Catalogue 2023/2024

Product and Systems Information





Complete solutions from a single source

For over 100 years, we at SAUTER have been developing and manufacturing innovative products and solutions for building management and room automation throughout the entire life cycle of a building. We make your property energy efficient and thus sustainable. And we do this from the planning to the implementation and the use of the building.

Our four divisions meet your requirements with well thought-out products and comprehensive services. We are distinguished by our short decision-making processes and a direct exchange of information, from Development to the service technician.

The SAUTER Group

- Company active worldwide with headquarters in Basel, Switzerland
- Technology leader in M&E, in the building automation and system integration sector as well as in the field of Facility Management
- Focus: maximum energy efficiency and sustainability
- Aim: investment protection and operational reliability over the entire building life cycle
- Member of eu.bac, BACnet Interest Group (BIG-EU), BACnet International and EnOcean Alliance



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Product highlights







The intelligent Smart Actuator combines the functions of an actuator, a controller and cloud integration to allow autonomous control of a wide range of applications. As an IoT device, the actuator continuously records the status of the system and transmits this data to the SAUTER Cloud, where the data is analysed by comparing it with reference values. System optimisations are carried out online via the mobile app, and maintenance work can also be scheduled according to needs. The field devices required for specific applications can be connected directly to the actuator or the I/O module.



Smart Sensor

The smart viaSens sensor not only measures room temperature, but also air humidity, air quality (VOC) and brightness levels. The integrated presence detector is supported by a microphone to ensure reliable detection of people in the room. The iBeacon enables location and, together with SAUTER MBS and the Mobile Room Control app, the local room function can be operated with a smartphone. viaSens sensors in multiple rooms form a Bluetooth mesh network. Via the MQTT interface of the sensor gateway, the wireless sensor network can be connected to the room automation station, which in turn provides access to the building's IoT.



SAUTER Vision Center 8

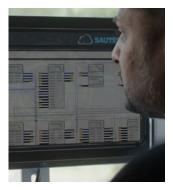
SAUTER Vision Center (SVC) enables operation and visualisation of installations, independently of system and place. Integration of different functions, high flexibility and scalability as well as webbased access are among the strengths of the multidisciplinary "Building Intelligence Hub". With the integrated energy management and building analytics module (AEM) and Vision Services (SVC in the cloud), the uniform look and feel of the optimisation and efficiency tools allow them to be intuitively used by anyone. Version 8 includes a new reporting module with useful templates and a report design tool for creating individual reports.



BACnet/SC Router

With BACnet/SC (Secure Connect), a new security standard has been introduced. SAUTER has implemented BACnet/SC in automation stations from the modulo 6 product family and in the SAUTER Vision Center building management system. A new BACnet Secure Connect router complements the product portfolio. This can be used to connect existing BACnet/IP systems with the BACnet/SC network. The BACnet/SC router can also perform the function of a primary hub or failover hub in the BACnet/SC network. As a BACnet/SC hub, it allows communication between BACnet/SC devices in the network.





Remote Management

Rapid troubleshooting, efficient servicing and maintenance, as well as extensions or adjustments to applications while at another location are all made possible with Remote Management. This SAUTER Cloud servicing provides services for building automation, energy management, the associated IT infrastructure and software applications. Direct access to decentralised systems and applications benefits external service providers as well as building operators and facility management.



Performance Management

Digital services turn building data into added value for real estate owners.

With Performance Management, consisting of a cloudbased platform and services, specialists from SAUTER take over the analysis of complex situations. Clear, web-based dashboards provide clarity at all time about operation. Based on the measured and aggregated data, the building management system detects deviations from normal operation at an early stage and intervenes. The automatically optimised operation allows energy-efficient performance - a prerequisite for ESG compliance of buildings.

Mobile Apps

From installation to service.

Mobile apps supplement the SAUTER product portfolio. They help users execute tasks or provide services remotely. Here is a handy overview of the apps that are currently available.

Overview of mobile apps (alphabetical order)

	Name	Main functions	iOS	Android
☼ □	ecoUnit	Controlling the ecoUnit Touch room oper- ating unit (EY-RU365)		
	eValveco Configurator	 Commissioning, configuration, service and operation Creating and managing projects 	In development	In development
	Mobile Room Control, the Mobile Building Services app	 Operating room functions, information and notifications for tenants, owners and operators Booking meeting rooms, assets, parking spaces and workspaces 		
modulo 6	modulo 6	Commissioning, service and operation		
SAUTER	Smart Actuator	 Commissioning, service and operation Application selection and configuration Creating and managing projects 		
I∰I	ValveDim	 Access to the SAUTER valve and actuator portfolio Configuring valve and actuator combinations 		
SAUTER	viaSens	 Commissioning the sensor in SAUTER meshNet Sensor network configuration Basic configuration of the sensor Calibration of the sensor Beacon transmission capacity display 	In development	In development

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

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Pressure switches

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Fan-coil room-temperature controllers

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









	WSAUTER	16 6	13	
Type designation	TSO, TSH	TSHK 621643	TSHK 670672	TSHK 681682
Indicating and operating elements				
Mode switch for heating	•	•	•	-
Mode switch for cooling	•	•	•	-
Mode switch for fan	•	•	•	•
Setpoint adjuster	•	•	•	•
LCD	-	-	-	•
Method 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

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

SAUTER

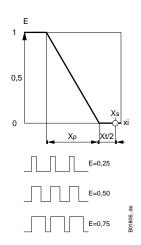




TSO67*F001



TSH67*F002



E= control factor

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	530 °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		
	Ambient temperature	050 °C
Construction		
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 mm ²
Standards and directives		
otanuarus anu un conves	Type of protection	IP20 (EN 60529)
	Protection class	
		II (IEC 60730)
	Energy class	= 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

Supply voltage: 10% more voltage means proportional band approx. 4 K, switching period 15 minutes and actualvalue reduction approx. 0.5 K

Low-Voltage Directive 2014/35/EU

EN 60730-1

 \mathbf{i} H/C = heating or cooling, depending on connection; H//C = heating or cooling, selectable

Туре	Operating mode switch	Output for	Power supply
TSO670F001	-	H/C	
TSO672F001	Heating/OFF/Cooling	H//C	-
TSH670F002	-	H/C	230 V~, ±10%, 5060 Hz
TSH676F002	-	H/C	230 V~, ±10%, 5060 Hz

¹⁾ For TSO672F001 for cooling 5(1.5) A





2-point controllers | Thermostats

- * TSO670F001, TSO672F001: Switching difference 1.3 K without thermal feedback²⁾
- * TSH670F002, TSH676F002: Dynamic switching difference 0.5 K with thermal feedback³
- * TSH676F002: Additional feature N/R (normal/reduced) for external clock

Accessories	
Туре	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



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.

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

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%, 5060 Hz
Parameters		
	Setting range	530 °C
	Proportional band	3 K
	Hysteresis ²⁾	Approx. ±0.10.5 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		
	Ambient temperature	055 °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 classif cation UL94 HB)
	Baseplate	Black thermoplastic with bimetallic sen sor and contact snap mechanism with permanent magnet
	Cable inlet	At rear
	Screw terminals	For electrical cables of up to 2.5 mm ²
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.





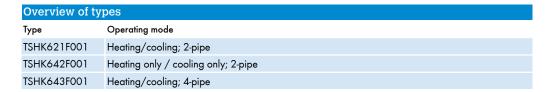






Devices with thermal feedback are pulsed by a built-in heating resistor. The control factor reduces as the temperature increases (i.e. the controller has proportional behaviour). A small temperature variation of $\pm 0.1...0.5$ K occurs as a result of pulsing, depending on the time constant of the room

2-point controllers | Thermostats



	TSHK621	TSHK642	TSHK643
Mains switch on/off	•	•	•
Operating mode switch	<u>\\\</u>	_	<u>∭</u> ≉
Fan speeds	LLL.	LU.	LLL

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



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

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.

Power supply		
	Power supply	230 V~, approx. ±10%, 5060 Hz
Parameters		
	Setting range	530 °C
	Proportional band	2 × 3 K
	Sequence dead zone	2 K ±0,7
	Hysteresis ¹⁾	Approx. ±0.10.5 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		
	Ambient temperature	055 °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 mm ²
Standards and directives		
	Type of protection	IP30 (EN 60529)









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 $\pm 0.1...0.5$ K occurs as a result of pulsing, depending on the time constant of the room

2-point controllers | Thermostats

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

Overview of types	
Туре	Number of switches
TSHK670F001	0
TSHK672F001	2

	TSHK670	TSHK672
Mains switch ON/OFF	_	•
Fan speeds	-	人人人
Indicators/display	_	1 LED

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



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

Features

- ullet LCD of the room temperature or setpoint, with two buttons (\pm) 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.

Power supply		
	Power supply ¹⁾	230 V~, approx. ±10 V, 5060 Hz
Parameters	0.00	5 00 00 14 0 5 00
	Setting range	530 °C; resolution 0.5 °C
	Proportional band	3 K
	Display of actual value	040 °C; resolution 0.1 °C
	Hysteresis ²⁾	Approx. ±0.10.5 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		
	Ambient temperature	055 °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 classif cation UL94 HB)
	Baseplate	Black thermoplastic with NTC sensor
	Cable inlet	At rear
	Screw terminals	For cables of up to 2.5 mm ²
Standards and directives		
otaliaalab alla allootivos	Type of protection	IP30 (EN 60529)
	Protection class	II (IEC 60730)
	Energy class	= 1%
	37 0.000	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











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

2-point controllers | Thermostats



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 ≉ Å
Fan speeds	人人人	444
Indicators/display	°C digital	°C digital

Accessories	
Туре	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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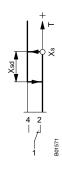
TUC*0*F00*



TW, STW



TB, STB





TUC207F003 TUC407F001 TUC407F002

TUC: Universal thermostat

Features

- Regulates and monitors the temperature of liquids in baths, containers, pipes, ducts and HVAC installations
- Variants as temperature monitor (TW) and temperature limiter (TB)
- Double thermostat as TW and TB
- Thermostat with remote sensor
- Clamp-on thermostat
- Capillary tube thermostat with or without thermowell
- The shift in the change-over point is minimised due to the temperature compensation
- Thermowell supplied (max. 12 bar)

The following features and certifications do **not** apply to the United Kingdom of Great Britain and Northern Ireland (UK):

- Variants as safety temperature monitor (STW), or safety temperature limiter (STB)
- Double thermostat as STW or STB
- Testing according to EN 14597 (TUC207F003, TUC407F001, TUC407F002)
- As per PED 2014/68/EU classified as cat. IV (TUC207F003, TUC407F001, TUC407F002)
- TÜV-certified (TUC207F003, TUC407F001, TUC407F002)

Use in safety applications is not permitted in the United Kingdom.

Tooriinoar aata		
Power supply		
Max. load	Terminal 1-2	230 VAC, 10(2.5) A (on the normally- closed contact)
	Terminal 1-4	230 VAC 2(0.4) A
Min. load	Terminal 1-2, 1-4	24 VAC/DC, 100 mA
Parameters		
Parameters	A discount of the	A++ 22 °C
	Adjustment point	At t _a 22 °C
	Effect of temperature at instrument head	Approx0.10.2 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	070 °C
	Storage and transport temperature	−2580 °C
	Max. pipe temperature during fitting	120 °C
Construction		
O CHISTI WOLLOTT	Connection terminals	Plug-in connectors
	Cable cross-section	0.752.5 mm ²
		Ø 6.5 mm
	Sensor cartridge	
	Housing	Two sections, lower section black, up- per section yellow, including inspection window
	Housing material	PA, ABS, PMMA
	Weight	0.2 kg
Standards, directives		
Standards, directives	Type of protection	IP54 (EN 60529)
	Protection class	I (EN 60730)
	Test mark	As per DIN EN 14597
	ICSI IIICIK	7.5 pc. 5114 E14 14577



Overview of ty	pes							
Туре	Setting range	Туре	Switching difference	Capillary tube length	Sensor car- tridge length (± 12 mm)	Thermowell	Max. sen- sor temp.	Approval
TUC101F003	-1050 °C	TW	Approx. 4.2 K	1.6 m	80 mm	100 mm, brass	140 °C	CE, UKCA
TUC102F001	530 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C	CE, UKCA
TUC105F001	1595 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C	CE, UKCA
TUC106F001	40120 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C	CE, UKCA
TUC107F001	50130 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, brass	200 °C	CE, UKCA
TUC108F001	80160 °C	TW	Approx. 5.6 K	0.7 m	65 mm	100 mm, stainless steel	200 °C	CE, UKCA
TUC207F003	70130 °C	STW	Approx. 10 K	1.6 m	60 mm	100 mm, brass	160 °C	CE, TÜV
TUC303F001	1560 °C	ТВ	≤ 20 K	0.7 m	70 mm	100 mm, brass	200 °C	CE, UKCA
TUC307F001	50130 °C	ТВ	≤ 20 K	0.7 m	65 mm	100 mm, brass	200 °C	CE, UKCA
TUC407F001	95130 °C	STB	≤ 20 K	0.7 m	76 mm	100 mm, brass	160 °C	CE, TÜV
TUC407F002	95130 °C	STB	≤ 20 K	0.7 m	76 mm	150 mm, brass	160 °C	CE, TÜV



[★] The TÜV-certified devices TUC207F003, TUC407F001 and TUC407F002 are not approved in the UK.

^{*} TUC108F001 with adapter for temperature reduction, only mount with supplied thermowell.

Accessories	
Туре	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 with a diameter of 15100 mm
0300360011	Mounting plate for double thermostats
0300360012	Sensor support spiral for fitting in ventilation duct
0300360013	Duct/wall mounting bracket





Only use the supplied thermowells or stainless steel thermowells (part nos.: 0393022*** or 0392022***) with the TÜV-certified devices.



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 (G $\frac{1}{2}$ " male ISO 228/1, flat-sealing) $^{1)}$ or cone-shaped (R $\frac{1}{2}$ " ISO 7/1 sealing in thread)
- With pressure spring (LW 15)
- With retaining holder

Overview of type	pes						
Туре	LW	Length	Material	Thread	Nominal pres- sure	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



 $^{^{1)}~~}G^{1\!\!/_{\!2}}"$ 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	
Туре	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 $G^{1/2}$ ", 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





	•	9
Type designation	TFL 201	TFL 611
Function		
Monitor	•	•
Limiter	•	-
Output signal Switched		
Switched	•	•
Continuous	-	•
Auxiliary energy Further information	•	-
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		
Power supply		
Max. load	Terminal 1-2	230 VAC, 10(2.5) A (on the normally- closed contact)
	Terminal 1-4	230 VAC 2(0.4) A
Parameters		
	Setting range	−1015 °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)	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⁾	−570 °C
	Max. capillary temperature	120 °C
	Storage and transport temperature	-3080 °C
Construction		
	Connection terminals	Plug-in connectors
	Cable cross-section	Ø 0.752.5 mm ²
	Housing	Two sections, lower section black, up- per section yellow, including inspection window
	Housing material	ABS, PMMA
	Weight	0.2 kg
Standards, 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				
Туре	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

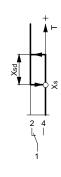
 $^{^{1)}}$ The frost monitor always reacts to the coldest point (minimum length 7.5 cm (1.5 m), 15 cm (3 m) and 30 cm (6 m))







TFL201F*02





TFL201F*22



²⁾ The head of the instrument must be fitted in a warmer location than the sensor; see fitting instructions

2-point controllers | Frost monitors

Accessories	
Туре	Description
0300360014	Six holders for fitting the capillary tube



TFL 611: Continuous frost monitor with capillary sensor

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
- ullet Active capillary sensor for measuring the lowest temperatures in the range 0...15 $^{\circ}\text{C}$
- 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	5060 Hz
Parameters		
	Measuring range	015 °C
	Setting range	110 °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 mm ²
Analogue input	Valve control for terminal Y	010 V
0 1	Current	< 0.1 mA
Analogue outputs	Sensor temperature for terminal B	010 V ≙ 015 °C
	Valve control for terminal Y10	010 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	-1555 °C
Storage and transport	Humidity (non-condensing)	< 95% rh
0	Temperature	-2565 °C
	<u> </u>	
Construction		
	Terminals with spring technology	Max. 2 × 1.5 mm ² Or 1 × 2.5 mm ² Min. 0.25 mm ²
	Cable inlet	Cable gland M16 for cable diameter 510 mm
	Protection class ²⁾	1

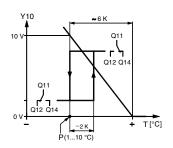
PA, silver grey (RAL 7001)

Housing











¹⁾ SELV/PELV: Safety Extra Low Voltage/Protected Extra Low Voltage

²⁾ No earth conductor necessary

2-point controllers | Frost monitors

	Housing cover	PC, transparent
	Сар	ABS, light grey (RAL 7035)
	Capillary tube	Copper
s and directives		
	Azi e	ENT (0701 0 0 / 1 0 0 / 0)

tandards 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 IEC 63000
	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				
Туре	Description	Weight		
TFL611F201	Continuous frost monitor; 015 °C; capillary tube length= 2 m	340 g		
TFL611F601	Continuous frost monitor; 015 °C; capillary tube length= 6 m	410 g		

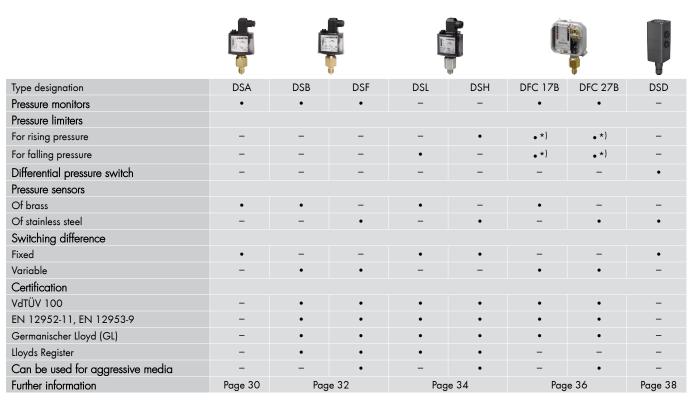
Accessories	
Туре	Description
0292146001	Set for duct fitting consisting of: 5 capillary-tube holders, 1 depth-adjustable flange
0300360014	Six holders for fitting the capillary tube
0374534001	Depth-adjustable flange



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



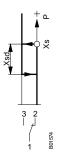
^{*)} Depending on approval





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

Tooliinour uutu		
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 VAC, 50 W, 250 VDC
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G ½" A
Ambient conditions		
	Admissible sensor temperature	70 °C
	Ambient temperature	-2070 °C
Construction		
	Fitting	Pipe and wall mounting
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard female connector for Ø 610 mm cable
Standards, directives		
Standards, directives	Type of protection ²⁾	IP65 (EN 60529)
	Protection class	I (IEC 60730)
CE/UKCA conformity according to ³⁾	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-6
CE/ ORCA collidinilly according to	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-6
	EMC-D 2014/30/EU (CE)	EN 61000-6-1, EN 61000-6-2
	LMC-D 2014/30/10 (CL)	EN 61000-6-3, EN 61000-6-4
	EMC-2016 (UKCA)	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Machinery-D 2006/42/EC (CE)	EN ISO12100:2018
	SMSR-2008 (UKCA)	EN ISO12100:2018
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
	RoHS-2012 (UKCA)	EN IEC 63000:2018

³⁾ Use as a pressure limiter is not permitted. The use of an electrical interlock is not permitted.

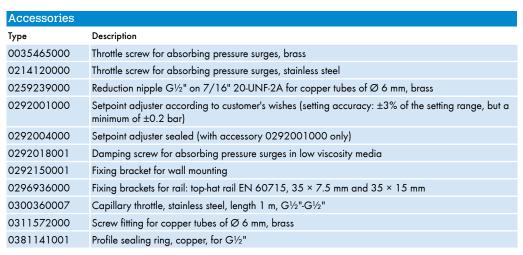


If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts.

