15...50 °C
	Temperature at the diaphragm	Max. 70 °C

Overview of types

Type	For valve with stroke	Air consumption for 100% stroke	Effective area	Weight
AVP242F001	8 mm	0.30 l_n	180 cm²	3 kg
AVP242F021	14/20/25 mm	0.65 l_n	180 cm²	3 kg
AVP243F021	20 mm	1.10 l_n	250 cm²	6 kg
AVP243F031	30/40 mm	2.00 l_n	250 cm²	6 kg
AVP244F021	20 mm	1.90 l_n	500 cm²	12 kg
AVP244F031	30/40 mm	3.30 l_n	500 cm²	12 kg

Assembly materials for the VUD/BUD, VQD/BQD, VUE/BUE, VQE/BQE, VUG/BUG, VUS/BUS and VUP valve series

Type of actuator	XSP31	XAP	XEP
AVP24*	0297933001	0297934001	0297935001

Accessories

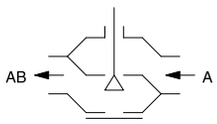
Type	Description
XSP31F001	Pneumatic positioner (see product data sheet)
XAP1F001	Auxiliary contact unit (see product data sheet)
XAP2F001	Potentiometer unit (see product data sheet)
XEP	Electro-pneumatic converter for continuous signals (see product data sheet)
0274521000	Manual adjuster for AVP 243 and 244; weight 1.7 kg

Electro-pneumatic converter: Of the accessories, only one positioner (XSP 31), one feedback unit (XAP) and one electro-pneumatic converter (XEP) can be fitted; if the XSP 31 and XAP are fitted, the XEP must be screwed onto the side of the fixing bracket

Positioner, auxiliary contact unit, potentiometer, manual adjuster: Can be used for minimum or maximum limitation of the stroke; hand wheel can be removed

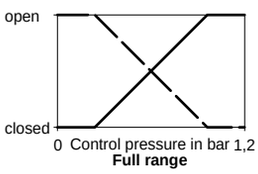
XSP 31, XAP 1, XAP 2: Fitted at the factory to the valve/actuator combination

V6R15F300



Pressure-stroke characteristic
(with valve fitted)

AVP142 F001



——— Condition ex works
- - - - - Fitting variant A

V6R: 2-way valve with female thread, PN 16 (pn.)

Features

- Regulating valve free of silicone grease with female thread DIN EN ISO 228-1 G for the control of cold/hot water in closed circuits
- In combination with AVP 142 and AV 43 valve actuators
- Equal-percentage (F3**) or linear (F2**) characteristic
- Control passage A–AB closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of gunmetal
- Stainless-steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Control ratio	> 50:1
Leakage rate	≤ 0.05% of K_{vs} value
Valve stroke	14 mm
Nominal pressure	16 bar

Ambient conditions

Operating temperature[1)]	–15...130 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
V6R15F350	DN 15	0.4 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F340	DN 15	0.63 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F330	DN 15	1 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F320	DN 15	1.6 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	G½"	1.2 kg
V6R15F300	DN 15	4 m³/h	equal-percentage	brass	G½"	1.2 kg
V6R15F200	DN 15	4 m³/h	linear	brass	G½"	1.2 kg
V6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	G1"	1.6 kg
V6R25F300	DN 25	10 m³/h	equal-percentage	brass	G1"	1.6 kg
V6R25F210	DN 25	6.3 m³/h	linear	brass	G1"	1.6 kg
V6R25F200	DN 25	10 m³/h	linear	brass	G1"	1.6 kg
V6R40F310	DN 40	16 m³/h	equal-percentage	brass	G1½"	3.4 kg
V6R40F300	DN 40	25 m³/h	equal-percentage	brass	G1½"	3.4 kg
V6R40F210	DN 40	16 m³/h	linear	brass	G1½"	3.4 kg
V6R40F200	DN 40	25 m³/h	linear	brass	G1½"	3.4 kg

[1)] *At temperatures below 0 °C, use stuffing box heater (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
V6R50F300	DN 50	35 m³/h	equal-percentage	brass	G2"	4.6 kg
V6R50F200	DN 50	35 m³/h	linear	brass	G2"	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. seal, 2 pcs. required
0360391025	Screw fitting, DN 25, incl. seal, 2 pcs. required
0360391040	Screw fitting incl. seal, 2 pcs. required, Rp1½ - G1½
0360391050	Screw fitting incl. seal, 2 pcs. required, Rp2 - G2

*0217268***Stuffing box heater 15 W, light alloy housing, IP54, 3 x 0.75 mm² power cable, earth connector, length 1 m, ferrule*

Combination of V6R with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

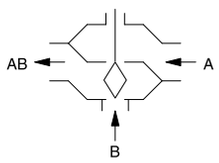
The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

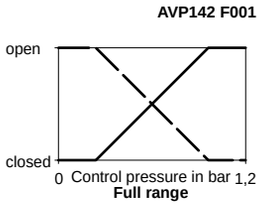
Actuator	AVP142F001
Page	376
Admissible pressure p_{stat}	≤ 16 bar
Running time	10 s

	Δp [bar]	
Closes against the pressure	Δp_{max}	Δp_s
V6R15F350 V6R15F340 V6R15F330 V6R15F320 V6R15F310 V6R15F300 V6R15F200	4.0	16.0
V6R25F310 V6R25F300 V6R25F210 V6R25F200	4.0	13.6
V6R50F300 V6R50F200	2.0	2.3
Cannot be used to close with the pressure		

B6R25F300



Pressure-stroke characteristic
(with valve fitted)



B6R: 3-way valve with female thread, PN 16 (pn.)

Features

- In combination with AVP 142 and AV 43 valve actuators
- Regulating valve free of silicone grease with female thread DIN EN ISO 228-1 G for the control of cold/hot water in closed circuits
- Control passage A–AB closed when the spindle is moved out
- Used as a control valve
- Valve body and seat made of gunmetal
- Stainless-steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Control ratio	> 50:1
Nominal pressure	PN 16
Leakage rate of control passage A-AB	≤ 0.05% of K_{vs} value
Leakage rate of mixing passage B-AB	≤ 1% of K_{vs} value
Valve stroke	14 mm
Valve characteristic, mixing passage	Linear

Ambient conditions

Operating temperature[1)]	–15...130 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar

Standards and directives

Pressure and temperature data	DIN 2401
Flow parameters	VDI/VDE 2173

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R15F330	DN 15	1 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F320	DN 15	1.6 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F300	DN 15	4 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F200	DN 15	4 m³/h	linear	brass	G½"	1.2 kg
B6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F300	DN 25	10 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F210	DN 25	6.3 m³/h	linear	brass	G1"	1.6 kg
B6R25F200	DN 25	10 m³/h	linear	brass	G1"	1.6 kg
B6R40F310	DN 40	16 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F300	DN 40	25 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F210	DN 40	16 m³/h	linear	brass	G1½"	3.4 kg
B6R40F200	DN 40	25 m³/h	linear	brass	G1½"	3.4 kg

[1)] *At temperatures below 0 °C, use stuffing box heater (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R50F300	DN 50	35 m³/h	equal-percentage	brass	G2"	4.6 kg
B6R50F200	DN 50	35 m³/h	linear	brass	G2"	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C
0360391015	Screw fitting, DN 15, incl. seal, 3 pcs. required
0360391025	Screw fitting, DN 25, incl. seal, 3 pcs. required
0360391040	Screw fitting, DN 40, incl. seal, 3 pcs. required
0360391050	Screw fitting, DN 50, incl. seal, 3 pcs. required

*0217268***Stuffing box heater 15 W, light alloy housing, IP54, 3 × 0.75 mm² power cable, earth connector, length 1 m, ferrule*

Combination of B6R with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

Definition of Δp_{max}: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

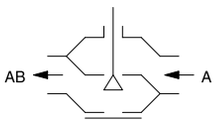
The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

Actuator	AVP142F001
Page	376
Admissible pressure P_{stat}	≤ 16 bar
Running time	10 s

	Δp [bar]	
As control valve	Δp_{max}	Δp_s
B6R15F330 B6R15F320 B6R15F310 B6R15F300 B6R15F200	4.0	16.0
B6R25F310 B6R25F300 B6R25F210 B6R25F200	4.0	13.5
B6R40F310 B6R40F300 B6R40F210 B6R40F200	2.4	3.1
B6R50F300 B6R50F200	2.0	2.3
Cannot be used as distribution valve		

VUD032F300



VUD: 2-way flanged valve, PN 6 (pn.)

Features

- Continuous control of cold and hot water in closed circuits[1)]
- Water quality as per VDI 2035
- In combination with AVP 242 valve actuators as a control unit
- Not suitable for steam or drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Nominal pressure	PN 6
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage F200	Linear
Valve characteristic, control passage F300	Equal-percentage
Control ratio of valve	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate	≤ 0.05% of K_{vs} value
Valve stroke	8 mm

Ambient conditions

Operating temperature[2)]	−10...150 °C
Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VUD015F320	DN 15	1.6 m³/h	3.2 kg
VUD015F310	DN 15	2.5 m³/h	3.2 kg
VUD015F300	DN 15	4 m³/h	3.2 kg
VUD020F300	DN 20	6.3 m³/h	4.1 kg
VUD025F300	DN 25	10 m³/h	4.7 kg
VUD032F300	DN 32	16 m³/h	7.3 kg
VUD040F300	DN 40	22 m³/h	8.6 kg

1) *Humidity must not exceed 75%*
2) *At temperatures below 0 °C, use stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
VUD050F300	DN 50	28 m^3/h	11.2 kg
VUD050F200	DN 50	40 m^3/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of VUD with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

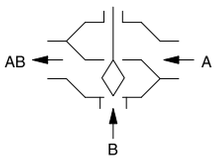
Combination of VUD with pneumatic actuator AVP 242

Actuator	**AVP242F001**
Page	377
Admissible pressure p_{stat}	≤ 6 bar
Running time	8 s

	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_s**
VUD015F320 VUD015F310 VUD015F300 VUD020F300 VUD025F300 VUD032F300	6.0	6.0
VUD040F300	4.0	4.0
VUD050F300 VUD050F200	2.5	2.5
Cannot be used to close with the pressure		

At temperatures above 100°C, accessories are required

BUD032F300



BUD: 3-way flanged valve, PN 6 (pn.)

Features

- Continuous control of cold and hot water in closed circuits[1)]
- Water quality as per VDI 2035
- In combination with AVP 242 valve actuators as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- The control passage is closed when the spindle is moved out
- Used as a control valve
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Nominal pressure	PN 6
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage F200	Linear
Valve characteristic, control passage F300	Equal-percentage
Valve characteristic, mixing passage	Linear
Control ratio of valve	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate, control passage	< 0.05% of K_{vs} value
Leakage rate, mixing passage	< 1% of K_{vs} value
Valve stroke	8 mm

Ambient conditions

Operating temperature[2)]	−10...150 °C
Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
BUD015F320	DN 15	1.6 m³/h	3.2 kg
BUD015F310	DN 15	2.5 m³/h	3.2 kg
BUD015F300	DN 15	4 m³/h	3.2 kg
BUD020F300	DN 20	6.3 m³/h	4.1 kg
BUD025F300	DN 25	10 m³/h	4.7 kg

1) *Humidity must not exceed 75%*
2) *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
BUD032F300	DN 32	16 m^3/h	7.1 kg
BUD040F300	DN 40	22 m^3/h	8.4 kg
BUD050F300	DN 50	28 m^3/h	10.9 kg
BUD050F200	DN 50	40 m^3/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of BUD with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

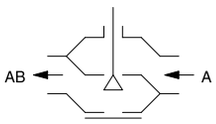
Combination of BUD with pneumatic actuator AVP 242

Actuator	**AVP242F001**
Page	377
Admissible pressure p_{stat}	≤ 6 bar
Running time	8 s

	Δp [bar]	
As control valve	**Δp_{max}**	**Δp_s**
BUD015F320 BUD015F310 BUD015F300 BUD020F300 BUD025F300 BUD032F300	6.0	6.0
BUD040F300	4.0	4.0
BUD050F300 BUD050F200	2.5	2.5
Cannot be used as distribution valve		

At temperatures above 100°C, accessories are required

VUE032F300



VUE: 2-way flanged valve, PN 16/10 (pn.)

Features

- Continuous control of cold and hot water and low-pressure steam up to 115 °C in closed circuits[1)]
- Water quality as per VDI 2035
- In combination with AVP 242 valve actuators as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Nominal pressure	PN 16/10
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage F200	Linear
Valve characteristic, control passage F300	Equal-percentage
Control ratio of valve	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate	< 0.05% of K_{vs} value
Valve stroke	8 mm

Ambient conditions

Operating temperature[2)]	−10...150 °C
Operating pressure	PN 16: Up to 120 °C, 16 bar At 150 °C, 14.4 bar PN 10: Up to 120 °C, 10 bar At 150 °C, 9 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Nominal diameter	K_{vs} value	Weight
VUE015F350	DN 15	0.4 m³/h	3.2 kg
VUE015F340	DN 15	0.63 m³/h	3.2 kg
VUE015F330	DN 15	1 m³/h	3.2 kg
VUE015F320	DN 15	1.6 m³/h	3.2 kg

1) *Humidity must not exceed 75%*
2) *At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C*

Type	Nominal diameter	K_{vs} value	Weight
VUE015F310	DN 15	2.5 m³/h	3.2 kg
VUE015F300	DN 15	4 m³/h	3.2 kg
VUE020F300	DN 20	6.3 m³/h	4.1 kg
VUE025F300	DN 25	10 m³/h	4.7 kg
VUE032F300	DN 32	16 m³/h	7.3 kg
VUE040F300	DN 40	22 m³/h	8.6 kg
VUE050F300	DN 50	28 m³/h	11.2 kg
VUE050F200	DN 50	40 m³/h	11.2 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of VUE with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

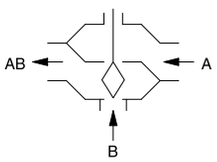
Combination of VUE with pneumatic actuator AVP 242

Actuator	AVP242F001
Page	377
Admissible pressure P_{stat}	≤ 6 bar
Running time	8 s
Stroke	8 mm

	Δp [bar]	
Closes against the pressure	**Δp_{max}**	**Δp_s**
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300	10.0	16.0
VUE025F300	10.0	12.0
VUE032F300	6.5	6.5
VUE040F300	4.0	4.0
VUE050F300 VUE050F200	2.5	2.5
Cannot be used to close with the pressure		

At temperatures above 100°C, accessories are required

BUE032F300



BUE: 3-way flanged valve, PN 16/10 (pn.)

Features

- Continuous control of cold and hot water in closed circuits[1)]
- Water quality as per VDI 2035
- In combination with AVP 242 valve actuators as a control unit
- Not suitable for drinking water
- Valve with flange connection as per EN 1092-2, seal form B, for PN 16 and PN 10
- Regulating valve, free of silicone grease, painted black
- The control passage is closed when the spindle is moved out
- Used as a control valve
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Plug made of brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM

Technical data

Parameters

Nominal pressure	PN 16/10
Connection	Flange as per EN 1092-2, form B
Valve characteristic, control passage F200	Linear
Valve characteristic, control passage F300	Equal-percentage
Valve characteristic, mixing passage	Linear
Control ratio of valve	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate, control passage	< 0.05% of K_{vs} value
Leakage rate, mixing passage	< 1% of K_{vs} value
Valve stroke	8 mm

Ambient conditions

Operating temperature[2)]	–10...150 °C
Operating pressure	PN 16: Up to 120 °C, 16 bar At 150 °C, 14.4 bar PN 10: Up to 120 °C, 10 bar At 150 °C, 9 bar Between 120 °C and 150 °C, a linear interpolation can be performed

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534 (page 3)
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types

Type	Weight	K_{vs} value	Nominal diameter
BUE015F330	3.2 kg	1 m³/h	DN 15
BUE015F320	3.2 kg	1.6 m³/h	DN 15

1) Humidity must not exceed 75%
2) At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C

Type	Weight	K_{vs} value	Nominal diameter
BUE015F310	3.2 kg	2.5 m^3/h	DN 15
BUE015F300	3.2 kg	4 m^3/h	DN 15
BUE020F300	4.1 kg	6.3 m^3/h	DN 20
BUE025F300	4.7 kg	10 m^3/h	DN 25
BUE032F300	7.1 kg	16 m^3/h	DN 32
BUE040F300	8.4 kg	22 m^3/h	DN 40
BUE050F300	11.2 kg	28 m^3/h	DN 50
BUE050F200	11.2 kg	40 m^3/h	DN 50

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100...130 °C (recommended for temperatures <10 °C)
0372249002	Adapter required when temperature of the medium is 130...150 °C
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50

Combination of BUE with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

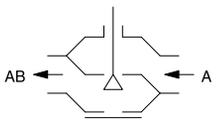
Combination of BUE with pneumatic actuator AVP 242

Actuator	AVP242F001
Page	377
Admissible pressure P_{stat}	≤ 6 bar
Running time	8 s
Stroke	8 mm

	Δp [bar]	
As control valve	Δp_{max}	Δp_s
BUE015F330 BUE015F320 BUE015F310 BUE015F300 BUE020F300	10.0	16.0
BUE025F300	10.0	12.0
BUE032F300	6.0	6.5
BUE040F300	4.0	4.0
BUE050F300 BUE050F200	2.5	2.5
Cannot be used as distribution valve		

At temperatures above 100°C, accessories are required

VUG032F304



VUG: 2-way flanged valve, PN 25/16 (pn.)

Features

- Continuous control of cold and hot water in closed circuits
- Together with pneumatic actuators AVP 242, AVP 243 and AVP 244
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar, except VUG065F316, nominal pressure 16 bar
- Regulating valve, free of silicone grease, painted black
- The valve is closed when the spindle is moved out
- Closing procedure against the pressure
- Valve body made of ductile cast iron; seat and spindle of stainless steel
- Plugs of nominal diameter DN 15...50 made of stainless steel with glass-fibre-reinforced PTFE sealing ring
- Plugs of nominal diameter DN 65...150 made of stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Parameters

Nominal pressure	PN 16/25
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of K_{vs} value

Admissible ambient conditions

Operating temperature[1]	−20...200 °C
Operating pressure[2]	PN 16: 30 °C, 16 bar At 120 °C, 16 bar At 200 °C, 14 bar PN 25: 30 °C, 25 bar At 120 °C, 25 bar At 200 °C, 21.7 bar

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Connection	Weight
VUG015F374	DN 15	0.16 m³/h	20 mm	PN 25/16	4 kg
VUG015F364	DN 15	0.25 m³/h	20 mm	PN 25/16	4 kg
VUG015F354	DN 15	0.4 m³/h	20 mm	PN 25/16	4 kg
VUG015F344	DN 15	0.63 m³/h	20 mm	PN 25/16	4 kg
VUG015F334	DN 15	1 m³/h	20 mm	PN 25/16	4 kg
VUG015F324	DN 15	1.6 m³/h	20 mm	PN 25/16	4 kg
VUG015F314	DN 15	2.5 m³/h	20 mm	PN 25/16	4 kg
VUG015F304	DN 15	4 m³/h	20 mm	PN 25/16	4 kg

[1] *For cold water applications from -20...30 °C, the versions VUG***F3**S with a stuffing box containing silicone (e.g.: VUG015F304S) must be used. VUG***F3**S are only available up to DN125.*
Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C. Down to -10 °C, as per AD code of practice W 10, use water with anti-freeze and brine solution

[2] *For operating pressure, see table: Pressure / temperature assignment*

Type	Nominal diameter	K_{vs} value	Valve stroke	Connection	Weight
VUG020F304	DN 20	6.3 m³/h	20 mm	PN 25/16	5 kg
VUG025F304	DN 25	10 m³/h	20 mm	PN 25/16	5.6 kg
VUG032F304	DN 32	16 m³/h	20 mm	PN 25/16	9.1 kg
VUG040F304	DN 40	25 m³/h	20 mm	PN 25/16	11.2 kg
VUG050F304	DN 50	40 m³/h	20 mm	PN 25/16	13.8 kg
VUG065F316	DN 65	63 m³/h	40 mm	PN 16	25 kg
VUG065F304	DN 65	63 m³/h	40 mm	PN 25	25 kg
VUG080F304	DN 80	100 m³/h	40 mm	PN 25/16	37 kg
VUG100F304	DN 100	160 m³/h	40 mm	PN 25	50 kg
VUG125F304	DN 125	250 m³/h	40 mm	PN 25	75 kg
VUG150F304	DN 150	340 m³/h	40 mm	PN 25	100 kg

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Torsion protection DN 65...150

Combination of VUG with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

Actuator	AVP242F021	AVP243F021	AVP244F021	AVP243F031	AVP244F031
Page	377	377	377	377	377
Admissible pressure P_{stat}	≤ 25 bar	≤ 25 bar	≤ 25 bar	≤ 25 bar	≤ 25 bar
Running time	8 s	24 s	40 s	24 s	40 s
Stroke	20 mm	20 mm	20 mm	40 mm	40 mm

	Δp [bar]									
Closes against the pressure	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUG015F374 VUG015F364 VUG015F354 VUG015F344 VUG015F334 VUG015F324 VUG015F314 VUG015F304	16.0	16.5	16.0	22.7	16.0	25.0	–	–	–	–
VUG020F304	13.0	13.0	16.0	18.0	16.0	25.0	–	–	–	–
VUG025F304	8.8	8.8	12.2	12.2	16.0	24.5	–	–	–	–
VUG032F304	5.5	5.5	7.8	7.8	15.5	15.5	–	–	–	–
VUG040F304	3.7	3.7	5.2	5.2	10.3	10.3	–	–	–	–
VUG050F304	2.5	2.5	3.3	3.3	6.6	6.6	–	–	–	–

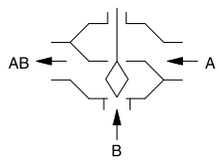
Actuator	**AVP242F021**		**AVP243F021**		**AVP244F021**		**AVP243F031**		**AVP244F031**	
Page	377		377		377		377		377	
VUG065F316 VUG065F304	–	–	–	–	–	–	2.2	2.2	4.4	4.4
VUG080F304	–	–	–	–	–	–	1.5	1.5	3.0	3.0
VUG100F304	–	–	–	–	–	–	1.0	1.0	2.0	2.0
VUG125F304	–	–	–	–	–	–	0.7	0.7	1.3	1.3
VUG150F304	–	–	–	–	–	–	0.5	0.5	1.0	1.0

Cannot be used to close with the pressure

At temperatures above 130 °C, accessories are required

BUG: 3-way flanged valve, PN 25/16 (pn.)

BUG032F304



Features

- Continuous control of cold and hot water in closed circuits
- In combination with pneumatic actuators AVP242, AVP243 and AVP244
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar, except BUG065F316, nominal pressure 16 bar
- Regulating valve, free of silicone grease, painted black
- The control passage is closed when the spindle is moved out
- Used as a control valve
- Valve body made of ductile cast iron
- Stainless-steel seat and spindle
- Plugs of nominal diameter DN 15...50 made of stainless steel with glass-fibre-reinforced PTFE sealing ring
- Plugs of nominal diameter DN 65...150 made of stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Parameters		
	Nominal pressure	PN 16/25
	Connection	Flange as per EN 1092-2, form B
	Control ratio	> 50 : 1
	Valve characteristic, control passage	Equal-percentage
	Valve characteristic, mixing passage	Linear
	Leakage rate, control passage	≤ 0.05% of K_{vs} value
	Leakage rate, mixing passage	≤ 1.0% of K_{vs} value
Ambient conditions		
	Operating temperature[1)]	−20...200 °C
	Operating pressure[2)]	PN 16: 30 °C, 16 bar At 120 °C, 16 bar At 200 °C, 14 bar PN 25: 30 °C, 25 bar Up to 120 °C, 25 bar At 200 °C, 21.7 bar
Standards and directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	Connection	K_{vs} value	Weight	Valve stroke
BUG015F304	DN 15	PN 25/16	4 m³/h	3.1 kg	20 mm
BUG015F314	DN 15	PN 25/16	2.5 m³/h	3.1 kg	20 mm
BUG015F324	DN 15	PN 25/16	1.6 m³/h	3.1 kg	20 mm
BUG015F334	DN 15	PN 25/16	1 m³/h	3.1 kg	20 mm
BUG020F304	DN 20	PN 25/16	6.3 m³/h	4 kg	20 mm

*1) For cold water applications below 30 °C, use versions BUG***F3**S with a stuffing box containing silicone (e.g.: BUG015F304S). BUG***F3**S are only available up to DN125.*
Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C. Down to -10 °C, as per AD code of practice W 10, use water with anti-freeze and brine solution.