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

Overview of types					
Туре	Setting range	Switching difference	e Maximum pressure	Admissible vacuum loading	Weight
DSA140F002	0.52.5 bar	0.25 bar	12 bar	-0.7 bar	0.5 kg
DSA143F002	0.56 bar	0.3 bar	16 bar	-0.7 bar	0.5 kg
DSA146F002	110 bar	0.4 bar	20 bar	-1.0 bar	0.4 kg

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



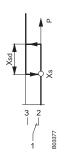
^{* 0296936000:} With accessory 0292150001 only





DSB1**F001













DSB, DSF: Pressure monitors and pressure switches

- 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 IEC 615081)
- Approved for marine applications (GL- and LR-certified)

Power supply		
	Maximum load with gold-plated contacts ²	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 VAC, 50 W, 250 VDC
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G ½" A
Ambient conditions		
	Ambient temperature	-2070 °C
Construction		
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard plug with female cable connector for cable Ø 610 mm
Standards, directives	<u>.</u>	
	Type of protection ³⁾	IP65 (EN 60529)
	Protection class	I (IEC 60730)
	Test mark ⁴⁾	TÜV DWFS (SDBFS) ID: 06024
	Ship-approved	Germanischer Lloyd (GL) Lloyds Register (LR)
CE/UKCA conformity ⁵⁾	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-6
•	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-6
	EMC-D 2014/30/EU (CE)	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	EMC-2016 (UKCA)	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Machinery-D 2006/42/EC (CE)	EN ISO12100:2018

¹⁾ SIL 2 approval is not valid in the United Kingdom (UK).



²⁾ 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

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

⁴⁾ For the EU: 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. For the United Kingdom (UK): Use as a safety pressure limiter is not permitted. The use of an electrical interlock is not

Explanation of abbreviations in the "Further information" section of the product data sheet and in the appendix to SAUTER's product catalogues

SMSR-2008 (UKCA)	EN ISO12100:2018
RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
RoHS-2012 (UKCA)	EN IEC 63000:2018
PED 2014/68/EU (CE)	VdTÜV pressure information sheet 100, sheet 1, cat. IV EN 12952-11, EN 12953-9
PESR-2016 (UKCA)6)	Article 4.3 AD 2000 Rulebook
Standards ⁷⁾	IEC 61508 parts 1-2 and 4-7

•	

0						
Overview of ty	_					
Туре	Setting range	Switching differ- ence	Maximum pres- sure	Max. sensor temp.	Admissible vac- uum loading	Weight
DSB138F001	01.6 bar	0.250.65 ba r	12 bar	70 °C	-0.7 bar	0.5 kg
DSB140F001	02.5 bar	0.250.75 ba r	12 bar	70 °C	-0.7 bar	0.5 kg
DSB143F001	06 bar	0.31.6 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSB146F001	010 bar	0.83.7 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB152F001	616 bar	14 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB158F001	025 bar	17.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSB170F001	540 bar	1.47.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSF125F001	-11.5 bar	0.250.75 ba r	12 bar	110 °C	-1 bar	0.5 kg
DSF127F001	-15 bar	0.31.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF135F001	00.6 bar	0.120.60 ba r	12 bar	110 °C	-1 bar	0.5 kg
DSF138F001	01.6 bar	0.250.7 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF140F001	02.5 bar	0.250.75 ba r	12 bar	110 °C	-1 bar	0.5 kg
DSF143F001	06 bar	0.31.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF146F001	010 bar	0.83.0 bar	18 bar	110 °C	-1 bar	0.5 kg
DSF152F001	016 bar	1.23.8 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF158F001	025 bar	1.58.0 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF170F001	1540 bar	1.78.2 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	
Туре	Description
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: $\pm 3\%$ of the setting range, but a minimum of ± 0.2 bar)
0292002000	Switching difference according to customers' wishes (setting accuracy: $\pm 5\%$ of the setting range, but a minimum of ± 0.05 bar, with accessory 0292001000 only)
0292004000	Setpoint adjuster sealed (with accessory 0292001000 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 \varnothing 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: With accessory 0292150001 only

SIL conformity as per SIL 2

 $^{^{\}rm 6)}$ SIL 2 approval is not valid in the United Kingdom (UK).

^{7]} SIL 2 approval is not valid in the United Kingdom (UK).









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 IEC 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 VAC, 50 W, 250 VDC
	Minimum load with silver-plated contacts	100 mA, 24 V
Parameters		
	Pressure connection	G ½" A
Ambient conditions		
	Ambient temperature	-2070 °C
Construction		
	Housing	Transparent cover
	Housing material	Impact-proof thermoplastic
	Device plug	Standard female connector for cable of Ø 610 mm
Standards and directives		ID (5 (5) 1 (0 500)
	Type of protection ²⁾	IP65 (EN 60529)
	Protection class	I (IEC 60730)
	Test mark ³⁾	TÜV DSL: SDBF ID: 06022 DSH: SDB ID: 06023
		PED: 2014/68/EU, cat. IV
	Ship-approved	Germanischer Lloyd (GL) Lloyds Register (LR)
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
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN 12952-11, EN 12953-9 EN ISO 12100:2018
SIL conformity as per SIL 2	Standards	IEC 61508 parts 1-2 and 4-7

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

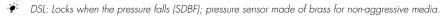
Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.

Certificates can be downloaded from www.certipedia.com. The certificates are not valid in the United Kingdom of Great Britain and Northern Ireland.

Overview of types

i Min. change for reset: Average values

Туре	Setting range	Min. change for reset	Maximum pressure	Admissible sensor temperature	Admissible vac- uum loading	Weight
DSL140F001	02.5 bar	0.4 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSL143F001	06 bar	0.5 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSL152F001	616 bar	1.2 bar	30 bar	70 °C	-1.0 bar	0.4 kg
DSH127F001	-15 bar	-0.4 bar	16 bar	110 °C	-1.0 bar	0.5 kg
DSH143F001	0.56 bar	-0.45 bar	16 bar	110 °C	-0.7 bar	0.5 kg
DSH146F001	110 bar	-0.8 bar	18 bar	110 °C	-1.0 bar	0.5 kg
DSH152F001	216 bar	-1.5 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH158F001	525 bar	-1.8 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH170F001	1540 bar	-2.0 bar	60 bar	110 °C	-1.0 bar	0.3 kg



 $[\]stackrel{\leftarrow}{\Psi}$ DSH: Locks when the pressure rises (SDB); pressure sensor made of stainless steel.

Accessories	
Туре	Description
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: $\pm 3\%$ of the setting range, but a minimum of ± 0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001000 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 \varnothing 6 mm, brass
0381141001	Profile sealing ring, copper, for $G\frac{1}{2}$ "

0296936000: With accessory 0292150001 only

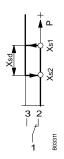






DFC17B76F001







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

- 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

recrimical 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 VAC (25 W), 250 VDC
	Minimum load with silver-plated contacts	100 mA, 24 V
Ambient conditions		
	Media temperature	≤ 110 °C
	Ambient temperature	-4070 °C
	<u> </u>	
Construction		
	Housing	Transparent cover
	Housing material	Light alloy
	Cable inlet	PG 13.5
	Screw terminals	For electrical cables up to 2.5 mm ²
	Pressure connection	G ½" A
Standards, directives		
	Type of protection	IP44 (EN 60529)
	Protection class	I (IEC 60730)
	Test mark ³⁾	TÜV DWFS (SDBF) ID: 06018 DWFS (SDB) ID: 06019 DB (SDBF) ID: 06017
	Mode of operation	Type 2 B (EN 60730)
CE/UKCA conformity	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-6
,	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-6
	EMC-D 2014/30/EU (CE)	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	EMC-2016 (UKCA)	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Machinery-D 2006/42/EC (CE)	EN ISO12100:2018
	SMSR-2008 (UKCA)	EN ISO12100:2018

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

³⁾ Certificates can be downloaded from www.certipedia.com. The certificates are not valid in the United Kingdom (UK).



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

RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
RoHS-2012 (UKCA)	EN IEC 63000:2018
PED 2014/68/EU (CE)	VdTÜV pressure information sheet 100, sheet 1, cat. IV EN 12952-11, EN 12953-9
PESR-2016 (UKCA) ⁴⁾	Article 4.3 AD 2000 Rulebook

Overview of types						
Туре	Setting range (bar)	Min. switching difference (bar)	Maximum pressure (bar)	Max. temp., sensor (°C)	Admissible vac- uum loading (bar)	Weight (kg)
DFC17B54F001	02.5	0.14	16	70	-0.7	1.2
DFC17B58F001	06.0	0.18	16	70	-1.0	1.2
DFC17B59F001	-15.0	0.20	16	70	-1.0	1.2
DFC17B76F001	010	0.50	40	70	-1.0	1.1
DFC17B78F001	016	0.50	40	70	-1.0	1.1
DFC17B79F001	1632	0.80	42	70	-1.0	1.1
DFC17B96F001	025	1.70	100	70	-1.0	1
DFC17B97F001	2550	2.00	100	70	-1.0	1
DFC17B98F001	040	1.80	100	70	-1.0	1
DFC27B26F002	-12.5	0.30	21	110	-1.0	0.9
DFC27B43F002	0.56.0	0.30	21	110	-1.0	0.9
DFC27B46F002	110	0.30	21	110	-1.0	0.9
DFC27B52F002	216	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	
Туре	Description
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
0300360007	Capillary throttle, stainless steel, length 1 m, G½"-G½"
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0259189000	Holder for raised wall mounting
0292019001	Setpoint adjustment for each switching point according to customer's wishes (setting accuracy: $\pm 3\%$ 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"

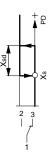
⁴⁾ For the United Kingdom (UK): Use as a safety pressure limiter is not permitted. The use of an electrical interlock is not permitted.





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 in process plants
- Differential pressure setting ranges from 0.06 to 6 bar
- Up to 80 °C media temperature
- High repeatability
- 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	AC min: 0.1 A, 250 VAC, 25 VA DC min: 0.1 A, 30 VDC
	Max. load	AC max: 3(1) A, 250 VAC, 250 VA DC max: 0.4 A, 30 VDC, 10 W
	Temperature dependence	1.5%/10 K
	Accuracy	3% of the setting range
	Hysteresis	12% of the setting range
	Mechanical serviceable life	10 ⁶ switchings
	Max. static operating pressure (positive and negative pressure)	16 bar
Ambient conditions		
	Ambient temperature	-1070 °C
	Media temperature	080 °C
	, , , , , , , , , , , , , , , , , , ,	(non-freezing media)
	Ambient humidity	4575% rh
Construction		
	Power cable ¹⁾	30.5 mm ²
	Diaphragms	Chromium-nickel steel 1.4310
	Connection thread	G 1/8" (female thread)
	Weight	0.2 kg
Standards, 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 Altitude up to 2000 m
	EMC Directive 2014/30/EU	EN 55014-1 Click rate N < 0.2 Art. 4.4
	PED 2014/68/EU	Art. 4.3 and Art. 13, fluid group 2

Overview of types		
Туре	Setting range (bar)	
DSD134F102	0.060.6	
DSD137F002	0.101.0	
DSD140F002	0.252.5	
DSD143F002	0.66.0	



^{1) 1} m long, fixed wiring

Accessories	
Туре	Description
0300360005	Cutting ring fitting G1/8" to 6 mm pipe (2 pcs)
0300360006	Pneumatic fitting G1/8" to 6 mm hose (2 pcs)
0300360016	Throttle screws G1/8", G1/8" (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 101	НВС
Application		
Room	-	-
Panel	•	-
Duct	-	•
Further information	Page 41	Page 42

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

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

Technical data		
Power supply		
	Max. load	5(3) A, 250 V~
	Min. load	100 mA, 24 V
Parameters		
	Setting range	2595% 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 effect	0.5% rh/K
Ambient conditions		
Operation	Humidity (non-condensing)	2595% rh
	Temperature	070 °C
Storage and transport	Humidity (non-condensing)	1095% rh
	Temperature	-2070 °C
Construction		
	Weight	0.03 kg
	Baseplate	Thermoplastic
	Electrical connection	AMP terminals 2.8 mm
Standards and directives3)		
	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

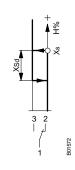
Overview of types

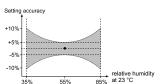
Туре	Features
HSC101F001	Panel-mounted humidistat















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

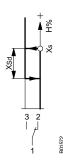




HBC11*F001



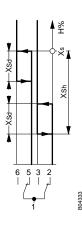
HBC111F001



HBC111F001



HBC112F001



HBC112F001

HBC: Duct-mounted humidistat

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
- \bullet With single-pole change-over contacts and fixed switching difference X_{sd}
- Immersion depth 130...156 mm; includes fixing bracket

Technical data

Technical data		
Power supply		
	Max. load	5(3) A, 250 V~
	Min. load	100 mA, 24 V
Parameters		
	Setting range	1595% 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)	3090% rh
	Temperature	070 °C
Storage and transport	Humidity (non-condensing)	1095% rh
	Temperature	-2070 °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 mm ²
Standards and directives		
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,
	LIVIC 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
	2011 Tollage Directive 2014/00/20	21, 33, 55 1, 21, 55, 55 2-15

Overview of types			
Туре	Switching range X _{sh}	Number of switches	Weight
HBC111F001	-	1	0.33 kg
HBC112F001	625% rh	2	0.35 kg

[☀] HBC 112: For 3-point control or min./max. monitoring and internally adjustable switching range X sd



Accessories	
Туре	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 911 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

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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 330335, 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 47	Page 47	Page 48	Page 49









		I I		
Type designation	EGT 353356, 456, 554	EGT 346348, 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 51	Page 53	Page 57	Page 59

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

Features

- Passive or active measurement of the room temperature
- Variants with setpoint adjuster, presence button and multi-coloured status LED
- Suitable for direct wall mounting and on flush-mounted boxes

Technical data

-		
Power supply		
	Power supply	24 VAC/DC, ±10%
Ambient conditions		
	Storage and transport temperature	−3570 °C
	Ambient temperature	050 °C
Construction		
	Housing	Pure white
	Housing material	ASA
	Cable inlet	From rear
	Connection terminals	Spring-type terminal, max. 1.5 mm ²
Standards, directives		
	Type of protection	IP20 (EN 60529)

Overview of ty	Overview of types					
Туре	Description	Output signal	Measuring range	Adjuster		
EGT330F053	Room-temperature sensor	Passive, Ni500	−3570 °C	_		
EGT330F103	Room-temperature sen- sor	Passive, Ni1000	−3570 °C	_		
EGT332F103	Room-temperature sen- sor, setpoint adjuster	Passive, Ni1000	−3570 °C	_		
EGT335F103	Room-temperature sen- sor, setpoint adjuster, presence button, LED	Passive, Ni1000	−3570 °C	Pot. 2.5 $k\Omega$		
EGT430F013	Room-temperature sen- sor	Passive, Pt100	−3570 °C	Pot. 2.5 kΩ		
EGT430F103	Room-temperature sen- sor	Passive, Pt1000	−3570 °C	_		
EGT130F032	Room temperature transducer	Active, 010 V	3 areas	_		









EGT335F103









EGT386F101

EGT486F101

EGT686F101





EGT388F101

EGT388F102

EGT688F101



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

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	-3570 °C
Time characteristic	Time constant in still air	30 minutes
Ambient conditions		
	Storage and transport temperature	-3570 °C
	Ambient temperature	-3570 °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 IEC 63000
Resistance values / characterist	tics	

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					
Туре	Measuring element	Adjuster	Weight		
EGT386F101	Ni1000	-	53 g		
EGT388F101	Ni1000	10 kΩ	83 g		
EGT388F102	Ni1000	100 Ω	83 g		
EGT486F101	Pt1000	-	83 g		
EGT686F101	NTC 10k	-	53 g		
EGT688F101	NTC 10k	10 k Ω	83 g		



EGT 301, 401, 601: 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 conditions	Ambient temperature	EGT*01F102: -3590 °C EGT301F031: -3570 °C
Storage and transport	Storage and transport temperature	−3570 °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 0.351.5 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, directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN IEC 63000
,	EMC Directive 2014/30/EU	EGT301F031:

Resistance values / characteristics

 $m{i}$ 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.

EN 60730-1 (mode of operation 1,

residential premises)

Measuring element	Standards	Nominal value at 0 °C	Tolerance at 0 °C
Ni1000	DIN 43760	1000 Ω	±0.4 K
Ni1000 TK5000	-	1000 Ω	±0.4 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K



EGT*01F102



EGT301F031







Data capture | Temperature

Active type		Measuring accuracy at 21 °C	Output signal	' ' '	Power consumption
	5 temperature ranges (-50160 °C), adjustable on device (see connection dia- gram)	measuring range ¹⁾²⁾			Max. 0.42 W / 0.84 VA

Overview of t	ypes			
Туре	Description	Output signal	Measuring range	Weight
EGT301F102	Outdoor temperature sensor	Passive, Ni 1000	−3590 °C	80 g
EGT401F102	Outdoor temperature sensor	Passive, Pt1000	−3590 °C	80 g
EGT601F102	Outdoor temperature sensor	Passive, Ni 1000 TK 5000	−3590 °C	80 g
EGT301F031	Outdoor temperature transmitter	Active, 010 V	−50160 °C (5 ranges)	120 g



 $^{^{1)}}$ With offset adjustment ± 3 K

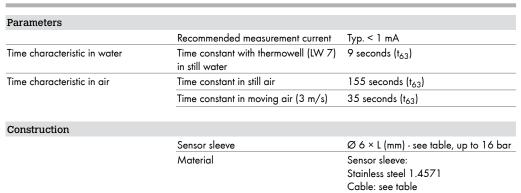
The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be avoided by the customer.