2) For operating pressure, see table: Pressure / temperature assignment

Type	Nominal diameter	Connection	K_{vs} value	Weight	Valve stroke
BUG025F304	DN 25	PN 25/16	10 m³/h	4.7 kg	20 mm
BUG032F304	DN 32	PN 25/16	16 m³/h	7.2 kg	20 mm
BUG040F304	DN 40	PN 25/16	25 m³/h	9.2 kg	20 mm
BUG050F304	DN 50	PN 25/16	40 m³/h	11.9 kg	20 mm
BUG065F304	DN 65	PN 25	63 m³/h	27.1 kg	40 mm
BUG065F316	DN 65	PN 16	63 m³/h	26.8 kg	40 mm
BUG080F304	DN 80	PN 25/16	100 m³/h	36.3 kg	40 mm
BUG100F304	DN 100	PN 25	160 m³/h	53 kg	40 mm
BUG125F304	DN 125	PN 25	250 m³/h	79.1 kg	40 mm
BUG150F304	DN 150	PN 25	340 m³/h	108.7 kg	40 mm

Accessories

Type	Description
0372336180	Adapter (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Torsion protection DN 65...150

Combination of BUG with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Max. admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Max. admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

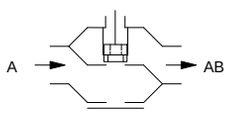
Actuator	AVP242F021	AVP243F021	AVP244F021	AVP243F031	AVP244F031
Page	377	377	377	377	377
Admissible pressure P_{stat}	≤ 16 bar	≤ 16 bar	≤ 16 bar	≤ 25 bar	≤ 25 bar
Running time	8 s	24 s	40 s	24 s	40 s

	Δp [bar]									
As control valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUG015F304 BUG015F314 BUG015F324 BUG015F334	16.0	16.5	16.0	22.7	16.0	25.0	–	–	–	–
BUG020F304	10.0	13.0	16.0	18.0	16.0	25.0	–	–	–	–
BUG025F304	6.0	8.8	11.9	12.2	16.0	24.0	–	–	–	–
BUG032F304	4.0	5.5	7.4	7.8	15.5	15.5	–	–	–	–
BUG040F304	2.6	3.7	4.2	5.2	10.3	10.3	–	–	–	–
BUG050F304	1.7	2.4	3.1	3.3	6.5	6.5	–	–	–	–
BUG065F304 BUG065F316	–	–	–	–	–	–	2.2	2.2	4.4	4.4
BUG080F304	–	–	–	–	–	–	1.5	1.5	3.0	3.0
BUG100F304	–	–	–	–	–	–	1.0	1.0	2.0	2.0
BUG125F304	–	–	–	–	–	–	0.6	0.7	1.3	1.3
BUG150F304	–	–	–	–	–	–	0.4	0.5	1.0	1.0

Cannot be used as distribution valve

At temperatures above 130 °C, accessories are required

VUP100F304



VUP: Pressure-relieved 2-way flanged valve, PN 25 (pn.)

Features

- Continuous control of cold and hot water in closed circuits, and of steam
- In combination with AVP 242 to 244 actuators as control unit.
- Water quality as per VDI 2035
- Not suitable for drinking water or potentially explosive atmospheres
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, with pressure compensation, galvanised and painted black
- The valve is closed when the spindle is moved in
- Valve body made of ductile cast iron
- Valve seat, plug and spindle made of stainless steel
- Closing procedure only against the pressure
- Maintenance-free stuffing box in brass with spring-loaded PTFE-FKM-PTFE washer

Technical data

Parameters

Nominal pressure	PN 25
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio	> 100:1
Leakage rate at max. Δp_s	< 0.05% of K_{vs} value

Admissible ambient conditions

Operating temperature[1]	−20...200 °C
Operating pressure	Up to 120 °C, 25 bar Up to 200 °C, 20 bar

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUP040F304	DN 40	25 m³/h	14 mm	10 kg
VUP050F304	DN 50	40 m³/h	25 mm	14 kg
VUP065F304	DN 65	63 m³/h	25 mm	18 kg
VUP080F304	DN 80	100 m³/h	25 mm	25.5 kg
VUP100F304	DN 100	160 m³/h	40 mm	36.5 kg
VUP125F304	DN 125	250 m³/h	40 mm	56.5 kg
VUP150F304	DN 150	350 m³/h	40 mm	84.5 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378356001	Replacement pack for stuffing box DN 40...80
0378357001	Replacement pack for stuffing box DN 100...150

[1] *Use stuffing box heater at temperatures below 0 °C; use the relevant adapter (accessory) at temperatures above 130 °C or 180 °C*

Combination of VUP with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

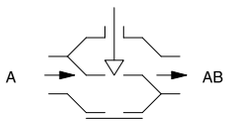
VUP with AVP is possible only in combination with XSP31.

Pressure differences

Actuator	AVP242F021	AVP243F031	AVP244F031
Page	377	377	377
Running time	8 s	24 s	40 s
	Δp [bar]		
Closes against the pressure	**Δp_{max}**	**Δp_{max}**	**Δp_{max}**
VUP040F304	22.2	–	–
VUP050F304 VUP065F304	15.1	–	–
VUP080F304	9.8	–	–
VUP100F304	–	18.5	25.0
VUP125F304 VUP150F304	–	10.7	25.0
Cannot be used to close with the pressure			

At temperatures above 130 °C, accessories are required

VUS040F305



VUS: 2-way flanged valve, PN 40 (pn.)

Features

- Continuous control of cold, warm and hot water in closed circuits, and of steam
- In combination with AVP 242 to 244 actuators as control unit
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, matt black
- Not suitable for drinking water or potentially explosive atmospheres
- When the spindle is moved in, the valve is closed
- Closing procedure only against the pressure
- Valve body made of cast steel
- Stainless-steel seat and plug
- Stainless-steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer up to 220 °C, with graphite seal up to 260 °C (accessory)

Technical data

Parameters	
Nominal pressure	PN 40
Connection	Flange as per EN 1092-2, form B
Valve characteristic	Equal-percentage
Control ratio	> 50 : 1
Leakage rate	≤ 0.05% of K_{vs} value

Admissible ambient conditions	
Operating temperature[1]	−10...260 °C
Operating pressure	40 bar at -10...50 °C 36.3 bar at 120 °C 29.4 bar at 220 °C 27.8 bar at 260 °C

Standards and directives	
Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUS015F375	DN 15	0.16 m³/h	20 mm	5.1 kg
VUS015F365	DN 15	0.25 m³/h	20 mm	5.1 kg
VUS015F355	DN 15	0.4 m³/h	20 mm	5.1 kg
VUS015F345	DN 15	0.63 m³/h	20 mm	5.1 kg
VUS015F335	DN 15	1 m³/h	20 mm	5.1 kg
VUS015F325	DN 15	1.6 m³/h	20 mm	5.1 kg
VUS015F315	DN 15	2.5 m³/h	20 mm	5.1 kg
VUS015F305	DN 15	4 m³/h	20 mm	5.1 kg
VUS020F305	DN 20	6.3 m³/h	20 mm	5.9 kg
VUS025F305	DN 25	10 m³/h	20 mm	6.8 kg
VUS032F305	DN 32	16 m³/h	20 mm	8.4 kg
VUS040F305	DN 40	25 m³/h	20 mm	10.6 kg

[1] *No stuffing box heater required down to -10 °C. At temperatures below -10 °C and down to -60 °C, use special version with bellows seal (available on request). Application: Water with anti-freeze (glycol up to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adapter (accessory). Above 220 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Type	Nominal diameter	K_{vs} value	Valve stroke	Weight
VUS050F305	DN 50	40 m³/h	20 mm	13.2 kg
VUS065F305	DN 65	63 m³/h	30 mm	18.6 kg
VUS080F305	DN 80	100 m³/h	30 mm	25.1 kg
VUS100F305	DN 100	160 m³/h	30 mm	36.4 kg
VUS125F305	DN 125	220 m³/h	40 mm	56.4 kg
VUS150F305	DN 150	320 m³/h	40 mm	77.9 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 15...50
0378373002	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 65...100
0378373003	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 125...150

Combination of VUS with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

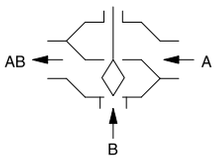
Actuator	AVP242F021	AVP243F021	AVP244F021	AVP243F031	AVP244F031
Page	377	377	377	377	377
Admissible pressure p_{stat}	≤ 32 bar	≤ 40 bar	≤ 40 bar	≤ 25 bar	≤ 40 bar
Running time	8 s	24 s	40 s	24 s	40 s

	Δp [bar]									
Closes against the pressure	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUS015F375 VUS015F365 VUS015F355 VUS015F345 VUS015F335 VUS015F325 VUS015F315 VUS015F305 VUS020F305	15.5	15.5	21.7	21.7	40.0	40.0	–	–	–	–
VUS025F305	9.5	9.5	13.1	13.1	26.2	26.2	–	–	–	–
VUS032F305	7.2	7.2	10.0	10.0	19.9	19.9	–	–	–	–
VUS040F305	4.1	4.1	5.7	5.7	11.4	11.4	–	–	–	–
VUS050F305	2.7	2.7	3.7	3.7	7.4	7.4	–	–	–	–
VUS065F305	–	–	–	–	–	–	2.2	2.2	4.4	4.4
VUS080F305	–	–	–	–	–	–	1.5	1.5	2.9	2.9
VUS100F305	–	–	–	–	–	–	1.0	1.0	1.5	1.9
VUS125F305	–	–	–	–	–	–	0.6	0.6	1.0	1.2
VUS150F305	–	–	–	–	–	–	0.4	0.4	0.6	0.8

Cannot be used to close with the pressure

At temperatures above 130 °C, accessories are required

BUS025F205



BUS: 3-way flanged valve, PN 40 (pn.)

Features

- Continuous control of cold/warm/hot water in closed circuits
- In combination with AVP 242 to 244 actuators as control unit
- Water quality as per VDI 2035
- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, matt black
- Not suitable for drinking water or potentially explosive atmospheres
- The valve is closed when the spindle is moved out
- For use only as a control valve
- Valve body made of cast steel
- Stainless-steel seat and plug
- Stainless-steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer up to 220 °C, with graphite seal up to 260 °C

Technical data

Parameters

Nominal pressure	PN 40
Connection	Flange as per EN 1092-2, form B
Valve characteristic, mixing passage	Linear
Control ratio	> 50 : 1
Leakage rate, control passage	≤ 0.05% of K_{vs} value
Leakage rate, mixing passage	≤ 1.0% of K_{vs} value

Ambient conditions

Operating temperature[1]	-10...240 °C
Operating pressure	40 bar at -10...50 °C 36.3 bar at 120 °C 29.4 bar at 220 °C 27.8 bar at 260 °C

Standards and directives

Pressure and temperature data	EN 764, EN 1333
Flow parameters	EN 60534

Overview of types

Type	Nominal diameter	K_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS015F225	DN 15	1.6 m³/h	Linear	20 mm	7.2 kg
BUS015F215	DN 15	2.5 m³/h	Linear	20 mm	7.2 kg
BUS015F205	DN 15	4 m³/h	Linear	20 mm	7.2 kg
BUS020F205	DN 20	6.3 m³/h	Linear	20 mm	8.4 kg
BUS025F205	DN 25	10 m³/h	Linear	20 mm	9.4 kg
BUS032F205	DN 32	16 m³/h	Linear	20 mm	12.4 kg
BUS040F205	DN 40	25 m³/h	Linear	20 mm	15.5 kg
BUS050F205	DN 50	40 m³/h	Linear	20 mm	19.2 kg
BUS065F205	DN 65	63 m³/h	Linear	30 mm	27.6 kg
BUS080F205	DN 80	100 m³/h	Linear	30 mm	36.5 kg

[1] *No stuffing box heater required down to -10 °C. At temperatures below -10 °C and down to -60 °C, use special version with bellows seal (available on request). Application: Water with anti-freeze (glycol up to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adapter (accessory). Above 220 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Type	Nominal diameter	K_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS100F205	DN 100	160 m³/h	Linear	30 mm	61.2 kg
BUS125F305	DN 125	220 m³/h	Equal-percentage	40 mm	82.5 kg
BUS150F305	DN 150	320 m³/h	Equal-percentage	40 mm	113.5 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 15...50
0378373002	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 65...100
0378373003	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 125...150

Combination of BUS with pneumatic actuator

Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp_s: *Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.*

Definition of Δp_{max}: *Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

The running time is based on the centair air flow rate (400 l_n/h) and on a supply line with a length of 20 m and a diameter of 4 mm.

Pressure differences

Actuator	AVP242F021		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page	377		377		377		377		377	
Admissible pressure p_{stat}	≤ 32 bar		≤ 40 bar		≤ 40 bar		≤ 25 bar		≤ 40 bar	
Running time	8 s		24 s		40 s		24 s		40 s	
	Δp [bar]									
As control valve	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUS015F225 BUS015F215 BUS015F205	12.1	15.6	21.1	21.7	24.5	24.5	–	–	–	–
BUS020F205	7.7	15.6	13.5	21.7	17.5	17.5	–	–	–	–
BUS025F205	6.6	9.4	11.6	13.1	14.7	14.7	–	–	–	–
BUS032F205	4.7	7.2	8.3	9.9	10.4	10.4	–	–	–	–
BUS040F205	3.0	4.1	5.3	5.7	6.2	6.2	–	–	–	–
BUS050F205	1.9	2.6	3.4	3.7	3.9	3.9	–	–	–	–
BUS065F205	–	–	–	–	–	–	1.7	2.2	4.4	4.4
BUS080F205	–	–	–	–	–	–	1.1	1.5	2.9	2.9
BUS100F205	–	–	–	–	–	–	0.7	0.9	1.9	1.9
BUS125F305	–	–	–	–	–	–	0.4	0.7	1.3	1.3
BUS150F305	–	–	–	–	–	–	0.3	0.5	1.0	1.0
Cannot be used as distribution valve										

At temperatures above 130 °C, accessories are required

XSP31F001

XSP: Pneumatic positioner

Features

- Conversion of a continuous positioning signal into a defined position on the pneumatic drive
- The use of a positioner provides increased positioning accuracy, partitioning of the control range, reversal of the direction of action and an increase in positioning speed
- Compressed-air connections with Rp⅛" female thread
- Measuring connection for output pressure with M4 thread
- Measures the valve stroke using a measuring spring

Technical data

Parameters		
	Control pressure	1.3 bar ±0.1
	Max. control pressure	1.4 bar
	Max. air capacity	1000 l_n/h
	Air consumption	Approx. 30 l_n/h
	Setting range, zero point (bar)	0.2...1.0 bar
	Setting range, span (bar)	0.2...1.0 bar
Admissible ambient conditions		
	Admissible ambient temperature	0...70 °C
Inputs/outputs		
	Linearity error	Approx. 1%
Construction		
	Housing material	light metal
	Fitting	with cover
	Weight	0.1 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type	Description
XSP31F001	Pneumatic positioner

XAP: Position alarm/transmitter

XAP*F001

XAP1F001

XAP2F001

Features

- Additional equipment for AK41...43 P pneumatic actuators and AV43, AVP 142 and AVP 242...244 pneumatic valve actuators
- Position feedback when monitoring
- Auxiliary contact unit with two contacts
- The relevant contacts are switched depending on whether the actuator spindle is extended or retracted
- Potentiometer, the resistance of which changes in accordance with the actuating force

Technical data

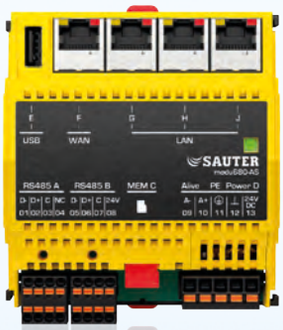
Parameters		
XAP1	Admissible contact load	10(2) A, 250 V~
	Switching point 'extended'	Approx. 5% before end position
	Switching point 'retracted'	Approx. 5% before end position
	Switching difference	2.5% of the stroke
XAP2	Potentiometer resistance	2000 Ω
	Resistance "extended"	10...50 Ω
	Resistance 'retracted'	1.5...1.8 kΩ
	Resolution	2 Ω
	Load	Max. 4 W, 42 V
Admissible ambient conditions		
	Admissible ambient temperature	-15...50 °C
Construction		
	Weight	0.3 kg
	Housing material	Glass-fibre-reinforced, fire-retardant plastic
Standards and directives		
	Type of protection	IP54 (EN 60529)

Overview of types

Type	Features	Output signal	Power cable
XAP1F001	Auxiliary contact unit	2 contacts, open/close	4 × 1 mm²
XAP2F001	Potentiometer unit	Approx. 10...1800 Ω	3 × 0.5 mm²

SAUTER modulo 6

The future of building management systems in the age of the Internet of Things (IoT) demands reliable, very fast processing of large data quantities using devices of very small dimensions. modulo 6 provides unequalled performance in terms of data points per automation station, memory space and processing speed – all of this while taking up minimum space in the control panel.
modulo 6 can be operated intuitively! It connects via Bluetooth to a smartphone or tablet. As an alternative to smartphone operation, modulo 6 also has a local operating unit (LOI) with a high-resolution graphical colour display. The LOI is compatible with all the available I/O modules and offers priority operation independently of the automation station as per EN ISO 16484-2.
modulo 6 speaks the languages of the intelligent buildings of the future! modulo 6 knows the specialised communication protocols of the systems for heating, ventilation, air conditioning, lighting and energy.
The new world of the "Internet of Things" (IOT) removes barriers to communication. This is why modulo 6 connects with the cloud and with IoTs just as naturally and securely as with the existing plants for heating, ventilation, and air conditioning.



SAUTER modulo 6

HVAC automation

SAUTER modulo 6 automation stations

SAUTER modulo 6 automation stations regulate, control, monitor and optimise the energy efficiency in HVAC installations. The installation network is based on BACnet/IP – the communication protocol for networked building intelligence.

Overview of automation stations

		
Type designation	EY6AS80	EY6AS60
Product name	modu680-AS	modu660-AS
Power supply	24 V=	24 V=
WAN network interfaces	1	–
LAN network interfaces	3 (switch)	2 (switch)
SLC/RS-485 interfaces	1	1
Modbus/RS-485 interfaces	1	–
I/O and COM extension modules	Max. 24 (of which 6 are COM modules)	Max. 24 (of which 6 are COM modules)
BACnet profile	B-BC	B-BC
Data points	Max. 1600 I/O	Max. 800 I/O
Further information	Page 407	Page 410

EY6AS80: Modular BACnet automation station and web server, modu680-AS

EY6AS80

Features

- Part of the SAUTER modulo 6 system family
- Modular automation station, expandable with I/O modules and communication modules
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- Locally expandable with up to 24 modules via iSEB interface
- Locally expandable with ecoLink I/O modules and ASV actuators via SLC interface
- Expandable via IP network with modu612-LC
- RS-485 interface for field bus integration (Modbus RTU/ASCII)
- Four RJ45 connections for two separate IP networks (OT/IT; Operational/Information Technology). Three connections switched for daisy chain
- BACnet/IP communication (EN ISO 16484-5)
- REST API interface
- BACnet profile B-BC
- AMEV profile AS-B
- Integrated web server for local commissioning, visualisation and operation
- User administration for identification, authentication and access control
- Encryption of communication with TLS 1.2
- Bluetooth interface for mobile commissioning and maintenance
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Predictive control based on meteorological forecast data
- Data recording on removable media (microSD card)
- User administration and user identification (web server)
- Alive signal output pulsed

Technical data

Power supply		
	Power supply	24 V= ± 10%
Parameters		
	Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm^2, at least 8 mm
	Battery (buffer: RTC/SRAM)	CR2032, pluggable
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Function		
	BACnet data point objects	1600 DP (HW or SW-IO)
Architecture		
	Processor	ARM 8, 1 GHz
	RAM (memory)	512 MB (DDR3)
	Flash	512 MB
	Embedded web server	moduWeb Unity
	Application data	Via CASE Engine
	Operating system	Embedded Linux

	Processes	Supports separated processes with different cycle times and independent booting
	Cycle time	Adjustable via process, at least 100 ms
Interfaces and communication		
Ethernet network #1	Ethernet network	1 × RJ45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
Ethernet network #2	Ethernet network	3 × RJ45 connector
	10/100 BASE-T(X) switched	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
Connection, I/O and COM modules	Use	1 × integrated iSEB interface for up to 12 modules, expandable with modu602-LC for up to 24 modules
RS-485-A connection	Communication protocol	Modbus RTU/ASCII, BACnet / MS/TP (expected to be available from 2020)
	Use	Modbus master, BACnet / MS/TP router (expected to be available from 2020)
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm^2 stiff/flexible
	Line	4-wire, twisted, shielded
	Termination/Pull-Up/Pull-Down	Switchable via software
RS-485-B connection	Communication protocol	SLC master
	Use	ecoLink, ASV, ecoUnit, FCCP200
	Participant	Max. 10 ecoLink modules and 6 ecoUnit modules, max. 14 ASV
	Power supply	24 V= ± 5%, max. 1.5 W, protected against short circuit, can be switched on and off
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm^2 stiff/flexible
	Line	4-wire, twisted, shielded
	Cable length	Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary
	Termination/Pull-Up/Pull-Down	Switchable via software
Bluetooth	Version	BLE 4.0
	Radiation	6 mW
USB	Version	2.0, type A
	Current consumption	Max. 500 mA
SD memory expansion	Type	microSD (SLC technology recommended)
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	87.5 × 97 × 54 mm
Standards and directives		
	Type of protection[1)]	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
	Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	BACnet profile	B-BC (nach ISO 16484-5)
	AMEV profile	AS-B

1) *IP30 only frontal with terminal cover*

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
	RoHS Directive 2011/65/EU	EN 50581
	RED Directive 2014/53/EU	EN 300 328 V2.1.1

Accessories

Plug-in I/O modules

Type	Description
EY6IO30F001	modu630-IO 16 x DI/CI inputs I/O module
EY6IO70F001	modu670-IO 8 x DI/CI/DO(OC) + 8 x DI/CI I/O module
EY6IO31F001	modu631-IO 8 x UI(DI/CI/AI) + 8 x DI/CI I/O module
EY6IO71F001	modu671-IO 8 x AO + 8 x DI/CI I/O module
EY6IO50F001	modu650-IO 6 x relay (2A) outputs I/O module
EY6IO72F001	modu672-IO 4 x UO(DO/AO) + 4 x UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM60F061	modu660-CM SMI communication module
EY6CM50F051	modu650-CM DALI communication module
EY6CM40F041	modu640-CM KNX-TP communication module
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module

Connection modules

Type	Description
EY6LC12F011	modu612-LC IP coupler for I/O modules with web server
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet

EY6AS60

EY6AS60: Modular BACnet automation station, modu660-AS

Features

- Part of the SAUTER modulo 6 system family
- Modular automation station, expandable with I/O modules and communication modules
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- Locally expandable with up to 24 modules via iSEB interface
- Locally expandable with ecoLink I/O modules and ASV actuators via SLC interface
- Two RJ45 connections switched for daisy chain
- BACnet/IP communication (EN ISO 16484-5)
- REST API interface
- BACnet profile B-BC
- AMEV profile AS-B
- Integrated web server for local commissioning, expandable with visualisation
- User administration for identification, authentication and access control
- Encryption of communication with TLS 1.2
- Bluetooth interface for mobile commissioning and maintenance
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Predictive control based on meteorological forecast data
- Data recording on removable media (microSD card)
- User administration and user identification (web server)
- Alive signal output pulsed

Technical data

Power supply		
	Power supply	24 V= ± 10%
Parameters		
	Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm^2, at least 8 mm
	Battery (buffer: RTC/SRAM)	CR2032, pluggable
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Function		
	BACnet data point objects	800 DP (HW or SW-IO)
Architecture		
	Processor	ARM 8, 1 GHz
	Embedded web server	moduWeb Unity
	Application data	Via CASE Engine
	Operating system	Embedded Linux
	Processes	Supports separated processes with different cycle times and independent booting
	Cycle time	Adjustable via process, at least 100 ms

Interfaces and communication		
Ethernet network	Ethernet network	2 × RJ45 socket, switched
	10/100 BASE-T(X) switched	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
RS-485 connection	Communication protocol	SLC master
	Use	ecoLink, ASV, ecoUnit, FCCP200
	Participant	Max. 8 ecoLink modules and 8 ecoUnit modules, max. 12 ASV
	Power supply	24 V= ± 5%, max. 1.5 W, protected against short circuit, can be switched on and off
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm^2 stiff/flexible
	Line	4-wire, twisted, shielded
	Cable length	Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary
	Termination/Pull-Up/Pull-Down	Switchable via software
Bluetooth	Version	BLE 4.0
	Radiation	6 mW
USB	Version	2.0, type A
	Current consumption	Max. 500 mA

Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	87.5 × 97 × 54 mm

Standards and directives		
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
	Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	BACnet profile	B-BC (nach ISO 16484-5)
	AMEV profile	AS-B
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
	RoHS Directive 2011/65/EU	EN 50581
	RED Directive 2014/53/EU	EN 300 328 V2.1.1

Accessories

Plug-in I/O modules

Type	Description
EY6IO30F001	modu630-IO 16 x DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 x UI(DI/CI/AI) + 8 x DI/CI I/O module
EY6IO50F001	modu650-IO 6 x relay (2A) outputs I/O module
EY6IO70F001	modu670-IO 8 x DI/CI/DO(OC) + 8 x DI/CI I/O module
EY6IO71F001	modu671-IO 8 x AO + 8 x DI/CI I/O module
EY6IO72F001	modu672-IO 4 x UO(DO/AO) + 4 x UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM40F041	modu640-CM KNX-TP communication module

Type	Description
EY6CM50F051	modu650-CM DALI communication module
EY6CM60F061	modu660-CM SMI communication module

Connection modules

Type	Description
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet
EY6LC12F011	modu612-LC IP coupler for I/O modules with web server

SAUTER modulo 6 connection modules

The SAUTER modulo 6 connection modules offer more flexibility in the control panel installation (modu602-LC) and more freedom for a decentralised topology (modu612-LC). The modu601-LC ensures the functionality of the I/O modules if the operation of the automation station is interrupted.