EGT 353...356, 456, 554, 654: 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





	Active length	IO mm	
Standards and directives			
	Type of protection	IP67 (EN 60529)	
CE conformity according to	RoHS Directive 2011/65/FU	EN IEC 63000	

 \emptyset 5 mm with wire ferrules

 $2 \times 0.25 \text{ mm}^2$

Power cable

Cable cross-section

Resistance values / characteristics

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
Ni1000 TK5000		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						
Туре	Measuring ele- ment	Sleeve length LH	Total length Lg	Material	Measuring range	Weight
EGT353F101	NTC 10k	50 mm	1.5 m	PVC	-35100 °C	40 g
EGT353F103	NTC 10k	50 mm	3 m	PVC	-35100 °C	85 g
EGT353F110	NTC 10k	50 mm	10 m	PVC	-35100 °C	280 g
EGT353F120	NTC 10k	50 mm	20 m	PVC	-35100 °C	550 g
EGT554F103	NTC 22k	50 mm	3 m	PVC	-35100 °C	85 g
EGT354F102	Ni1000	50 mm	1 m	PVC	-35100 °C	30 g
EGT354F104	Ni1000	50 mm	3 m	PVC	-35100 °C	85 g
EGT354F111	Ni1000	50 mm	10 m	PVC	-35100 °C	280 g
EGT354F121	Ni1000	50 mm	20 m	PVC	-35100 °C	550 g











Data capture | Temperature



Accessories	
Туре	Description
0300360000	Compression fitting G1/4"; stainless steel, up to 16 bar
0300360003	Mounting flange; plastic
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 for cable temperature sensor (holder, heat-conducting paste, retaining strap)

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



EGT 346...348, 392, 446, 447, 646, 647: 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

	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	o- 17 s (t ₆₃)
	Time constant in still water, with thermowell made of stainless steel	o- 20 s (t ₆₃)

Ambient conditions		
, and on the contract of the c	Ambient temperature	EGT*4* passive: -3590 °C EGT*4* active: -3570 °C EGT392F102: -2590 °C
Storage and transport	Storage and transport temperature	−3570 °C
	Humidity (non-condensing)	85% rh
Construction		

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 0.351.5 mm ² For number of poles, see connection diagram
	Cable inlet	M16 for cable min. \emptyset 5 mm, max. \emptyset 8 mm
	Immersion stem	Ø 6×L (mm) made of stainless steel 1.4571, up to 16 bar, see table

Standards, directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN IEC 63000
	EMC Directive 2014/30/EU	EGT34*F031: EN 60730-1 (mode of

10 mm

Active length

Resistance values / characteristics

 $m{i}$ 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
Ni1000 TK5000	-	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



EGT*4*



EGT392F102







Active types	Measuring range	Measuring accuracy at 21 °C ¹⁾²⁾	Output sig- nal	Power supply	Power consumption
EGT346F031	5 temperature ranges	T . II . 10/ (010 V,	1524 V=	Typical
EGT347F031	(-50 160 °C) adjustable on	Typically ±1% of measuring range	min. load	(±10%)/	0.35 W /
EGT348F031	device (see connection diagram)	ineasoning range	5 kΩ	24 V~ (±10%)	0.82 VA

Overview of ty	pes				
Туре	Description	Output signal	Measuring range	Immersion length (L)	Weight
EGT346F022	Duct temperature sensor	Passive, Ni200	−50 160 °C	100 mm	85 g
EGT346F102	Duct temperature sensor	Passive, Ni1000	−50 160 °C	100 mm	85 g
EGT347F022	Duct temperature sensor	Passive, Ni200	−50 160 °C	200 mm	95 g
EGT347F102	Duct temperature sensor	Passive, Ni1000	−50 160 °C	200 mm	95 g
EGT348F102	Duct temperature sensor	Passive, Ni1000	−50 160 °C	450 mm	120 g
EGT392F102	Duct temperature sensor	Passive, Ni1000	−50 260 °C	100 mm	105 g
EGT446F012	Duct temperature sensor	Passive, Pt100	−50 160 °C	100 mm	85 g
EGT446F102	Duct temperature sensor	Passive, Pt1000	−50 160 °C	100 mm	85 g
EGT447F012	Duct temperature sensor	Passive, Pt100	−50 160 °C	200 mm	95 g
EGT447F102	Duct temperature sensor	Passive, Pt1000	−50 160 °C	200 mm	95 g
EGT646F102	Duct temperature sensor	Passive, Ni 1 000 TK 5000	−35 160 °C	100 mm	85 g
EGT647F102	Duct temperature sensor	Passive, Ni 1 000 TK 5000	−35 160 °C	200 mm	85 g
EGT346F031	Duct temperature transmitter	Active, 010 V	-50160 ° C (5 ranges)	100 mm	90 g
EGT347F031	Duct temperature transmitter	Active, 010 V	-50160 ° C (5 ranges)	200 mm	100 g
EGT348F031	Duct temperature transmitter	Active, 010 V	-50160 ° C (5 ranges)	450 mm	120 g

Accessories	
Туре	Description
0300360000	Compression fitting G¼"; stainless steel, up to 16 bar
0300360003	Mounting flange; plastic
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)

With offset adjustment ± 3 K

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)
- \bullet Versions with cylindrical pipe thread (G½" male ISO 228/1, flat-sealing)¹⁾ or cone-shaped ($R\frac{1}{2}$ " ISO 7/1 sealing in thread)
- With pressure spring (LW 15)
- With retaining holder

Overview of types							
Туре	LW	Length	Material	Thread	Nominal pres- sure	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	R1/2"	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	G1/2"	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





 $^{^{1)}~~}G^{1\!\!/_{\!2}}"$ male ISO 228/1, flat-sealing: for welding bushings with flat seal (accessories)



- 4 0392022100 and 0392022300 for TUC thermostats only
- ₩ith 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	
Туре	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 $G^{1/2}$ ", 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 311, 411, 611: Clamp-on temperature sensor

Features

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



Parameters		
	Recommended measurement current	Typ. < 1 mA
Time characteristic with heat- conducting paste	Time constant	16 s
Ambient conditions		
	Storage and transport temperature	−3570 °C
	Humidity (non-condensing)	85% rh
Construction		
	Housing	Yellow/black
	Housing material	Polyamide
	Connection terminals	Screw terminals 0.351.5 mm ² , for number of poles, see connection d agram
	Cable inlet	M16 for cable
		min. Ø 5 mm, max. Ø 8 mm
Standards, directives		
	Type of protection	IP65 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN IEC 63000
	EMC Directive 2014/30/EU	EGT311F031: EN 60730-1 (mode of operation 1, residential premises)

Resistance values / characteristics

 $m{i}$ 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
Ni1000 TK5000	-	1000 Ω	±0.4 K
Ni200	DIN 43760	200 Ω	±0.4 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K

Active type		Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption
	5 temperature ranges (-50160 °C), adjustable on device (see connection dia- gram)		load impe-	1524 V= (±10%) / 24 V~ (±10%)	Max. 0.42 W / 0.84 VA







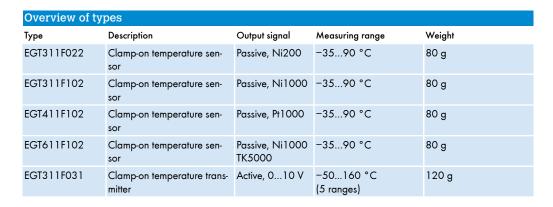




 $^{^{1)}}$ With offset adjustment ± 3 K

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.

Data capture | Temperature



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



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



EGS100F70*

Technical data

Parameters		
	Measuring range	-3570 °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 mm ²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	RoHS Directive 2011/65/EU	EN IEC 63000
CE conformity	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)

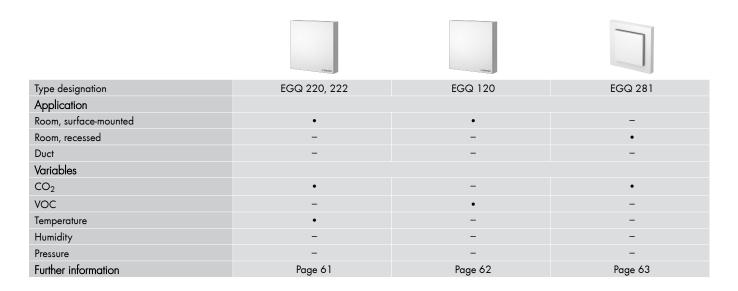
Overview of types			
Туре	Resistance values	Tolerance	Measuring elements
EGS100F705	1 k Ω (at 0 °C)	±0.4 K (at 0 °C)	2 × Ni500 as per DIN 43760 in series
EGS100F706	10 kΩ (at 25 °C)	±1% (at 25 °C)	2 × NTC 5 $k\Omega$ in series
EGS100F707	22 kΩ (at 25 °C)	±1% (at 25 °C)	2 × NTC 11 k Ω in series

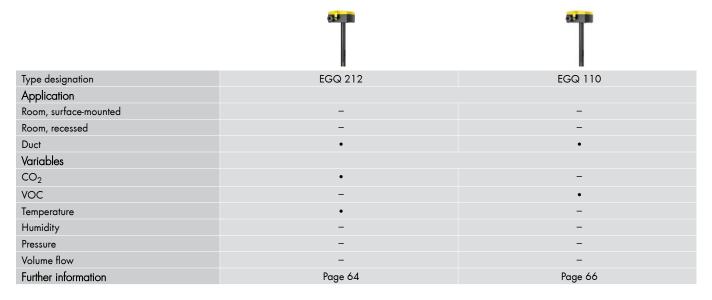


Air quality sensors

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





EGQ 220, 222: Room transducer, CO₂, surface-mounted

- Selective measurement of the CO₂ concentration for demand-controlled ventilation of rooms (e.g. meeting rooms, conference rooms, offices, classrooms, etc.)
- Available in three versions: With and without temperature measurement, with LED indicator
- ullet CO $_2$ measurement with NDIR $^{\scriptscriptstyle (1)}$ Dual-beam technology, therefore stable in the long term and largely resistant to external influences
- Calibrated ex works and ready to use immediately
- \bullet Very fast response to changes in the CO_2 concentration in rooms







EGQ222F032





Technical data

Power supply		
	Power supply	24 VAC/DC
Parameters		
CO ₂	Measuring range	02000 ppm
	Temperature dependence	Typ. 2 ppm per °C (050 °C)
Temperature (EGQ 222)	Measuring range	050 °C
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	Max. 85% rh, non-condensing
Construction		
	Housing	Pure white
	Housing material	PC
	Cable inlet	From rear, top, bottom
	Connection terminals	Spring-type terminal, max. 1.5 mm ²
		· • · · · · · · · · · · · · · · · · · ·
Standards, directives		

Overview of types		
Туре	Description	Output signal
EGQ220F032	Room transducer, CO ₂	$1 \times 010 \text{ V, load} \ge 10 \text{ k}\Omega$
EGQ222F032	Room transducer, CO ₂ , temp	$2 \times 010 \text{ V, load} \ge 10 \text{ k}\Omega$

IP20 (EN 60529)

Type of protection



¹⁾ NDIR: Non-dispersive infrared sensor



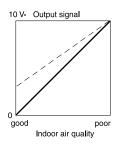
EGQ 120: Room transducer, air quality, surface-mounted

Features

- Measures the relative mixed gas concentration (organic components in the room air), such as tobacco smoke, kitchen vapours
- 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
- Suitable for fitting directly to walls

EGQ120F032





Technical data

Power supply		
	Power supply	24 VAC/DC
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	Max. 85% rh, no condensation
	·	
Inputs/outputs		
	Output signal	010 V, min. load 10 k Ω
Construction		
	Housing	Pure white
	Housing material	PC
	Cable inlet	From rear, top, bottom
	Connection terminals	Spring-type terminal, max. 1.5 mm ²
Standards, directives		
	Type of protection	IP20 (EN 60529)

Overview of types

Туре	Description
EGQ120F032	Room transducer, air quality



EGQ 281: Room transducer, CO₂, recessed

Features

- ullet 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.)
- ullet CO $_2$ measurement with NDIR dual-beam technology $^{\rm 1}$, 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 CO₂ 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

Technical data		
Power supply		
	Power supply (SELV)	1524 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	010 V
	Load current	Max. 10 mA
Parameters		
	Measuring range	02000 ppm
	Measuring accuracy	$<\pm50$ 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	−2070 °C
Construction		
	Housing	Pure white
	Housing material	Lower section: PA6
		Front plate: PC
	Frame design	Gira E2
	Weight	90 g
Standards, directives		
Standards, directives	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1,
CE conformity according to	LIVIC DIFECTIVE 2014/30/EU	residential premises)
	RoHS Directive 2011/65/EU	EN IEC 63000

Overview of types

Туре	Description
EGQ281F031	Room transducer, CO ₂ ; 010 V, recessed



EGQ281F031







¹⁾ NDIR: Non-dispersive infrared sensor



EGQ212F032



EGQ 212: Duct transducer, CO₂ and temperature

Features

- Duct sensor for measuring carbon dioxide (CO₂) content for demand-based ventilation of indoor spaces
- CO₂ measurement with NDIR¹⁾ Dual-beam technology, therefore stable in the long term and largely resistant to external influences
- Measurement of temperature in ventilation ducts
- Two analogue 0...10 V outputs are available: one for CO₂ measurement and one for temperature measurement. This allows direct connection to an automation station
- Automatic drift compensation
- Mounting accessories and flange included

Technical data

Power supply		
	Power supply (SELV)	1535 V= / 1929 V~
	Power consumption	Max. 2.3 W (24 V=) / 4.3 VA
		(24 V~)
	Peak inrush current	1.2 A < 3 ms
Outputs		
	Output signal	2×010 V, load min.: $10 \text{ k}\Omega$
Parameters		
	Flow speed	Min. 0.3 m/s, max. 12 m/s
Time characteristic	In moving air (3 m/s)	5 minutes
CO_2	Measuring range	02000 ppm
	Measuring accuracy	±50 ppm drift over the serviceable life
		+3% of the measured value
		(typical at 21 C, 50% rh)
Temperature	Measuring range	050 °C
	Measuring accuracy	±0.5 K (typical at 21 °C)
Ambient conditions	A 1:	0.50.00
	Ambient temperature	050 °C
	Ambient humidity	Max. 85% rh non-condensing
G		
Construction	C	DI : C I I II
	Connection terminals	Plug-in female connectors, removable
	Cable cross-section	Max. 2.5 mm ²
	Cable inlet	Removable insert, M20 for cable,
	Harrison.	min. Ø 4.5 mm, max. Ø 9 mm
	Housing	Yellow/black
	Housing material	Housing: PC, sensor tube: PA6
	Filter unit material Sensor tube diameter	Stainless steel, wire mesh
		19.5 mm 180 mm
	Sensor tube length	
	Weight	150 g
Standards, directives		
Standards, unectives	Type of protection	Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1,
CL comorning according to	LIVIC DIRECTIVE 2014/30/EU	residential premises)
	RoHS Directive 2011/65/EU	EN IEC 63000
	10110 DIRECTIVE 2011/03/10	L. 1 ILC 00000



¹⁾ NDIR: Non-dispersive infrared sensor

Overview of types

Туре Features

EGQ212F032 Duct transducer, CO_2 and temperature; 2 \times 0...10 V

Accessories

Туре Description 0300360003 Mounting flange; plastic





EGQ110F032



EGQ 110: Duct transducer, air quality (VOC), temperature

Features

- Duct air quality sensor for detection of volatile organic compounds (VOC) for demand-controlled ventilation of indoor spaces. VOC sources include flue gases, solvents as well as various cleaning agents and building materials
- Measurement of temperature in ventilation ducts
- Two analogue 0...10 V outputs are available: one for VOC measurement and one for temperature measurement. This allows direct connection to an automation station
- Automatic calibration via an integrated algorithm
- Mounting accessories and flange included

Technical data

Power supply	Power supply (SELV) Power consumption	1535 V= / 1929 V~
		·
	Power consumption	
		Max. 2.3 W (24 V=) / 4.3 VA
		(24 V~)
	Peak inrush current	1.2 A < 3 ms
Outputs		
	Output signal	2×010 V, load min.: $10 \text{ k}\Omega$
Parameters		
	Flow speed	Min. 0.3 m/s, max. 12 m/s
Time characteristic	In moving air (3 m/s)	5 minutes
VOC	Measuring range	0100%
	Serviceable life	Typically 10 years
	Sensor	Heated tin dioxide semiconductor
Temperature	Measuring range	050 °C
	Measuring accuracy	±0.5 K (typical at 21 °C)
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	Max. 85% rh non-condensing
Construction		
	Connection terminals	Plug-in female connectors, removable
	Cable cross-section	Max. 2.5 mm ²
	Cable inlet	Removable insert, M20 for cable,
	Harring	min. Ø 4.5 mm, max. Ø 9 mm Yellow/black
	Housing	,
	Housing material Filter unit material	Housing: PC, sensor tube: PA6 Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
		180 mm
	Sensor tube length	150 mm
	Weight	130 g
Standards, 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 IEC 63000

Overview of types

Type Features

EGQ110F032 Duct transducer; VOC and temperature; 2 × 0...10 V



Accessories

Description Туре

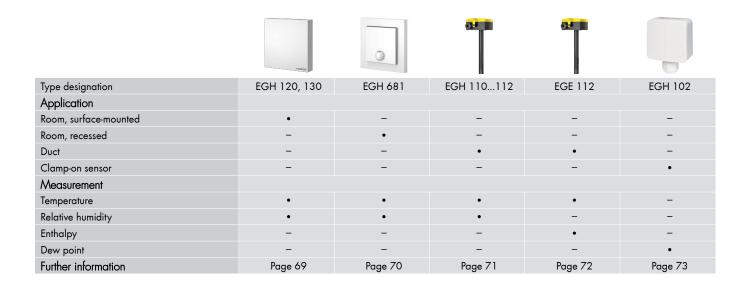
0300360003 Mounting flange; plastic



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



EGH 120, 130: Room transducer, relative humidity and temperature, surface-mounted

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)



EGH120F042 EGH130F032



Technical data

Power supply		
	Power supply	24 VAC/DC
Parameters		
Relative humidity	Measuring range	0100% rh, no condensation
Temperature	Measuring range	050 °C
Ambient conditions		
	Ambient temperature	−2070 °C
Construction		
	Housing	Pure white
	Housing material	PC
	Cable inlet	From rear, top, bottom
	Connection terminals	Spring-type terminal, max. 1.5 mm ²
Standards, directives		

Overview of types				
Туре	Description	Output signal	Power supply	Power consumption
EGH120F042	Room transducer, rh, temp.	Active, 2 × 420 mA	1524 VDC, ±10%	Max. 1 W
EGH130F032	Room transducer, rh, temp.	Active, 2 × 010 V	1524 VDC, ±10% 24 VAC, ±10%	Max. 0.3 W (24 VDC) 0.5 VA (24 VAC)

IP20 (EN 60529)

Type of protection





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	1524 V= (±10%) or 24 V~ (±10%)
	Power consumption	Typ. 0.3 W / 0.5 VA
Output signal		
	Output signal	010 V, load resistance at least 10 k Ω
Parameters		
	Measuring range, temperature	050 °C
	Measuring range, humidity	0100% rh
Ambient conditions		
	Ambient temperature	-2070 °C
Construction		
	Housing	Pure white
	Housing material	Lower section: ABS Front plate: PC
	Frame design	Gira E2
	Weight	80 g
Standards, directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN IEC 63000
	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)

Overview of types

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



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

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	1524 V= (±10%) or 24 V~ (±10%)
	Peak inrush current	1.5 A, 4 ms
Parameters		
Humidity	Measuring range, humidity	0100% rh, no condensation
	Measuring accuracy, humidity	Typ. ±2% (1090% rh)
	Repeat accuracy	Typ. ±0.1% rh
	Gradual drift	Typ. < 0.5% rh/year
Temperature	Measuring range, temperature	-2080 °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	-2070 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)

Overview of types			
Туре	Power consumption	Output signal	
EGH110F041	Max. 1 W (24 V=)	2 × 420 mA (max. load 500 Ω)	
EGH111F031	Max. 0.4 W (24 V=) 0.8 VA (24 V~)	2 × 010 V (min. load 10 k Ω) + Ni1000	
FGH112F031	Max 0.4 W (24 V=) 1.0.8 VA (24 V~)	$2 \times 0.10 \text{ V (min, load, } 10 \text{ k} \Omega)$	



EGH11*F0*1







EGE112F031



EGE 112: Duct transducer, enthalpy

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

Power supply		
	Power supply	1524 V= (\pm 10%) or 24 V~ (\pm 10%)
	Power consumption	Max. 0.4 W (24 V=) 0.8 VA (24 V~)
Outputs		0 0 10 1/1 : 1 110101
	Output signal	2 x 010 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	0100 kJ/kg
	Measuring accuracy	3.5 kJ/kg (typ. at 21 °C)
Temperature	Measuring range	−2080 °C
	Measuring accuracy	±0.5 °C (typ. at 25 °C)
Ambient conditions		
	Ambient temperature	-2070 °C
Construction		
	Connection terminals	Screw terminal, max. 1.5 mm ²
	Cable inlet	M20 for cable Ø min. 5.8 mm, max.
	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, 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 IEC 63000

Overview of type:	

Туре	Description
EGE112F031	Duct transducer, enthalpy and temperature, 2 x 010 V



EGH 102: Dew point monitor and transducer

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
- ullet Includes retaining strap for pipes of Ø 10...100 mm and heat-conducting paste

Technical data

Technical data		
Power supply		
	Power supply	24 V~/=, ±20%
	Power consumption	Max. 1 VA
D		
Parameters		70.050/ 1
	Measuring range	7085% rh
	Changeover 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		
Allibient conditions	A h : t t t	560 °C
	Ambient temperature	560 C
Inputs/outputs		
	Output signal	Approx. 7085% rh, 010 V, load > 10 k Ω
Construction		
	Screw terminals	For electrical cables of up to 1.5 mm ²
	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)
		Type 1 C (EN 60730)
	Mode of operation	Type 1 C (EIN 00/30)

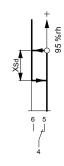
Overview of types

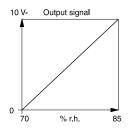
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Туре	Clamp-on sensor
EGH102F001	Integrated in housing
EGH102F101	Cable 1 m long, sensor integrated in the cable end













When activating relays, gates etc. with $\cos \phi <$ 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
- \bullet 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 mm²
- Cable inlet M20
- Fitted onto pipes using the provided cable tie for pipes Ø 10...40 mm

Technical data

Power supply		
	Power supply	230 V~ ±10%
	Power consumption	Max. 3.5 VA
Parameters		
	Changeover contact ¹⁾	5 A, 230 V~
	Switching point	95 ±4% rh
	Switching difference	Fixed, approx. 5% rh
Ambient conditions		
	Ambient temperature	-2060 °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

Туре	Description
EGH103F001	Dew point monitor 230 V~

Accessories

Accessories		
Туре	Description	
0300360004	Heat-conducting paste incl. gun with 2 g content	

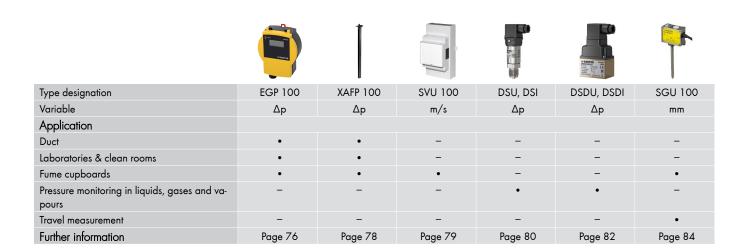


When activating relays, gates, etc. with $\cos \phi < 0.3$, it is recommended to use RC circuitry in parallel to the coil. This reduces contact pitting and prevents high-frequency interference

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.

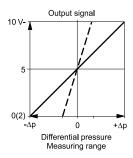
Overview of flow and pressure sensors

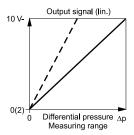


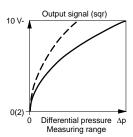


EGP100F*12









- Gain ∆p = 1 — Gain ∆p = 3

EGP 100: Differential pressure transducer

- 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 pressure sensor
- 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

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

Ambient conditions		
	Media temperature	070 °C
	Admissible operating pressure p _{stat} 3)	$\pm 7~\mathrm{kPa}$
	Ambient temperature	060 °C
	Ambient humidity	595% rh, no condensation

nputs/outputs		
	Output signal ⁴⁾	F*01: 010 V, load > 10 k Ω F*02/F*12: 0(2)10 V, load < 500 Ω
	Filter time constant	F*01: 0.052 s F*02, F*12: 0.155.2 s

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



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

The zero point should be recalibrated if the admissible operating pressure is exceeded

With a load of $< 500 \Omega$, 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~

Construction		
	Pressure connection	Internal Ø 6 mm
	Housing	PC/ABS
	Cable gland	M16
	Screw terminals	For electrical cables of up to 1.5 mm ²
Standards, 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

- *i* Output signal: Analogue output limited to 10.6 V. Measured values with an overrun of 6% of the measuring range can therefore be transferred
- i Variable characteristic/LED: Manual adjustment of measuring range with gain potentiometer. Signal curve: linear/rootextracted. Output signal: 0...10 V / 2...10 V via DIP switches or with CASE Sensors software

Туре	Measuring range	Display	Variable characteris- tic/LED	Weight (kg)
EGP100F101	±75 Pa, ±0.75 mbar	-	-	0.17
EGP100F102	±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
EGP100F212	±150, 1.5 mbar	•	•	0.19
EGP100F301	0150 Pa, 01.5 mbar	-	-	0.17
EGP100F302	0150 Pa, 01.5 mbar	-	•	0.18
EGP100F312	0150 Pa, 01.5 mbar	•	•	0.19
EGP100F401	0300 Pa, 03.0 mbar	-	-	0.17
EGP100F402	0300 Pa, 03.0 mbar	-	•	0.18
EGP100F412	0300 Pa, 03.0 mbar	•	•	0.19
EGP100F601	01000 Pa, 010.0 mbar	-	-	0.17
EGP100F602	01000 Pa, 010.0 mbar	-	•	0.18
EGP100F612	01000 Pa, 010.0 mbar	•	•	0.19

Accessories	
Туре	Description
0010240300	Connection set, 6 mm, complete
XAFP100F001	Flow probe to measure the air volume in ventilation ducts
CERTIFICATO01	Manufacturer's test certificate type M
CERTIFICAT999	Test for further device (from 2 pcs.)
0300360001	USB-RS-485 converter





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

Parameters		
	Measurement tolerance	< 3%
	Range (mm)	DN 80400
Admissible ambient conditions		
	Operating temperature	050 °C
	Ambient humidity	< 85% rh, no condensation
Function		
	Function	Flow probe
Construction		
	Dimensions	$65 \times 40 \times 396$ mm (W × H × L)
	Bore	Ø 3032 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

	f types

o totalon of types		
Туре	Features	
XAFP100F001	Flow probe for ventilation ducts	



SVU 100: Air-flow transducer

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%, 5060 Hz
	Power consumption	1 VA
	·	
Parameters		
	Measuring range	O1 Pa
	Measuring span ¹⁾	01.3 m/s
	Differential pressure	Approx. 01 Pa
	Time constant	< 0.1 s
	Air throughput rate	3 cm ³ /min (at 1 m/s)
Ambient conditions		
	Ambient temperature	555 °C
	Ambient humidity	< 90% rh
Inputs/outputs		
	Output signal ²⁾	010 V
	Linearity	2% (based on the output signal)
	<u> </u>	
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

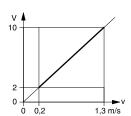
Туре	Feature
SVU100F005	Linear to v [m/s]

• Specified flow speed is based on $\rho = 1.2 \text{ kg/m}^3$













¹⁾ Recommended measuring span 0.2...1.3 m/s (output 2...10 V)

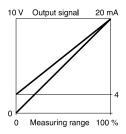
Output signal: Output protected against short circuits and excess voltage up to 24 $V\sim$





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
- \bullet 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

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: $U_b \ge 15 \text{ V} \ge 5 \text{ k}\Omega$ $U_b \ge 20 \text{ V} \ge 2 \text{ k}\Omega$ DSI: $(U_b - 6 \text{ V})/0.02 \text{ A}$
Ambient conditions		
	Ambient temperature	060 °C
	Media temperature	085 °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 safe- ty function



Overview of types					
Туре	Measuring range (bar)	Output signal	Power supply	Maximum pressure	Power consumption
DSU203F002	02.5 bar	010 V	24 V=/~	8 bar	24 V=/~, 0.5 W (VA)
DSU206F002	06 bar	010 V	24 V=/~	20 bar	24 V=/~, 0.5 W (VA)
DSU210F002	010 bar	010 V	24 V=/~	32 bar	24 V=/~, 0.5 W (VA)
DSU216F002	016 bar	010 V	24 V=/~	50 bar	24 V=/~, 0.5 W (VA)
DSU225F002	025 bar	010 V	24 V=/~	80 bar	24 V=/~, 0.5 W (VA)
DSI203F002	02.5 bar	420 mA	24 V=	8 bar	24 V=, 0.7 W
DSI206F002	06 bar	420 mA	24 V=	30 bar	24 V=, 0.7 W
DSI210F002	010 bar	420 mA	24 V=	32 bar	24 V=, 0.7 W
DSI216F002	016 bar	420 mA	24 V=	50 bar	24 V=, 0.7 W
DSI225F002	025 bar	420 mA	24 V=	80 bar	24 V=, 0.7 W

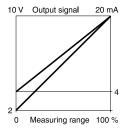
Accessories	
Туре	Description
0300360007	Capillary throttle, stainless steel, length 1 m, G½"-G½"
0300360015	Wall holder for DSU/DSI





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

Power supply Electrical connection Power consumption	24 V=/~, ±20%, (5060 Hz) Three-wire < 1.5 W (VA)
Electrical connection	Three-wire
Electrical connection	Three-wire
Power consumption	< 1.5 W (VA)
<u> </u>	
Output signal	010 V Load: > 2 kΩ
	420 mA
	Load: \leq 700 Ω (V=), \leq 400 Ω (V~)
Accuracy	≤ 1%
· · · · · · · · · · · · · · · · · · ·	-2080°C
Media temperature	080°C
A 1 · · · 1 · · !·	(non-freezing media) 4575% rh
burst pressure	64 bar (both sides)
Housing material	Brass
Diaphragms	Ceramic
Connection thread	G 1/8" (female thread)
Device plug	Plug connection 4-pin, standard plug DIN EN 175 01-803-A, cable gland M16
Weight	0.62 kg
Type of protection	IP65 (EN 60529)
EMC Directive 2014/30/EU	EN 61326-1, EN 61326-2-3
PED 2014/68/EU	Fluid group II, article 4.3
	Accuracy ¹⁾ Ambient temperature Media temperature Ambient humidity Burst pressure Housing material Diaphragms Connection thread Device plug Weight Type of protection EMC Directive 2014/30/EU

Overview of types				
Туре	Measuring range Δp	Output signal	Max. pressure (connection +)	Max. pressure (connection -)
DSDI101F021	01 bar	420 mA	10 bar	5 bar
DSDI103F021	02.5 bar	420 mA	21 bar	15 bar
DSDI106F021	06 bar	420 mA	21 bar	15 bar
DSDU101F021	01 bar	010 V	10 bar	5 bar
DSDU103F021	02.5 bar	010 V	21 bar	15 bar
DSDU106F021	06 bar	010 V	21 bar	15 bar

 $^{^{1)}}$ Including non-linearity and hysteresis in compensated temperature range 10...70 $^{\circ}\mathrm{C}$



Accessories	
Туре	Description
0300360005	Cutting ring fitting G1/8" to 6 mm pipe (2 pcs)
0300360006	Pneumatic fitting G½" to 6 mm hose (2 pcs)
0300360016	Throttle screws G1/8", G1/8" (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 mm², 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)

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	±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.: 210 V = 8 V
	Hardware response time ³⁾	< 100 ms
	Filter time constant	O5, 22 s, variable using SAUTER CASE Sensors
Ambient conditions		
	Operating temperature	055 °C
	Storage and transport temperature	-2070 °C
	Humidity	85% rh, no condensation
Inputs/outputs		
	Digital input	I _{out_source} max.: 1 mA, V _{out} max.: 18 V at R _{load} = ∞
	Alarm output	I _{sink} max.: 2 mA, open collector outpu 100 mV at I _{sink} 2 mA, V _{in} max.: 24 V=, 20% at I _{sink} = 0 mA
	Voltage output ⁴⁾	0/210 V, 1 mA max., V _{out} max.: 11.5 V, can be parametr- ised, Default 210 V
	Typical overall error	2.5% (unlinearity, hysteresis, offset, ar plified; based on working range)

Default is buzzer active



Inactive/active buzzer: Default is buzzer active

The set filter time constant must be added

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, Ø 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		
Туре	Working range	Resolution of working stroke
SGU100F010	200800 mm for bench-mounted fume cup- boards (max. spring travel 1000 mm)	< 1 mm
SGU100F011	4001600 mm for walk-in fume cupboards (max. spring travel 2000 mm)	< 2 mm

Accessories	
Туре	Description
0300360001	USB-RS-485 converter

 $[\]overline{}^{5)}$ Cable length of bus termination on both sides 120 Ω : 200...500 m, Ø 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 or 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

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Single-room control Overview of room temperature controllers NRFC 413, 422...424: Modbus fan coil thermostat TRA 410, 421: Room thermostat for heating and heating/cooling with

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equitherm heating control

display

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flexotron controllers for ventilation and air-conditioning

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VAV compact controllers

ASV205BF132*, ASV215BF132*: VAV compact controller	114
ASV2*5BF152*: VAV controller for laboratory and pharma applications	11 <i>7</i>
FCCP: Fume cupboard indicator and monitor	120

Room temperature controllers

The SAUTER single-room controller combines the highest standards of operability with a modern design. The device can be used in various applications in 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 controller is powerful, economical and easy to operate.

Overview of room temperature controllers



	7
Type designation	NRFC 4
Application	
Air-conditioning controller	•
Fan-coil controller	•
For 2-pipe installation	•
For 4-pipe installation	•
For 2/3-way zone valve	-
For 6-way ball valve	-
Outputs	
Continuous	•
Quasi-continuous, 2-point	•
3-point	-
Relay	•
Control	
PI	•
Operation and indicator	
Display	•
Presence button	-
Communication	
Protocols	Modbus RTU
Further information	Page 89

NRFC 413, 422...424: Modbus fan coil thermostat

Features

- · Single-room controller for heating and cooling by means of air conditioning units in commercial and residential buildings
- For 2- or 4-pipe fan coil units, two-stage heating systems or water-bearing heat pumps
- Can be integrated into building management systems via Modbus/RTU
- Large configurable display with backlight
- Integrated ON/OFF timer
- Deactivatable button operation for public installations
- Valve control via 2-point or 0...10 V output
- Supports 3-speed fans or fans with EC motor
- Summertime/wintertime change-over in 2-pipe applications
- Automatic deactivation of internal temperature sensor when using a cable temperature sensor
- Installation via mounting plate without opening the controller
- Universal design and low installation height of 14 mm for inconspicuous fitting

Technical data

Power supply		
	Power supply	100240 V~, 50/60 Hz
	Power consumption	5 VA
Ambient conditions		
	Ambient temperature	040 °C
	Ambient humidity	1090% rh, no condensation
	Storage and transport temperature	-1060 °C
Inputs/outputs		
Inputs	Temperature sensor	NTC 10k
	Digital input	closed < 0.3 V= open > 0.7 V=
	Analogue input	010 V
Outputs	Analogue output U	010 V (100 kΩ)
	Relay output	2.2 A (I _R); 3.6 A (I _X)
		cos φ 0.98 each at 240 V~
Interfaces, communication	_	
RS-485	Communication protocol	Modbus/RTU
	Connection	Screw terminal, 3-pole 0.141.5 mm² rigid
		A (D+) / B (D-)
	Bus speed	4800, 9600 bit/s (adjustable)
	Address range	164
	Function codes	01, 03, 04, 06, 16
	CRC check	CRC-16
	Data type	u16
	Data format	10 bit, 1 start, 8 data, 1 stop, no parity
	Indicator/display	LCD display with backlight (adjustable)
	Buttons	6
Construction		
COLDI GOLOTI	Weight	0.3 kg
	Dimensions W × H × D	88 × 88 × 46.2 mm
	Housing	Upper and lower part white
	Housing material	Polycarbonate
	Fitting	On round or square recessed box
	11111119	On round or square recessed box



NRFC413MF111





Standards, directives		
	Type of protection	IP20 (EN 60529)
	Protection class	II as per IEC 60730
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1, EN 60730-2-9 residential premises Type 1.C
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9
	RoHS Directive 2011/65/EU	EN IEC 63000

Inputs/outputs

Туре	Al	DI	AO	DO
NRFC413MF111	1 × NTC, 1 × 010 V	1	1	3 × relay (single-pole normally-open contact)
NRFC422MF111	1 × NTC	1	0	5 × relay (single-pole normally-open contact)
NRFC423MF111	1 × NTC	1	2	3 × relay (single-pole normally-open contact)
NRFC424MF112	1 × NTC	1	2	3 × relay (single-pole normally-open contact)

Overview of types		
Туре	Description	Fan
NRFC413MF111	2-pipe, continuous, with positional feedback signal	3 speeds
NRFC422MF111	2-pipe or 4-pipe, 2-point	3 speeds
NRFC423MF111	2-pipe or 4-pipe, continuous	3 speeds
NRFC424MF112	2-pipe or 4-pipe, 2-point or 2-pipe, continuous	EC motor with cut-off function



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	TRA 410, 421	TRT 317, 327
Application		
Controller	•	•
Electrical distributor	-	-
Operating device	•	•
Circuits/zones		
Channels	-	-
Time programme/set-back mode	•	•
Power supply		
24 V / 230 V	•	•
Battery mode	-	-
Operation and indicator		
Display	•	-
Sensor buttons	-	-
Rotary knob	•	•
Status LED	-	-
Communication and functions		
Communication via wireless connection	-	-
Communication via wire connection	•	•
Network connection/LAN	-	-
Heating/cooling	•	•
Access via app	_	-
Further information	Page 93	Page 95





Type designation	FXV 3***	FXV 33**
Application		
Controller	-	-
Electrical distributor	•	•
Operating device	-	-
Circuits/zones		
Channels	6/10	8
Time programme/set-back mode	•	•
Power supply		
24 V / 230 V	• / •	-/•
Battery mode	-	-
Operation and indicator		
Display	-	-
Sensor buttons	-	-
Rotary knob	-	-
Status LED	•	•
Communication and functions		
Communication via wireless connection	-	-
Communication via wire connection	•	•
Network connection/LAN	-	-
Heating/cooling	•	•
Access via app	_	-
Further information	Page 97	Page 99

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

Power supply		
	Power supply	See type list
	Power consumption	< 0.3 W in idle state
	Fuse	In housing:
		230 V= T1AH
		24 V= T1A
arameters		
arameters	Number of actuators	AXT:
	Number of actuators	
		230 V, max. 5 pcs. parallel
	C m.	24 V, max. 4 pcs. parallel
	Setting range	530 °C
	Switching difference	±0.2 K
	Set-back	2 K or adjustable
	Measuring element	NTC 22k
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	580% 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
nputs/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
		$0.22 \text{ mm}^2 \text{ to } 1.5 \text{ mm}^2$
	Power cable	Solid:
		NYM-J/NYM-O ($max. 5 \times 1.5 mm^2$)
		Flexible:
		H03V2V2H2-F / H05V2V2H2-F

Standards, 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			
Туре	Description	Power supply	Weight
TRA410F210	Heating, lowering, frost protection function	230 V~, ±10%, 50 Hz	130 g
TRA410F212	Heating, lowering, frost protection function	24 V~, ±20%, 50 Hz	130 g
TRA421F210	Heating/cooling, lowering, frost pro- tection and valve protection function, cooling lock	230 V~, ±10%, 50 Hz	140 g
TRA421F212	Heating/cooling, lowering, frost pro- tection and valve protection function, cooling lock	24 V~, ±10%, 50 Hz	140 g

Accessories	
Туре	Description
AXT3**	Thermal actuators for unit valves (see product data sheet)
EGT554F103	Cable temperature sensor, NTC 22k, -35100 °C, IP67, length 3 m



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







Power supply		
tower 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		
alaneers	Number of actuators	AXT: 230 V, max. 6 pcs. parallel 24 V, max. 4 pcs. parallel
	Setting range	1028 °C
	Switching difference	±0.5 K
	Set-back	2 K
	Measuring element	NTC
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	580% 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
nputs/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		
Joint Continues / Cable	Connection terminals	Screw terminals
	Connection letinings	0.22mm ² to 1.5mm ²
	Switching difference	±0.5 K
	Cord grip	External



Standards, 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			
Туре	Description	Voltage	Weight
TRT317F210	Heating, lowering, frost protection function	230 V~, ± 10 %, 50 Hz	90 g
TRT317F212	Heating, lowering, frost protection function	24 V~, ± 20 %, 50 Hz	90 g
TRT327F210	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	230 V~, ± 10 %, 50 Hz	135 g
TRT327F212	Heating/cooling, lowering, frost protection and valve protection function, cooling lock	24 V~, ± 10 %, 50 Hz	135 g

Accessories	
Туре	Description
AXT3**	Thermal actuators for unit valves (see product data sheet)



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 VAC	±10%, 5060 Hz
	Power supply 24 VAC	±20%, 5060 Hz
	Distributor fuse 24 V	T2A
	Distributor fuse 230 V	T4AH
Parameters		
	Circuits/zones	6 or 10
	Timer channels/set-back	2
Ambient conditions		
	Ambient temperature	050 °C
	Storage temperature	-2070 °C
	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 mm ² 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



FXV3210F002

FXV





Single-room, heating and air-conditioning controllers | Single-room control

Standards, 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				
Туре	Nominal voltage	Features	Channels	Weight
FXV3006F001	24 V~ / 230 V~	Heating, with decrease	6	482 g
FXV3110F001	230 V~	Heating/cooling, with decrease and pump control	10	515 g
FXV3110F002	24 V~	Heating/cooling, with decrease and pump control	10	515 g
FXV3210F001	230 V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	550 g
FXV3210F002	24 V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	534 g