Overview of connection modules

			
Type designation	EY6LC01F001	EY6LC02F001	EY6LC12F011
Product name	modu601-LC	modu602-LC	modu612-LC
Power supply	24 V=	–	24 V=
IP network interfaces	–	–	2 (switch)
I/O and COM extension modules	–	–	Max. 24 (of which 6 are COM modules)
Cloud Connector	–	–	MQTT
Further information	Page 414	Page 415	Page 416

EY6 LC01

EY6 LC01: Module for separated I/O module supply, modu601-LC

Features

- Part of the SAUTER modulo 6 system family
- Enables the separate supply of automation station and I/O modules
- Power supply of I/O modules and connected LOI units (Local Override and Indication Device)
- LOI manual operation and security setting remain if there is a functional interruption at the station, e.g. during a firmware update
- Enables simple wiring tests of the I/O modules without the station, together with modu600-LO on the I/O modules

Technical data

Power supply		
	Power supply	24 V= ± 10%
Parameters		
	Connection	Spring terminal, pluggable, 3-pin, 0.5...2.5 mm^2, at least 10 mm
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Connection, I/O and COM modules	7-pin spring contacts, left and right
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

EY6LC02: Coupling kit for I/O modules in cabinet, modu602-LC

EY6LC02

Features

- Part of the SAUTER modulo 6 system family
- Arrangement of I/O modules in up to three rows for space-optimised cabinet installation
- Minimum space requirement of the transmitter and receiver modules (1.5 HP)
- Up to twelve I/O modules per row
- Up to two modu602-LC per station

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Parameters		
	Connection	Spring terminal, pluggable, 3-pin, 0.5...2.5 mm^2, at least 10 mm
	Max. number per station	2
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Connection	RJ45 connector
	Baud rate	115200 baud
	Cable type	RJ45 Cat 6 or Cat 5e
	Connection, I/O and COM modules	Transmitter: 7-pin spring contacts, only left Receiver: 7-pin spring contacts, only right
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	26.25 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

EY6LC12

EY6LC12: IP coupler for I/O modules with web server, modu612-LC

Features

- Part of the SAUTER modulo 6 system family
- Remote operation of COM and I/O modules for modulo 6 automation stations via IP network
- Locally expandable with up to 24 modules via iSEB interface
- Two RJ45 connections switched for daisy chain
- MQTT communication
- Integrated web server for local commissioning
- Bluetooth interface for mobile commissioning and maintenance
- User administration and user identification (web server)

Technical data

Power supply		
	Power supply	24 V= ± 10%
Parameters		
	Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm^2, at least 8 mm
	Battery (buffer: RTC/SRAM)	CR2032, pluggable
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Architecture		
	Processor	ARM 8, 1 GHz
	Embedded web server	moduWeb Unity
	Operating system	Embedded Linux
Interfaces and communication		
Ethernet network	Ethernet network	2 × RJ45 socket, switched
	10/100 BASE-T(X) switched	10/100 Mbit/s
Construction		
	Dimensions W x H x D	87.5 × 97 × 54 mm
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
	Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
	RoHS Directive 2011/65/EU	EN 50581
	RED Directive 2014/53/EU	EN 300 328 V2.1.1

Accessories

Plug-in I/O modules

Type	Description
EY6IO30F001	modu630-IO 16 x DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 x UI(DI/CI/AI) + 8 x DI/CI I/O module
EY6IO50F001	modu650-IO 6 x relay (2A) outputs I/O module
EY6IO70F001	modu670-IO 8 x DI/CI/DO(OC) + 8 x DI/CI I/O module
EY6IO71F001	modu671-IO 8 x AO + 8 x DI/CI I/O module
EY6IO72F001	modu672-IO 4 x UO(DO/AO) + 4 x UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM40F041	modu640-CM KNX-TP communication module
EY6CM50F051	modu650-CM DALI communication module
EY6CM60F061	modu660-CM SMI communication module

Connection modules

Type	Description
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet

SAUTER modulo 6 I/O modules

SAUTER I/O modules are compatible with the modulo 6 series and are used to capture digital and analogue signals in HVAC installations. They control devices such as contactors, relays and valve actuators.

Overview of I/O modules

			
Type designation	EY6IO30F001	EY6IO31F001	EY6IO50F001
Product name	modu630	modu631	modu650
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Inputs/outputs			
Digital inputs	16	8	–
Universal inputs	–	8	–
Optional operating elements	modu600-LO	modu600-LO	modu600-LO
Digital outputs	–	–	6
Analogue outputs	–	–	–
Universal outputs	–	–	–
Digital inputs/outputs	–	–	–
Further information	Page 419	Page 420	Page 422

			
Type designation	EY6IO70F001	EY6IO71F001	EY6IO72F001
Product name	modu670	modu671	modu672
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Inputs/outputs			
Digital inputs	8	8	–
Universal inputs	–	–	4
Optional operating elements	modu600-LO	modu600-LO	modu600-LO
Digital outputs	–	–	–
Analogue outputs	–	8	–
Universal outputs	–	–	4
Digital inputs/outputs	8	–	–
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EY6IO30: 16 x DI/CI inputs I/O module, modu630-IO

EY6IO30F001

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Receiving digital inputs (alarm/status or pulse counter up to 50 Hz) in operational systems, e.g. in HVAC engineering
- 16 digital inputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	16
	Pulse counter	≤ 50 Hz
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO30F001	16 x DI/CI inputs I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO31F001

EY6IO31: 8 x UI (DI/CI/AI) and 8 x DI/CI I/O module, modu631-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Receiving digital inputs (alarm/status) and analogue inputs (Ni/Pt1000, U) in operational systems, e.g. in HVAC engineering
- Eight digital inputs and eight universal inputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Universal inputs (UI)	Number of inputs	8
	Analogue	0...10 V, Ni1000, Pt1000, R
	Digital	DI/CI (≤ 50 Hz)
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO31F001	8 x UI(DI/CI/AI) and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO50F001

EY6IO50: 6 x relay (2A) outputs I/O module, modu650-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation of displays in operational systems, such as HVAC engineering
- Activation of actuators such as contactors or valve actuators, in operational systems
- Six digital outputs (relay)
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital outputs (DO)	Number of outputs	6
	Type of outputs	Relay (0-I), normally-open contact, galvanically isolated
	Load	24...250 V~, 2 A
	Switching frequency, mechanical	300,000 cycles for 2 A
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	6 x 2-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO50F001	6 x relay (2A) outputs I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO70: 8 x DI/CI/DO (OC) and 8 x DI/CI I/O module, modu670-IO

EY6IO70F001

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation of actuators, such as relays, in operational systems, e.g. in HVAC engineering
- Activation of displays in operational systems
- Receiving digital inputs (alarm/status) in operational systems
- Eight digital inputs and eight digital inputs/outputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Digital inputs/outputs (DIO)	Number of inputs/outputs	8
	Type of inputs/outputs	Open collector, normally-open contacts (0-I), outputs switched with respect to ground (any arrangement)
	Power supply for DO	External, positive ≤ 24 V=
	Load	0...100 mA
	Power supply for DI	Internal, ~13 V
	Impulszähler (CI)	≤ 50 Hz
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO70F001	8 x DI/CI/DO(OC) and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO71: 8 x AO and 8 x DI/CI I/O module, modu671-IO

EY6IO71F001

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation with a standard signal (0...10 V) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm/status) in operational systems
- Eight digital inputs and eight analogue outputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Analogue outputs (AO)	AO-Analogeingänge	8 x 0...10 V
	Load	≤ 2 mA
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO71F001	8 x AO and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO72F001

EY6IO72: 4 x UO(DO/AO) and 4 x UI(DI/CI/AI) I/O module, modu672-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation with a standard signal (0...10 V, 0...20 mA) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm/status) and analogue inputs (Ni/Pt1000, U/I/R/Pot) in operational systems
- Four universal inputs and four universal outputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Universal inputs (UI)	UI Universal Inputs	4
	Analogue	0...10 V, 0...20 mA, R, Ni1000, Pt1000
	Digital	DI/CI (≤ 50 Hz)
Universal outputs (UO)	UO-Universalausgänge	4 x 0...10 V, 0...20 mA
	Load	≤ 20 mA
	Load ≥ 5 kΩ	Output 0...10 V / 2...10 V
	Load ≤ 400 kΩ	Output 0...20 mA / 4...20 mA
	Admissible load voltage	< 2 V (0(4)...20 mA)
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO72F001	4 x UO(DO/AO) and 4 x UI(DI/CI/AI) I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

SAUTER modulo 6 operating unit

The SAUTER modulo 6 operating unit allows you to display the current status of the inputs and to directly override the outputs of the automation station (AS) and the I/O modules – local priority operation as per EN ISO 16484-2.

Overview of operating unit

Type designation	EY6LO00F001
Product name	modu600-LO
Power supply	From I/O module
Device	Operating device with 4 push-buttons
Function	Visualisation, operation
Display	Display of analogue, digital and multi-state signals
Use	Universally for I/O modules
Further information	Page 429

EY6LO00: Operating and indicating unit for I/O modules, modu600-LO

EY6LO00F001

Features

- Part of the SAUTER modulo 6 system family
- Pluggable element for direct operation and visualisation of displays for the modu6** I/O modules
- Display of values and statuses of the inputs and outputs on an LCD colour display
- Detailed display of the individual inputs and outputs including labelling, type, status and graphics
- Automatic detection of the current I/O module configuration and manual operation via web and security mode
- Simple 4-button operation
- LED indicator of I/O module modu6**-IO
- Manual operation of outputs (according to EN ISO 16484-2:2004 "Local override and indication devices")
- Ready for use without parameterising

Technical data

Power supply		
	Power supply	From I/O module modu6**-IO
Parameters		
	Factory setting	All switches set to "A" (Auto)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Indicators, display, operation		
	Resolution	240 x 240 pixels, colour LCD display
	Operation	Four buttons: back (level/info view), backwards (step), forwards (step), confirm
Interfaces and communication		
	Connection	4-pin, spring contacts
	Protocol	SLC
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6LO00F001	modu600-LO, operating and indicating unit for I/O modules

SAUTER modulo 6 communication modules

SAUTER communication modules enable third-party systems to be integrated on the automation level. Field-bus protocols, based on EIA-232 or EIA-485, such as Modbus/RTU and M-Bus, can be integrated directly on the automation station. The data is mapped in BACnet objects and is visible on the BACnet/IP network.

Overview of communication modules

			
Type designation	EY6CM20F011	EY6CM20F021	EY6CM30F031
Product name	modu620-CM		modu630-CM
Interfaces	RS-485		RS-232, M-Bus
Protocol	Modbus RTU / ASCII	BACnet / MS/TP	M-Bus
Further information	Page 431		Page 433

			
Type designation	EY6CM40F041	EY6CM50F051	EY6CM60F061
Product name	modu640-CM	modu650-CM	modu660-CM
Interfaces	KNX-TP1	DALI	SMI / SMI LoVo
Protocol	KNX	DALI	SMI
Further information	Page 435	Page 436	Page 438

EY6CM20: Modbus-RTU (RS-485) communication module, modu620-CM

EY6CM20F011

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- Connection to non-SAUTER systems (PLC, chillers, meters etc.)
- RS-485 half duplex, electrically isolated interface for Modbus/RTU, Modbus/ASCII
- Galvanic isolation up to 300 V
- Configurable RS-485 network resistors (software)
- Baud rate 600...115200 bit/s
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring with serial Modbus master tools

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 200 mA
	Dissipated power	≤ 0.66 W
	Bus power supply	No
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Architecture		
	Number of data points	Up to 600 Modbus data points
Interfaces and communication		
	Communication protocol	Modbus/RTU and Modbus/ASCII Master as per V1.02 2-wire (2W)
	Bus physics	½ unit load; electrically isolated up to 300 V; integrated RS-485 network resistors (LT, PU, PD) configurable via software
	Bus speed	600...115,200 bit/s Parity bit, stop bit, Rx/Tx bus timing
	Connection	Pluggable spring-type terminals 2 × 5-pin 0.2...1.5 mm^2 rigid/flexible
	Cable	3-/4-wire (D+/D−/COM reference), shielded, up to 1000 m
	Use	Modbus master, integration of Modbus slaves in an RS-485 segment (line)
	Participant	Up to 31 unit loads
	Functions	600 Modbus channels for BACnet I/O/V objects for up to 247 Modbus devices; FC01-06, 15, 16, 22; unicast and broadcast; access optimisation
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 × 97 × 54 mm

Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module

EY6CM30: M-Bus communication module, modu630-CM

EY6CM30F031

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- M-Bus master
- Connection to M-Bus meter networks for the integration of heat meters, electricity meters etc.
- 2-wire M-Bus network electrically isolated
- 2-wire RS-232 connection for point-to-point communication
- Up to 80 meters and 256 values
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring on the modulo 6 stations

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 200 mA
	Dissipated power	≤ 0.66 W
	Bus power supply	24 V=, 0.56 A, 10 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Architecture		
	Protocol processor	NXP microcontroller LPC11U67
	COM port	UART
	Memory	No
	Number of data points	256 M-Bus data points
Interfaces and communication		
	Communication protocol	M-Bus (EN 13757)
	Power consumption	10 W
	Bus physics	Electrically isolated up to 300 V
	Bus speed	300...38400 bit/s
	Connection	Pluggable spring-type terminals 5-pin M-Bus: M+, M−, COM RS-232: RS-232+, RS-232−
	Cable	J-Y(ST)Y 4 × 0.5 mm^2 LiYY 2 × 1.5 mm^2
	Use	M-Bus master, integration of meters (slaves)
	Participant	Up to 80 meters on M-Bus 1 level converter on RS-232
	Functions	I/O up to 256 data points
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 × 97 × 54 mm

Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM30F031	M-Bus communication module

EY6CM40: KNX-TP communication module, modu640-CM

EY6CM40F041

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- Connection of KNX operating devices, e.g. sensors and actuators
- Integrated KNX tunnelling function (KNX/IP) for the commissioning of KNX with ETS

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 200 mA
	Dissipated power	≤ 0.66 W
	Bus power supply	24 V=, 0.56 A, 10 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Communication protocol	KNX/TP1 (ISO/IEC 14543)
	Power consumption	KNX bus max. 6 mA
	Bus speed	9600 bit/s
	Connection	KNX bus terminal x4 0.6...0.8 mm rigid lines
	Cable	KNX cable, 2-wire, twisted
	Use	KNX actuators and KNX sensors
	Participant	Up to 64 KNX devices, depending on the external KNX power supply
	Functions	256 KNX group addresses for BACnet I/O objects (256 channels)
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 × 97 × 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM40F041	KNX-TP communication module

EY6CM50F051

EY6CM50: DALI communication module, modu650-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- DALI interface with DALI bus power supply for connecting DALI ballasts (EB) and DALI sensors
- Web-based commissioning tool for DALI networks on the modulo 6 stations
- DALI single application master (and multi-master) functionality
- Integrated DALI bus power supply as per IEC 62386-101 and -103

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 200 mA
	Dissipated power	≤ 0.66 W
	Bus power supply	24 V=, 2.7 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Communication protocol	DALI (IEC 62386101/-103)
	Power consumption	DALI bus max. 2 mA (only when operating with external power supply)
	Bus speed	9600 bit/s
	Connection	Pluggable spring-type terminals 4-pin 2 × DA+, 2 × DA− 0.2...2.5 mm^2 rigid/flexible
	Cable	2-wire, NYM, up to 300 m
	Use	DALI ballasts (IEC 62386-102) DALI sensors (see list)
	Participant	Up to 64 DALI ballasts and 64 DALI sensors (depending on type and bus power supply)
	Functions	256 DALI functions for BACnet I/O objects (256 channels) with addressable 64 DALI short addresses and 16 group addresses
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 × 97 × 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM50F051	DALI communication module

EY6CM60F061

EY6CM60: SMI communication module, modu660-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- SMI interface (SMI/SMI LoVo) for activating SMI motors for sunshading (window blinds, roller shutters)
- Integrated tunnelling function for commissioning with SMI-easyMonitor on the modulo 6 stations

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 200 mA
	Dissipated power	≤ 0.66 W
	Bus power supply	24 V=, 0.7 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Communication protocol	SMI master (SMI standard V2.3.2)
	Bus speed	1200 bit/s
	Connection	Pluggable spring-type terminals 4-pin 2 × I+, 2 × I– 0.2...2.5 mm^2 rigid/flexible
	Cable	2-wire, NYM, up to 350 m
	Use	SMI actuators, SMI (230 V) or SMI Lo-Vo (see list)
	Participant	Up to 16 SMI motors
	Functions	128 SMI functions for BACnet I/O objects (128 channels) for up to 16 single and group addresses each
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 × 97 × 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM60F061	SMI communication module

SAUTER modulo 5

The SAUTER EY-modulo 5 automation technology fulfils the most complex requirements in a convenient, efficient building management system. With intelligent functions and modules that are completely forwards- and backwards-compatible – even with third-party systems – SAUTER meets all the challenges in open, modular, cross-platform building automation. The pioneering technology is based throughout on the open BACnet/IP communication protocol.

SAUTER ecos 5

Integrated room automation:
high-performance, modular, communicative and ready for IoT.
SAUTER ecos 5 guarantees both seamless integration in the building management system and in the automation system of the primary plants, while also providing maximum flexibility with the minimum use of energy.

SAUTER modulo 5

HVAC automation

Room automation

SAUTER modulo 5 automation stations

SAUTER modulo 5 automation stations regulate, control, monitor and improve energy efficiency in HVAC installations. The installation network is based on BACnet/IP - the communication protocol for networked building intelligence.

Overview of automation stations

		
Type designation	EY-AS525F001	ES-AS525F005
Product name	modu525	modu525
Power supply	230 V~	24 V~/=
Inputs/outputs		
Universal inputs	8	8
Digital inputs	8	8
Analogue outputs	4	4
Digital outputs	6	6
Further information	Page 443	Page 443

EY-AS 524, 525: Modular automation station, modu524/525

EY-AS525F00*
EY-AS524F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Modular automation station (AS)
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- 26 inputs/outputs
- Expandable with up to 3 modules (modu524) or 8 modules (modu525)
- BACnet/IP communication (EN ISO 16484-5)
- BACnet profile B-BC
- AMEV profile AS-B (modu525 only)
- Integrated web server
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Predictive control based on meteorological forecast data
- Data recording
- Can be equipped with local operating and indicating units, located up to 10 m away
- Alive signal output pulsed

Technical data

Power supply		
	Power supply	See list of types
	Power consumption	See list of types
	Dissipated power	≤ 5 W (without accessories)
	Peak inrush current	See list of types
Parameters		
	Battery (buffer: RTC/SRAM)	CR2032, insertable
Inputs/outputs		
	Digital inputs	8 (alarm/status)
	Digital outputs	6 (relays, 24...250 V~, 2 A)
	Universal inputs	8 (Ni1000/Pt1000, U/I/R, DI)
	Analogue outputs	4 (0...10 V)
	Watchdog output pulsed	1 (5 Hz)
Function		
	BACnet data point objects	512 (incl. HW)
	BACnet client links	200 (Peer-to-Peer)
	Control	32 (Loop)
	Active COV subscription	1500
	Structured view	128 (Structured View)
	BBMD in BDT	32
	FD in FDT	32
Dynamic objects	Time programmes	64 (Schedule)
	Calendar	16 (Calendar)
	Historical data	100 (Trend Log) up to 30000 entries
	Alarms	16 (Notification Class)
	Chart	32 (Log View), only via moduWeb
	Command object	16
Architecture		
	Processor	32-bit, 400 MHz
	Flash	16 MB

	Embedded web server	moduWeb
	Application data	Via CASE Engine
	SDRAM (synchronous dynamic RAM)	32 MB
	SRAM (static RAM)	1 MB
Interfaces and communication		
	Ethernet network	1 × RJ-45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
	Connection, I/O and COM modules	1 × integrated I/O bus plug for up to 3 or 8 modules (max. load 1100 mA)
Operating and indicating units	Local operating unit, modu840 (LOP)	1 × integrated interface
	Connection LOI	1 × integrated interface
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	160 × 170 × 115 mm
	Weight	0.8 kg
Standards and directives		
	Type of protection[1]	IP20 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1 Appendix H)
	Energy class[2]	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	BACnet profile	B-BC (ISO 16484-5)
	AMEV profile	modu525: certified to AS-B modu524: functions like AS-B, but without certification
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9 EN 60950-1

Overview of types

Type	Power supply	Power consumption	Peak inrush current	Maximum number of modules	Maximum number of modules
EY-AS524F001	230 V~, ±10%, 50...60 Hz	≤ 13 VA/5 W (without accessories)	At 230 V~: 8 A (5 ms)	3	Max. 3 modules, of which max. 2 are I/O modules max. 2 are modu-Com modules
EY-AS525F001	230 V~, ±10%, 50...60 Hz	≤ 13 VA/5 W (without accessories)	At 230 V~: 8 A (5 ms)	8	Max. 8 modules, of which max. 2 are modu-Com modules
EY-AS525F005	24 V=, ±10%, 24 V~, ±20%, 50...60 Hz	≤ 11 VA/4 W (without accessories)	At 24 V=: 35 A (5 ms) At 24 V~: 39 A (5 ms)	8	Max. 8 modules, of which max. 2 are modu-Com modules

[1] *Only on front with terminal cover, blanking piece for LOI and transparent cover*

[2] *When the automation station is being used as a temperature controller, most temperature controller classes can be fulfilled according to EU Directive 2010/30/EU, Regulation 811/2013. For information on the exact temperature class, please refer to the system integrator's user program.*

Accessories

Plug-in I/O modules

Type	Description
EY-IO530F001	Digital and universal inputs (8 DI/8 UI)
EY-IO531F001	Digital inputs (16 DI)
EY-IO532F001	Universal inputs (16 UI)
EY-IO533F001	Universal and digital inputs (8 UI/4 DI/4 S0)
EY-IO534F001	Analogue inputs with galvanic isolation (8 AI current/voltage)
EY-IO550F001	Digital outputs (6 DO, relay)
EY-IO551F001	Digital outputs (16 DO, open collector)
EY-IO570F001	Analogue outputs and universal inputs (4 AO/8 UI)
EY-IO571F001	Digital inputs/outputs (16 DI/DO, open collector)
EY-IO572F001	Analogue outputs, universal and digital inputs (4 AO/8 UI/3 DI)
EY-LM590F001	novaLink module (8 channels)

Plug-in communication modules (COM)

Type	Description
EY-CM721F010	Integration of non-SAUTER systems via EIA-232 and EIA-485 for Modbus/RTU master
EY-CM721F020	Integration of non-SAUTER systems via EIA-232 and EIA-485 for M-Bus
EY-CM731F020	M-Bus and EIA-232 integration of non-SAUTER systems for M-Bus

Local operation and indication

Type	Description
EY-LO625F001	Operation/indication, 6 switches Auto-0-I, 4 LEDs alarm/status, 4 setpoint transmitters (A-0... 100%), 8 LEDs alarm/status
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, Auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, Auto-0-I-II, 4 LEDs operation/indication
EY-LO670F001	4 setpoint transmitters (A-0...100%), 8 LEDs operation/indication
EY-OP840F001	Local operating and display unit, modu840
0930240511	Front frame for 4 operating/indicating units
0930240540	Connection adaptor for RJ-45 operating/indicating units for front frame
0930240541	Connection adaptor for RJ-45 operating panel for front frame

Replacement relay

Type	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including connection terminals)

Manuals

Type	Description
7010050001	Operating manual for moduWeb, German
7010050002	Operating manual for moduWeb, French
7010050003	Operating manual for moduWeb, English

SAUTER modulo 5 I/O modules

SAUTER I/O modules are compatible with the modulo 5 series and are used to capture digital and analogue signals in HVAC installations. They control devices such as contactors, relays and valve actuators.