Accessories	
Туре	Description
0450573001	Transformer 230 / 24 V, 42 VA



FXV 33** EasySwitch: Electric distributor for control signals

Features

- For the control of a maximum of twelve thermal actuators for unit valves and the connection of up to eight room thermostats
- Flexible assignment of the actuators to the room thermostats via rotary switch
- Distribution of the power supply, the positioning signals and a shared time programme for room operating
- Easy-to-change channel assignment without rewiring
- Pump logic module for activating a circulation pump
- Input for timer for individual forwarding of time commands to the heating zones
- LED status indicators for power supply, pump logic module and active heating channels
- Integrated cable guides and terminal connection without tools
- Fitting on DIN rail or wall mounting

Technical data

recrifical data		
Power supply		
	Power supply	230 V~, ±10%, 5060 Hz
	Distributor fuse 230 V	T4AH (5 × 20 mm)
Parameters		
	Control loops/heating zones ¹⁾	Max. 8 inputs
	Timer channel/set-back	Yes
Ambient conditions		
	Ambient temperature	050 °C
	Storage temperature	−2070 °C
	Ambient humidity	1085% rh
	·	
Inputs/outputs		
Outputs	Number of actuators	Max. 12 thermal actuators for unit
		valves (for heating circuits)
	Pump connection	Max. 2 (1) A
Inputs	Set-back	Contact input
a , , , ,		
Construction		
	Housing material	PC-ABS plastic, black (similar to RAL9005)
		Fire-retardant as per UL94V-0
	Cover material	PC plastic, grey transparent
	Cover malerial	Fire-retardant as per UL94V-0
	Fitting	Mounted unit, DIN rail, 35 mm
	•	or optionally screw-on mounting
	Dimensions W × H × D	350 × 100 × 52 mm
Connection terminals / cab	le	
	Connection terminals	Spring-loaded plug-in connectors
	Cable cross-section	0.51.5 mm ²
	Power cable	Solid: NYM-J/NYM-O
		$(max. 5 \times 1.5 \text{ mm}^2)$
		Flexible: H05V2V2H2-F
	Cable clamping device	Cable fastening points integrated with- out tools into housing



FXV3308F011





¹⁾ TRA or TRT room thermostats: TRA: max. five AXT per heating zone TRT: max. six AXT per heating zone

Single-room, heating and air-conditioning controllers | Single-room control

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

Overview of ty	Overview of types			
Туре	Nominal voltage	Features	Channels	Weight
FXV3308F011	230 V~	Heating/cooling, with decrease, pump logic and LED indicator	8	580 g



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. Using communication accessories, the devices can be networked together in larger plants or integrated into a building automation system. 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	EQJW246F002
Application				
Solar	-	•	•	•
Boiler control	-	•	•	•
Supply temperature control	•	•	•	•
Heating of drinking water	-	•	•	•
Local/district heating	•	•	•	•
Operation				
Symbol display	•	•	-	-
Graphics display	-	-	•	•
Function				
Control loops	1	2 3		3
Switching programmes	•	•	•	•
Inputs/outputs				
Inputs/outputs (010 V)	-		1	1/1
Digital inputs	-	2		17
Analogue inputs (Ni1000/ Pt1000)	3	8		1 <i>7</i>
Relay (pump/actuator)	3	;	7	11
Communication				
Interfaces	RJ45			
Protocols	٨			Modbus RTU, Device bus (TAP), M-Bus
Logbook	-	-	•	•
Further information	Page 102	Page 104	Page 104	Page 107



EQJW126F001

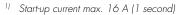


EQJW 126: Heating controller with digital user interface, equitherm

Features

- Pl 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.

Toominour data		
Power supply		
	Power supply	230 V~, ±15%, 5060 Hz
	Power consumption	Approx. 1.5 VA
		la la caracteristica de la car
Parameters		
Control parameters	Amplification KP	0.150
	Integral action time	1999 seconds
	Frost-protection temperature	3 °C
Temperature ranges	Normal temperature	040 °C
	Reduced temperature	040 °C
	Supply temperature	−5150 °C
	Outdoor temperature	−5050 °C
	Cycle time	Running time of the valve ÷ 15
	Running time of valve	30300 seconds
Ambient conditions		
	Ambient temperature	040 °C
	Ambient humidity	595% rh, no condensation
	Storage and transport temperature	-1060 °C
Inputs/outputs		
	Number of inputs	3 analogue, Ni1000/Pt1000
	Number of outputs	3 relays
	Pump relay ¹⁾	$1 \times 2 \text{ A}, 250 \text{ V} \sim , \cos \phi > 0.5$
	Actuator relay (3-point or 2-point) ²⁾	$2 \times 2 \text{ A}, 250 \text{ V} \sim , \cos \phi > 0,5$
Function		
Digital timer for weekly/annual switching programme	Backup power supply	Min. 24 hours, typically 48 hours
	Accuracy	< 10 minutes/year
Weekly switching programme	Number of switching commands	42/week
	Min. switching interval	15 minutes
Annual switching programme	Number of switching commands	20
	Min. switching interval	1 day



²⁾ Extra low voltage not admissible



Interfaces and communication	n	
	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, switch panel, DIN rail
	Screw terminals	For electrical cables of up to 2.5 mm ²
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		
Туре	Features	
EQJW126F001	Heating controller with digital user interface	

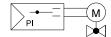
Accessories	
Туре	Description
AVF***	Motorised valve actuator (see product data sheet)
AVM***	Motorised valve actuator (see product data sheet)
AXM***	Motorised valve actuator (see product data sheet)
EGT***	External temperature sensor Ni1000 (see product data sheet)
0440210001	Communication module for 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
0440210010	Parameter storage module for transferring controller parameters
0440210012	Cable converter, 2 conductors, RS-485





EQJW146F002





EQJW 146: Heating and district heating controller, equitherm

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
- 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.

Power supply		
	Power supply	230 V~, ±15%, 5060 Hz
	Power consumption	Approx. 1.5 VA
Parameters		
Control characteristic	Supply temperature	PI control
	Drinking water temperature	2-point
Control parameters	Amplification KP	0.150
	Integral action time	1999 seconds
	Switching difference for drinking water	130 K
Temperature ranges	Normal temperature	040 °C
	Reduced temperature	040 °C
	Supply temperature	0140 °C
	Return temperature	0140 °C
	Outdoor temperature	−5050 °C
	Drinking water temperature	2090 °C
	Frost-protection temperature	-153°C
	Running time of valve	30300 seconds
	Cycle time	Running time of the valve ÷ 15
Ambient conditions		
	Ambient temperature	040 °C
	Ambient humidity	595% rh, no condensation
	Storage and transport temperature	-1060 °C
Inputs/outputs		
	Number of outputs	7 relays
	Pump relay ¹⁾	$3 \times 2 \text{ A}, 250 \text{ V} \sim , \cos \phi > 0.5$



¹⁾ Start-up current max. 16 A (1 second)



Actuator relay ²⁾	$4 \times 2 \text{ A}, 250 \text{ V} \sim, \cos \phi > 0.5$
Continuous input/output ³⁾	1 × 010 V
Number of inputs	2 digital, 8 analogue
Analogue inputs	8 Ni1000/Pt1000

Wall, switch panel, DIN rail

	Analogue inputs	8 Ni1000/Pt1000
Function		
Timer	Backup power supply	Min. 24 hours, typically 48 hours
	Accuracy	< 10 minutes/year
Weekly switching programme	Number of programmes	3
	Number of switching commands	42 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 day
Interfaces and communication		
Communication	Interface	RJ45
	Protocol	Modbus, device bus (TAP)
Construction		
	Weight	0.5 kg
	Dimensions	$144 \times 98 \times 54 \text{ mm}$
	Housing	Light-grey
	Housing material	Fire-retardant thermoplastic

	Screw terminals	For electrical cables of up to 2.5 mm ²
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

Fitting

Overview of types

Туре EQJW146F002 Heating and district heating controller with graphic display

Accessories	
Туре	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

Extra low voltage not admissible



As input for requirement or outside temperature signal. As output for continuous control or requirement request, load $> 5~k\Omega$

Single-room, heating and air-conditioning controllers | equitherm heating control

Туре	Description
0440210010	Parameter storage module for transferring controller parameters
0440210012	Cable converter for 2-conductor RS-485 interface



EQJW 246: Heating and district heating controller, equitherm

Features

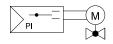
- Max. three control loops in the following combinations:
- Control of a primary heat exchanger or boiler, two regulated and one unregulated heating circuit, and control of the drinking water heating in the secondary circuit
- Weather-dependent buffer tank control with solid fuel boiler and solar circuit control, as well as max. two mixed-heating circuits
- Control of two weather-dependent heating circuits and one drinking water heating with three valves in the primary circuit
- Control of three weather-dependent heating circuits
- Different system models, e.g. for district heating, single-stage boilers, buffer tanks, drinking water heating with solar energy
- Weather-dependent supply temperature control based on heating characteristic or 4-point characteristic
- To regulate more circuits, multiple controllers can be connected to each other via a device bus
- Convenient operation with state-of-the-art operating concept (turn and press) and large graphical display
- Convenient weekly and annual switching programmes with optimisation of switching times
- Automatic summertime/wintertime change-over
- 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
- 0...10 V input for external requirement or outdoor temperature signal
- 0...10 V output for continuous control for control loop RK1 or signal for external requirement
- Binary inputs for fault signals or external requirement processing
- Interface for various accessories such as modem, gateway, data storage module etc.

Power supply		
	Power supply	230 VAC, ±15%, 5060 Hz
	Power consumption	Approx. 1.5 VA
Parameters		
Control characteristic	Supply temperature	PI control
	Drinking water temperature	2-point
Control parameters	Amplification KP	0.150
	Integral action time	1999 seconds
	Switching difference for drinking water	130 K
Temperature ranges	Normal temperature	040 °C
	Reduced temperature	040 °C
	Supply temperature	0140 °C
	Return temperature	0140 °C
	Outdoor temperature	−5050 °C
	Drinking water temperature	2090 °C
	Frost-protection temperature	-153°C
	Running time of valve	15240 seconds
	Cycle time	Running time of the valve ÷ 15











Ambient conditions		
	Ambient temperature	040 °C
	Ambient humidity	595% rh, no condensation
	Storage and transport temperature	−1060 °C
Inputs/outputs	·	
	Number of outputs	11 relays, 2 × 010 V
	Pump relay ¹⁾	$5 \times 2 \text{ A}, 250 \text{ V} \sim, \cos \phi > 0.5$
	Actuator relay ²⁾	6 × 2 A, 250 V~, cos φ > 0,5
	Continuous output	 010 V (e.g. for continuous control, outdoor temperature, external requirement request or for speed control of pumps, load > 5 kΩ) 0/10 V PWM signal for speed control of pumps 17 configurable Ni1000/Pt1000 and binary 1 × 010 V (e.g. for requirement or outdoor temperature) 1 × pulse 3800 lmp/h of heat meter for output limitation in RK1
		ioi coipoi illillidion ili kki
Function		
Timer	Backup power supply	Min. 24 hours, typically 48 hours
	Accuracy	< 10 minutes/year
Weekly switching programme	Number of programmes	3
	Number of switching commands	42 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 day
Interfaces, communication	AA D	F
	M-Bus	For max. 3 M-Bus units, protocol as per EN 1434-3 (with accessories)
	Device bus interface	RS-485, for max. 32 bus participants (2-wire bus, inverse, with protection against reversed polarity, with accessories)
	Modbus	Optional, for 2-wire bus with RS-485 communication module (Modbus RTU protocol, data format 8N1, RJ45)
Construction		
Ooristi uotiori	Weight	0.5 kg
	Dimensions	144 × 98 × 54 mm
	Housing	Light-grey
	Housing material	Fire-retardant thermoplastic
	Fitting	Wall, switch panel, DIN rail
	Screw terminals	For electrical cables up to 2.5 mm ²
		,
Standards, directives		
	Type of protection	IP40 (EN 60529) (panel mounting)
	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

Start-up current max. 16 A (1 second)

2) Extra low voltage not admissible

Overview of types

Features

EQJW246F002 Heating and district heating controller with graphic display

Accessories	
Туре	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
0440210006	ModBus-MBus gateway
0440210011	ModBus-GPRS gateway
0440210007	Converter/repeater for RS-232 or RS-485 interfaces
0440210008	RS-485 overvoltage protection
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



	flexotron400		
Type designation	RDT405F201	RDT410F*01	
Control loops			
Cascade	-	•	
P-controller	•	•	
Pl-controller	•	•	
PID-controller	-	•	
Function			
Time programme	-	•	
Communication			
Number of inputs	3	5	
Number of outputs	2	5	
Modbus	-	-	
BACnet	-	-	
Serial interface for parameters and configuration	-	-	
Application			
Supply temperature control	•	•	
Supply air cascade control	-	•	
Air-conditioning control	-	-	
Further information	Page	e 111	

RDT 405, 410: Electronic controller for simple applications, flexotron400

Features

- Five different control models for each device, for temperature, pressure, CO₂, supply air cascade, heating
- Easy to operate with large, illuminated LCD and rotary knob
- Fast commissioning due to simple operating concept
- Weekly programme (depending on variant)
- External setpoint

Technical data

Power supply		
	Power supply	24 V~, ±15%, 5060 Hz (RDT4**F201 230 V~, +10%/-15% 5060 Hz (RDT4**F301)
RDT 405	Power consumption	4 VA, 2 W
RDT 410	Power consumption	7.5 VA, 5 W
	Start-up current	16 A (2 ms) 24V~ devices 23 A (2 ms) 230 V~ devices
Parameters		
	Control characteristics	P/PI
	P-band X _p	099 K
	Integral action time	0990 s
Setting and measuring ranges		
RDT 405	Measuring range, temperature	-2060, 20100, 60140°C
RDT 410	Measuring range, temperature	580, -3050°C
	Input for external setpoint	040°C
	Humidity	0100% rh
	Humidity	0100% rh
	CO ₂	109900 ppm for 100% signal
Ambient conditions		
	Ambient temperature	050 °C
	Ambient humidity	595% rh, no condensation
	Storage and transport temperature	-2070 °C
Transita / asstrosta		
Inputs/outputs	11: 1: .	N:1000 (DINI 427/0)
	Universal inputs	Ni 1000 (DIN 43760) Potential-free contacts
	Digital inputs	
	Analogue inputs	Ni 1000 (DIN 43760) for temperature setpoint
	Analogue outputs	010 V, 2 mA, protected against short circuit
	Digital outputs	RDT410F201: Triac
		2 × 24 V~, 0.3 A 1 × 230 V~, 5 A RDT410F301:
		Triac 2 × 24 V~, 0.16 A
		1 × 230 V~, 5 A
Construction		



RDT4**F*01



RDT405F201



RDT410F*01



Dimensions $W \times H \times D$

Screw terminals Fitting

Housing material

 $123\times99\times64~\text{mm}$

PC+ABS

Top-hat rail, wall, panel

For electrical cables of up to $1.5\ mm^2$

Standards and directives			
	Type of protection ¹⁾	IP20 (EN 60529)	
	Protection class	II (RDT410F301 only)	
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN61000-6-3	_

Overview of types								
Туре	Analogue inputs	Digital in- puts	Universal in- puts	Analogue outputs	Digital out- puts	Input for ex- ternal set- point	Week time- switch	Weight
RDT405F201	1	1	1	2	0	1	_	0.2 kg
RDT410F201	2	2	1	2	3	1	•	0.3 kg
RDT410F301	2	2	1	2	3	1	•	0.45 kg

[₩] Week time-switch: only RDT410F*01 (number of switching commands: 8)

Accessories	
Туре	Description
XYE460F001	flexotron400 demo case
0460240001	flexotron400/800 pluggable terminal strips
0460240010	Cabinet fitting kit for flexotron400
EGT388F102	External setpoint adjuster, room operating unit with potentiometer and temperature sensor, recessed
EGT333F102	External setpoint adjuster, room operating unit with potentiometer and temperature sensor, surface-mounted



¹⁾ When installed

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

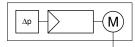


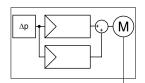


Type designation	ASV205BF132*, ASV215BF132*	ASV215BF152*
Technical data		
Adm. dimensions of damper shaft (mm)	Ø 816	Ø 816
Running time (s)	30105 60105	315
Power supply (V)	24	24
Communication/protocol	RS-485 SLC / BACnet MS/TP	RS-485 SLC / BACnet MS/TP
Further information	Page 114	Page 11 <i>7</i>



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 applications¹⁾:
 - 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 integrating:
 - 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 software²:
 - Volume flow control
 - Room pressure control
 - Duct pressure control
- Adjustable end values of the differential pressure measuring range³⁾
 - 100...300 Pa
- Efficient control algorithm for fast control loops
- Priority control via switching contacts
- Zero point can be calibrated

Power supply		
	Power supply ⁴⁾	24 V~, +/-20%, 5060 Hz 24 V=, -10%/+20%
Power consumption at nominal voltage 50/60 Hz (~/=)	Rated power during continuous operation ⁵⁾	4.7 VA/2.5 W
	Power consumption when idle ⁶⁾	1.5 VA/0.7 W

⁶⁾ Holding torque ASV205*: 4 Nm ASV215*: 8 Nm



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*



Integrated damper actuator	Angle of rotation ⁷⁾	90°		
iniegralea adinper acteurer	Admissible dimensions of damper shaft Ø 816 mm, □ 6.512			
	Admissible damper shaft (hardness) Max. 300 HV			
	Surge-voltage resistance	500 V (EN 60730)		
	Operating noise	< 35 dB (A)		
An concor		0500 Pa		
∆p sensor	Measuring range Δp (gain = 1) ⁸			
	Linearity error Time constant	2% (at 25 °C) 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 = 3.56 mm		
Ambient conditions				
	Operating temperature	055 °C		
	Storage and transport temperature	-2055 °C		
	Humidity	< 85% rh, no condensation		
Inputs/outputs				
	Analogue inputs	$010 \text{ V } (R_i = 100 \text{ k}\Omega)$		
	Analogue outputs	010 V, load > 10 k Ω		
	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),		
	Resolution	Pt1000 (EN 60751) 0.3 °C (Ni1000/Pt1000),		
	Resolution	0.1 °C (NTC)		
	Measuring difference	+/- 0.6 °C		
	PWM	0.3 A at 24 V ~/=		
	LAAIAI	Period duration 1 s15 minutes		
		0100%		
Turk-of d				
Interfaces and communication	RS-485 not electrically isolated	115 kBaud		
	Communication protocols	SAUTER Local Communication (SLC),		
		BACnet MS/TP, 1/4 load		
	Access method	Master/slave		
	Topology	Line		
	Number of participants ¹³⁾	31 (32) with SLC		
	Bus termination	120 Ω (both ends)		
Construction	Maria.	0.01		
	Weight	0.8 kg		
	Fitting	Self-centring spindle adapter		
Standards and directives				
	Type of protection	IP00, IP30 (EN 60529) (with protec-		
	· · · · · · · · · · · · · · · · · · ·	tion 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)

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						
Туре	Measuring range Δp	Running time for 90°	Rotational torque	Holding torque		
ASV205BF132E	0300 Pa	30, 45, 60, 75, 90, 105 s	5 Nm	4 Nm		
ASV215BF132E	0300 Pa	60, 75, 90, 105 s	10 Nm	8 Nm		

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

Accessories	
Туре	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-RS-485 converter
0297867001	Reference pressure container
0430360100	IP30 protection set
0430360200	Replacement LP connector
0372129001	Torsion protection



ASV215BF152*: VAV compact controller for laboratory and pharmaceutical applications

Features

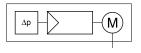
- Controlling the return air in fume cupboards and controlling the supply and return air in laboratories, clean rooms, hospital wards and operating theatres using a VAV box or a damper and flow probe
- Static measurement of differential pressure based on the capacitive method of measurement
- Zero point can be calibrated using software
- Adjustable end values of the differential pressure measuring range¹⁾
 - 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:21
 - 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
- $2 \times RS-485$ 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/TP4)
 - 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

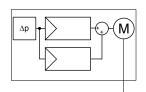
Power supply		
	Rotational torque	10 Nm
	Power supply ⁵⁾	24 V~, ±20%, 5060 Hz
		24 V=, -10%/+20%
Power consumption at nominal voltage		Approx. 19 VA/10 W (10 Nm)
$50/60 \text{ Hz}$ (\sim /=) after 3 s running time	during continuous operation	Approx. 20 VA/11 W with FCCP 200
	Power consumption when idle 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

²⁴ V=: Analogue inputs that are not connected are rated 0 V. The nominal torque is achieved within the specified toler-

Holding torque approx. 5 Nm

Rotational torque Holding torque '' 2 Nm	Parameters		
Holding torque ⁷⁾ 2 Nm	raidilleleis	Potational torque	10 Nm
Angle of rotation 90°		-	
Running time for 90 *** Admissible dimensions of damper shaft Ø 816 mm	Integrated damper actuator		=
Admissible dimensions of damper shoft	inlegialed damper actualor		· ·
Admissible damper shaft (hardness) Max. 300 HV			
Surge-voltage resistance		•	
Operating noise			
Δp sensor Measuring range Δp (gain = 1) Pressure range, types D/E¹ºl⟩ 0150/300 Pa Linearity error Time constant Influence of position¹¹¹ 0.1 s Influence of position¹¹¹ Typically ±1 Pa Reproducibility 0.2% FS Zero point stability 0.2% FS (et 20 °C) Admissible positive pressure ±10 kPa Admissible operating pressure p _{stan} ²²¹ ±3 kPa Low-pressure connections²¹³¹ Ø i = 3.56 mm Ambient conditions Operating temperature connections²¹³¹ 055 °C Storage and transport temperature -2055 °C Humidity < 85% rh, no condensation			_,·
Pressure range, types D/E 100 Linearity error	A		
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Δp sensor	Pressure range, types D/E ¹⁰⁾	,
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			
Reproducibility Zero point stability Zero point stability Q.2% FS (at 20 °C)			
		•	
Admissible positive pressure		Reproducibility	0.2% FS
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			· · · · · · · · · · · · · · · · · · ·
Low-pressure connections Ø i = 3.56 mm			±10 kPa
Ambient conditions Operating temperature O55 °C Storage and transport temperature -2055 °C Humidity < 85% rh, no condensation		Admissible operating pressure p _{stat} ¹²⁾	±3 kPa
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Low-pressure connections ¹³⁾	Ø i = 3.56 mm
$\begin{tabular}{l l l l l l l l l l l l l l l l l l l $	Ambient conditions		
		Operating temperature	055 °C
			-2055 °C
$\begin{tabular}{lll} Analogue inputs $^{14]}$ & $010 \ V \ (R_i = 100 \ k\Omega)$ \\ \hline Digital inputs $^{15]}$ & $Closed \ 1 \ V=, 1 \ mA, open $> 2 \ V=$ \\ \hline Analogue outputs $^{16]}$ & $010 \ V, load $> 10 \ k\Omega \\ max. cable length $30 \ m$ \\ max. adm. external voltage $\pm 24 \ V$ \\ \hline Digital output & $0.3 \ A \ at \ 24 \ V \ \sim/=$ \\ \hline \end{tabular}$ $\begin{tabular}{lll} Interfaces and communication & & & & & & & & & & & & & & & & & & &$		Humidity	< 85% rh, no condensation
$\begin{tabular}{lll} Analogue inputs $^{14]}$ & $010 \ V \ (R_i = 100 \ k\Omega)$ \\ \hline Digital inputs $^{15]}$ & $Closed \ 1 \ V=, 1 \ mA, open $> 2 \ V=$ \\ \hline Analogue outputs $^{16]}$ & $010 \ V, load $> 10 \ k\Omega \\ max. cable length $30 \ m$ \\ max. adm. external voltage $\pm 24 \ V$ \\ \hline Digital output & $0.3 \ A \ at \ 24 \ V \ \sim/=$ \\ \hline \end{tabular}$ $\begin{tabular}{lll} Interfaces and communication & & & & & & & & & & & & & & & & & & &$			
$\begin{array}{c} \text{Digital inputs}^{15)} & \text{Closed 1 V=, 1 mA,} \\ & \text{open} > 2 \text{ V=} \\ \\ \text{Analogue outputs}^{16)} & \text{O10 V, load} > 10 \text{ k}\Omega \\ & \text{max. cable length 30 m} \\ & \text{max. cable length 30 m} \\ & \text{max. adm. external voltage } \pm 24 \text{ V} \\ \\ \text{Digital output} & \text{O.3 A at } 24 \text{ V } \sim /= \\ \\ \hline \textbf{Interfaces and communication} \\ \hline \begin{array}{c} \text{RS-485 not electrically isolated} \\ \text{Communication protocols}^{17)} & \text{SAUTER Local Communication (SLC),} \\ \text{BACnet MS/TP, 1/4 load} \\ \text{Access method} & \text{Master/slave} \\ \hline \text{Topology} & \text{Line} \\ \text{Number of participants}^{18)} & 31 (32) \text{ with SLC} \\ \hline \text{Bus termination} & 120 \Omega \text{ (both ends)} \\ \hline \\ \textbf{Construction} \\ \hline \\ \textbf{Construction} \\ \hline \\ \textbf{Standards and directives} \\ \hline \\ \text{Type of protection} & \text{IP00, IP30 (EN 60529) (with protection set)} \\ \hline \end{array}$	Inputs/outputs		
$\begin{array}{c} & \text{open} > 2 \text{ V=} \\ \\ \text{Analogue outputs}^{16)} & \text{O10 V, load} > 10 \text{ k}\Omega \\ \\ \text{max. cable length 30 m} \\ \text{max. adm. external voltage } \pm 24 \text{ V} \\ \\ \hline \text{Digital output} & \text{O.3 A at } 24 \text{ V} \sim /= \\ \\ \hline \\ \text{Interfaces and communication} \\ \hline \\ \text{RS-485 not electrically isolated} & \text{115 kBaud} \\ \\ \text{Communication protocols}^{17)} & \text{SAUTER Local Communication (SLC), BACnet MS/TP, } \text{ Va load} \\ \hline \\ \text{Access method} & \text{Master/slave} \\ \hline \\ \text{Topology} & \text{Line} \\ \hline \\ \text{Number of participants}^{18)} & \text{31 (32) with SLC} \\ \hline \\ \text{Bus termination} & \text{120 }\Omega \text{ (both ends)} \\ \hline \\ \text{Construction} \\ \hline \\ \text{Weight} & \text{O.8 kg} \\ \hline \\ \text{Fitting} & \text{Self-centring spindle adapter} \\ \hline \\ \text{Standards and directives} \\ \hline \\ \text{Type of protection} & \text{IP00, IP30 (EN 60529) (with protection set)} \\ \hline \end{array}$		Analogue inputs ¹⁴⁾	$010 \text{ V } (R_i = 100 \text{ k}\Omega)$
Analogue outputs ¹⁶⁾ O10 V, load > 10 kΩ max. cable length 30 m max. adm. external voltage ±24 V Digital output O.3 A at 24 V ~/= Interfaces and communication RS-485 not electrically isolated Communication protocols ¹⁷⁾ SAUTER Local Communication (SLC), BACnet MS/TP, ½ load Access method Access method Master/slave Topology Line Number of participants ¹⁸⁾ Number of participants ¹⁸⁾ Bus termination 120 Ω (both ends) Construction Weight O.8 kg Fitting Self-centring spindle adapter Standards and directives Type of protection IPO0, IP30 (EN 60529) (with protection set)		Digital inputs ¹⁵⁾	
Digital output 0.3 A at 24 V ~/=		Analogue outputs ¹⁶⁾	010 V, load > 10 k Ω max. cable length 30 m
RS-485 not electrically isolated Communication protocols 17) SAUTER Local Communication (SLC), BACnet MS/TP, ½ load Access method Access method Master/slave Topology Line Number of participants 18) Bus termination 120 Ω (both ends) Construction Weight Fitting Self-centring spindle adapter Type of protection IP00, IP30 (EN 60529) (with protection set)		Digital output	0.3 A at 24 V ~/=
RS-485 not electrically isolated Communication protocols 17) SAUTER Local Communication (SLC), BACnet MS/TP, ½ load Access method Access method Master/slave Topology Line Number of participants 18) Bus termination 120 Ω (both ends) Construction Weight Fitting Self-centring spindle adapter Type of protection IP00, IP30 (EN 60529) (with protection set)			
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)	Interfaces and communication		
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)		RS-485 not electrically isolated	115 kBaud
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		Communication protocols ¹⁷⁾	. ,,
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		Access method	Master/slave
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		Topology	<u> </u>
		Number of participants ¹⁸⁾	31 (32) with SLC
Weight 0.8 kg Fitting Self-centring spindle adapter Standards and directives Type of protection IP00, IP30 (EN 60529) (with protection set)		Bus termination	120 Ω (both ends)
Weight 0.8 kg Fitting Self-centring spindle adapter Standards and directives Type of protection IP00, IP30 (EN 60529) (with protection set)			
Standards and directives Type of protection IPO0, IP30 (EN 60529) (with protection set)	Construction	we to	2.21
Standards and directives Type of protection IP00, IP30 (EN 60529) (with protection set)			
Type of protection IP00, IP30 (EN 60529) (with protection set)		Fiffing	Self-centring spindle adapter
tion set)	Standards and directives		
		Type of protection	•
		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

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,
	FN 61000-6-2

Overview of types		
Туре	Measuring range Δp	
ASV215BF152D	0150 Pa	
ASV215BF152E	0300 Pa	

Accessories	
Туре	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-RS-485 converter
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-RC 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-buttons1)
- Chemical-resistant glass surface
- Units that can be displayed: m/s, fps, l/s, m3/h, cfm, Pa, °C, °F, %rh, ppm

Power supply		
	Power supply	5 V, ±10%
	Power consumption	0.4 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	−550 °C
Admissible ambient conditions		
	Operating temperature	545 °C
	Storage temperature	-2080 °C
	Humidity without condensation	< 585% rh
Construction		
	Dimensions $W \times H \times D$	169 × 36 × 12 mm
Standards and directives		
	Protection class	III (EN 60730)
	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



²⁾ Can be set using software.



³¹ After it is installed, the temperature sensor must be calibrated using CASE Engine software during the commissioning.

Overview of types

Features

FCCP200F010 Fume cupboard monitor and indicator

Accessories

Туре	Description
0300360001	USB-RS-485 converter
0430600100	USB-C RJ12 cable FCCP 200



Valves, control valves, dampers, actuators

A high degree of flexibility provides optimum results.

SAUTER's valves and SUT actuators 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 the latest addition to the portfolio, the Smart Actuator, predictive maintenance has become reality: The Smart Actuator enables the heating, ventilation and air-conditioning regulation to be performed autonomously. SAUTER provides cloud-based applications for controlling various plants. Commissioning then follows through simple configuration in the mobile app. Operating data is visualised graphically via the SAUTER Cloud, allowing operation to be optimised online via smartphone.





Valve specification – calculating made easy

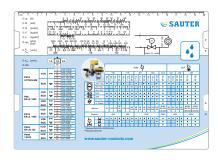
SAUTER valve slide rule

Use SAUTER's practical valve slide rule 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

- 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.

VALVEDIM is available from your SAUTER subsidiary or as a download at https://www.sauter-controls.com/produkt/case-suite/





[2]



SAUTER CASE ValveDim mobile app

With the new CASE ValveDim mobile app, finding the right parts and the ideal valve/actuator combinations is impressively convenient and very efficient: Intuitive operation makes it easier to search for individual products and combine them.

Selected valve/actuator combinations can be stored in projects. Personal lists with valve/actuator combinations can be exported from the app as a project table in PDF format so that they can be shared with contacts. What's more, CASE ValveDim can also be used offline.





[1]

Valve specification - manual calculation

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

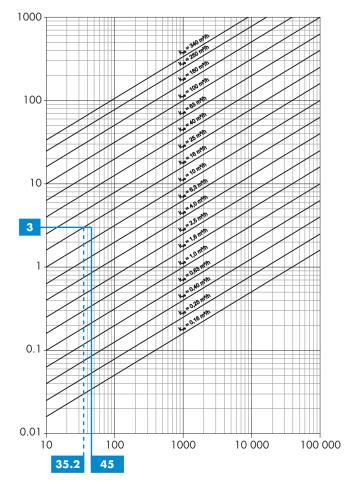
[1] Variables, constants and formulas

Variable	Description		Value	Unit
Ÿ	Volume flow			m³/h
Q _{to}	Supplied heat per unit of time (heat flow)			kW, kJ/h
Q _{from}	Supplied heat per unit of time (heat flow)			kW, kJ/h
Δ†	Temperature difference			K
C _W	Specific thermal capacity of water		4,19 =1,164·10 ⁻³	kJ/(kg·K) kWh/(kg·K)
$\rho_{\scriptscriptstyle{W}}$	Density of water	Supposition:	$\rho_{\rm W} = const. = 1000$	kg/m³
Δp_{v}	Pressure difference across the valve			bar, kPa
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			m³/h

Calculation formula for k [2]

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

Diagram



[4] **Calculations**

The following are given:

$$\dot{Q}_{to} = 70 \text{ kW} \approx 250000 \text{ kJ/h}$$

$$\Delta t = 20 \text{ K}$$

 $\Delta p_v = 45 \text{ mbar} = 4.5 \text{ kPa}$ (corresponds to 450 mm water column)

To be found:

Approximate calculation of V

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

$$\dot{Q}_{to} = \dot{Q}_{from} = \dot{V} \cdot c_{w} \cdot \Delta t \cdot \rho_{w}$$

$$\Rightarrow \qquad \dot{V} = \frac{Q_{to}}{C \cdot \Delta t \cdot Q}$$

$$\Rightarrow \qquad | \dot{V} = \frac{Q_{lo}}{c_{w} \cdot \Delta t \cdot \rho_{w}}$$

$$\Rightarrow \qquad \dot{V} = \frac{70}{1.164 \cdot 10^{-3} \cdot 20 \cdot 1000} \cdot \frac{kW \cdot (kg \cdot K) \cdot m^{3}}{kWh \cdot K \cdot kg \cdot h} \approx 3 \text{ m}^{3}/\text{h}$$

Calculation of Kv

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

Determination of flow rate

Determination of $k_{\rm s}$ from the diagram

$$k_{vs} = 16 \text{ m}^3/\text{h}$$

Example plotted: Given are the volume flow (3 m³/h) and a desired Δp_{ν} of 45 mbar, which results in a Kv value of 14.1 m³/h. The Kvs values entered are deliverable values. Selected: A valve with $k_{\nu s} = 16$ m³/h, which results in a pressure difference Δp_{ν} of 35.2 mbar.

Valves, control valves, dampers, actuators

Smart actuators			
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and energy monitoring, eValveco		VDL 050100: 2-way regulating valve, PN 16, Valveco flange	264
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SAUTER smart actuators

Smart actuator 3 in 1: Actuator, controller and cloud integration for autonomous control of a wide range of heating, ventilation and airconditioning applications.

Information on the status of the plant is continuously recorded and transferred to the SAUTER cloud. The data is analysed by comparing it with reference values.

Maintenance work can be specifically planned. The system is operated and commissioned using a smartphone and the mobile app.

The I/O box, available as an accessory, is used to record additional sensors and directly control circulation pumps.

Overview of smart actuators









	A1990 - 1000		
AKM115SAF232	AVM115SAF232	ASM115SAF232	SAIO100F020
8	-	10	-
-	500	-	-
-	8	-	-
90°	-	90°	-
	35/60/120		-
Line	ear, equal-percentage, quadi	ratic	-
	2		5
-	-	-	3
-	-	-	10 A / 5 A
010 V / 0 (4)20 mA / Ni1000 / Pt1000 / digital 0/1 / 1002500 Ω			
010 V			
RS-485, Bluetooth, Wi-Fi	RS-485, Bluetooth, Wi-Fi	RS-485, Bluetooth, Wi-Fi	RS-485
BACnet, MQTT, SLC		SLC	
2-, 3- and 6-way regulat- ing ball valves	2- and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series	Air, shut-off and multi-leaf dampers, and butterfly valves	-
Page 128	Page 131	Page 134	Page 137
	8 90° Line - 010 V / RS-485, Bluetooth, Wi-Fi 2-, 3- and 6-way regulating ball valves	8	8



AKM115SAF232









ValveDim app

AKM 115SA: Smart Actuator for ball valve

Features

- Smart Actuator as an intelligent IoT solution for autonomous control of heating and air-conditioning
 applications in smart buildings
- Ready-made HVAC standard applications enable efficient installation and commissioning of small systems
- Applications are selected from the library via smartphone app and installed on the Smart Actuator
- BACnet, Bluetooth LE and WLAN interface for flexible system integration
- Commissioning, parameterisation and remote access to the system are conveniently carried out via a smartphone app
- As an IoT device, the cloud connection for remote access takes place via MQTT using TLS encryption
- Extensive diagnostic data from the actuator enables predictive maintenance of installations
- Enables creation of Smart Actuator networks with distributed intelligence
- Optionally, the Smart Actuator can be used flexibly in BA networks due to free programmability via CASE Suite
- Real-time clock for calendar functions and time programmes
- Two universal I/Os for connecting external sensors and actuators
- Direct connection of a room operating unit
- Flexibly expandable with up to two Smart Actuator SAIO 100 I/O modules for comprehensive control tasks
- Pre-assembled cables, with colour- and mechanically-coded connectors, allow fast and error-free wiring
- Fitting without tools using a bayonet ring made of glass-fibre reinforced plastic
- BLDC motor technology enables extensive diagnostic functions
- Intelligent angle of rotation adaptation and detection incl. feedback signal
- Electronic, torque-dependent cut-off
- Gear unit can be disengaged for manual adjustment
- For operating the 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI and BKTA, as well as 6-way ball valve B2KL

Power supply		
	Power supply	24 VAC, -10%/+20%, 5060 Hz 24 VDC, -10%/+20%
Parameters		
	Surge-voltage resistance	500 V (EN 60730)
	Rotational torque	8 Nm
	Holding torque ¹⁾	8 Nm
	Angle of rotation	90°
	Response time	200 ms
	Running time for 90°	35/60/120 sec.
	Characteristic	Linear, (inverse) equal percentage, (inverse) quadratic, free characteristic
	Operating noise (unloaded)	< 30 dB (A)
Ambient conditions		
	Media temperature ²⁾	Max. 100 °C
	Ambient temperature	−1055 °C
	Ambient humidity	585% rh, no condensation
	Storage and transport temperature	−2070 °C