Overview of I/O modules

					
Type designation	EY-IO530F001	EY-IO531F001	EY-IO532F001	EY-IO533F001	EY-IO534F001
Product name	modu530	modu531	modu532	modu533	modu534
Power supply	From modu525 AS	From modu525 AS	From modu525 AS	From modu525 AS	From modu525 AS
Inputs/outputs					
Digital inputs	8	16	–	8 (4 × S0)	–
Universal inputs	8	–	16	8	–
Analogue inputs (with power applied)	–	–	–	–	8
Optional operating elements	modu630	modu630	modu630	modu630	modu630
Digital outputs	–	–	–	–	–
Analogue outputs	–	–	–	–	–
Digital inputs/outputs	–	–	–	–	–
Further information	Page 447	Page 449	Page 450	Page 451	Page 453

					
Type designation	EY-IO550F001	EY-IO551F001	EY-IO570F001	EY-IO571F001	EY-IO572F001
Product name	modu550	modu551	modu570	modu571	modu572
Power supply	From modu525 AS	From modu525 AS	From modu525 AS	From modu525 AS	From modu525 AS
Inputs/outputs					
Digital inputs	–	–	–	–	3
Universal inputs	–	–	8	–	8
Optional operating elements	modu630, modu650	modu630, modu650	modu630, modu670	modu630, modu650	modu630, modu670
Digital outputs	6	16	–	–	–
Analogue outputs	–	–	4	–	4
Digital inputs/outputs	–	–	–	16	–
Further information	Page 455	Page 457	Page 459	Page 461	Page 463

EY-IO 530: I/O module, digital and universal inputs, modu530

EY-IO530F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving digital (alarm/status) and analogue inputs (Ni/Pt1000, U/I/R) in operational systems, e.g. in HVAC engineering
- 16 inputs
- Power supply of automation station (AS)
- Direct labelling on the front
- Can be equipped with a local indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1.6 VA/0.65 W
	Dissipated power	≤ 0.65 W
	Current consumption[2]	40 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital inputs	8 fixed assignment (alarm/status)
	Pulse counter	≤ 50 Hz
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (approx. 3 Hz)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO530F001	I/O module, digital and universal inputs, modu530

[1] *Primary side of base station*
[2] *Supply via base station*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

EY-IO 531: I/O module, digital inputs, modu531

EY-IO531F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving digital inputs (alarm/status) in operational systems, e.g. in HVAC engineering
- 16 digital inputs
- Power supply of automation stations
- Direct labelling on the front
- Can be equipped with a local indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1 VA/0.4 W
	Dissipated power	≤ 0.4 W
	Current consumption[2]	25 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital inputs	16
	Pulse counter	≤ 50 Hz
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO531F001	I/O module, digital inputs, modu531

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

[1] *Primary side of base station*
[2] *Supply via base station*

EY-IO532F001

EY-IO 532: I/O module, universal inputs, modu532

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving digital (alarm/status) and analogue inputs (Ni/Pt1000, U/I/R) in operational systems, e.g. in HVAC engineering
- 16 universal inputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1.2 VA/0.5 W
	Dissipated power	≤ 0.5 W
	Current consumption[2]	35 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Universal inputs	16
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (≤ 3 Hz)
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO532F001	I/O module, universal inputs, modu532

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

[1] *Primary side of base station*
[2] *Supply via base station*

EY-IO 533: I/O module, universal, digital, S0 inputs, modu533

EY-IO533F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving digital (alarm/status), analogue inputs (Ni/Pt1000, U/I/R) and meter signal S0 in operational systems, e.g. in HVAC engineering
- 16 inputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 2.9 VA/1.5 W
	Dissipated power	≤ 1.5 W
	Current consumption[2]	100 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I(2x)/R, Pot
	Digital	DI (≤ 3 Hz)
	Digital inputs	8 (≤ 50 Hz)
	Fixed assignment	4
	Meter inputs S0	4 (as per IEC 62053-31)
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO533F001	I/O module, universal, digital, S0 inputs, modu533

[1] *Primary side of base station*
[2] *Supply via base station*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

EY-IO 534: I/O module, analogue inputs with galvanic isolation, modu534

EY-IO534F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving analogue inputs in operational systems, such as HVAC engineering
- 8 analogue inputs (U/I) with electrical isolation for non-isolated sensors with external power supply
- Power supply for I/O module of the automation station
- Direct labelling on the front
- Can be equipped with a local indicating unit

Technical data

Parameters		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 3.5 VA / 1.3 W
	Dissipated power	≤ 1.1 W
	Current consumption[2]	80 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity without condensation	10...85% rh
Version		
	Analogue inputs	8 (with power applied)
	Voltage	0(2)...10 V
	Current	0(4)...20 mA
	Max. external voltage	Common-mode voltage 80 V=/50 V~
Interfaces and communication		
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24, 0.5...2.5 mm²
	Connection LOI	6-pin, integrated
Construction		
	Fitting	On DIN rail
	Weight	0.285 kg
	Dimensions W x H x D	42 × 170 × 115 mm
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4

Overview of types

Type	Description
EY-IO534F001	I/O module, analogue inputs

[1] *Primary side of base station*
[2] *Supply via base station*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

EY-IO 550: I/O module, digital outputs (relays), modu550

EY-IO550F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Activation of actuators such as contactors, valve actuators or displays of operational systems, e.g. in HVAC engineering
- 6 digital outputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 2.9 VA/1.6 W
	Dissipated power	≤ 1.6 W
	Current consumption[2]	≤ 100 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital outputs	6
	Type of outputs	Relay (0-I), NO contact, galvanically isolated
	Load	24...250 V~/2 A
	Switching frequency, mechanical	10^6 cycles
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	12 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.3 kg
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	EN 60730-1
CE conformity according to	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO550F001	I/O module, digital outputs (relays), modu550

[1] *Primary side of base station*
[2] *Supply via base station*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, Auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, Auto-0-I-II, 4 LEDs operation/indication

Components

Type	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including connection terminals)

EY-IO 551: I/O module, digital outputs (open collector), modu551

EY-IO551F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Activation of actuators such as relays or displays of operational systems, e.g. in HVAC engineering
- 16 digital outputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 0.7 VA/0.35 W
	Dissipated power	≤ 0.35 W
	Current consumption[2]	≤ 30 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital outputs	16
	Type of outputs	Open collector, NO contacts (0-I) outputs switched with respect to ground
	Power supply for DO	External, positive ≤ 24 V=
	Load	0.5 mA up to 100 mA
Interfaces and communication		
	Connection, modu6**	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[3]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO551F001	I/O module, digital outputs (open collector), modu551

[1] *Primary side of base station*
[2] *Supply via base station*
[3] *EN 61000-6-2: In order to meet the European Standard, the power cables must not exceed 30 metres in length.*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, Auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, Auto-0-I-II, 4 LEDs operation/indication

EY-IO 570: I/O module, analogue outputs and universal inputs, modu570

EY-IO570F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Actuation with a standard signal (0...10 V), receiving digital (alarm/status) and analogue inputs (Ni/Pt1000, U/I/Pot) in operational systems, e.g. in HVAC engineering
- 12 inputs/outputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1.5 VA/0.8 W
	Dissipated power	≤ 0.8 W
	Current consumption[2]	≤ 50 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Analogue outputs	4 (push-pull)
	Load	≤ 2 mA
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (approx. 3 Hz)
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-IO570F001	I/O module, analogue outputs and universal inputs, modu570

[1] *Primary side of base station*
[2] *Supply via base station*

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO670F001	4 setpoint transmitters (A-0...100%), 8 LEDs operation/indication

EY-IO 571: I/O module, digital inputs/outputs (open collector), modu571

EY-IO571F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Receiving digital inputs (alarm/status) and activation of actuators such as relays or displays of operational systems, e.g. in HVAC engineering
- 16 digital inputs/outputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1 VA/0.4 W
	Dissipated power	≤ 0.4 W
	Current consumption[2]	≤ 25 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital inputs/outputs	16
	Type of inputs/outputs	Open collector, NO contacts (0-I), outputs switched with respect to ground (any arrangement)
	Power supply for DO	External, positive ≤ 24 V=
	Load	0 mA up to 100 mA
	Power supply for DI	Internal, 13.5 V
	Pulse counter	(DI) ≤ 50 Hz
Interfaces and communication		
	Connection, modu6**	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[3]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

[1] *Primary side of base station*
[2] *Supply via base station*
[3] *EN 61000-6-2: In order to meet the European Standard, the power cables must not exceed 30 metres in length.*

Overview of types

Type	Features
EY-IO571F001	I/O module, digital inputs/outputs (open collector), modu571

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, Auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, Auto-0-I-II, 4 LEDs operation/indication

EY-IO 572: I/O module, analogue outputs, universal and digital inputs, modu572

EY-IO572F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Actuation with a standard signal (0...10 V), receiving digital (alarm/status) and analogue inputs (Ni/Pt1000, U/I/Pot) in operational systems, e.g. in HVAC engineering.
- 15 inputs/outputs
- Power supply of the automation station
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Power consumption[1]	≤ 1.8 VA/0.8 W
	Dissipated power	≤ 0.8 W
	Current consumption[2]	≤ 110 mA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Analogue outputs	4× 0...10 V/0...20 mA (source)
	Load	≤ 20 mA
	Load ≥ 5 kΩ	Output 0...10 V / 2...10 V
	Load ≤ 400 kΩ	Output 0...20 mA / 4...20 mA
	Admissible load voltage	< 2 V (0(4)...20 mA)
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (≤ 3 Hz)
	Digital inputs	3 fixed assignment
	Pulse counter	≤ 50 Hz
Interfaces and communication		
	Connection LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

[1] *Primary side of base station*
[2] *Supply via base station*

Overview of types

Type	Features
EY-IO572F001	I/O module, analogue outputs, universal and digital inputs, modu572

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO670F001	4 setpoint transmitters (A-0...100%), 8 LEDs operation/indication

SAUTER field modules

Field modules from SAUTER expand the automation stations by adding more inputs and outputs. The field modules can be situated up to 100 metres away from the automation station.

Overview of field modules

					
Type designation	EY-LM590F001	EY-FM164F001	EY-FM165F001	EY-FM170F001	EY-FM174F001
Product name	modu590	modu164	modu165	modu170	modu174
Power supply	External, 24 V~/=	Via Bus, 24 V~/=	Via Bus, 24 V~/=	Via Bus, 24 V~/=	Via Bus
For stations	modu524/525	modu590, modu225	modu590, modu225	modu590, modu225	modu590, modu225
Connection	novaLink	novaLink	novaLink	novaLink	novaLink
Inputs/outputs					
Digital inputs	16	–	–	–	16
Analogue outputs	4	–	–	4	–
Digital outputs	2-4	4	4	–	–
Further information	Page 466	Page 468	Page 470	Page 472	Page 474

EY-LM590F001

EY-LM 590: novaLink module, modu590

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- Suitable for connecting EY-FM 1** and EYY 1** remote units
- 24 V ~/= external power supply
- Up to 8 field modules per novaLink module with DC power supply, 6 with AC power supply
- I/O bus and novaLink electrically isolated from each other
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit

Technical data

Power supply		
	Power supply	24 V=, ±10% 24 V~, +20%/-15%, 50...60 Hz
	Power consumption	Max. 20 W
	Dissipated power	Max. 1 W
	Current consumption	Max. 1.2 A
	Max. peak inrush current	Max. 20 A (2 ms)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Interfaces and communication		
	Connection LOI	6-pin, integrated in electronics module
	Connection, I/O bus	12-pin, integrated in base
	Connection terminals	24 (0.5...2.5 mm^2)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.315 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-LM590F001	novaLink module, 8 novaLink channels, modu590

Accessories

Local operating and indicating units (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

Field modules

Type	Description
EY-FM164F001	moduLink164 digital output 4× 0-I (change-over relay)
EY-FM165F001	moduLink165 digital output 2× 0-I-II (change-over relay)

Type	Description
EY-FM170F001	moduLink170 analogue output 4× 0...10 V (2× 0...20 mA)
EY-FM174F001	moduLink174 digital input 16×

EY-FM 164: Field module for digital outputs 0-I, moduLink164

EY-FM164F001

Features

- Part of the SAUTER EY-modulo system family
- 4 digital outputs
- Remote unit for modu590 and modu225
- Front insert for direct labelling
- Can be located up to 100 m from the automation station (AS)
- Defined relay statuses can be preselected for the priority/watchdog functions
- Can be used for local priority operation with manual control of outputs
- Communication/power supply via novaLink connection (2-wire) of AS
- 1 output, novaLink bus monitoring
- LED indicator and manual operation

Technical data

Power supply		
	Power supply	From AS (via novaLink)
	External supply	24 V~/=
	Current consumption	≤ 150 mA
	Dissipated power	≤ 1 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital outputs	4 × 0-I relay, change-over contacts
	Switching frequency	> 5 × 10^6 cycles
	Load	250 V~/2 A resistive load
Interfaces and communication		
	Activation	From modu590, modu225, nova225,nova106 (EYX 168)
	Connection	novaLink bus ≤ 100 m (cable shielded, twisted and earthed on both ends < 5 nF/< 7.5 Ω)
Construction		
	Dimensions W x H x D	105 × 90 × 60 mm
	Weight	0.24 kg
Standards and directives		
	Type of protection	IP00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Mode of operation	Type 1 C (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

[1)] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs must not exceed 30 m in length*

Overview of types

Type	Features
EY-FM164F001	Field module for digital outputs 0-I, moduLink164

Accessories

Type	Description
0920000164	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated

EY-FM 165: Field module for digital outputs 0-I-II, moduLink165

EY-FM165F001

Features

- Part of the SAUTER EY-modulo system family
- 2 digital outputs/2-step
- Remote unit for modu590 and modu225
- Front insert for direct labelling
- Can be located up to 100 m from the automation station (AS)
- Defined relay statuses can be preselected for the priority/watchdog functions
- Can be used for local priority operation with manual control of outputs
- Communication/power supply via novaLink connection (2-wire) of AS
- 1 output, novaLink bus monitoring
- LED indicator and manual operation

Technical data

Power supply		
	Power supply	From AS (via novaLink)
	External supply	24 V~/=
	Current consumption	≤ 150 mA
	Dissipated power	≤ 1 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital outputs	2 × 0-I-II relay, change-over contacts
	Switching frequency	> 5 × 10^6 cycles
	Load	250 V~/2 A resistive load
Interfaces and communication		
	Activation	From modu590, modu225, nova225,nova106 (EYX 168)
	Connection	novaLink bus ≤ 100 m (cable shielded, twisted and earthed on both ends < 5 nF/< 7.5 Ω)
Construction		
	Dimensions W x H x D	105 × 90 × 60 mm
	Weight	0.24 kg
Standards and directives		
	Type of protection	IP00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Mode of operation	Type 1 C (EN 60730)
CE conformity according to	EMC Directive 2014/30/EU[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

[1)] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs must not exceed 30 m in length*

Overview of types

Type	Features
EY-FM165F001	Field module for digital outputs 0-I-II, moduLink165

Accessories

Type	Description
0920000165	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated

EY-FM 170: Field module for analogue outputs 0...10 V (0...20 mA), moduLink170

EY-FM170F001

Features

- Part of the SAUTER EY-modulo system family
- 4 analogue outputs
- Remote unit for modu590 and modu225
- Front insert for direct labelling
- Can be located up to 100 m from the automation station (AS)
- Defined signal values can be preselected for the priority or watchdog functions
- Can be used for local priority operation with manual control of outputs
- Communication and power supply via novaLink connection (2-wire) of AS
- 1 output, novaLink bus monitoring

Technical data

Power supply		
	Power supply	From AS (via novaLink)
	External supply	24 V~/=
	Current consumption	≤ 100 mA
	Dissipated power	≤ 1 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Analogue outputs	2 × 0...10 V 2 × 0...10 V/0...20 mA
Interfaces and communication		
	Activation	From modu590, modu225, nova225, nova106 (EYX172)
	Connection	novaLink bus ≤ 100 m (cable screened, twisted and earthed at both sides, < 5 nF/< 7.5 Ω)
Construction		
	Dimensions W x H x D	105 × 90 × 60 mm
	Weight	0.24 kg
Standards and directives		
	Type of protection	IP00 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-FM170F001	Field module for analogue outputs 0...10 V (0...20 mA), moduLink170

[1)] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs must not exceed 30 m in length*

Accessories

Type	Description
0920000170	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated

EY-FM174F001

EY-FM 174: Field module for digital inputs, moduLink174

Features

- Part of the SAUTER EY-modulo system family
- 16 digital inputs
- Remote unit for modu590 and modu225
- Front insert for direct labelling
- Can be located up to 100 m from the automation station (AS)
- Bi-colour LED indicators (red/green)
- Communication and power supply via novaLink bus (2-wire) of AS

Technical data

Power supply		
	Power supply	From AS (via novaLink)
	Current consumption	≤ 120 mA
	Input resistance	≤ 1 kΩ (incl. cable)
	Dissipated power	≤ 1 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
	Digital inputs	16 potential-free contacts, grounded
	Polling cycle	150 ms
	Detection time	30 ms
Interfaces and communication		
	Activation	From modu590, modu225, nova225, nova106 (EYX 176)
	Connection	novaLink bus ≤ 100 m (cable shielded, twisted and grounded at both ends, < 5 nF/< 7.5 Ω)
Construction		
	Dimensions W x H x D	105 × 90 × 60 mm
	Weight	0.24 kg
Standards and directives		
	Type of protection	IP00 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[1]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-FM174F001	Field module for digital inputs, moduLink174

Accessories

Type	Description
0920000174	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated

[1] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs must not exceed 30 m in length*

SAUTER modulo 5 operating units

SAUTER operating units allow you to display the current status of the inputs and to directly override the outputs of the automation station (AS) and the I/O modules.

Overview of operating units

			
Type designation	EY-OP840F001	EY-LO625F001	EY-LO630F001
Product name	modu840	modu625	modu630
Power supply	From AS	From AS	From AS or I/O module
Device	Operating unit	Operating unit with LED	Operating unit with LED
Function	Visualisation, operation	6 manual/auto switches, 4 slide switches	Status/alarm
Display	Structured installations	6 DO (A-0-I), 4 LEDs, 4 AO (A-0...100%), 8 LEDs	16 LEDs
For stations	modu525	modu525	modu525
For I/O modules	–	–	modu530...533, modu550, modu551, modu571, modu570, modu572
Interfaces	I/O bus	I/O bus	I/O bus
Further information	Page 476	Page 478	Page 478

			
Type designation	EY-LO650F001	EY-LO650F002	EY-LO670F001
Product name	modu650	modu650	modu670
Power supply	From AS or I/O module	From AS or I/O module	From AS or I/O module
Device	Operating unit with LED	Operating unit with LED	Operating unit with LED
Function	6 manual/auto switches	3 manual/auto switches	4 slide switches
Display	6 DO (A-0-I), 4 LEDs	3 DO (A-0-I), 4 LEDs	4 AO (A-0...100%), 8 LEDs
For stations	modu525	modu525	modu525
For I/O modules	modu550, modu551, modu571	modu550, modu551, modu571	modu570, modu572
Interfaces	I/O bus	I/O bus	I/O bus
Further information	Page 478	Page 478	Page 478

EY-OP840F001

EY-OP 840: Local operating unit, modu840

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/modu525 automation stations (AS)
- Local operating and display unit for direct local and manual operation of the AS
- Intuitive single-button operation (using the "turn and press" method)
- Graphic display with various font sets and types
- Menu-led navigation with user login for operation rights
- Visualisation of information with structured installation display
- Two LED indicators for installation alarm and function status
- Displays objects, alarms and other information
- Choice of four languages
- Can be fitted remotely (using accessories) in cabinet

Technical data

Power supply		
	Power supply	From AS
	Power consumption	≤ 50 mA
	Dissipated power	≤ 0.1 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Indicators, display, operation		
	Resolution	160 × 100 pixels, monochrome (LCD)
	Operation	Turn and press
	Rotary knob	+/–, down/up
	Acknowledgement	OK (short), start (long > 3 s)
Interfaces and communication		
	Internal connection	5-pin pogo pins for supply and data communication
Construction		
	Weight	0.11 kg
	Dimensions W x H x D	85 × 94 × 25 mm
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 55024

Overview of types

Type	Features
EY-OP840F001	Local operating unit, modu840

Accessories

Type	Description
7010035001	modu840 user manual, German
7010035002	modu840 user manual, French
7010035003	modu840 user manual, English
0930240511	Front frame for 4 operating/indicating units
0930240541	Connection adaptor for RJ-45 operating panel for front frame

EY-LO 625...670: Local operating and indicating units, modu625...670

EY-LO625F001

EY-LO630F001

EY-LO650F001

EY-LO650F002

EY-LO670F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Pluggable elements for direct operation/indication of modu524/525 automation station (AS) and nova-Link and I/O modules
- Direct operation via switches/sliders (as per EN ISO 16484-2:2004 "Local override and indication devi-ces")
- Separate indicator for manual operation
- Ready for use without parameterising

Technical data

Power supply		
	Power supply	From AS, novaLink and modu5** I/O module
Parameters		
	Factory setting	All switches set to "A" (Auto)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Interfaces and communication		
	Connection for novaLink or I/O mod-ule, AS or lowering frame	Spring contacts, 9-pin
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1) PELV
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

i *Power consumption: On primary side of base station (230 V~)*

i *Current consumption: Supply via base station*

Type	EY-LO625F001	EY-LO630F001	EY-LO650F001	EY-LO650F002	EY-LO670F001
Use	modu521, modu524, modu525 (from hardware index C)	modu524/525, modu530...590	modu524/525, modu550, 551, 571	modu524/525, modu550, 551, 571	modu524/525, modu570, 572
Power consump-tion	≤ 2 VA/0.7 W	≤ 1 VA/0.35 W	≤ 1 VA/0.35 W	≤ 1 VA/0.35 W	≤ 1 VA/0.35 W
Dissipated power	≤ 0.7 W	≤ 0.35 W	≤ 0.35 W	≤ 0.35 W	≤ 0.35 W
Current consump-tion	≤ 40 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Operation	6 switches (A-0-I), 4 sliders (A-0...100%)	–	6 switches (A-0-I)	3 switches (A-0-I-II)	4 sliding switches (A-0...100%)
Indicator/display	4 LEDs (bi-colour), analogue: 8 LEDs (bi-colour)	16 LEDs (bi-col-our)	4 LEDs (bi-colour)	4 LEDs (bi-colour)	8 LEDs (bi-colour)
Dimensions W x H x D	84 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm
Weight	0.07 kg	0.03 kg	0.03 kg	0.03 kg	0.03 kg

Accessories

Type	Description
0930240511	Front frame for 4 operating/indicating units
0930240540	Connection adaptor for RJ-45 operating/indicating units for front frame

EY-WS 500: Web server for moduWeb Vision and moduWeb500 BACnet networks

EY-WS500F005

Features

- Part of the SAUTER EY-modulo 5 system family
- Visualisation and operation of facilities
- Facilities operated via internet using a standard web browser
- Online notification via e-mail and text message
- Recording of historical values and alarms
- Time and calendar functions (BACnet Schedule Client)
- Visualisation either in lists, dynamic images or diagrams
- Engineering/parametrising via PC using CASE Suite
- Communication with web client via standard HTTP protocol
- Secure communication with web client via encrypted HTTPS protocol
- Communication with mail server and SMS gateway via standard SMTP
- Communication with automation devices via BACnet/IP and BACnet web services (EN ISO 16484-5)
- Integrated firewall

Technical data

Power supply		
	Power supply	24 V~/=, ±20%, 50...60 Hz= (EY-WS500F005, moduWeb500 hardware)
	Low-voltage connector	10...35 V= Ø 5.5 mm external, Ø 2.5 mm internal
	Power consumption	≤ 6.5 VA/5.5 W
	Battery (buffer: RTC)	Lithium button-cell (CR2032), insertable
	Serviceable life of battery	10 a
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...65 °C
	Admissible ambient humidity	5...85% rh, no condensation
Architecture		
Watchdog	Processor	ARM Cortex A8, 600 MHz
	RAM	RAM, 256 MB
	Flash	128 MB (permanent memory)
	Memory expansion	SD-HC card slot ≤ 32 GB
	Back-up medium	USB mass storage device, ≤ 250 mA USB 2.0, type A connection
Interfaces and communication		
	Ethernet network	1 × RJ-45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
	Max. load	15 V, 10 mA
Construction		
	Weight	0.8 kg
	Dimensions W x H x D	133 × 170 × 61 mm
	Fitting	Cabinet, DIN rail

Standards and directives		
	Type of protection[1]	IP20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60950-1
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Software class	EN 60730-1 Appendix H

Overview of types

Type	Description
EY-WS500F005	moduWeb500 hardware
EY-WS505F010	moduWeb Vision software for 800 DP, 75 diagrams, 25 users
EY-WS505F011	Upgrade from EY-WS505F010 to 2500 DP, 250 diagrams, 100 users
EY-WS505F020	moduWeb Vision software for 2500 DP, 250 diagrams, 100 users
EY-WS506F100	moduWeb Vision Touch, optional, incl. various resolutions
EY-TC505F110	Touch Client software for Windows 7

Accessories

Manuals

Type	Description
7010083001	Operating manual for moduWeb Vision, German
7010083002	Operating manual for moduWeb Vision, French
7010083003	Operating manual for moduWeb Vision, English

[1] *Only on front with terminal cover*

SAUTER modulo 5 communication modules

SAUTER communication modules enable third-party systems to be integrated on the automation level. Field-bus protocols, based on EIA-232 or EIA-485, such as Modbus/RTU and M-Bus, can be integrated directly on the automation station. The data is mapped in BACnet objects and is visible on the BACnet/IP network.
The devices of the moduNet series enable the SAUTER novaNet bus system to be integrated into parent IT networks. A direct Ethernet interface and BACnet gateway functionality are provided for this purpose.