²⁾ At media temperatures < 5 °C or > 100 °C, appropriate accessory must be used







Inputs/outputs	Number of universal I/O	2
Type of inputs	Analogue input U	$010 \text{ V } (\text{Ri} = 100 \text{ k}\Omega, \pm 0.05 \text{ V})$
Mrh	Analogue input I	420 mA (with ext. resistor 500 Ω o accessory 053060311**)
	Digital input ³⁾	Closed: ≤ 1 VDC, 1 mA Open: ≥ 4 VDC
	Ni1000	-20100 °C (DIN 43760)
	Pt1000	−20100 °C (IEC 751)
	Resistance	2003000 Ω
Type of output	Analogue output U	010 V (±0.1 V)
Function		
	BACnet data point objects	Max. 50
	BACnet client links	16
	Control	6 loops
	Active COV subscription	64
Dynamic objects	Time programmes	4 (Schedule)
	Calendar	3 (Calendar)
Architecture		
	Processor	ARM Cortex-M7 (528 MHz)
	RAM (memory)	1024 kB
	Flash	2 × 16 MB external, for data and system
	Flash encryption	128-bit AES
	Application data	Via CASE Engine or mobile app
	Operating system	Zephyr
	Cycle time	100 ms
	Mobile app	For commissioning and maintenance
	Cloud	Via MQTT to IoT hub
	Real-time clock	For time programmes and calendars
Interfaces, communication		
RS-485 A connection ⁴⁾	Communication protocol	BACnet MS/TP, 1/4 load
	Connection	2 × 3-pin connector, coded, Daisy Chain
	Termination/Pull-Up/Pull-Down	Internal, switchable via software
RS-485 B connection ⁵⁾	Communication protocol	SLC master
	Use	2 × I/O module, 1 × ecoUnit
	Connection	5-pin connector, coded
	Termination	Internal, switchable via software
Bluetooth	Version	BLE 4.2
	Range	< 10 m
	Radiation	4 mW
WLAN	Standard	IEEE 802.11 b/g
Indicator/display	LED indicator	2 status LEDs (green/red and blue)
Construction		
	Fitting position	Connections at the bottom or side, no
	Dimensions W × H × D	at the top 168 × 137 × 74 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section ye
	Housing material	Flame retardant plastic, PC/ABS
Standards, directives		
Standards, directives	Type of protection Protection class	IP54 (EN 60529) III (IEC 60730)

 $^{^{3)}}$ Switching thresholds: 2.28 V (0 to 1) and 2.69 V (1 to 0) or 2.19 k Ω (0 to 1) and 2.69 k Ω (1 to 0)

⁴⁾ Not electrically isolated

⁵⁾ Not electrically isolated

	Environment class	3K3 (IEC 60721)
CE/UKCA conformity ⁶⁾	RED 2014/53/EU (CE)	EN 60730-1:2011
		EN 60730-2-14:1997 + A1:2001,
		A11:2005; A2:2008
		EN 62479:2010
		EN 301 489-1 V1.9.2
		EN 61000-6-2:2005; AC:2005
		EN 61000-6-3:2007 + A1:2011; AC
		2012
		EN 300 328 V2.2.2
	RER-2017 (UKCA)	See Radio Equipment Directive
	RoHS-D 2011/65/EU &	EN IEC 63000: 2018
	2015/863/EU (CE)	
	RoHS-2012 (UKCA)	EN IEC 63000: 2018

Overview of types		
Туре	Features	Power consumption
AKM115SAF232	Smart Actuator for ball valve, RS-485	Max. 5 W / 10 VA (without peripherals)

Power consumption: Without connected peripheral devices (room operating units, sensors, actuators or I/O modules)

Accessories	
Туре	Description
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0510240011	Adaptor required when temperature of the medium < 5 $^{\circ}$ C
SAIO100F020	I/O module, 5 × UI/AO, 3 × relay
05393601000	Dummy plug spare part set IP54
EY-PS021F011	Power supply module 85264 VAC / 24 VDC, 1 A; 3 HP DIN rail mounting
EY-PS021F021	Power supply module 85264 VAC / 24 VDC, 2 A; 4 HP DIN rail mounting
EY-PS021F041	Power supply module 85264 VAC / 24 VDC, 4 A; 5 HP DIN rail mounting

For power cables or connecting cables (053060*****), see order code in PDS 53.950



Explanation of abbreviations in the "Additional technical information" section of the product data sheet and in the appendix to SAUTER product catalogues

AVM 115SA: Smart Actuator for 2- and 3-way valves

Features

- Smart Actuator as an intelligent IoT solution for autonomous control of heating and air-conditioning
 applications in smart buildings
- Ready-made HVAC standard applications enable efficient installation and commissioning of small systems
- Applications are selected from the library via smartphone app and installed on the Smart Actuator
- BACnet, Bluetooth LE and WLAN interface for flexible system integration
- Commissioning, parameterisation and remote access to the system are conveniently carried out via a smartphone app
- As an IoT device, the cloud connection for remote access takes place via MQTT using TLS encryption
- Extensive diagnostic data from the actuator enables predictive maintenance of installations
- Enables creation of Smart Actuator networks with distributed intelligence
- Optionally, the Smart Actuator can be used flexibly in BA networks due to free programmability via CASE Suite
- Real-time clock for calendar functions and time programmes
- Two universal I/Os for connecting external sensors and actuators
- Direct connection of a room operating unit
- Flexibly expandable with up to two Smart Actuator SAIO 100 I/O modules for comprehensive control
 tasks
- Pre-assembled cables, with colour- and mechanically-coded connectors, allow fast and error-free wiring
- Toolless assembly by means of automatic valve stem connection and brass cap nut
- BLDC motor technology enables extensive diagnostic functions
- Intelligent stroke adaptation and detection incl. feedback signal
- Electronic, torque-dependent cut-off
- Gear unit can be disengaged for manual adjustment
- For activation of 2-way and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series

Power supply		
	Power supply	24 VAC, -10%/+20%, 5060 Hz 24 VDC, -10%/+20%
Parameters		
	Surge-voltage resistance	500 V (EN 60730)
	Actuating power	500 N
	Actuator stroke	010 mm
	Response time	200 ms
	Running time	35/60/120 sec.
	Characteristic	Linear, (inverse) equal percentage, (inverse) quadratic, free characteristic
	Operating noise (unloaded)	< 30 dB (A)
Ambient conditions		
	Media temperature ¹⁾	Max. 100 °C
	Ambient temperature	−1055 °C
	Ambient humidity	585% rh, no condensation
	Storage and transport temperature	−2070 °C
Inputs/outputs		
	Number of universal I/O	2

¹⁾ At media temperature > 100 °C, appropriate accessory must be used



AVM 115SAF232









ValveDim app







Type of inputs	Analogue input U	$010 \text{ V (Ri} = 100 \text{ k}\Omega, \pm 0.05 \text{ V)}$
	Analogue input I	420 mA (with ext. resistor 500 Ω or accessory 053060311**)
	Digital input ²⁾	Closed: ≤ 1 VDC, 1 mA Open: ≥ 4 VDC
	Ni1000	-20100 °C (DIN 43760)
	Pt1000	-20100 °C (IEC 751)
	Resistance	2003000 Ω
Type of output	Analogue output U	010 V (±0.1 V)
Function	DAG . I I	
	BACnet data point objects	Max. 50
	BACnet client links	16
	Control	6 loops
<u> </u>	Active COV subscription	64
Dynamic objects	Time programmes	4 (Schedule)
	Calendar	3 (Calendar)
Architecture		
	Processor	ARM Cortex-M7 (528 MHz)
	RAM (memory)	1024 kB
	Flash	2 × 16 MB external, for data and sys-
		tem
	Flash encryption	128-bit AES
	Application data	Via CASE Engine or mobile app
	Operating system	Zephyr
	Cycle time	100 ms
	Mobile app	For commissioning and maintenance
	Cloud	Via MQTT to IoT hub
	Real-time clock	For time programmes and calendars
Interfaces, communication		
RS-485 A connection ³⁾	Communication protocol	BACnet MS/TP, ¼ load
K3-463 A Connection	Connection	2 × 3-pin connector, coded, dai-
	Connection	sy chain
	Termination/Pull-Up/Pull-Down	Internal, switchable via software
RS-485 B connection ⁴⁾	Communication protocol	SLC master
	Use	2 × I/O module, 1 × ecoUnit
	Connection	5-pin connector, coded
	Termination	Internal, switchable via software
Bluetooth	Version	BLE 4.2
	Range	< 10 m
	Radiation	4 mW
WLAN	Standard	IEEE 802.11 b/g
Indicator/display	LED indicator	2 status LEDs (green/red, blue)
Construction		
Ooriou ucuoii	Fitting position	Connections at the bottom or side, not
		at the top
	Dimensions $W \times H \times D$	168 × 119 × 74 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame retardant plastic, PC/ABS
Standards, directives	- (IDE (/E) ((0.500)
	Type of protection	IP54 (EN 60529)
	Protection class	III (IEC 60730)
	Environment class	3K3 (IEC 60721)

 $^{^{2)}}$ Switching thresholds: 2.28 V (0 to 1) and 2.69 V (1 to 0) or 2.19 $k\Omega$ (0 to 1) and 2.69 $k\Omega$ (1 to 0)

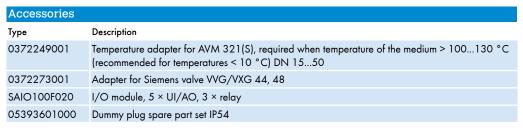
³⁾ Not electrically isolated

⁴⁾ Not electrically isolated

CE/UKCA conformity ⁵⁾	RED 2014/53/EU (CE)	EN 60730-1:2011
,		EN 60730-2-14:1997 + A1:2001,
		A11:2005; A2:2008
		EN 62479:2010
		EN 301 489-1 V1.9.2
		EN 61000-6-2:2005; AC:2005
		EN 61000-6-3:2007 + A1:2011; AC
		2012
		EN 300 328 V2.2.2
	RER-2017 (UKCA)	See Radio Equipment Directive
	RoHS-D 2011/65/EU &	EN IEC 63000: 2018
	2015/863/EU (CE)	
	RoHS-2012 (UKCA)	EN IEC 63000: 2018

Overview of types			
Туре	Features	Power consumption	
AVM115SAF232	Smart Actuator for globe valves, RS-485, BACnet MS/TP	Max. 5 W / 10 VA (without peripherals)	

Power consumption: Without connected peripheral devices (room operating units, sensors, actuators or I/O modules)



For power cables or connecting cables (053060*****), see order code in PDS 53.950



 $^{^{5)}}$ Explanation of abbreviations in the "Additional technical information" section of the product data sheet and in the appendix to SAUTER product catalogues



ASM115SAF232









ValveDim app

ASM 115SA: Smart Actuator for ventilation dampers

Features

- Smart actuator as an intelligent IoT solution for autonomous control of heating and air-conditioning applications in smart buildings
- Ready-made HVAC standard applications enable efficient installation and commissioning of small systems
- Applications are selected from the library via smartphone app and installed on the Smart Actuator
- BACnet, Bluetooth LE and WLAN interface for flexible system integration
- Commissioning, parameterisation and remote access to the system are conveniently carried out via a smartphone app
- As an IoT device, the cloud connection for remote access takes place via MQTT using TLS encryption
- Extensive diagnostic data from the actuator enables predictive maintenance of installations
- Enables creation of Smart Actuator networks with distributed intelligence
- Optionally, the Smart Actuator can be used flexibly in BA networks due to free programmability via CASE Suite
- Real-time clock for calendar functions and time programmes
- Two universal I/Os for connecting external sensors and actuators
- Direct connection of a room operating unit
- Flexibly expandable with up to two Smart Actuator SAIO 100 I/O modules for comprehensive control tasks
- Pre-assembled cables, with colour- and mechanically-coded connectors, allow fast and error-free wiring
- Easy mounting using self-centring spindle adapters
- BLDC motor technology enables extensive diagnostic functions
- Intelligent angle of rotation adaptation and detection incl. feedback signal
- Electronic, torque-dependent cut-off
- Gear unit can be disengaged for manual adjustment

Power supply		
	Power supply	24 VAC, -10%/+20%, 5060 Hz 24 VDC, -10%/+20%
Parameters		
	Surge-voltage resistance	500 V (EN 60730)
	Rotational torque	10 Nm
	Holding torque ¹⁾	10 Nm
	Angle of rotation	Max. 95 °
	Admissible damper shaft	Ø 816 mm, \square 6.512.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Response time	200 ms
	Running time for 90°	35/60/120 sec.
	Characteristic	Linear, (inverse) equal percentage, (inverse) quadratic, free characteristic
	Operating noise (unloaded)	< 30 dB (A)
Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	585% rh, no condensation
	Storage and transport temperature	−2070 °C
Inputs/outputs		
	Number of universal I/O	2



¹⁾ Holding torque energised and de-energised

Type of inputs	Analogue input U	$010 \text{ V (Ri} = 100 \text{ k}\Omega, \pm 0.05 \text{ V)}$
	Analogue input I	420 mA (with ext. resistor 500 Ω c accessory 053060311**)
	Digital input ²⁾	Closed: ≤ 1 VDC, 1 mA Open: ≥ 4 VDC
	Ni1000	-20100 °C (DIN 43760)
	Pt1000	-20100 °C (IEC 751)
	Resistance	2003000 Ω
Type of output	Analogue output U	010 V (±0.1 V)
,		
unction		
	BACnet data point objects	Max. 50
	BACnet client links	16
	Control	6 loops
	Active COV subscription	64
Dynamic objects	Time programmes	4 (Schedule)
	Calendar	3 (Calendar)
Architecture		
	Processor	ARM Cortex-M7 (528 MHz)
	RAM (memory)	1024 kB
	Flash	2 × 16 MB external, for data and sy
	Flash encryption	128-bit AES
	Application data	Via CASE Engine or mobile app
	Operating system	Zephyr
	Cycle time	100 ms
	Mobile app	For commissioning and maintenance
	Cloud	Via MQTT to IoT hub
	Real-time clock	For time programmes and calendars
		· •
,	Communication protocol	BACnot MS /TP 1/4 load
•	Communication protocol	BACnet MS/TP, ¼ load
•	Communication protocol Connection	2 × 3-pin connector, coded, dai-
•	-	
RS-485 A connection ³⁾	Connection	2 × 3-pin connector, coded, dai- sy chain
RS-485 A connection ³⁾	Connection Termination/Pull-Up/Pull-Down	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software
RS-485 A connection ³⁾	Connection Termination/Pull-Up/Pull-Down Communication protocol	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master
RS-485 A connection ³⁾	Connection Termination/Pull-Up/Pull-Down Communication protocol Use	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SIC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue)
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue)
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue)
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position	2 × 3-pin connector, coded, daisy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, no at the top
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position Dimensions W × H × D	2 × 3-pin connector, coded, dai-sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, no at the top 168 × 62 × 74 mm 0.7 kg Lower section black, upper section ye
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position Dimensions W × H × D Weight	2 × 3-pin connector, coded, dai- sy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, not at the top 168 × 62 × 74 mm 0.7 kg
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display Construction	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position Dimensions W × H × D Weight Housing	2 × 3-pin connector, coded, daisy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, not at the top 168 × 62 × 74 mm 0.7 kg Lower section black, upper section yellow
Interfaces, communication RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display Construction Standards, directives	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position Dimensions W × H × D Weight Housing Housing material	2 × 3-pin connector, coded, daisy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, no at the top 168 × 62 × 74 mm 0.7 kg Lower section black, upper section yellow Flame retardant plastic, PC/ABS
RS-485 A connection ³⁾ RS-485 B connection ⁴⁾ Bluetooth WLAN Indicator/display Construction	Connection Termination/Pull-Up/Pull-Down Communication protocol Use Connection Termination Version Range Radiation Standard LED indicator Fitting position Dimensions W × H × D Weight Housing	2 × 3-pin connector, coded, daisy chain Internal, switchable via software SLC master 2 × I/O module, 1 × ecoUnit 5-pin connector, coded Internal, switchable via software BLE 4.2 < 10 m 4 mW IEEE 802.11 b/g 2 status LEDs (green/red, blue) Connections at the bottom or side, not at the top 168 × 62 × 74 mm 0.7 kg Lower section black, upper section yellow

 $^{^{2)}}$ Switching thresholds: 2.28 V (0 to 1) and 2.69 V (1 to 0) or 2.19 $k\Omega$ (0 to 1) and 2.69 $k\Omega$ (1 to 0)

³⁾ Not electrically isolated

⁴⁾ Not electrically isolated

CE/UKCA conformity ⁵	RED 2014/53/EU (CE)	EN 60730-1:2011
		EN 60730-2-14:1997 + A1:2001,
		A11:2005; A2:2008
		EN 62479:2010
		EN 301 489-1 V1.9.2
		EN 61000-6-2:2005; AC:2005
		EN 61000-6-3:2007 + A1:2011; AC
		2012
		EN 300 328 V2.2.2
	RER-2017 (UKCA)	See Radio Equipment Directive
	RoHS-D 2011/65/EU &	EN IEC 63000: 2018
	2015/863/EU (CE)	
	RoHS-2012 (UKCA)	EN IEC 63000: 2018

Overview of types		
Туре	Features	Power consumption
ASM115SAF232	Smart Actuator for dampers, RS-485, BACnet MS/TP	Max. 5 W / 10 VA (without peripherals)

Power consumption: Without connected peripheral devices (room operating units, sensors, actuators or I/O modules)

Accessories	
Туре	Description
SAIO100F020	I/O module, 5 × UI/AO, 3 × relay
0361977002	Assembly materials for M3R, M4R, MH32R/F, MH42R with ASM 105, 115
0372300001	Torsion protection, long (230 mm)
05393601000	Dummy plug spare part set IP54
0372301001	Spindle adaptor for squared end hollow profile (x 15 mm), pack of 10 pcs.
0372320001	Hexagon key as visualisation for position indicator

For power cables or connecting cables (053060*****), see order code in PDS 53.950



⁵⁾ Explanation of abbreviations in the "Additional technical information" section of the product data sheet and in the appendix to SAUTER product catalogues

SAIO 100: I/O module for smart actuators

Features

- Extends the inputs and outputs of the smart actuator for extensive control tasks
- Connection of sensors or actuators via five integrated universal inputs and outputs
- Three changeover relays for fan or pump control
- Connection to the smart actuator via plug-in I/O module cable (SLC)
- Direct connection of a room operating unit
- Housing according to IP54 enables use without cabinet
- Separate 24 V power supply for sensors and actuators with total power requirement up to 1 A

Technical data

Power supply		
,	Power supply	24 VAC/DC (via smart actuator) 24 VAC/DC for terminals T4T7 (via separate power supply)
	Power consumption	1.2 VA at 24 VDC (without sensors and actuators)
Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	595% rh, no condensation
	Storage and transport temperature	-2070 °C
Inputs/outputs		
pats/ catpats	Number of universal I/O	5 (+1 from smart actuator)
	Number of relays	3
	Rating	10 A (resistive) 5 A (inductive)
	Туре	Change-over
Type of inputs	Analogue input U	$010 \text{ V (Ri} = 100 \text{ k}\Omega, \pm 0.05 \text{ V)}$
	Analogue input I	420 mA (with ext. resistor 500 Ω)
	Digital input	Closed: 1 VDC, 1 mA Open: > 2 VDC
	Ni1000	-20100 °C (DIN 43760)
	Pt1000	−20100 °C (IEC 751)
	Resistance	1002500 Ω (±25 Ω)
Type of output	Analogue output U	010 V (±0.4 V)
Interfaces, communication		
RS-485 connection	Communication protocol	SLC slave
	Use	1 × I/O module, 1 × ecoUnit
	Connection	5-pin connector, coded
	Termination	Internal, DIP switch
Indicator/display	LED indicator	1 status LED (green, red)
Construction		
	Fitting	On DIN rail 35 × 7.5/15 (EN 60715) or on supplied rail
	Dimensions W × H × D	200 × 107 × 55 mm
	Weight	0.5 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame retardant plastic, PC/ABS
Standards, directives		
	Type of protection	IP54 (EN 60529)
	Protection class	III (IEC 60730)
	Environment class	3K3 (IEC 60721)
		, ,



SAIO100F010





Valves, control valves, dampers, actuators | Smart actuators

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-3,
		EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1. EN 60730-2-14

Overview of types		
Туре	Features	Power consumption
SAIO100F020	I/O module for smart actuator, 6 pcs. UI/AO, 3 pcs. relay	Max. 1.7 W / 3.6 VA (without peripherals)

Accessories	
Туре	Description
05393601000	Dummy plug spare part set IP54

^{ightharpoonup} For power cables or connecting cables (053060*****), see order code in PDS 53.950