Overview of communication modules

		
Type designation	EY-CM 721	EY-CM 731
Product name	modu721	modu731
Interfaces	EIA-232 EIA-485	EIA-232 M-Bus
Protocol	Modbus M-Bus	M-Bus
Further information	Page 483	Page 485

			
Type designation	EY-BU292F001	EY-BU292F002	EYZ291F001
Product name	moduNet292	moduNet292	novaNet291
Property	Connection of novaNet to Ether-net/IP	Connection of novaNet to Ether-net/IP	Router
Fitting	Cabinet model	Desktop model	Cabinet model
Further information	Page 487	Page 487	Page 489

EY-CM 721: Communication module with EIA-232 and EIA-485 interfaces, modu721

EY-CM721F010

Features

- Part of the SAUTER EY-modulo 5 system family
- Plug-in element for extending the modu524/525 automation station (AS)
- One or two COM modules per AS
- Connection to non-SAUTER systems (PLC, chillers, meters etc.)
- Connection for point-to-point protocols with EIA-232 interface
- Connection for field bus protocols based on EIA-485
- 2-wire EIA-485 (half-duplex)
- Galvanic isolation up to 300 V
- Jumper for EIA-485 bus voltage, bus termination and connection for galvanic isolation
- M-Bus and further integration of third-party products with the AS for integrated control and optimised regulation and the option to use BACnet/IP communication with the management level.
- Direct labelling on the front

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Per AS at location 1 or 2	≤ 2 COM modules
	Current consumption	≤ 150 mA
	Dissipated power	≤ 1.2 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Architecture		
	Protocol processor	FPGA
	COM port	UART
	Memory	Flash memory (user and protocol data)
	Number of data points	≤ 200
Interfaces and communication		
	COM port, EIA-232 (DTE)	D-Sub plug (9-pin, male)
	COM port, EIA-485	6 screw terminals (2 × C, 2 × D+, 2 × D-)
	Baud rate	0.3...57.6 kbit/s
	Data bits	5, 6, 7, 8
	Stop bits	1, 1.5, 2
	Parity	None, even, odd
	Connection, I/O bus	12-pin, integrated in base
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.8 kg
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)

	Software class	EN 60730-1 Appendix H
CE conformity according to	EMC Directive 2014/30/EU[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Protocol
EY-CM721F010	Communication module for Modbus/RTU (master, EIA-232 or EIA-485)
EY-CM721F020	Communication module for M-Bus (master, EIA-232 or EIA-485)

Accessories

Type	Description
7010037001	Manual for moduCom communication modules, German
7010037002	Manual for moduCom communication modules, French
7010037003	Manual for moduCom communication modules, English
0386301001	Connection cable COM DB9(f)-DB9(f), 3 m (null modem)

[1)] *EN 61000-6-1: EIA-232 cable max. 15 m in length; EIA-485: Shielded cable 2 × 2 twisted pair*

EY-CM 731: Communication module with M-Bus and EIA-232 interfaces, modu731

EY-CM731F020

Features

- Part of the SAUTER EY-modulo system family
- Plug-in element for extending the modu524/525 automation station (AS)
- One or two COM modules per AS
- EIA-232 interface for point-to-point connection with an M-Bus level converter
- Two-wire M-Bus network (as per EN 1434-3)
- Connection to M-Bus meter networks for up to 200 meters (heat meter, electricity meter, etc.)
- Recording counting values at automation level allows optimum control and regulation of systems and offers the option of using BACnet/IP communication at the management level.
- Without external power supply: up to 10 M-Bus meters
- With external power supply: up to 50 M-Bus meters
- D-Sub plugs (9-pin, male, DTE) for connecting to external M-Bus level converter
- Direct labelling on the front

Technical data

Power supply		
	Power supply	From AS via I/O bus
	Current consumption	≤ 200 mA
	Dissipated power	≤ 3.28 W
External power supply	For 1...50 meters on the M-Bus network	24 V~ (±20%)/24 V= (±20%)
	Power consumption	5 W, 6 VA (for 11...50 meters on the M-Bus network)
	Screw terminals	2 (MM, LS)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Architecture		
	Protocol processor	FPGA
	COM port	UART
	Memory	Flash memory (user and protocol data)
	Number of data points	≤ 200
Interfaces and communication		
	COM port, EIA-232 (DTE)	D-Sub plug (9-pin, male)
	COM port, M-Bus (EN 1434-3)	4 screw terminals (2 × M+, 2 × M-)
	Baud rate	0.3...9.6 (38.4) kbit/s
	Connection, I/O bus	12-pin, integrated in base
	Protocol	M-Bus (master)
Construction		
	Fitting	On DIN rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.8 kg
Standards and directives		
	Type of protection	IP20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)

	Software class	EN 60730-1 Appendix H
CE conformity according to	EMC Directive 2014/30/EU[1)]	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-CM731F020	Communication module with M-Bus and EIA-232 interface, modu731

Accessories

Type	Description
7010037001	Manual for moduCom communication modules, German
7010037002	Manual for moduCom communication modules, French
7010037003	Manual for moduCom communication modules, English
0386301001	Connection cable COM DB9(f)-DB9(f), 3 m (null modem)

[1)] *EN 61000-6-1: EIA-232 cable max. 15 m in length. M-Bus cable: Two-core, twisted pair*

EY-BU 292: novaNet-Ethernet interface, moduNet292

EY-BU292F001

EY-BU292F002

Features

- Part of the SAUTER EY-modulo 2 system family
- Bus access device for novaNet system bus with Ethernet interface
- To integrate novaNet stations (EY3600, EY-modulo 2) into IP networks based on Ethernet (LAN/WAN)
- For SAUTER CASE Suite applications
- To download programmes onto the stations
- For SAUTER novaPro visualisations
- For remote monitoring via the internet
- TCP/IP communication
- Communication with two-wire novaNet system bus
- RJ-45 plug for Ethernet 10 Base-T (10 Mbit/s)
- Fixed IP addressing
- RS-232 interface for parameterisation and updating
- Five LEDs for Error, novaNet Send, Power, Activity, Link

Technical data

Power supply		
	Power supply	230 V~, +10%, –15% 115 V~, +10%, –15% (50...60 Hz)
	Power consumption	6 VA, < 7 W
Ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	–25...70 °C (–13...158 °F)
	Admissible ambient humidity	10...85% rh, no condensation
Interfaces and communication		
	Ethernet	1 × RJ-45 socket 10 Mbit/s (10 Base-T)
	RS-232 serial port	1 × DB-9 (male) as per DTE (57k6, 8n1)
Standard settings	TCP/IP address	192.168.10.20
	Subnet mask	255.255.255.0
	TCP port (App 1)	51806 (nova292-Server)
	TCP port (App 2)	51807 (nova291-Emulation)
Construction		
	Fitting	EY-BU292F001: DIN rail Installation EY-BU292F002: desktop model
Standards and directives		
	Type of protection	IP00 (EN 60529); IP20 (EN 60529)
	Protection class	I (EN 60730-1)
	Software class	EN 60730-1 Appendix H
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN61000-6-2, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60950-1

Overview of types

Type	Description	Dimensions W x H x D	novaNet	Weight
EY-BU292F001	panel-fitted model	193 × 131 × 41 mm	1 × a/b terminal	0.65 kg
EY-BU292F002	desktop model	228 × 131 × 41 mm	1× RJ-11 socket	0.7 kg

Accessories

Software

Type	Description
GZS100F599	CASE Tools CD, latest version (CASE TPC, CASE HWC, CASE Sun, novaNet292 SW etc.)

Connecting cables

Type	Description
0367862001	novaNet RJ-11 to RJ-11: 1.5 m
0367862002	novaNet RJ-11 to RJ-11: 2.9 m
0367862003	novaNet RJ-11 to RJ-11: 6.0 m
0367842002	Ethernet RJ-45 to RJ-45: 1.5 m
0367842003	Ethernet RJ-45 to RJ-45: 2.9 m
0367842004	Ethernet RJ-45 to RJ-45: 6.0 m
0386507001	Ethernet crossover RJ-45 to RJ-45: 3.0 m

General information

Type	Description
0374509001	Connector, 3-pin, packaged
0010240105	Cable housing for 0374509 001, cable cord grip
0374677001	Installation kit for 2-DIN rail mounting (for F001)

EYZ 291: Router, novaNet291

EYZ291F001

Features

- Part of the EY-modulo 2 and EY3600 system family
- Bus access device for novaNet system bus with RS-232 interface
- For configuring EY-modulo 2 and EY3600 stations with SAUTER CASE applications
- For management-level software and all SAUTER novaPro visualisations and novaNet OPC servers
- Direct communication from novaNet stations to PC with a serial connection
- Remote access with router function via RS-232 modem
- Remote monitoring in routel mode via RS-232 modem (i.e. automatic uploading of events)
- Communication using two-wire novaNet system bus
- Communication with RS-232-compatible pairs of devices (dial-up modem, ISDN adapter, electronic surge protector, OWG converter, wireless modem etc.)
- 1 MB buffer for separating the time characteristics of novaNet and RS-232 interface

Technical data

Power supply		
	Power supply	230 V~, 50/60 Hz
	Max. current consumption	10 VA
Ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	–25...70 °C (–13...158 °F)
	Humidity	10...90% rh, no condensation
Interfaces and communication		
	COM port (DTE)	DB9 plug
	novaNet	1 × a/b terminal, 1 × RJ-11 socket
	DIP switch	4 (baud rate, router/routel function)
Construction		
	Weight	0.99 kg (2.2 lb)
Standards and directives		
	Type of protection	
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Description
EYZ291F001	novaNet router

Accessories

Type	Description
0367862001	Connecting cable to novaNet291 or moduNet292 automation station 1.5 m (4.9 ft)
0367862002	Connecting cable to novaNet291 or moduNet292 automation station 2.9 m (9.5 ft)
0367862003	Connecting cable to novaNet291 or moduNet292 automation station 6.0 m (19.7 ft)

SAUTER modulo 5 room automation stations

The areas of use for the SAUTER ecos 5 room automation stations range from precise room control with heating and cooling to integrated room automation with demand-based ventilation, lighting and sunshading. The scalable solutions for controlling and regulating the rooms are individually adjusted to the required functional scope and the usage profile. You thus reduce your energy consumption, your costs and CO_2 emissions while providing maximum comfort and well-being. The ecos 5 enables the floor space to be adjusted flexibly during operation by dividing the area on each floor into room segments.

Overview of room automation stations

			
Type designation	EY-RC500F001/F002	EY-RC504F0**	EY-RC505F0**
Product name	ecos500	ecos504	ecos505
Function	4 room segments	8 room segments	8 room segments
Power supply	230 V~	24 V=/~	24 V=/~
SLC/RS-485 interfaces	2	2	2
Room operating units	1 x 4	2 x 4	2 x 4
I/O extension modules	1 x 16	2 x 8	2 x 8
Communication interfaces	–	1	3
Communication protocols	SLC	SLC, KNX DALI, SMI	SLC, KNX DALI, SMI
Terminal type	Screw terminals (F001) Pluggable terminals (F002)	Push-in terminals	Push-in terminals
Inputs/outputs			
Universal inputs	8	–	–
Digital inputs	4	–	–
Normally-open relay contacts	16	–	–
Changeover relay contacts	–	–	–
Triac	8	–	–
Analogue outputs	4	–	–
BACnet profile	B-BC	B-BC	B-BC
Objects			
Data points	256	600	600
Loop	32	32	32
Calendar	8	16	16
Schedule	32	32	32
Trend Log	16	256	256
Notification Class	16	16	16
Further information	Page 491	Page 493	Page 493

EY-RC 500: Room automation station, ecos500

EY-RC500F001

EY-RC500F002

Features

- Part of the SAUTER EY-modulo 5 system family
- BACnet/IP communication (EN ISO 16484-5)
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Room automation station for up to four rooms or room segments
- Can be extended with up to sixteen ecoLink remote I/O modules
- Free arrangement of hardware
- The ecoUnit 3 (EY-RU 3**) and ecoUnit 1 (EY-RU 1**) room operating units enable individual adjustment of the room climate
- Optimises energy consumption via presence function, window contact monitoring, demand-controlled switching of fan speeds, control of lighting and window blinds, and time-dependent setpoint specification
- Predictive control based on meteorological forecast data
- Time program and calendar function
- Integration into the building management system with BACnet/IP via Ethernet interface
- Control libraries

Technical data

Power supply		
	Power supply	230 V~, ±10%, 50...60 Hz
	Power consumption	≤ 34 VA (incl. 12 VA external)
	Dissipated power	≤ 15 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Inputs	Universal inputs	8, Ni1000, Pt1000, 0...10 V, DI
	Digital inputs	4
Outputs	Relay	16 normally-open contacts (250 V~) Terminals 1 to 28
	Triac	8 (24 V~)
	Analogue	4, 0...10 V
Function		
	BACnet data point objects	256 incl. HW
Number of dynamic objects	Time programmes	32 (Schedule)
	Calendar	8 (Calendar)
	Alarms	16 (Notification Class)
	Historical data	16 (Trend Log) ≤ 2000 entries
	Control	32 (Loop)
	COV notifications	500
	Structured view	64 (Structured View)
	BACnet client links	200 (Peer-to-Peer)
	Number of BBMDs in BDT	32
	Number of FDs in FDT	32
Architecture		
	Processor	32 bit, 200 MHz
	SDRAM (synchronous dynamic RAM)	32 MB
	SRAM (static RAM)	128 kB

	Flash	16 MB
	Operating system	Linux
	Cycle time	100 ms
	Application data	Via CASE Engine
Interfaces and communication		
	Ethernet network	2 × RJ-45 socket (2-port switch)
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP
	Operating units	≤ 4 in total, EY-RU 3** RS-485 A EY-RU 1** via EY-EM 580 to RS-485 A
	Extension interface	RS-485 B
Construction		
	Fitting	Top-hat rail/wall
	Dimensions W x H x D	299 × 120 × 73 mm
	Weight	1.6 kg
Standards and directives		
	Type of protection[1]	IP00 (EN 60529)
	Protection class	I (EN 60730-1)
	Energy class[2]	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Environment class	3K3 (IEC 60721)
	Mode of operation	Type 1 CI (EN 60730)
	Software class	EN 60730-1 Appendix H
CE conformity according to	EMC Directive 2014/30/EU[3]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9

Overview of types

Type	Description
EY-RC500F001	With screw terminals
EY-RC500F002	With plug-in connectors

Accessories

Type	Description
0900240002	Terminal cover, 295 mm (2 pcs.)
0900240011	Wiring box, 295 mm (2 pcs.)

[1] *IP10 with terminal cover (accessory 090024002); IP20 with wiring box (accessory 090024011)*

[2] *When the automation station is being used as a temperature controller, most temperature controller classes can be fulfilled according to EU Directive 2010/30/EU, Regulation 811/2013. For information on the exact temperature class, please refer to the system integrator's user program.*

[3] *EN 61000-6-2: In order to meet the European Standard, the power cables for the digital inputs, analogue inputs and outputs, and the RS-485 cables must not exceed 30 metres in length*

EY-RC 504/505: Room automation station, ecos504/505

EY-RC 504

EY-RC 505

Features

- Part of the SAUTER EY-modulo 5 system family
- Modular room automation station (AS) for up to eight rooms or eight flexible room segments
- BACnet/IP communication (EN ISO 16484-5) as BACnet Building Controller (B-BC)
- The ecoUnit 3 (EY-RU 3**) and ecoUnit 1 (EY-RU 1**) room operating units enable individual adjustment of the room climate
- Optimises energy consumption thanks to presence function, window contact monitoring, demand-controlled ventilation, control of lighting and window blinds, and time-dependent setpoint specification
- Function libraries for climate, lighting and sunshading
- Expansion bus for remote ecoLink modules, ecoUnit room operating units and EnOcean wireless interface
- KNX interface to connect KNX operating devices, sensors and actuators
- Integrated KNX tunnelling function (KNX/IP) for the commissioning of KNX with ETS
- DALI interface with DALI bus power supply for the connection of DALI electronic ballasts (EB) and DALI sensors
- Web-based commissioning tool for DALI network
- SMI interface (SMI/SMI LoVo) for activating SMI motors for sunshading (window blinds, roller shutters)
- Integrated tunnelling function for commissioning with SMI-easyMonitor
- RS-485 half duplex, electrically isolated interface for Modbus/RTU, Modbus/ASCII
- Baud rate 600 to 115,200 bit/s with configurable RS-485 network resistors
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring with serial Modbus master tools
- Time programme and calendar function; data recording
- Integrated moduWeb web server (only EY-RC504F101)
- Engineering/programming using SAUTER CASE Suite (based on IEC 61131-3)
- Integration into the building management system via BACnet/IP with Ethernet interface

Technical data

Power supply		
	Power supply	24 V= ±10% 24 V~ +25%/-15%, 48...63 Hz
	Current consumption	EY-RC504F**1: max. 0.33 A EY-RC504F021: max. 0.43 A EY-RC 505 (without DALI): max. 0.33 A EY-RC 505 (with DALI): max. 0.61 A
	Max. peak inrush current	23 A (10 ms)
	Power consumption	EY-RC504F**1: 4 W/8 VA; typ. 2.5 W EY-RC504F021: max. 6 W/10 VA EY-RC 505 (without DALI): 4 W/8 VA EY-RC 505 (with DALI): max. 9 W/14 VA
	Connection	Spring-type terminals 0.2...2.5 mm^2 rigid/flexible Ampacity max. 5 A
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation

Function		
BACnet	BACnet profile	B-BC (EN ISO 16484-5)
	BACnet data point objects	600 (incl. HW)
	Control	32 (Loop)
	Active COV subscription	1500
	BACnet client links	200 (Peer-to-Peer)
Dynamic objects	Time programmes	32 (Schedule)
	Calendar	16 (Calendar)
	Alarms	16 (Notification Class)
	Historical data	256 (Trend Log) up to 60,000 entries
	Chart	32 (Log View), only moduWeb (F101)
	Command object	16 (Command)
Services	Number of BBMDs in BDT	32
	Number of FDs in FDT	32
Architecture		
	Processor	32-bit, 600 MHz (ARM)
	SDRAM (synchronous dynamic RAM)	128 MB
	SRAM (static RAM)	64 kB
	Flash	128 MB
	Operating system	Embedded Linux
	Cycle time	100 ms
	Application data	Via CASE Engine
	Embedded web server	moduWeb (only EY-RC504F101)
Interfaces and communication		
Ethernet network	Communication protocol	BACnet/IP
	Connection	2 × RJ-45 connector
	Type	10/100 BASE-TX switched
RS-485 A, RS-485 B	Communication protocol	2 × RS-485, SLC
	Use	ecoLink modules and ecoUnit 1, ecoUnit 3 operating devices
	Participant	Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1 or ecoUnit 3
	Power supply	5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit
	Connection	Pluggable spring-type terminals 2 × 4-pin 0.2...1.5 mm^2 rigid/flexible
	Cable[1)]	4-wire, twisted, shielded
	Cable length[2)]	Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary
KNX	Communication protocol	KNX/ TP1 (ISO/IEC 14543)
	Power consumption	KNX bus max. 6 mA
	Bus power supply	Via external KNX power supply
	Connection	KNX bus terminal x4 0.6...0.8 mm rigid lines
	Line	KNX cable, 2-wire, twisted
	Use	KNX actuators and sensors
	Participant	Up to 64 KNX devices, depending on the external KNX power supply
	Functions	256 KNX group addresses for BACnet I/O objects (256 channels)
DALI (per COM module)	Communication protocol	DALI (IEC 62386-101/-103)
	Power consumption	DALI bus max. 2 mA (only when operating with external power supply)

1) *Example cable CAT-5, J-Y(ST)Y, RS-485 bus cable (e.g. Belden 9842)*

2) *With the cable length and the conductor cross-section, the supply voltage (+5 V) for the ecoUnit 3 must not fall below the minimum required voltage due to the voltage drop.*

	Bus power supply	Typ. 16 V, max. 116 mA (can be switched off for external bus power supply)
	Connection	Spring-type terminals 0.2...2.5 mm² rigid/flexible
	Line	2-wire, NYM..., up to 300 m
	Use	DALI ballasts (IEC 62386-102) DALI sensors (see list)
	Participant	Up to 64 DALI ballasts and 64 DALI sensors (depending on type and bus power supply)
	Functions	256 DALI functions for BACnet I/O objects (256 channels) with addressable 64 DALI short addresses and 16 group addresses
SMI (per COM module)	Communication protocol	SMI master (SMI standard V2.3.2)
	Bus power supply	Typ. 17 V, max. 20 mA, for 16 motors typ. 12.8 mA (0.8 mA/motor), protected against short circuit (30 mA)
	Connection	Spring-type terminals 0.2...2.5 mm² rigid/flexible
	Cable	2-wire, NYM..., up to 350 m
	Use	SMI actuators, SMI (230 V) or SMI LoVo (see list)
	Participant	Up to 16 SMI motors
	Functions	128 SMI functions for BACnet I/O objects (128 channels) for up to 16 single and group addresses each
RS-485 (COM module)	Communication protocol	Modbus/RTU and Modbus/ASCII Master as per V1.02 2-wire (2W)
	Bus physics	1 unit load (unit load = UL); electrically isolated; integrated RS-485 network resistors (LT, PU, PD) configurable via software
	Bus speed	600...115,200 bit/s Parity bit, stop bit, Rx/Tx bus timing
	Connection	Pluggable spring-type terminals 2 × 5-pin 0.2...1.5 mm² rigid/flexible
	Cable[3)]	3-/4-wire (D+/D−/COM reference), twisted, shielded, up to 1000 m
	Use	Integration of Modbus slaves in an RS-485 segment (line)
	Participant	Up to 31 RS-485 unit loads (UL)
	Functions	600 Modbus channels for BACnet I/O/V objects for up to 247 Modbus devices; FC01-06, 15, 16, 22; unicast and broadcast; access optimisation
Construction		
	Fitting	DIN rail 35 × 7.5/15 EN 50022 Rail housing DIN 43880
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out IP30 (EN 60529), with accessory terminal cover

3) *Example cable CAT-5, J-Y(ST)Y, RS-485 bus cable (e.g. Belden 9842)*

	Energy class[4]	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4
eu.bac certificate	Energy Performance of Buildings Directive 2010/31/EC	EN 15500
	eu.bac licence	No. 2166

Overview of types

Type	Features	Dimensions W x H x D	Weight
EY-RC504F001	Room automation station, 8 room segments	105 (6 HP) × 90 × 58 mm	0.22 kg
EY-RC504F101	Room automation station, 8 room segments, moduWeb	105 (6 HP) × 90 × 58 mm	0.22 kg
EY-RC504F011	Room automation station, 8 room segments, KNX interface	105 (6 HP) × 90 × 58 mm	0.24 kg
EY-RC504F021	Room automation station, 8 room segments, DALI interface with bus power supply	105 (6 HP) × 90 × 58 mm	0.245 kg
EY-RC504F041	Room automation station, 8 room segments, SMI interface	105 (6 HP) × 90 × 58 mm	0.24 kg
EY-RC504F0C1	Room automation station, 8 room segments, RS-485 interface for Modbus	105 (6 HP) × 90 × 58 mm	0.243 kg
EY-RC505F031	Room automation station, 8 room segments, KNX interface, DALI interface with bus power supply	210 (12 HP) × 90 × 58 mm	0.385 kg
EY-RC505F051	Room automation station, 8 room segments, SMI interface, DALI interface with bus power supply	210 (12 HP) × 90 × 58 mm	0.41 kg
EY-RC505F061	Room automation station, 8 room segments, KNX interface, SMI interface	210 (12 HP) × 90 × 58 mm	0.385 kg
EY-RC505F071	Room automation station, 8 room segments, KNX interface, SMI interface, DALI interface with bus power supply	210 (12 HP) × 90 × 58 mm	0.42 kg
EY-RC505F081	Room automation station, 8 room segments, 2 DALI interfaces with a bus power supply each	210 (12 HP) × 90 × 58 mm	0.41 kg
EY-RC505F091	Room automation station, 8 room segments, 2 SMI interfaces, DALI interface with bus power supply	210 (12 HP) × 90 × 58 mm	0.43 kg
EY-RC505F0A1	Room automation station, 8 room segments, KNX interface, 2 DALI interfaces with a bus power supply each	210 (12 HP) × 90 × 58 mm	0.42 kg
EY-RC505F0B1	Room automation station, 8 room segments, 2 SMI interfaces	210 (12 HP) × 90 × 58 mm	0.4 kg

[4] *When the room automation station is being used as a temperature controller, most temperature controller classes can be fulfilled according to EU Directive 2010/30/EU, Regulation 811/2013. For information on the exact temperature class reached, please refer to the system integrator's user program*

DALI interface with bus power supply (116 mA)

Accessories

Type	Description
0940240001	ecos504 terminal cover (2 pcs)
0450573001	Transformer 230 V~/24 V~ 42 VA; for 35 mm DIN rail (EN 50022)
EY-PS021F011	Power supply module 230 V~ / 24 V=, 1 A; 3 HP DIN rail mounting
EY-PS021F021	Power supply module 230 V~ / 24 V=, 2 A; 4 HP DIN rail mounting
EY-PS021F041	Power supply module 230 V~ / 24 V=, 4 A; 5 HP DIN rail mounting
EY-EM580F001	Bi-directional EnOcean wireless interface ecoMod580
EY-RU 1**	ecoUnit 1 room operating units with EnOcean wireless technology (via EY-EM580F001 wireless interface)
EY-RU 3**	ecoUnit 3 room operating units (apart from EY-RU 38*)
EY-EM 51*	Remote ecoLink I/O modules
EY-EM 52*	Remote ecoLink I/O modules

1 HP = one horizontal pitch with 17.5 mm

SAUTER modulo 5 room operating units

SAUTER's ecoUnit room operating unit combines technology with design. The buttons can be freely assigned with various functions. Due to the standard internal dimensions of 55 x 55 mm, these devices fit both SAUTER frames and common frames of third-party manufacturers of light switches.

Overview of room operating units

				
Type designation	EY-RU310F001	EY-RU311F001	EY-RU314F001	EY-RU316F001
Product name	ecoUnit310	ecoUnit311	ecoUnit314	ecoUnit316
Function	Temperature sensor	Temperature sensor, set-point correction	Temperature sensor, set-point correction, occupancy, fan	Temperature sensor, set-point correction, occupancy, fan, lighting/window blind
For stations	ecos 5, ecos311	ecos 5, ecos311	ecos 5, ecos311	ecos 5, ecos311
Interface	RS-485	RS-485	RS-485	RS-485
Display	–	–	–	–
Temperature sensor	•	•	•	•
Button functions	–	–	2	4
Fan speeds	–	–	AUTO-0-1-2-3	AUTO-0-1-2-3
Setpoint correction	–	Rotary knob	Rotary knob	Rotary knob
Room occupancy	–	–	3 modes	3 modes
Further information	Page 500	Page 500	Page 500	Page 500

				
Type designation	EY-RU365F0**	EY-RU355F***	EY-SU358F081	EY-SU106F100
Product name	ecoUnit365	ecoUnit355	ecoUnit358	ecoUnit106
Function	Temperature sensor, 12 setpoints with 4 functions (temperature, lights, blinds and fans)	Temperature sensor, setpoint correction, occupancy, fan	Push-button unit	Push-button unit
For stations	ecos 5	ecos 5	For connection to ecoUnit355 room operating units	For connection to ecoUnit1** room operating units
Interface	SLC/RS-485	SLC/RS-485	–	–
Display	3.5" TFT colour display	LCD	–	–
Temperature sensor	•	•	–	–
Button functions	12 on 6 x 6 tiles	5	2, 4, 8	6
Fan speeds	•	AUTO-0-1-2-3	–	–
Setpoint correction	Digitally adjustable	Digitally adjustable	–	–
Room occupancy	•	3 modes	–	–
Further information	Page 502	Page 505	Page 509	Page 508

				
Type designation	EY-RU110F100	EY-RU141F100	EY-RU144F100	EY-RU146F100
Product name	ecoUnit110	ecoUnit141	ecoUnit144	ecoUnit146
Function	Temperature sensor	Temperature sensor, setpoint correction	Temperature sensor, setpoint correction, occupancy, fan	Temperature sensor, setpoint correction, occupancy, fan, lighting/window blind
For stations	With ecoMod580 for: ecos 5	With ecoMod580 for: ecos 5	With ecoMod580 for: ecos 5	With ecoMod580 for: ecos 5
Interface	EnOcean wireless	EnOcean wireless	EnOcean wireless	EnOcean wireless
Display	–	LCD	LCD	LCD
Temperature sensor	•	•	•	•
Button functions	–	2	4	6
Fan speeds	–	–	AUTO-0-1-2-3	AUTO-0-1-2-3
Setpoint correction	–	Digitally adjustable	Digitally adjustable	Digitally adjustable
Room occupancy	–	–	3 modes	3 modes
Further information	Page 511	Page 511	Page 511	Page 511

EY-RU316F001

EY-RU310F001

EY-RU 310...316: Room operating unit, ecoUnit310...316

Features

- Part of the SAUTER EY-modulo 5 system family
- Room operating unit for eco500, 502, 504, 505
- Can be extended with EY-SU 306 push-button unit
- Operating unit to control and guarantee the highest possible room comfort
- Temperature measurement and setpoint adjustment
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Room climate can be adapted individually
- Operating mode can be set for room occupancy and actuation of a 3-speed fan
- Control of window blinds, windows and lighting (ON/OFF/dim)
- Multicolour LED indicators for visualisation of local energy consumption
- Room operating unit with a wide range of functions, designs and colours

Technical data

Power supply		
	Power supply	From automation station
	Current consumption	≤ 25 mA ≤ 38 mA with 2 × EY-SU306
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Parameters		
Sensors	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	Approx. 7 minutes
Functionality	Setpoint correction	Variable
	Room occupancy (presence)	3 modes, LED indicator
	Fan speeds	5 functions, LED indicator
	Position LED	Switchable: green/red/OFF
Interfaces and communication		
Connection to automation station	Activation	ecos 5, modu521
	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Cable length[1)]	≤ 100 m (30 m) with bus termination
	Connection terminals	Pluggable; for wire of 0.12...0.5 mm² (Ø 0.4...0.8 mm)
Construction		
	Fitting	Recessed/surface-mounted (see accessories)
	Dimensions W x H x D	59.5 × 59.5 × 25 mm
	Weight	0.1 kg
	Housing	Pure white (similar to RAL 9010)
	Labelling insert	Silver (similar to Pantone 877 C)
Standards and directives		
	Type of protection	IP30 (EN 60529)

[1)] *Max. 30 m for industrial applications as per EN 61000-6-2*

	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3

Overview of types

Type	Features	Buttons _=dummy button, PRA=presence
EY-RU310F001	NTC sensor	–
EY-RU311F001	Operating unit, NTC sensor, dXs setpoint correction (rotary knob)	–
EY-RU314F001	Operating unit, NTC sensor, dXs setpoint correction (rotary knob), fan, occupancy	2
EY-RU316F001	Operating unit, NTC sensor, dXs setpoint correction (rotary knob), fan, occupancy, window blinds / light	4

Accessories

Operating unit

Type	Description
EY-SU306F001	Push-button unit, without frame

Fitting

Type	Description
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0949360004	Plug-in connectors ecoUnit, 2-pin, "01/02", "03/04" (2 x 10 pcs.)
0949241301	Transparent cover for EY-RU 310 (10 pcs.)
0949241302	RAL 9010 white cover for EY-RU 310 (10 pcs.)

EY-RU365F001

EY-RU 365: Touch room operating unit, ecoUnit365

Features

- Part of the SAUTER EY-modulo 5 system family
- High quality room operating unit with touch operation and tile display
- 3.5" TFT colour display, 320x240 pixels
- Scratch-resistant, capacitive touch interface
- Navigation of up to 6 pages with up to 6 functions (tiles) each
- Intuitive operation for 4 predefined functions (temperature, lights, blinds and fans)
- Up to 12 setpoints can be defined as a reference for BACnet objects
- Display of the energy efficiency function ("ECO 10")
- Mode and symbol displays, e.g. heating/cooling
- Audio feedback when pressed
- 24 V~/= power supply
- SLC/RS-485 communicative interface for ecos 5
- Can be located up to 500 m from the automation station
- 6 digital inputs for connecting presence detector, door/window contacts, digital contact directly
- Configuration with CASE Suite (CASE Engine "EY-RU365 module configuration", RU_TOUCH module)
- Optional: Bluetooth 4.0 LE for using a BT app on a smartphone

Technical data

Power supply		
	Power supply	24 V~/=, ±20% – SELV 0 / 50/60 Hz or from EY-PS 021 of the ecos
	Power consumption during operation	< 2.6 W
Ambient conditions		
Operation	Operating temperature	0...45 °C
	Admissible ambient humidity	10...85% rh, no condensation
Transport	Admissible ambient humidity	< 85% rh, no condensation
	Storage and transport temperature	–25...70 °C
Parameters		
	Setpoint	Up to 12 setpoint entries, configurable
	Symbol	Up to 6 symbols:room mode - comfort/reduced/set-back; ECO mode – green-yellow-red; heating/cooling; windows; humidity; wind; alarm; block
	Number of functions	Up to 6 pages Up to 6 tiles per page
	Tile function	Temperature, fan, light dimming, light switching, control of window blinds (position/angle)
	Special functions	°C/°F changeover for temperature function; Home button; Navigation display; (Title) labelling for pages, tiles and functions
	Screensaver display	None, Time or Actual Temperature
Temperature sensors	Type of sensor	NTC 10kΩ
	Measuring range	0...40 °C
	Resolution	0.1 K
	Updating interval	1 s
	Drift	< 0.1 °C/year
	Position	Bottom left

Inputs	Number of inputs	6
	Type of inputs	For potential-free switching contacts
	Polling voltage	24 V= unregulated
	Polling current	>3 mA (closed contact)
	Internal resistance	> 4.7 kOhm
	Refresh interval input	20 ms
	Switching thresholds	<10 V (voltage "rising") > 6 V (voltage "falling")
	Switching hysteresis	>1 V
Audible feedback	Type	Piezoelectric signal
	Application	Audio feedback when touch function is executed
Display with backlight	Screen diagonal	3.5 inches (8.9 cm)
	Resolution	320 x 240 pixels
	Refresh interval display	60 Hz
	Type	TFT
	Number of colours	262,000
	Brightness	500 cd/m²
	Contrast ratio	300
	Perspective	From above:15° From below:35° From left/right:45°
Touchpad	Touchpad type	Capacitive with gesture recognition
	Refresh rate	10 ms
Light sensor	Type of sensor	Phototransistor with integrated filter
	Measuring range	0...5000 lux
	Resolution	Typ.10 lux
	Position sensor	In the middle above the display
	Refresh rate	100 ms

Interfaces and communication		
Connection terminals	SLC/RS-485, DI, power supply	2 x 6-pin screw terminals, pluggable, for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm)
Communication	Activation	From ecos 5
	Interface	RS-485 with 115kbit/s (no integrated terminating resistor)
	Protocol	SLC (SAUTER Local Communication)
	Cable	2-wire twisted, shielded (D+, D-); MM terminal is reference for RS-485; shielded at controller
	Cable length	≤ 500 m with bus termination
	Protection circuit	Protected against excess voltage and reversed polarity
Wireless	Bluetooth specification	4.0 Low Energy Class 2
	Module	Panasonic PAN1740
	Number of app participants	1 simultaneously 256 registered
	Supported OS Bluetooth app	iOS 8.0 or higher Android 4.1 (Jelly Bean) or higher

Construction		
Device dimensions	Fitting	Recessed mounting
	Dimensions W x H	Glass front:86 x 86 mm² Plastic housing:85 x 85 mm²
	Surface depth T	Max. 15 mm
	Recessed depth T (recessed junction box)	Min. 34 mm (incl. terminals)
	Compatible recessed junction boxes	Swiss and European recessed junction boxes

Housing	Colour	F0*1:White (similar to RAL 9010) F0*2:Black (similar to RAL 9005)
Weight	Weight	F0*1:0.190 kg F0*2:0.200 kg
Glass front	Glass type	Float glass, chemically hardened soda-lime glass
	Glass thickness	2.9 mm
	Surface hardness	6 H

Standards and directives		
	Software class	A (EN60730)
	Plastic fire classification	UL94V2
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 50491-5-2, EN 50491-5-3
	Wireless (Bluetooth) RED Directive as per 2014/53/EU	ETSI EN 300 328 v1.8.1 ETSI EN 301 489-1 v1.9.2 ETSI EN 301 489-17 v2.1.1
	RoHS Directive 2011/65/EU	EN 50581
EU regulation	Reach conformity	1907/2006
	WEEE	2012/19/EU

Overview of types

Type	Title
EY-RU365F001	ecoUnit365, white, touch, NTC, 6DI
EY-RU365F002	ecoUnit365, white, touch, NTC, 6DI, Bluetooth
EY-RU365F0A1	ecoUnit365, black, touch, NTC, 6DI
EY-RU365F0A2	ecoUnit365, black, touch, NTC, 6DI, Bluetooth

Accessories

Type	Description
EY-PS021F***	Power supply EY-PS 021

EY-RU 355: Room operating unit, ecoUnit355

EY-RU355F051

Features

- Part of the SAUTER EY-modulo system family
- Room operating unit for ecos311, 500, 502, 504, 505 and ASV2
- Local, intuitive operation for temperature, fan and occupancy
- Large backlit (BL) display for status information on the room condition
- Ergonomic push-buttons with mechanical, tactile feedback
- Individual adjustment of the room climate via temperature detection and setpoint adjustment
- Operating mode can be set for room occupancy and actuation of a 3-speed fan
- ECO button for resetting to automatic mode
- Multicolour LED indicator for visualisation of energy consumption or as position LED
- Sturdy surface of front cover
- Fits into standard frame with 55 x 55 mm aperture
- Individually labelled buttons as accessories
- Expandable with EY-SU 358 switching unit for operating lights, window blinds etc.
- Frame can be ordered as an accessory
- Room operating unit with various functions, designs and colours

Technical data

Power supply		
	Power supply	12...24 V=, ± 20% (with BL) 5 V=, ± 20% (without BL) from ecos 5/ecos311/ASV2: 5 V= from ecos311: 15 V= from EY-PS021: 24 V=
	Current consumption	5 V= < 10 mA (without active LCD lighting) 24 V= < 25 mA (with active LCD lighting)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Parameters		
Sensors	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	14 min.
	Measuring accuracy	Typ. 1 K in the 15...35 °C range
Functionality	Setpoint correction	Can be set and reset; LCD
	Room occupancy (presence)	3 modes; LCD
	Fan speeds	3 levels, off, automatic; LCD
	Position/energy LED	1; green, red, orange, off; switchable
	Symbols in LCD	Time/date, air quality, heating/cooling, ECO, different units, state symbols (window, dew point, locked), SAUTER logo (can be hidden)
Interfaces and communication		
Connection to automation station, controller	Activation	ecos 5, ecos311
	Interface	RS-485
	Protocol	SLC
	Cable	4-wire, twisted, shielded

	Cable length[1]	≤ 100 m with bus termination
	Connection terminals	Pluggable for wire of 0.12...0.5 mm² (Ø 0.4...0.8 mm)

Construction

	Fitting	Recessed/surface-mounted (see accessories)
	Dimensions W x H x D	55 × 55 mm
	Weight	0.05 kg
	Housing	F0xx: traffic white (similar to RAL 9016) FAxx: jet black (similar to RAL 9005)
	Button printing	F0xx: black (similar to RAL 9005) FAxx: white (similar to RAL 9016)

Standards and directives

	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Buttons _=dummy button, PRA=presence	Colour
EY-RU355Fx02	Operating device, LCD, NTC, 0T	No buttons supplied	x=0, traffic white x=A, jet black
EY-RU355Fx21	Operating device, LCD, NTC, 2T	+ | − | _ | _ | _	x=0, traffic white
EY-RU355Fx31	Operating device, LCD, NTC, 3T	+ | − | _ | _ | PRA	x=0, traffic white
EY-RU355Fx32	Operating device, LCD, NTC, 3T	+ | − | _ | FAN | _	x=0, traffic white
EY-RU355Fx41	Operating device, LCD, NTC, 4T	+ | − | _ | FAN | PRA	x=0, traffic white
EY-RU355Fx51	Operating device, LCD, NTC, 5T	+ | − | ECO | FAN | PRA	x=0, traffic white x=A, jet black
EY-RU355Fx52	Operating device, LCD, NTC, 5T	+ | − | UP | DOWN | PRA	x=0, traffic white
EY-RU355Fx53	Operating device, LCD, NTC, 5T	+ | − | UP | DOWN | LIGHT	x=0, traffic white
EY-RU355Fx54	Operating device, LCD, NTC, 5T	+ | − | ECO | FAN | °C/°F	x=0, traffic white

Accessories

Type	Description	Buttons	Colour
EY-SU358Fx21	Push-button unit, ecoUnit358, 2T	2 (dual buttons, dual dummy buttons)	x=0, traffic white x=A, jet black
EY-SU358Fx41	Push-button unit, ecoUnit358, 4T	4 (dual buttons)	x=0, traffic white x=A, jet black
EY-SU358Fx81	Push-button unit, ecoUnit358, 8T	8 (single buttons)	x=0, traffic white x=A, jet black

Fitting accessories, spare parts

Type	Description
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0940240103	Frame, single, recessed, white (RAL9016), 10 pcs.
0940240104	Frame, single, recessed, black (RAL9005), 10 pcs.
0940240703	Mounting plate, single, for recessed fitting (10 pcs.)
0940240203	Frame, double, recessed, white (RAL9016), 10 pcs.

[1] *SLC/RS-485 permits a line length of up to 500 m (decentralised supply)*

Type	Description
0940240204	Frame, double, recessed, black (RAL9005), 10 pcs.
0940240802	Mounting plate, double, for recessed fitting (10 pcs.)
0940240302	Frame, single, surface-mounted, white (RAL9016), 10 pcs.
0940240303	Frame, single, surface-mounted, black (RAL9005), 10 pcs.
0940240402	Frame, double, surface-mounted, white (RAL9016), 10 pcs.
0940240403	Frame, double, surface-mounted, black (RAL9005), 10 pcs.
094013****	Buttons as accessories/spares, 10 pcs. (see product data sheet PDS 94.056)
0949360004	Plug-in connectors ecoUnit, 2-pin, "01/02", "03/04" (2 x 10 pcs.)
0940360005	Terminal RU-SU, push-in, @3P (V,C,DQ), 10 pcs. (accessory for EY-SU 358)
0940360007	Terminal RU-SU, screw, @3P (V,C,DQ), 10 pcs. (optional accessory for EY-SU 358)
0940360006	Terminal and cable RU-SU, @3P (V,C,DQ), 15 cm, 10 pcs. (optional accessory for EY-SU 358)
0940360012	Terminal RU, screw, 2x10pcs. @2P (01/02, 03/04) (optional accessory for stranded cable)

EY-SU 106: Push-button unit for room operating unit with radio technology, ecoUnit106

EY-SU106F100

Features

- Part of the SAUTER EY-modulo 5 system family
- Push-button unit to supplement the ecoUnit110 or ecoUnit141...146
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Integrated solar cell for additional power supply for ecoUnit 1
- Control of window blinds and lighting (ON/OFF, dim)
- Six button functions
- Many different design and colour variations

Technical data

Power supply		
	Power supply	From ecoUnit 1
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Parameters		
Connection	Line	4-wire
	Length[1)]	≤ 1 m (for ecoUnit 1)
Construction		
	Fitting	Recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 × 59.5 × 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-SU106F100	Push-button unit with 6 button functions, integrated solar cell

Accessories

Type	Description
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0949241301	Transparent cover for EY-RU 310 (10 pcs.)
0949360002	4-pin plug-in connector for connecting ecos room operating unit (10 pcs.)

1) *See connection diagram*

EY-SU 358: Push-button unit for room operating unit, ecoUnit358

EY-SU358F081

Features

- Part of the SAUTER EY-modulo system family
- Push-button unit to supplement the ecoUnit355 (EY-RU 355)
- Various designs and colour versions in black and white
- For controlling window blinds and lighting (on/off, dim)
- 2, 4 or 8 button functions
- Labelling insert for individual labelling
- Fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory

Technical data

Power supply		
	Power supply	From ecoUnit355
	Current consumption	≤ 2.5 mA (at 24 V= for ROU) ≤ 3 mA (at 15 V= for ROU) ≤ 8.5 mA (at 5 V= for ROU)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Parameters		
Functionality	Position LED	2; green, red, orange, off; can be connected parallel to EY-RU 355 LED
Connection	Line	3-wire (V, C, DQ)
	Length	≤ 30 m (can be installed remotely from ecoUnit355)
Labelling	Labelling insert	1 to 3, depending on type; Colour: silver (similar to Pantone 877 C)
Construction		
	Fitting	Recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	55 × 55 × 23 mm
	Weight	0.04 kg
	Buttons	F021: two (dual buttons, dummy buttons) F041: four (dual buttons) F081: eight (single buttons)
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Description	Colour
EY-SU358Fx21	Push-button unit, ecoUnit358, 2T	x=0, traffic white x=A, jet black
EY-SU358Fx41	Push-button unit, ecoUnit358, 4T	x=0, traffic white x=A, jet black
EY-SU358Fx81	Push-button unit, ecoUnit358, 8T	x=0, traffic white x=A, jet black

Accessories

Type	Description
0940360005	Terminal RU-SU, push-in, @3P (V,C,DQ), 10 pcs. (accessory for EY-SU 358)
0940360007	Terminal RU-SU, screw, @3P (V,C,DQ), 10 pcs. (optional accessory for EY-SU 358)
0940360006	Terminal and cable RU-SU, @3P (V,C,DQ), 15 cm, 10 pcs. (optional accessory for EY-SU 358)
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0940240103	Frame, single, recessed, white (RAL9016), 10 pcs.
0940240104	Frame, single, recessed, black (RAL9005), 10 pcs.
0940240703	Single mounting plate (10 pcs.)
0940240203	Frame, double, recessed, white (RAL9016), 10 pcs.
0940240204	Frame, double, recessed, black (RAL9005), 10 pcs.
0940240802	Mounting plate, double, for recessed fitting (10 pcs.)
0940240302	Frame, single, surface-mounted, white (RAL9016), 10 pcs.
0940240303	Frame, single, surface-mounted, black (RAL9005), 10 pcs.
0940240402	Frame, double, surface-mounted, white (RAL9016), 10 pcs.
0940240403	Frame, double, surface-mounted, black (RAL9005), 10 pcs.
0940001501	Blank foil for EY-SU 358, silver, (10 pcs.)
094013****	Buttons as accessories/spares, 10 pcs. (see product data sheet PDS 94.056)

EY-RU 110...146: Room operating unit with EnOcean wireless technology, ecoUnit110...146

EY-RU146F100

EY-RU110F100

Features

- Part of the SAUTER EY-modulo 5 system family
- Room operating unit compatible with EnOcean interfaces of third-party manufacturers
- Battery-free with LCD; EY-SU 106 push-button unit can be added
- Display with extensive status information on room conditions
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Room climate can be adapted individually
- Operating mode can be set for room occupancy and actuation of a 3-speed fan
- Control of window blinds, windows and lighting (ON/OFF/dim)
- Room operating unit with a wide range of functions, designs and colours

Technical data

Power supply		
	Power supply	From integrated solar panel (battery operation optional)
	Illuminance	Min. 250 lux, 5 h
	Bridging time without lighting (fully charged devices)	60 h of full operation Additonal 60 h in Low Power mode
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	5...85% rh, no condensation
Parameters		
Sensors	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	Approx. 7 min
	Measuring accuracy, temperature	Typ. 0.5 K in the 15...35 °C range
Functionality	Setpoint correction	Adjustable and resettable
	Room occupancy (presence)	3 modes, LCD
	Fan speeds	5 functions, LCD
	Technology	EnOcean, STM 300
	Transmission frequency	868.3 MHz
	Range	Up to 30 m, depending on building structure
Interfaces and communication		
	Connection[1)]	No wiring required, connection to SLC via EY-EM580 wireless interface
	EnOcean Equipment Profile (EEP V2.6.1)[2)]	EEP: D2-00-01 (in bi-directional mode), EEP: A5-10-01 (in uni-directional mode), EEP: F6-03-01 (push-buttons 3, 4, 7...12)
Construction		
	Weight	0.1 kg
	Dimensions W x H x D	59.5 × 59.5 × 25 mm
	Housing	Pure white (similar to RAL 9010)
	Labelling insert	Silver (similar to Pantone 877 C)

1) See the ecoMod580 quick reference
2) D2-00-01: ecoUnit141...146
A5-10-01, F6-03-01: ecoUnit110...146

	Fitting	Recessed/surface-mounted (see list of accessories)

Standards and directives

	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	R&TTE Wireless Directive 1999/5/EC	EN 50371, EN 300489-1 (V1.8.1), EN 300489-3 (V1.4.1), EN 300220-1 (V2.1.1), EN 300220-2 (V2.1.2)

Overview of types

Type	Features	Buttons _=dummy button, PRA=presence
EY-RU110F100	NTC sensor	–
EY-RU141F100	Operating unit with LCD, NTC, dXs setpoint correction	2
EY-RU144F100	Operating unit with LCD, NTC, dXs setpoint correction, fan, occupancy	4
EY-RU146F100	Operating unit with LCD, NTC, dXs setpoint correction, fan, occupancy, window blinds/lighting	6

Accessories

Operating unit

Type	Description
EY-SU106F100	Push-button unit with solar panel, 6 push-buttons, without frame

Fitting

Type	Description
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0949241301	Transparent cover for EY-RU 310 (10 pcs.)
0949360004	Plug-in connectors ecoUnit, 2-pin, "01/02", "03/04" (2 x 10 pcs.)

Energy supply in permanently darkened room

Type	Description
0949570001	Battery pack, 10 pcs.

EY-EM 580: Wireless interface, ecoMod580

EY-EM580F001

Features

- Part of the SAUTER EY-modulo 5 system family, bi-directional wireless communication for energy-efficient control of the room
- Interface for SAUTER ecoUnit110...146 wireless room operating units and other EnOcean wireless standard sensors/actuators
- Wireless interface in a wide range of designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory

Technical data

Power supply		
	Power supply	From ecos 5
	Current consumption	Typically 60 mA
Ambient conditions		
	Operating temperature	0...40 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Interfaces, wireless communication		
	Wireless technology	EnOcean, TCM300
	Transmission frequency	868.3 MHz
	Range	Approx. 30 m, depending on structure
Connection to automation station	Interface	RS-485
	Protocol	SLC
	Activation	ecos 5
	Line	4-wire, twisted (shielding recommended)
	Cable length	≤ 100 m
Construction		
	Fitting	Recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 × 59.5 × 25 mm
	Housing	Pure white (RAL 9010)
	Labelling insert	Silver (similar to Pantone 877 C)
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	R&TTE Wireless Directive 1999/5/EC	EN 50371, EN 300489-1 (V1.8.1) EN 300489-3 (V1.4.4) EN 300220-1 (V2.1.1) EN 300200-2 (V2.1.2)

Overview of types

Type	Features
EY-EM580F001	Wireless interface, bi-directional, with EnOcean wireless standard

Accessories

Type	Description
0940240***	Frames, mounting plates and adaptors for third-party frames: see product data sheet PDS 94.056
0949241301	Transparent cover for EY-RU 310 (10 pcs.)
0949241302	RAL 9010 white cover for EY-RU 310 (10 pcs.)
0949360004	Plug-in connectors ecoUnit, 2-pin, "01/02", "03/04" (2 x 10 pcs.)

Frame for device inserts with 55 × 55 mm fitting dimensions

EY-RU 346, EY-SU 306

Features

- Accessory components for SAUTER device inserts with 55 × 55 mm aperture
- Suitable for ecoUnit 1 room operating units EY-RU 1** and EY-SU 106
- Suitable for ecoUnit 2 room operating units EY-RU2**
- Suitable for ecoUnit 3 room operating units EY-RU 3** and EY-SU 306
- Suitable for EGT 33* room sensors
- Suitable for viaSens room sensors
- Adhesive plate for smooth surfaces
- Surface and recessed mounting
- Adaptation to the GIRA series: Standard55, E2, Event, Esprit
- Adaptation to the Jung series: LS990, A500, A plus, A Creation, CD500
- Adaptation to the MERTEN series: M-smart, ARTEC, M-Plan, M-ARC
- Adaptation to the Busch-Jaeger series: Future, Future linear
- Adaptation to the Berker series: B.1
- Adaptation to the Feller series: EDIZIOdue

Accessories

Mounting plate

Type	Description
0940240703	Mounting plate, single, for recessed fitting (10 pcs.)
0940240704	Mounting plate, single, type 2, for recessed fitting (10 pcs.)
0940240802	Mounting plate, double, for recessed fitting (10 pcs.)

Frames for recessed mounting

Type	Description
0940240102	Frame, single, pure white, RAL 9010 (10 pcs.)
0940240202	Frame, double, pure white, RAL 9010 (10 pcs.)

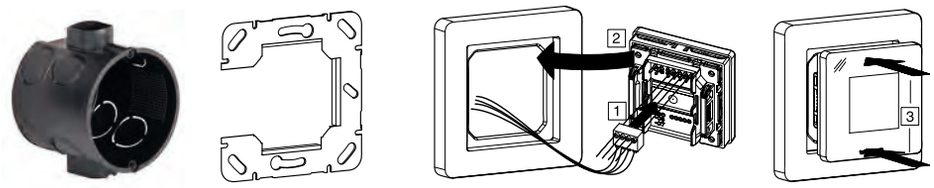
Frames for surface mounting

Type	Description
0940240301	Baseplate, single (for wall mounting), 10 pcs.
0940240401	Baseplate, double (for wall mounting), 10 pcs.
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs.
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs.
0940240710	Adhesive plate, single, black, 83 × 83 mm, 10 pcs.
0940240711	Adhesive plate, double, black, 83 × 143 mm, 10 pcs.

Spacer frames for adapting non-SAUTER frames

Type	Description
0940240751	Spacer frame, 0.5 mm (10 pcs.)
0940240752	Spacer frame, 1.0 mm (10 pcs.)
0940240753	Spacer frame, 1.5 mm (10 pcs.)
0940240755	Spacer frame, F1 (10 pcs.)

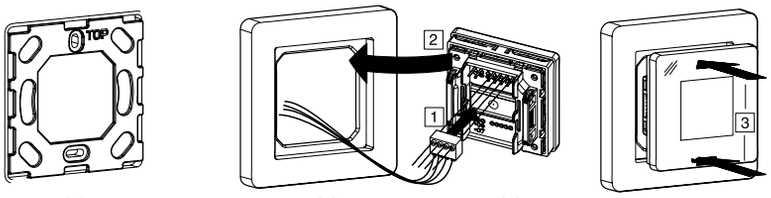
Recessed mounting with SAUTER frame



(1) (2) (3) (4)

(1) Recessed junction box
(2) Mounting plate
(3) Frame
(4) Device insert

Surface mounting with SAUTER frame



(1) (2) (3)

(1) Optional cable cover plate
(2) Baseplate including surface mounting plate
(3) Device insert

SAUTER modulo 5 power supply units

Efficient switched-mode power supply units for supplying power to automation stations, I/O modules and field devices in building automation. Optimal for use with SAUTER modulo 5 and modulo 6 system families.

- Variable input voltage
- Output short-circuit-proof
- Flat DIN rail housing for small distribution boxes

Overview of power supply units

			
Type designation	EY-PS021F011	EY-PS021F041	EY-PS021F041
Output current with vertical/any fitting position	1.3 / 0.9 A	2.5 / 1.6 A	4.0 / 2.4 A
Current consumption (110/230 V~)	0.7 / 0.4 A	1.4 / 0.6 A	1.6 / 0.9 A
Efficiency	Typ. 82%	Typ. 88%	Typ. 88%
Dimensions W x H x D	54 × 89 × 59 mm	72 × 89 × 59 mm	90 × 89 × 59 mm
Weight	0.17 kg	0.24 kg	0.3 kg
Further information	Page 518	Page 518	Page 518

EY-PS021F011

EY-PS021F021

EY-PS021F041

EY-PS 021: Power supply unit

Feautures

- Optimal for use with SAUTER EY-modulo 5 system family
- Variable input voltage
- Output short-circuit-proof
- Flat DIN rail housing fo small distribution boxes

Technical data

Power supply		
	Power supply	85...264 V~; 44...66 Hz
	Start-up current limitation	< 30 A, NTC
	Internal input fuse	2 A (slow-blow)
	Recommended pre-fuses, LS switch	6 A, 10 A, 16 A, characteristic B, C
	Connection	Spring-type terminals 0.5...2.5 mm^2 stiff/flexible
Ambient conditions		
	Operating temperature	−25...55 °C
	Derating	-3% / K > 45 °C
	Storage and transport temperature	−25...85 °C
	Admissible ambient humidity	10...85 % rh, no condensation
Output		
	Output voltage	24 V=, ±2%
	Setting range	22.8...26.4 V=
	Resistance to reverse feed	30 V=
	Overload behaviour	Stabilized current
	Ripple factor (nominal load)	Typ.100 mVss
	LED indicator	Green, device ready for operation
	Connection	Spring-type terminals 0.5...2.5 mm^2 stiff/flexible
Construction		
	Fitting	DIN rail as per EN 60715, type TH 35 x 7.5/15 DIN rail housing DIN 43880
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	II (EN 60730-1)
CE conformity according to	Low-voltage directive	EN 60950
	EMC Directive 2006/95/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	EY-PS021F011	EY-PS021F021	EY-PS021F041
Output current with vertical/random fitting position	1.3 / 0.9 A	2.5 / 1.6 A	4.0 / 2.4 A
Current consumption (110/230 V~)	0.7 / 0.4 A	1.4 / 0.6 A	1.6 / 0.9 A
Efficiency	Typ.82%	Typ.88%	Typ.88%
Dimensions W x H x D	54 × 89 × 59 mm	72 × 89 × 59 mm	90 × 89 × 59 mm
Weight	0.17 kg	0.24 kg	0.3 kg

SAUTER modulo 5 remote I/O modules

The SAUTER ecoLink modules are remote modules for flexibly expanding the I/O mix of the ecos500/504/505 room automation stations. The modules are used to capture digital and analogue signals from sensors and HVAC installations. They control valve actuators, dampers, fans, dimmable lamps or sunshade actuators. The remote fitting reduces the wiring needed for the sensors and actuators.

Overview of remote I/O modules

			
Type designation	EY-EM510F001	EY-EM511F001	EY-EM512F001
Product name	ecoLink510	ecoLink511	ecoLink512
Power supply	24 V~	24 V~	24 V~
Inputs/outputs			
Universal inputs	–	–	–
0-10 V / digital inputs	4	4	4
Ni1000/Pt100 inputs	2	2	–
DIM-10 V outputs	–	–	–
NO relays	3	–	–
Changeover relay contacts	–	–	–
Triac	3	3	2
Analogue outputs	3	3	3
Further information	Page 521	Page 521	Page 521

				
Type designation	EY-EM514F001	EY-EM515F001	EY-EM520F001	EY-EM521F001
Product name	ecoLink514	ecoLink515	ecoLink520	ecoLink521
Power supply	24 V~/=	24 V~/=	230 V~	230 V~
Inputs/outputs				
Universal inputs	4	4	–	–
0-10 V/digital inputs	–	–	4	4
Ni1000/Pt1000 inputs	–	–	–	–
DIM-10 V outputs	–	–	2	2
NO relays	4	–	4	2
Changeover relay contacts	–	–	–	–
Triac 24 V=	–	–	–	–
MOS-FET 24 V~/=	6	6	–	–
Analogue outputs	4	4	–	–
Further information	Page 523	Page 523	Page 525	Page 525

				
Type designation	EY-EM522F001	EY-EM523F001	EY-EM526F001	EY-EM527F001
Product name	ecoLink522	ecoLink523	ecoLink526	ecoLink527
Power supply	230 V~	230 V~	230 V~	230 V~
Inputs/outputs				
Universal inputs	4	4	–	4
0-10 V/digital inputs	–	–	4	–
Ni1000/Pt1000 inputs	–	–	–	–
Digital/meter inputs	–	–	–	4
DIM-10 V outputs	4	4	2	–
NO relays	4	–	–	4
Changeover relay contacts	–	–	3	–
Triac	–	–	–	–
Analogue outputs	4	4	–	–
Further information	Page 529	Page 529	Page 525	Page 527

EY-EM 510...512: Remote I/O module, ecoLink510...512

EY-EM510F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Regulation, control, monitoring and optimisation of operational systems, e.g. room automation or HVAC engineering
- Remote I/O module for ecos500, 504, 505
- Communicative connection of actuators to automation stations
- Can be located up to 500 m from automation stations

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Current consumption	≤ 0.2 A, without load current from Triac and relay outputs
	Power consumption	≤ 6.6 VA Triac outputs not under load, ≤ 48 VA Triac outputs with rated load
	Dissipated power	≤ 5 W (typically approx. 0.5 W)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Analogue/digital inputs	Type	0...10 V/O-I
Ni1000/Pt1000-Eingänge	Type	-20...100 °C
Relay outputs	Type	0-I, normally-open contacts
	Load[1]	230 V~, 5 A (total max. 10 A)
	Switching frequency	> 3 × 10^5 cycles
Triac outputs	Type	0-I, 24 V~/0.5 A
Analogue outputs	Type	0...10 V, 2 mA
Interfaces and communication		
	Activation	From ecos500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Cable	4-wire, twisted, shielded
	Cable length[2]	Up to 500 m with bus termination
Construction		
	Dimensions W x H x D	105 × 95 × 60 mm
	Weight	0.22 kg
Standards and directives		
	Type of protection[3]	IP00 (EN 60529)
	Protection class	II (EN 60730-1) for EY-EM 510, III (EN 60730-1) for EY-EM 511, EY-EM 512
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[4]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

[1] *See the section "Digital outputs (relays)"*
[2] *See the section "Engineering notes"*
[3] *IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted*
[4] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs and outputs must not exceed 30 metres in length*

Overview of types

Type	Description
EY-EM510F001	Remote I/O module, 24 V~, 3 relays, 3 Triacs
EY-EM511F001	Remote I/O module, 24 V~, 3 Triacs
EY-EM512F001	Remote I/O module, 24 V~, 2 Triacs

Overview of I/O mix	EY-EM 510	EY-EM 511	EY-EM 512
Relay	3	0	0
Triac	3	3	2
0...10 V Out	3	3	2
Ni1000/Pt1000	2	2	0
0...10 V In, Digital In	4	4	4

Accessories

Type	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover
0450573001	Transformer 230 V~/24 V~ 42 VA; for 35 mm DIN rail (EN 50022)

EY-EM 514, 515: Remote I/O module, ecoLink514, 515

EY-EM514F001

EY-EM515F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Remote I/O module for ecos500, 504, 505
- Communicative, digital connection of actuators and sensors to automation stations
- Activation of actuators for heated/chilled ceilings, recirculated air and fan coil units, and window blinds
- Inputs for presence detectors, temperature sensors, analogue sensors and window contacts
- Can be located up to 500 m from automation stations

Technical data

Power supply		
	Power supply	24 V~, ±20%, 50...60 Hz 24 V=, ±10%
	Current consumption	Max. 150 mA Without load current of DO (relay, FET) Plus up to 0.5 A / FET
	Dissipated power	Max. 2 W (typically 1.2 W)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Relay outputs	Type	0-I relay, normally-open contacts
	Load	24...250 V 5 A resistive load Total max. 10 A
	Switching frequency	> 3 × 10^5 cycles
Semiconductor outputs (FET)	Type	0-I, 24 V~/=, 0.5 A, connected to ground max. peak current 1 A at 20 ms
Analogue outputs	Type	0...10 V/2 mA
Universal inputs	Analogue	0...10 V/0...1 V
	Digital	0-I
	Resistance	100...2500 Ω
	Potentiometer	1...10 kΩ
	Ni1000/Pt1000	-20...100 °C
Interfaces and communication		
Connection to automation station	Activation	From ecos500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Cable	4-wire, twisted, shielded
	Cable length[1)]	Up to 500 m with bus termination
Construction		
	Dimensions W x H x D	105 × 95 × 60 mm
Standards and directives		
	Type of protection[2)]	IP00 (EN 60529)
	Protection class	II (EN 60730-1) for EY-EM 514 III (EN 60730-1) for EY-EM 515
	Environment class	3K3 (IEC 60721)

1) See the section "Engineering notes"

2) IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1 (EY-EM 514 only)

Overview of types

Type	Description	Weight
EY-EM514F001	Remote I/O module, 24 V~/=, 4 relays, 6 DO FET, 4 AO, 4 UI	0.27 kg
EY-EM515F001	Remote I/O module, 24 V~/=, 6 DO FET, 4 AO, 4 UI	0.22 kg

Overview of I/O mix	EY-EM 514	EY-EM 515
Normally-open relay contacts	4	–
Semiconductor FET switch (connected to ground)	6	6
Analogue outputs	4	4
Universal inputs	4	4

Accessories

Type	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover
0450573001	Transformer 230 V~/24 V~ 42 VA; for 35 mm DIN rail (EN 50022)
EY-PS021F0**	Power supply, 85...264 V~, 24 V=, ±2% (F011: 1.3 A; F021: 2.5 A; F041: 4.0 A)

EY-EM 520, 521, 526: Remote I/O module, ecoLink520, 521, 526

EY-EM520F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Regulation, control, monitoring and optimisation of operational systems, e.g. room automation or HVAC engineering
- Remote I/O module for ecos500, 504, 505
- Communicative connection of actuators to automation stations
- Can be located up to 500 m from automation stations

Technical data

Power supply		
	Power supply	230 V~, ±10%, 50...60 Hz
	Current consumption	≤ 35 mA (typically 20 mA) Without load current of relays
	Dissipated power	≤ 8 W (typically approx. 4 W)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Analogue/digital inputs	Type	0...10 V / O-I
DIM-10V outputs	Type	0-I relay, NO contacts 230 V~ with voltage applied
Relay outputs	Load[1]	230 V~/1 A or 5 A (total max. 10 A)
	Switching frequency	> 3 × 10^5 cycles
Interfaces and communication		
	Activation	From ecos500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Cable	4-wire, twisted, shielded
	Cable length[2]	Up to 500 m with bus termination
Construction		
	Dimensions W x H x D	105 × 95 × 60 mm
	Weight	0.32 kg
Standards and directives		
	Type of protection[3]	IP00 (EN 60529)
	Protection class	I (EN 60730-1) II (EN 60730-1) for EY-EM 526
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[4]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

[1] *See the section "Digital outputs (relays)"*
[2] *See the section "Engineering notes"*
[3] *IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted*
[4] *EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs and outputs must not exceed 30 m in length*

Overview of types

Type	Description
EY-EM520F001	Remote I/O module, 230 V~, 4 relays, normally-open contacts
EY-EM521F001	Remote I/O module, 230 V~, 2 relays, normally-open contacts
EY-EM526F001	Remote I/O module, 230 V~, 3 relays, changeover contact

Overview of I/O mix	EY-EM 520	EY-EM 521	EY-EM 526
Normally-open relay contacts (with voltage applied)	4	2	0
Changeover relay contacts (potential-free)	0	0	3
DIM-10 V	2	2	2
0...10 V In, Digital In	4	4	4

Accessories

Type	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover

EY-EM 527: Remote I/O module, ecoLink527

EY-EM527F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Remote I/O module for ecos500, 504, 505
- Communicative, digital connection of actuators and sensors to automation stations
- Controlling ventilation dampers, motorised windows and blinds
- Inputs for positional feedback, presence detectors, window contacts
- Universal inputs for temperature measurement, 0-10 V signals, potentiometer
- Meter inputs for recording energy pulses up to 10 Hz
- Can be located up to 500 m from automation stations

Technical data

Power supply		
	Power supply	230 V~, ±10%, 50...60 Hz
	Current consumption	Max. 15 mA Without load current of relays
	Dissipated power	Max. 2.5 W (typically 1.5 W)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Relay outputs	Type	0-I relay, normally-open contacts
	Load	24...250 V~ 5 A resistive load Total max. 10 A
	Switching frequency	> 3 × 10^5 cycles
Universal inputs	Analogue	0...10 V / 0...1 V
	Digital	0-I
	Resistance	100...2500 Ω
	Potentiometer	1...10 kΩ
	Ni1000/Pt1000	-20...100 °C
Digital inputs	Digital	0-I
	Meter	10 Hz (pulse duration 50 ms)
Interfaces and communication		
Connection to automation station	Activation	From ecos500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Cable	4-wire, twisted, shielded
	Cable length[1)]	Up to 500 m with bus termination
Construction		
	Dimensions W x H x D	105 × 95 × 60 mm
	Weight	0.35 kg
Standards and directives		
	Type of protection[2)]	IP00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environment class	3K3 (IEC 60721)

1) See the section "Engineering notes"
2) IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

Overview of types

Type	Description
EY-EM527F001	Remote I/O module, 230 V~, 4 normally-open relay contacts, 4 universal and 4 digital inputs

Overview of I/O mix	EY-EM 527
Normally-open relay contacts	4
Universal inputs	4
Digital inputs / meter inputs (10 Hz)	4

Accessories

Type	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover

EY-EM 522, 523: Remote I/O module, ecoLink522, 523

EY-EM522F001

EY-EM523F001

Features

- Part of the SAUTER EY-modulo 5 system family
- Remote I/O module for ecos500, 504, 505
- Switching and dimming of up to 4 lamps
- Can be located up to 500 m from the automation station

Technical data

Power supply		
	Power supply	230 V~, ±10%, 50...60 Hz
	Current consumption	Max. 20 mA (typically 14 mA) Without load current of relays
	Dissipated power	Max. 2.5 W (typically 1.5 W)
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Admissible ambient humidity	10...85% rh, no condensation
Inputs/outputs		
Relay outputs	Type	0-I relay, normally-open contacts 230 V~ with voltage applied
	Load	230 V~/5 A resistive load Total max. 10 A
	Switching frequency	> 3 × 10^5 cycles
DIM-10V outputs	Type	1...10 V passive output for electronic ballasts as per EN 60929 Electrically isolated
Analogue outputs	Type	0...10 V / 2 mA
Universal inputs	Analogue	0...10 V / 0...1 V
	Digital	O-I
	Resistance	100...2500 Ω
	Potentiometer	1...10 kΩ
	Ni1000/Pt1000	-20...100 °C
Interfaces and communication		
Connection to automation station	Activation	From ecos500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Cable length[1)]	Up to 500 m with bus termination
Construction		
	Dimensions W x H x D	105 × 95 × 60 mm
	Weight	0.32 kg
Standards and directives		
	Type of protection[2)]	IP00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU[3)]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

1) See the section "Engineering notes"
2) IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted
3) EN 61000-6-2: In order to meet the European Standard, the power cables for the inputs and outputs must not exceed 30 m in length

Overview of types

Type	Description
EY-EM522F001	Remote I/O module, 230 V~, 4 normally-open relay contacts, 4 DIM outputs
EY-EM523F001	Remote I/O module, 230 V~, 4 DIM outputs

Overview of I/O mix	EY-EM 522	EY-EM 523
Normally-open relay contacts (with voltage applied)	4	-
DIM-10V	4	4
Analogue outputs	4	4
Universal inputs	4	4

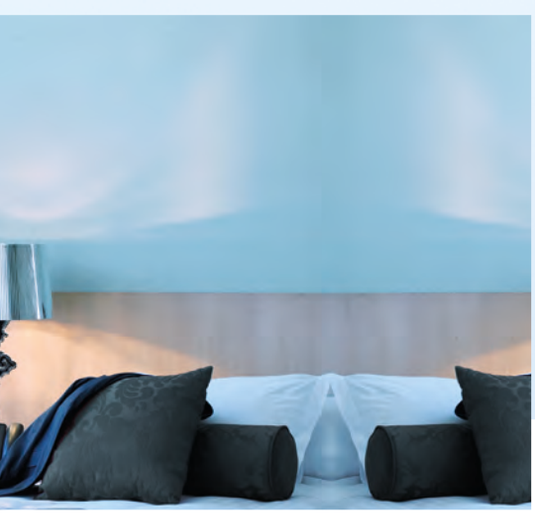
Accessories

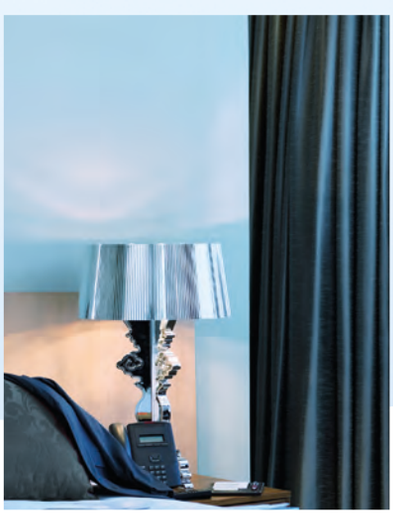
Type	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover

SAUTER modulo 3

Room automation – easy and communicative for versatile applications.

SAUTER offers the EY-modulo 3 system family for simple room automation projects. The open communication via BACnet MS/TP enables versatile HVAC applications and seamless integration into the building automation network. Programmable with SAUTER CASE Suite, it enables flexible room divisions based on individual requirements. EY-modulo 3 is ideally suited for renovation projects and migrating existing 2-wire systems to the open BACnet communication network. The controllers are designed for easy installation and operation. SAUTER EY-modulo 3 stands for a high level of planning security and reliable functionality.





SAUTER modulo 3

Room automation

SAUTER modulo 3 room automation stations

The BACnet MS/TP SAUTER ecos 3 room controllers are application-specific controllers (B-ASC) for applications such as fan coil units, chilled ceilings, chilled beams or radiators. They ensure an optimal room climate (heating, cooling, ventilation) with easy but also flexible parameterisation (2-pipe/4-pipe installations, changeover, frost protection, reheaters, and connecting presence detectors, window/door contacts, etc.). The controllers can be easily integrated into the building automation network and visualised in the building and room automation management system.

Overview of room automation stations

			
Type designation	EY-RC301F015	EY-RC302F011	EY-RC311F001
Product name	ecos301	ecos302	ecos311
Function	Room controllers	Room controllers	Room controllers
Protocol	BACnet MS/TP	BACnet MS/TP	BACnet MS/TP
Power supply	24 V~/=	230 V~	230 V~
Room operating unit	1	1	1
Extension module	–	–	2
Freely configurable (EasySet)	•	•	–
Freely programmable (CASE Suite)	–	–	•
Inputs/outputs			
Passive inputs (DI, contact, NTC10k, potentiometer)	3	4	–
Active inputs (0...10 V, 2...10 V)	3	2	–
Universal inputs	–	–	5
Virtual inputs (AV objects)	4	4	>10
Analogue outputs (0...10 V)	3	3	3
Normally-open relay contact (2 A / 5 A)	4 / –	4 / –	– / 3
Normally-open relay contact (10 A)	1	1	1
Triac (24 V~) / MOS-FET (24 V)	–	2 / –	– / 4
Output for power supply	–	24 V~ (6 VA)	24 V~ (6 VA)
Further information	Page 535	Page 535	Page 537

EY-RC 301, 302: Room controller, ecos301, 302

EY-RC301F015
EY-RC302F011

Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- Single-room controller for an energy-optimised room climate
- BACnet room controller (B-ASC) for fan coil unit, chilled beam, chilled ceiling, radiator heater etc.
- Individual adjustment of the room climate with the ecoUnit382 room operating unit (EY-RU 382)
- Universal PI and/or binary controller sequence for all the analogue and digital input/output signals
- Optimises energy consumption thanks to presence function, window contact monitoring, demand-controlled switching of fan speeds and time-dependent setpoint specification
- Additional functions: automatic heating/cooling changeover, automatic switching on, setpoint compensation, free external cooling and other
- Mathematical functions for universal inputs: Subtraction, mean, min. and max.
- Eight freely assignable alarm conditions with a selectable status for the outputs for an alarm condition
- Time and weekly calendar function (time software)
- Integration into building management system via BACnet router (MS/TP to IP)
- Parametrisation with ecoUnit382 room operating unit
- System bus: RS-485 (BACnet MS/TP)
- Bus for operating unit: RS-485 (VCPP)

Technical data

Ambient conditions		
	Operating temperature	0...50 °C
	Humidity without condensation	Max. 95% rh
Inputs / outputs		
Active inputs	Analogue inputs	U/(I) 0...10 V=, 2...10 V=
Passive inputs	Temperature sensor	NTC 10k (-40...140 °C), Type 2
	Resistance input	0...20 kΩ (for potentiometer)
	Digital input, open contact	100%/0% (ON/OFF)
Virtual inputs	BACnet AV object	4 ×
Outputs	Triac switching outputs	0-I, PWM (24 V~, total 250 mA)
	Relay switching outputs	Normally-open contacts (250 V~/24 V=, 2 A) Normally-open contacts (250 V~, 10 A)
	Analogue outputs	3 × 0...10 V=, 2...10 V= (load ≥ 1 kΩ)
Interfaces and communication		
Interface	Room operating unit (RBG)	1 × RS-485 for EY-RU 382 (VCPP)
Communication	BACnet MS/TP	1 × RS-485 galv. isolated, ½ load
Construction		
	Dimensions W x H x D	147 × 115 × 57 mm
	Electrical connection	Screw terminals for cables from 0.34...2.5 mm^2
	Power supply, bus and RBG connection	Pluggable screw terminals
Standards and directives		
	Type of protection[1)]	IP00 (EN 60529)
	Protection class	II (IEC 60536)

[1)] *The type of protection is IP30...IP40 (depending on the cover in the cabinet) from the front side, if installed correctly as per EN 60730-1*

	Energy class	VIII = 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Degree of contamination	II (EN 60730-1)
	Environment class	3K3 (IEC 60721-3-3)
CE conformity according to	EMC directive	2004/108/EC
	Low-voltage directive	2006/95/EC
Product standards	Automatic electric regulating and control devices	EN 60730-1
	Special requirements for temperature-dependent control devices	EN 60730-2-9
	Electromagnetic compatibility for residential premises (type 1)	Emission:EN 60730-1 (Type 1) Immunity:EN 60730-1 (Type 1)

Overview of types

Type	EY-RC301F015	EY-RC302F011
Power supply	24 V~ ±10%, 50/60 Hz 24 V= ±10% SELV, HD 384, Class II, 48 VA	230 V~ ±10%, 50/60 Hz
Power consumption	Max. 10 VA	Max. 13 VA
Output for power supply	–	24 V~, max. 6 VA
Number of I/Os	13	16
Passive inputs	3	4
Active inputs	3	2
Triac	–	2 (24 V~)
Relay	4 (2 A)	4 (2 A), 1 (10 A)
Weight	0.268 kg	0.55 kg

Accessories

Type	Description
0940183005	Memory plug-in for ecos 3 controller (contains 5 pcs of 0940183001)

Suitable products

AXT *** / AXS ***	Thermal actuators for unit valves (see product data sheets)
AXM ***	Motorised actuators for unit valves (see product data sheets)
EGT ***	External temperature sensors (active or NTC 10k) (see product data sheets)
EGT 688	Room temperature sensor (with adjuster)
EGH 102	Dew point monitor with sensor
EGT353F***	Cable temperature sensor (NTC 10k)
0450232001	Outdoor temperature sensor (NTC 10k)

EY-RC 311: Room controller, ecos311

EY-RC311F001

Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- BACnet MS/TP communication (EN ISO 16484-5)
- BACnet room controller (B-ASC) for fan coil unit, chilled beam, chilled ceiling, radiator heater, light, control of window blinds, variable volume flow control (VAV) etc.
- Individual adjustment of the setpoints via ecoUnit 3 room operating units (EY-RU 3**)
- Optimisation of energy consumption using presence function, monitoring of window contacts, demand-controlled switching of fan speeds and time-dependent setpoint specification
- Freely configurable time programme (BACnet Schedule objects)
- Freely programmable with CASE Suite software (based on IEC 61131-3)
- Expandable with ecoLink I/O modules for lighting and control of window blinds

Technical data

Power supply		
	Power supply	230 V, 200 V min., 253 V max., 50...60 Hz
	Power consumption	Max. 14 VA
	Dissipated power	5 W / 8 VA
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−20...70 °C
	Humidity	10...85% rh, no condensation
Inputs / outputs		
Relay outputs	Type	0-I relays, normally-open contacts with shared power supply
	Load	230 V~/30 V= 2 A resistive load, total max. 5 A 230 V~; 10 A resistive load
	Switching frequency	> 3 × 10^5 cycles (2 A) > 2 × 10^5 cycles (10 A)
Semiconductor outputs (MOS-FET)	Type	0-I, 24 V~/=, switched to ground
	Load	0.5 A Max. peak current 1 A (< 20 ms)
Analogue outputs	Type	0...10 V / 2 mA
Universal inputs	Analogue	0...10 V
	Digital	0-I, max. 2 Hz
	Potentiometer	1...10 kΩ (for potentiometer)
	Resistance	100...2500 Ω
	Ni1000/Pt1000	-20...100 °C
Interfaces and communication		
	Interface	1 × RS-485 electrically isolated, ½ load
	Protocol	BACnet MS/TP
	Cable	2-wire, twisted with reference, shielded
	Cable length	1000 m with bus termination
SAUTER Local Communication interfaces		
	Interface	1 x RS-485
	Protocol	SLC
	Cable	2x2-wire, twisted, shielded
	Cable length	< 100 m with bus termination (with ROU) < 500 m with bus termination (without ROU)

	Room operating units	Max. 1; EY-RU 31*, 34*, 1** (via 580)
	I/O modules	Max. 2; EY-EM 51*, 52*

Construction

	Dimensions W x H x D	178 × 103 × 53 mm
	Weight	674 g
	Fitting	DIN rail; TH35x7.5/15 EN 50022

Standards and directives

	Type of protection	IP00 (EN 60529) IP20 (cover with front aperture)
	Protection class	II (EN 60730-1)
	Energy class[1)]	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-9

Overview of types

Type	Description
EY-RC311F001	ecos311 - room controller B-ASC, MS/TP, 16IO, 230 V

Overview of I/O mix	
Universal inputs	5
Relay outputs	3 (2 A)
	1 (10 A)
Digital outputs	4
Analogue outputs	3

[1)] *When the automation station is being used as a temperature controller, most temperature controller classes can be fulfilled according to EU Directive 2010/30/EU, Regulation 811/2013. For information on the exact temperature class, please refer to the system integrator's user program.*

EY-RU 382: Room operating unit ecoUnit 382 for ecos301/302

EY-RU382F001

Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- Room operating unit for ecos301/302 for control and for ensuring individual room comfort
- Integrated temperature sensor (NTC 10k) for room-temperature control with ecos301/302
- Display, configuration and operation of the ecos301/302 room controller as a remotely installable unit
- Room operating unit with many different functions
- Individual settings (occupancy/absence and room temperature and fan speed setpoints)
- Setting of operating modes and setpoints for controlling the installation, such as fan coil units, chilled beams, chilled ceilings, etc.
- Display of operating statuses and actual values and setpoints
- Display of inputs according to the real values (based on units such as °C/°F, %, p)
- Display and operation for configuration parameters
- Digital communication with 4-wire connection to ecos301/302
- Large, blue-lit LCD

Technical data

Power supply		
	Power supply	From ecos 301/302 (10...30 V=, 10...26 V~)
	Power consumption	Max. 0.5 VA
Ambient conditions		
	Operating temperature	0...50 °C
	Humidity without condensation	Max. 95% rh
Parameters		
	Sensor	NTC 10kOhm@25°C (Type 2)
	Measuring range	0...50 °C
	Accuracy	0.2 K
	Setpoint	Adjustable, parameterisable
	Room occupancy	2 modes, LCD symbol display
	Fan speeds	5 modes, LCD
Interfaces and communication		
	Communication	RS-485
	Connections	Screw terminals
	Power cable	4-wire, 0.34...2.5 mm^2
	Cable type	Shielded, twisted pairs
	Cable impedance	100...120 Ω
	Cable capacity	≤ 50 pF/m
	Protocol	VCPP (point-to-point)
Construction		
	Dimensions W x H x D	88 × 88 × 30 mm
	Fitting	Metal plate for standard recessed junction box (perforation 55 × 55 mm^2)
	Weight	120 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K5 (IEC 60721-3-3)
	Degree of contamination	II (EN 60730-1)

CE conformity	EMC directive	2004/108/EG
Product standards	Automatic electric regulating and control devices	EN 60730-1
	Special requirements for temperature-dependent control devices	EN 60730-2-9
	Electromagnetic compatibility for residential premises (type 1)	Emission: EN 60730-1 (type 1) Immunity: EN 60730-1 (type 1)

Overview of types

Type	Features
EY-RU382F001	ecoUnit382, room operating unit for ecos 3, with NTC sensor, LCD, 4 push-buttons

Management level

Building and energy management from anywhere at all times.
The latest generation of web-based building management software – SAUTER Vision Center – guarantees optimum system monitoring and continuous operation. Energy management and monitoring modules provide additional benefits for the facility management to ensure optimum, energy-efficient operation of the systems, buildings and premises.
With EMS, SAUTER provides independent energy management software with special functions for energy optimisation and evaluation, as well as company certification in line with ISO 50001 and ISO 50002. SAUTER EMS has interfaces to building management systems that enable energy-relevant data to be used to perform analysis of the energy consumption.

Management level

Software

YZP 480...495: SAUTER Vision Center

SAUTER Vision Center: Central building management and visualisation of decentralised installations

SAUTER Vision Center (SVC) is a web-based building management solution in the HTML5 standard for running and visualising the building operation. SAUTER Vision Center is suitable for both larger single buildings and entire real estate parks or distributed premises. Typical areas of use are office complexes, business parks, college and industrial campuses, airports, railway stations, hospitals or internationally distributed branch networks. The modular concept allows the software to be extended precisely to meet the customer requirements of every installation. Therefore, SAUTER Vision Center gathers all of the data for the entire building and energy management and makes it available to the user from anywhere at all times.

Thanks to SVC's simple and intuitive operation, starting, planning and changing predefined building automation procedures is easy with the scenario manager. This allows users with PC skills to set rooms, for example, to Comfort or ECO mode at precise times and control them via calendar views.

The energy monitoring module integrates energy meters and other data from the buildings to create a comprehensive energy consumption display. Thus, daily, weekly, monthly and annual consumption can be automatically calculated and represented in diagrams. The maintenance module for SAUTER Vision Center is also used for the optimum planning and efficient performance of servicing and FM tasks. Here support is also provided by plant device data capture, the definition of maintenance intervals and the automatic triggering of maintenance cycles based on building management information. This enables complete concentration on the monitoring and evaluation of the installations, as well as their continuous and optimum operation, and contributes to efficient, sustainable building and energy management.

For the integration of different equipment systems, SAUTER Vision Center supports the manufacturer-independent BACnet standard, as well as connection to OPC servers for integrating different protocols in the building automation. In addition to the OPC UA client, the operation as an OPC UA server is also implemented. In order to fully support the integration options, it is also possible to directly connect SAUTER moduWeb Vision via web services and SAUTER novaNet installations. This makes it possible to connect existing systems when converting to the new generation of building management software without having to replace the existing automation level. SAUTER Vision Center sends alarms directly via e-mail or SMS to mobile phones according to the responsibilities assigned. With its many user-defined settings and customisable dashboards, SAUTER Vision Center guarantees maximum user convenience.

SAUTER Vision Center can be deployed in virtual IT environments and uses Microsoft SQL databases. These modern architectures and infrastructures enable topics such as high availability, redundancy via cluster systems and corresponding load assignments (provisioning) to be implemented and used.[1] For the optimal integration of the user structures of a company, it is possible to connect SAUTER Vision Center to an existing LDAP server.

Overview of types

i *SVC licences and options*

Type	Description
YZP480F000	Provision of all codes in a single ticket
YZP480F200	Basic licence for 500 addresses with maintenance
YZP480F999	Engineering licence with maintenance
YZP480F099	Latest version of the DVD
YZP481F200	Additional 100 objects with maintenance
YZP481F210	Additional 1000 objects with maintenance

[1] *Scalable via MS SQL Express up to SQL Enterprise depending on the specified properties, virtual IT environments and high-availability VMware & SQL Enterprise.*

Type	Description
YZP481F220	Additional 10000 objects with maintenance
YZP481F230	Additional 25000 objects with maintenance
YZP485F201	Basic energy monitoring with maintenance
YZP485F210	Maintenance module with software maintenance
YZP485F220	Scenario manager with software maintenance
YZP484F200	Licence key for VM
0900360001	Hardlock (dongle) for VM
YZP484F310	Migration Manager for SVC from nP32 and nPO
YZP487F201	OPC UA client for SVC with maintenance
YZP487F203	OPC UA server with maintenance
YZP483F300	novaNet integration *
YZP484F400	Vision Center Studio
YZP482F101	Termination of the software maintenance
YZP482F210	Resumption of the software maintenance

** YZP483F300 novaNet connection requires: YZP487F201*

EMS 100, 200: SAUTER EMS and EMS Mobile

Transparency and visualisation of energy consumption and CO_2 emissions

SAUTER EMS offers all the advantages of a state-of-the-art cloud solution. For example, energy management information can be called up at any time online, and reports can be sent automatically in a variety of formats.
As an alternative, EMS is also available as a licence solution for implementation in an existing IT infrastructure.
To provide an overview for company-wide energy management, maps of the various locations are available so that users can skip directly to the detailed views. These maps can also be defined as alarm overviews.
For optimised planning, SAUTER EMS provides forecast functions based on reference curves with calculated past values.
Measurement data is analysed and displayed in standardised reports or on portal pages that are available online and can be called up in a WEB browser via smartphones and tablets (iOS or Android), and via standard PCs and notebooks.
EMS Mobile is a smartphone and tablet app that provides optimised access to alarms and portal pages, as well as the option of manually entering meter readings online.

Features

- Energy data managed centrally for centralised and decentralised sites based on measurement data, key figures and reference variables
- EMS Mobile can optimise significantly manual data entry for meter reading rounds, and also ensures the data quality and that the data is available more quickly.
- Forecast functions based on reference curves, past data and formulae, as well as entry of future data point values
- Geographical maps can be assigned to any site, with direct links to detailed information and a general representation of alarms at the sites
- Standard reports for showing measurement data and comprehensive analysis options with scatter and carpet plots, as well as load curves, which are important components and prerequisites for various "Green Building" building certifications as per standards such as LEED, BREEAM, EnEV, MINERGIE, HQE, GreenCalc+, and for ISO 50001 company certification and ISO 50002 / EN 16247 auditing
- Logbook for documenting measures and entering comments and notes, in line with ISO 50001
- Displaying portal elements in external applications, including websites, PowerPoint presentations and Green Building Monitors
- Software Data Connector (SDC), including SSL functionality for building management systems such as novaPro Open, novaPro Enterprise, for SAUTER EMS Energy Data Logger (EDL, listed under "Accessories" for the products and their predecessor models), and for e-mail, SNMP (licence model only) and SQL
- SDC FTP data source for automatic import of CSV, XML, MSCONS and LPEX file formats with definable import interval
- Direct data acquisition (independent of SAUTER) through one or more SAUTER EMS Energy Data Loggers (EDL, listed under "Accessories" for the products and their predecessor models)
- Data acquisition, validation and automatic aggregation to daily, weekly, monthly and yearly values
- Entering and using time-dependent reference variables such as areas, operating and opening times, production times or high- and low-rate times
- Display of measurement data, reference variables and key figures as time series in diagrams for any periods
- Web-based graphic display of energy consumption including the basis for generation of the energy performance certificate
- Web-based graphic energy consumption comparisons with standardised benchmarks
- Optional creation of reports directly using the report module integrated in the SAUTER EMS server
- Automatic sending of reports by e-mail
- Seamless integration into facility management systems[1] Possible as an option with SAUTER EMS server
- Allocation of consumption and costs to internal cost centres and third-party tenants; optional connection of maintenance, CAFM and accounting systems[2]

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[1] *The development of the function is charged separately.*
[2] *The development of the function is charged separately.*

Technical description

- Alarm management
- Data point management
- Management of measurement data
- Aggregation (compression) of measurement data
- Forecast and reference module
- Comprehensive formula module
- Manual and automatic correction of measurement data
- Presentation of measured values
- Benchmarking
- Standard reporting (daily/weekly/monthly/yearly energy report)
- Creation and automatic export of the reports
- User administration
- Data export and import
- Configurable heating degree days

Technical data

Hardware		
	Processor	Dual-Core CPU 64-bit / x64-compatible
	Clock rate	> 2 GHz
	RAM	At least 4 GB RAM if the server is being used for EMS on a dedicated basis (2 GB must be used for VMware)
	Memory capacity	40 GB free HDD space for VM partition
Software		
	Operating system[3)]	VMware ESX(i) Server from 4.0 (recommended) or MS Windows 7 (x64), Windows 8.1 (x64), MS Windows Server 2008 (x64/from standard), Windows Server 2012 (VMware Workstation is required for MS OS)

EMS basic licence packages and user licences

Products	
Type	Description
EMS100F011	Basic system package including 10 data points (DP), 1 simultaneous user, 5 portal clients and an SDC for novaPro Open
EMS100F012	Basic system package including 10 DP, 1 simultaneous user, 5 portal clients and an SDC for EDL
EMS100F015	Basic system package including 10 DP, 1 simultaneous user, 5 portal clients and an SDC for novaPro Web
EMS100F016	Basic system package including 10 DP, 1 simultaneous user, 5 portal clients and an SDC for novaPro Entreprise
EMS120F011	(Sys) 1 additional simultaneous user (local user on EMS server)
EMS120F012	(Sys) 5 additional portal clients for accessing EMS Mobile and the Standard EMS Portal
EMS110F001	(Sys) each with 10 EMS DP from 11 to 30 DP
EMS110F002	(Sys) each with 10 EMS DP from 31 to 100 DP
EMS110F003	(Sys) each with 10 EMS DP from 101 to 200 DP
EMS110F004	(Sys) each with 100 EMS DP from 201 to 1000 DP
EMS110F005	(Sys) each with 200 EMS DP from 1001 to 2000 DP
EMS110F006	(Sys) each with 500 EMS DP from 2001 to 6000 DP

[3)] *The SAUTER EMS server is supplied as a virtual machine (VMware).*

Products	
EMS110F007	(Sys) each with 1000 EMS DP from 6001 to 20000 DP
EMS111F008	(Sys) each with 5000 EMS DP from 20001 to 100000 DP
EMS420F001	(Sys) software maintenance contract (18% per year)
EMS110F999	Current software on DVD

Software Data Connector (SDC) options for data acquisition for various BMS, e-mail, FTP, SQL and SNMP systems

Options	
Type	Description
EMS140F001	(Sys) SDC for novaPro Open
EMS140F002	(Sys) SDC for novaPro Web
EMS140F005	(Sys) SDC for novaPro Enterprise
EMS140F009	(Sys) SDC for EDL
EMS140F020	(Sys) SDC for Generic SQL for 10 data points (DP)
EMS140F021	(Sys) SDC for SNMP for 10 DP
EMS140F022	(Sys) SDC for e-mail (CSV, MSCONS, LPEX) for 10 DP
EMS140F023	(Host) SDC for FTP (CSV, XML, MSCONS, LPEX) for 10 DP
EMS140F025	(Sys) update DP for SDC e-mail, each with 10 DP from 11 DP to 100 DP
EMS140F026	(Sys) update DP for SDC e-mail, each with 100 DP from 101 DP to 1000 DP
EMS140F027	(Sys) update DP for SDC e-mail, each with 1000 DP from 1001 DP to 5000 DP
EMS140F028	(Sys) update DP for SDC SNMP, each with 10 DP from 11 DP to 100 DP
EMS140F029	(Sys) update DP for SDC SNMP, each with 100 DP from 101 DP to 1000 DP
EMS140F030	(Sys) update DP for SDC SNMP, each with 1000 DP from 1001 DP to 5000 DP
EMS140F031	(Sys) update DP for SDC SQL, each with 10 DP from 11 DP to 100 DP
EMS140F032	(Sys) update DP for SDC SQL, each with 100 DP from 101 DP to 1000 DP
EMS140F033	(Sys) update DP for SDC SQL, each with 1000 DP from 1001 DP to 5000 DP
EMS140F034	(Sys) update DP for SDC FTP, each with 10 DP from 11 DP to 100 DP
EMS140F035	(Sys) update DP for SDC FTP, each with 100 DP from 101 DP to 1000 DP
EMS140F036	(Sys) update DP for SDC FTP, each with 1000 DP from 1001 DP to 5000 DP

EMS basic hosting packages and user licences

Products	
Type	Description
EMS200F001	Basic hosting package including 10 data points (DP), 1 user and 1 SDC for novaPro Open
EMS200F002	Basic hosting package including 10 DP, 1 user and 1 SDC for EDL
EMS200F005	Basic hosting package including 10 DP, 1 user and 1 SDC for novaPro Web
EMS200F006	Basic hosting package including 10 DP, 1 user and 1 SDC for novaPro Entreprise
EMS210F001	(Host) each with 10 EMS DP from 11 to 30 DP
EMS210F002	(Host) each with 10 EMS DP from 31 to 100 DP
EMS210F003	(Host) each with 10 EMS DP from 101 to 200 DP
EMS210F004	(Host) each with 100 EMS DP from 201 to 1000 DP
EMS210F005	(Host) each with 200 EMS DP from 1001 to 2000 DP
EMS220F001	(Host) 1 additional simultaneous user (user access on host)
EMS220F002	(Host) 5 portal clients for accessing EMS Mobile and the Standard EMS Portal

Larger numbers of data points for hosting on request.

Software Data Connector (SDC) options for hosting for data acquisition for various BMS, e-mail, FTP and SQL systems

Options	
Type	Description
EMS240F001	(Host) SDC for novaPro Open
EMS240F002	(Host) SDC for novaPro Web
EMS240F005	(Host) SDC for novaPro Enterprise
EMS240F009	(Host) SDC for EDL
EMS240F020	(Host) SDC for Generic SQL for 10 data points (DP)

Options	
EMS240F022	(Host) SDC for e-mail (CSV, XML, MSCONS, LPEX) for 10 DP
EMS240F023	(Host) SDC for FTP (CSV, XML, MSCONS, LPEX) for 10 DP
EMS240F025	(Host) update DP for SDC e-mail, each with 10 DP from 11 DP to 100 DP
EMS240F026	(Host) update DP for SDC e-mail, each with 100 DP from 101 DP to 1000 DP
EMS240F027	(Host) update DP for SDC e-mail, each with 1000 DP from 1001 DP to 5000 DP
EMS240F031	(Host) update DP for SDC SQL, each with 10 DP from 11 DP to 100 DP
EMS240F032	(Host) update DP for SDC SQL, each with 100 DP from 101 DP to 1000 DP
EMS240F033	(Host) update DP for SDC SQL, each with 1000 DP from 1001 DP to 5000 DP
EMS240F034	(Host) update DP for SDC FTP, each with 10 DP from 11 DP to 100 DP
EMS240F035	(Host) update DP for SDC FTP, each with 100 DP from 101 DP to 1000 DP
EMS240F036	(Host) update DP for SDC FTP, each with 1000 DP from 1001 DP to 5000 DP

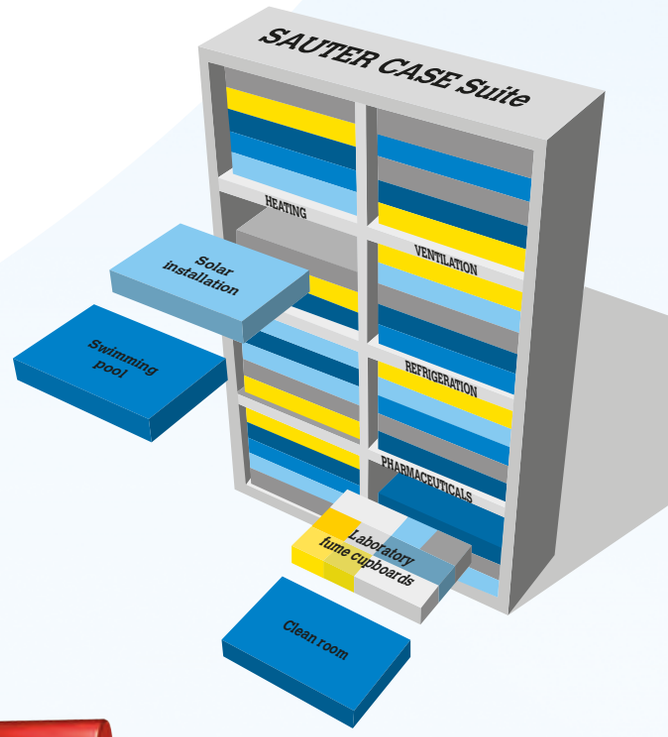
Accessories

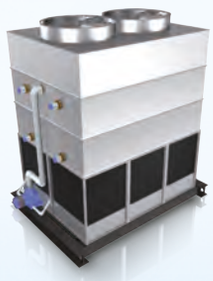
Type	Description
EDL50F001	Energy Data Logger 50 for max. 50 DP, incl. M-Bus Master for 25 devices, without software
EDL50F002	EDL 50/55 software licence for 10 DP each for the EDL50 and EDL 55 GSM models, incl. driver for BACnet/IP, M-Bus and Modbus (IP/RTU), KNX IP
EDL55F001	Energy Data Logger 55 GSM for max. 50 DP with GSM module, incl. .....(same as EDL50..)
EDL1000F001	Energy Data Logger 1000 including 10 data points (DP) for data acquisition and drivers for BACnet/IP, M-Bus and Modbus (IP-RTU), KNX IP and DIN mounting kit
EDL1000F002	EDL 1000 update for each 10 data points (DP) from 11 to 100 DP
EDL1000F003	EDL 1000 update for each 100 DP from 101 to 1000 DP
EDL1000F004	EDL 1000 update for each 1000 DP from 1001 to 10000 DP

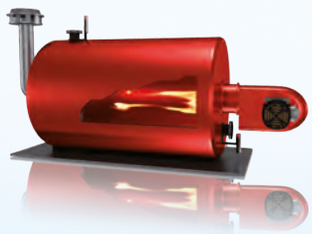
SAUTER CASE Suite

Project engineering made easy.

SAUTER CASE Suite is used to carry out the technical project processing for both building management systems and conventional control systems. Energy-efficient strategies and methods are already incorporated in the extensive and proven library. Furthermore, SAUTER CASE Suite possesses great flexibility to match the solutions to special circumstances, in order to be able to operate even the most unusual of installations with a great degree of energy efficiency.







SAUTER CASE Suite

Engineering

GZS 100, 150

GZS 100, 150: CASE Suite

Features

- Supports the whole process of a project, from the planning stage to the engineering, commissioning and servicing phases
- 'Nerve centre' for the project data and software programs
- Seamless integration of the solution libraries
- Safeguards the workflow between the specialist sub-programs (CASE Builder, CASE Engine, CASE Vision)
- Planning and documentation of the system technology
- Commercial and technical project processing
- Creates the regulation, control and optimisation functions
- Puts the automation stations into service
- Based on the Microsoft Windows operating system
- Multi-lingual program (German, English and French) on DVD
- Licence is required for full use of the program

Technical data

System requirements		
Hardware	Processor	Intel I7 (recommended)
	Clock rate	2.4 GHz or higher
	RAM	Min. 4 GB RAM – recommended 8 GB RAM
	Memory capacity	Min. 20 GB free HDD memory space
	DVD drive	For program installation
	Connections	USB (operating the VM licence dongle) Mouse, printer, network
Software	Operating system	MS Windows 7, 8.1, 10 Professional + Ultimate each (x64) MS Internet Explorer 9.0 or higher MS IIS (Internet Information Services) installed
	Additional software[1)]	MS Office 2010 (32-bit) Graphics program [CorelDRAW GraphicSuite: 32-bit: X4, X5, X6, X7; 32/64-bit: X8, 2017, 2018]

Overview of types

All licences delivered without CASE Suite application software

Type	Description
GZS150F010	CASE Suite Enterprise licence with maintenance [annual fees]
GZS150F011	CASE Suite Enterprise licence, excluding maintenance
GZS150F020	CASE Suite Enterprise time licence
GZS150F021	CASE Suite Partner time licence
GZS150F022	CASE Suite Designer time licence
GZS100F699	CASE Suite DVD, latest version

Accessories

Type	Description
0900360001	Hardlock VM

[1)] *To be able to use all the functions of CASE Suite Enterprise, we recommend installing the following software.*

Index search

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Facility Services

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SAUTER

Creating Sustainable Environments.