Power and connecting cables for Smart Actuators

Features

- For connection to the power supply, to cable temperature sensors, and for connecting the actuators
- Pre-assembled cables in various lengths from 0.5 to 30 metres
- Robust XLPE sheathed cables¹⁾ with mechanically and colour coded connectors
- Silicone- and halogen-free
- \bullet Can also be laid under plaster, in and on masonry and non-reinforced concrete 2l

recrifical data		
Parameters		
	Bending radius	Min. 10 × outer diameter for fixed installation
Ambient conditions		
	Ambient temperature	Max. +70 °C
Construction		
	Material	Silicone- and halogen-free according to EN 60754-1/2 Flame retardant according to EN 60332-1-2
	Туре	Conductor stranded bare copper wires, open ends ultrasonically welded
	Colour	Black (plug and sheath)
Standards, directives		
CE/UKCA conformity according to	RoHS Directive 2011/65/EU & 2015/863/EU Restriction of Hazardous Substances Regulations 2012 (RoHS UKCA)	

Outputions of the	waa		
Overview of ty			
Туре	Cable type	Cable length	Connector type
05306020000	24 V power supply, open cable end	0.5 m	2-pin
05306020001	24 V power supply, open cable end	1.0 m	2-pin
05306020005	24 V power supply, open cable end	5.0 m	2-pin
05306020010	24 V power supply, open cable end	10.0 m	2-pin
05306020020	24 V power supply, open cable end	20.0 m	2-pin
05306020030	24 V power supply, open cable end	30.0 m	2-pin
05306020201	24 V power supply, Y-connector	1.0 m	2-pin
05306031001	I/O signals, open cable end, 3-core	1.0 m	3-pin
05306031005	I/O signals, open cable end, 3-core	5.0 m	3-pin
05306031010	I/O signals, open cable end, 3-core	10.0 m	3-pin
05306031020	I/O signals, open cable end, 3-core	20.0 m	3-pin
05306031030	I/O signals, open cable end, 3-core	30.0 m	3-pin
05306031105	I/O signals (I), open cable end, 3-core	5.0 m	3-pin
05306032001	I/O signals, cable temperature sensor Ni1000 (–35100 °C) ready to plug in	1.0 m	3-pin
05306032005	I/O signals, cable temperature sensor Ni1000 (–35100 °C) ready to plug in	5.0 m	3-pin
05306032010	I/O signals, cable temperature sensor Ni1000 (–35100 °C) ready to plug in	10.0 m	3-pin

¹⁾ XLPE: Cross-linked Polyethylene







²⁾ National regulations must be observed

Туре	Cable type	Cable length	Connector type
05306032020	I/O signals, cable temperature sensor Ni1000 (–35100 °C) ready to plug in	20.0 m	3-pin
05306032101	I/O signals, cable temperature sensor Pt1000 (–50180 °C) ready to plug in	1.0 m	3-pin
05306032105	I/O signals, cable temperature sensor Pt1000 (–50180 °C) ready to plug in	5.0 m	3-pin
05306034000	RS-485, daisy chain, open cable end, 3-core	0.5 m	3-pin
05306034001	RS-485, daisy chain, open cable end, 3-core	1.0 m	3-pin
05306034005	RS-485, daisy chain, open cable end, 3-core	5.0 m	3-pin
05306034010	RS-485, daisy chain, open cable end, 3-core	10.0 m	3-pin
05306034020	RS-485, daisy chain, open cable end, 3-core	20.0 m	3-pin
05306034030	RS-485, daisy chain, open cable end, 3-core	30.0 m	3-pin
05306034100	RS-485, daisy chain, connection of two actuators, ready to plug in	0.5 m	3-pin
05306034101	RS-485, daisy chain, connection of two actuators, ready to plug in	1.0 m	3-pin
05306034105	RS-485, daisy chain, connection of two actuators, ready to plug in	5.0 m	3-pin
05306034110	RS-485, daisy chain, connection of two actuators, ready to plug in	10.0 m	3-pin
05306034120	RS-485, daisy chain, connection of two actuators, ready to plug in	20.0 m	3-pin
05306034130	RS-485, daisy chain, connection of two actuators, ready to plug in	30.0 m	3-pin
05306051000	I/O signals, open cable end, 3-core	0.5 m	5-pin
05306051001	I/O signals, open cable end, 3-core	1.0 m	5-pin
05306051005	I/O signals, open cable end, 3-core	5.0 m	5-pin
05306051010	I/O signals, open cable end, 3-core	10.0 m	5-pin
05306051020	I/O signals, open cable end, 3-core	20.0 m	5-pin
05306051030	I/O signals, open cable end, 3-core	30.0 m	5-pin
05306053000	I/O signals, connection of actuator with I/O module SAIO100, ready to plug in	0.5 m	5-pin
05306053001	I/O signals, connection of actuator with I/O module SAIO100, ready to plug in	1.0 m	5-pin
05306053005	$\ensuremath{\text{I/O}}$ signals, connection of actuator with $\ensuremath{\text{I/O}}$ module SAIO100, ready to plug in	5.0 m	5-pin
05306053010	$\ensuremath{\text{I/O}}$ signals, connection of actuator with $\ensuremath{\text{I/O}}$ module SAIO100, ready to plug in	10.0 m	5-pin
05306053020	$\ensuremath{\text{I/O}}$ signals, connection of actuator with $\ensuremath{\text{I/O}}$ module SAIO100, ready to plug in	20.0 m	5-pin
05306053030	$\ensuremath{\text{I/O}}$ signals, connection of actuator with $\ensuremath{\text{I/O}}$ module SAIO100, ready to plug in	30.0 m	5-pin
05306053500	SLC connection, open cable end, 5-core	0.5 m	5-pin
05306053501	SLC connection, open cable end, 5-core	1.0 m	5-pin
05306053505	SLC connection, open cable end, 5-core	5.0 m	5-pin
05306053510	SLC connection, open cable end, 5-core	10.0 m	5-pin
05306053520	SLC connection, open cable end, 5-core	20.0 m	5-pin
05306053530	SLC connection, open cable end, 5-core	30.0 m	5-pin

 $[\]stackrel{\bullet}{\varPsi}$ Other models and lengths on request. For order numbers, see order code below

Example

Order no.	Designation
05306020000	Power cable, 2-pin, 24 V power supply, open cable end, 2-core, 0.5 m

Order code

(1) Product type	(2) Model	(3) Cable length
053060	200	00

Not all theoretically possible combinations can be ordered

(1) Product type

Order no.	Туре
053060	Power and connecting cables for Smart Actuator

(2) Model

Order no.	Plug	Function and connection				
200	2-pin	24 V power supply, open cable end				
201	2-pin	24 V power supply, daisy chain				
202	2-pin	24 V power supply, Y-connector				
310	3-pin	I/O signals, 3-core open cable end				
510	5-pin					
311	3-pin	I/O signals for current measurement with integrated 500 Ω resistor, 3-core open cable end				
320	3-pin	I/O signals, cable temperature sensor Ni1000 (-35100 °C), ready to plug in				
321	3-pin	I/O signals, cable temperature sensor Pt1000 (-50180 °C), ready to plug in				
340	3-pin	RS-485, daisy chain, 3-core open cable end				
341	3-pin	RS-485, daisy chain, connection of two actuators, ready to plug in				
530	5-pin	I/O signals, connection of actuator with I/O module SAIO100, ready to plug in				
535	5-pin	SLC connection, 5-core open cable end				

(3) Cable length

Order no.	Length (m)	Conductor cross-section (mm²)³)
00	0.5	0.5 / 0.75
01	1.0	0.5 / 0.75
05	5.0	0.5 / 0.75
10	10.0	0.75
20	20.0	0.75
30	30.0	0.75



³⁾ Conductor cross-section depends on cable type and cable length

Unit valves

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

Overview of unit valves











				White the state of	
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)	1020	1020	1020	1020	2540
Nominal pressure	PN 16	PN 16	PN 16	PN 16	PN 16
Combination options with actuator	AXF 217S AXM 217(S)	AXF 217S AXM 217(S)	AXF 217S AXM 217(S)	AXF 217S AXM 217(S)	AXF 217S AXM 217(S)
Further information	Page 143	Page 146	Page 151	Page 153	Page 156

VUL: 2-way valve, PN 16

Features

- Regulation of heating zones, air secondary-treatment units and fan coil units in combination with AXF 217S or AXM 217(S)
- \bullet 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
- Closes 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



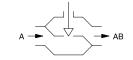
Parameters		
	Nominal pressure	PN 16
	Valve characteristic	Equal-percentage
	Valve stroke ¹⁾	4 mm
	Leakage rate	0.002% of K _{vs} value
Ambient conditions		
	Operating temperature for valve	2120 °C
	Operating temperature in combination with AXM 217(S)	100 °C at the valve
	Maximum operating pressure	Up to 120 °C, 16 bar
Standards, 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 ty	rpes			
Туре	Nominal diame- ter	K _{vs} value	Connection	Weight
VUL010F340	DN 10	$0.16 \text{m}^3/\text{h}$	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
VUL010F610	DN 10	1 m³/h	Clamping ring vers. Ø15 mm	0.18 kg
VUL010F600	DN 10	1.6 m³/h	Clamping ring vers. Ø15 mm	0.18 kg



VULO10F310









¹⁾ The valve stroke is limited by the actuator

Accessories	
Туре	Description
0378133010	1 threaded sleeve, R3%, flat-sealing, with cap nut and flat seal, $G^{1\!/_{\! 2}}$ - R3%
0378133015	1 threaded sleeve, $R1\!\!/\!_2$, flat-sealing, with cap nut and flat seal, $G3\!\!/_4$ - $R1\!\!/\!_2$
0378133020	1 threaded sleeve, $R^{3}\!4$, flat-sealing, with cap nut and flat seal, G1 - $R^{3}\!4$
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, $G1/2$
0378134015	1 solder nipple, \varnothing 15, flat-sealing, with cap nut and flat seal, $G^{3}\!\!/_{\!\!4}$
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, G3/4
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, G1
0378128001	Stuffing box for VUL valves, can be replaced under pressure

Combination of VUL with electric actuators

- i 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 \Delta p_s:** Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve.
- **1** 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	161	161	164	
Voltage	230 V~	24 V~/=	24 V~/=	
Control signal	2-/3-point	2-/3-point	0/210 V, 05 V, 510 V, 0/420 mA	
Running time	52 s	52 s	52 s	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	
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	AXT411F11 AXT411F12 AXT411F12 AXT411F15	:0 :0H	AXT411F210 AXT411F220 AXT411F250	AXT411F11 AXT411F12 AXT411F12 AXT411F15	- !2 !2H	AXT411F212 AXT411F222 AXT411F252	
Page							
Voltage	230 VAC		230 VAC	24 VAC/DC		24 VAC/DC	
Control signal	2-point		2-point	2-point		2-point	
Running time	47 s/mm		47 s/mm	60 s/mm		60 s/mm	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	6.0	4.0	4.0	6.0	4.0	
VUL010F310 VUL010F300 VUL010F610 VUL010F600	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	

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B	
Page			
Voltage	24 VAC	24 VAC	
Control signal	010 V	010 V	
Running time	30 s/mm	30 s/mm	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]
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 a	close with the pressure		



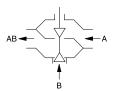


BUL015F310

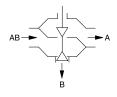


BUL010F410





Control valve



Distribution valve

BUL: 3-way unit valve, PN 16

Features

- ullet Flat-sealing standard version or version with clamping-ring screw fitting for pipe \varnothing 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

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		
	Operating temperature for valve	2120 °C
	Operating temperature in combination with AXM 217(S)	100 °C at the valve
	Operating pressure up to 120 °C	16 bar
Standards, 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 as per article 4.3

Overview of types

- i The BUL 3-way valve must not be used as a 2-way valve
- $\emph{\textbf{i}}$ K_{vs} value: The K_{vs} value of the mixing passage (B-AB) is reduced by approx. 30%

Туре	Nominal diameter	K _{vs} value	Connection	Weight
BUL010F330	DN 10	$0.4 \text{ m}^3/\text{h}$	G1⁄2" B	0.30 kg
BUL010F320	DN 10	0.63 m³/h	G1⁄2" B	0.30 kg
BUL010F310	DN 10	1 m³/h	G½" B	0.30 kg
BUL010F300	DN 10	1.6 m³/h	G1⁄2" B	0.30 kg
BUL015F310	DN 15	$2.5 \text{ m}^3/\text{h}$	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	$0.4 \text{m}^3/\text{h}$	G½" B	0.38 kg
BUL010F420	DN 10	0.63 m³/h	G½" B	0.38 kg
BUL010F410	DN 10	1 m³/h	G1⁄2" B	0.38 kg
BUL010F400	DN 10	1.6 m³/h	G½" B	0.38 kg
BUL015F410	DN 15	$2.5 \text{ m}^3/\text{h}$	G¾" B	0.42 kg
BUL015F400	DN 15	4 m³/h	G¾" B	0.42 kg
BUL020F400	DN 20	5 m³/h	G1" B	0.50 kg

Туре	Nominal diameter	K _{vs} value	Connection	Weight
BUL010F630	DN 10	0.4 m ³ /h	Clamping ring vers. Ø	0.38 kg
BUL010F620	DN 10	0.63 m³/h	Clamping ring vers. Ø	0.38 kg
BUL010F610	DN 10	1 m³/h	Clamping ring vers. Ø	0.38 kg
BUL010F600	DN 10	1.6 m³/h	Clamping ring	0.38 kg

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

Accessories	
Туре	Description
0378133010	1 threaded sleeve, R%, flat-sealing, with cap nut and flat seal, $G\frac{1}{2}$ - R%
0378133015	1 threaded sleeve, $R1\!\!/\!_2$, flat-sealing, with cap nut and flat seal, $G3\!\!/\!_4$ - $R1\!\!/\!_2$
0378133020	1 threaded sleeve, $R^{3}\!\!\!/_{4}$, flat-sealing, with cap nut and flat seal, G1 - $R^{3}\!\!\!/_{4}$
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, $G1/2$
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G3/4
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, G3/4
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, G1
0378126001	Stuffing box for BUL valves
0378126002	Stuffing box for BUL valves as of manufacturing date 1501

Combination of BUL with electric actuators

- $m{i}$ 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 \Delta p_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	161	161	164
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	2-/3-point	2-/3-point	0/210 V, 05 V, 510 V, 0/420 mA
Running time	48 s	48 s	48 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F630 BUL010F610 BUL010F610	1.7	1.7	1.7
BUL015F310 BUL015F410	1.4	1.4	1.4
BUL015F300 BUL015F400	1.2	1.2	1.2



Actuator	AXM217F200	AXM217F202	AXM217SF402
Page	161	161	164
BUL020F300 BUL020F400	1.0	1.0	1.0
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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	AXT411F11 AXT411F12 AXT411F12 AXT411F15	0 0H	AXT411F210 AXT411F220 AXT411F250	AXT411F11 AXT411F12 AXT411F12 AXT411F15	2 2H	AXT411F212 AXT411F222 AXT411F252
Page						
Voltage	230 VAC		230 VAC	24 VAC/DC		24 VAC/DC
Control signal	2-point		2-point	2-point		2-point
Running time	47 s/mm		47 s/mm	60 s/mm		60 s/mm
As control valve	Δp_{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.7	1.8	1.7	1.7	1.8	1.7
BUL015F310 BUL015F410	1.4	1.5	1.4	1.4	1.5	1.4
BUL015F300 BUL015F400	1.2	1.3	1.2	1.2	1.3	1.2
BUL020F300 BUL020F400	1.0	1.1	1.0	1.0	1.1	1.0



Actuator	AXT411F110 AXT411F120 AXT411F120H AXT411F150		AXT411F210 AXT411F220 AXT411F250	AXT411F122		AXT411F212 AXT411F222 AXT411F252
Page						
As distribution valve	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F620 BUL010F610 BUL010F600	1.9	4.0	1.9	1.9	4.0	1.9
BUL015F310 BUL015F410	1.6	2.1	1.6	1.6	2.1	1.6
BUL015F300 BUL015F400	1.4	2.1	1.4	1.4	2.1	1.4
BUL020F300 BUL020F400	1.2	2.0	1.2	1.2	2.0	1.2

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B	
Page			
Voltage	24 VAC	24 VAC	
Control signal	010 V	010 V	
Running time	111 s	111 s	
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F630 BUL010F610 BUL010F610	1 <i>.7</i>	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
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]
BUL010F330 BUL010F320 BUL010F310 BUL010F300 BUL010F430 BUL010F420 BUL010F410 BUL010F400 BUL010F630 BUL010F630 BUL010F610 BUL010F610	1.9	1.9	4.0



Valves, control valves, dampers, actuators | Unit valves and actuators for unit valves

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B		
Page				
BUL015F310 BUL015F410	1.6	1.6	2.1	
BUL015F300 BUL015F400	1.4	1.4	2.1	
BUL020F300 BUL020F400	1.2	1.1	1.2	



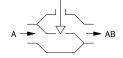
VUT: 2-way valve, PN 16

Features

- Regulation of fan coil units, air secondary-treatment units, heating zones and two-pipe systems with heat exchanger in combination with AXT, AXS 215S or AXM 217(S).
- Standard version flatsealing
- Adjustable Kvs value
- When the spindle is pushed in, the valve is closed
- Closes against the pressure
- Valve with male thread as per DIN EN ISO 228-1, class B
- Valve body made of cast brass
- Stainless-steel spindle
- Plug with EPDM soft seal
- Stuffing box with O-ring seal
- Water quality as per VDI 2035



VUT015F200



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Technical data

Parameters		
rarameters		
	Nominal pressure	PN 16
	Valve characteristic	Almost linear
	Leakage rate	\leq 0.0001% of K _{vs} value
Admissible ambient conditions		
	Operating temperature	2120 °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 as per article 4.3

Overview of types							
Туре	Nominal diameter (DN)	K _{vs} range	Valve stroke (mm)	Connection	Weight (kg)		
VUT010F200	10	0.21.6 m ³ /h	3	G⅓ B	0.18		
VUT010F210	10	$0.21.0 \text{ m}^3/\text{h}$	3	G½ B	0.18		
VUT010F220	10	0.20.63 m ³ /h	3	G½ B	0.18		
VUT015F200	15	1.03.5 m ³ /h	4	G¾ B	0.28		
VUT015F210	15	$0.32.5 \text{ m}^3/\text{h}$	3	G¾ B	0.28		
VUT020F200	20	$4.5 \text{ m}^3/\text{h}$	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.
- $\oint Definition of \Delta p_{max}$: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.



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Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402		
Page	161	161	164		
Voltage	230 V~	24 V~/=	24 V~/=		
Control signal	2-/3-point	2-/3-point	0/210 V, 05 V, 510 V, 0/420 mA		
Running time	13 s/mm	13 s/mm	8 s/mm		
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]		
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	AXT411F11 AXT411F12 AXT411F12 AXT411F15	:0 :0H	AXT411F210 AXT411F220 AXT411F250	AXT411F11 AXT411F12 AXT411F12 AXT411F15	2 2H	AXT411F212 AXT411F222 AXT411F252	
Page							
Voltage	230 VAC		230 VAC	24 VAC/DC		24 VAC/DC	
Control signal	2-point		2-point	2-point		2-point	
Running time	47 s/mm		47 s/mm	60 s/mm		60 s/mm	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	
VUT010F200 VUT010F210 VUT010F220	2.5	2.5	2.5	2.5	2.5	2.5	
VUT015F200 VUT015F210	1.8	1.8	1.8	1.8	1.8	1.8	
VUT020F200	1.0	1.0	1.0	1.0	1.0	1.0	

Pressure differences with thermal actuators

Actuator	AXS215SF222 AXS215SF222B	AXS215SF122 AXS215SF122B				
Page						
Voltage	24 VAC	24 VAC				
Control signal	010 V	010 V				
Running time	4760 s/mm 4760 s/mm					
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]			
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 a	Cannot be used to close with the pressure					

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

Features

- Regulation of fan coil units, air secondary-treatment units, heating zones and two-pipe systems with heat exchanger in combination with AXT, AXS 215S or AXM 217(S) unit valve actuators
- Standard version flatsealing
- Special model for fan coil units with cast-on by-pass T-piece
- Control passage closed when spindle is pushed in
- Used as a control valve
- Valve with male thread as per DIN EN ISO 228-1, class B
- Valve body in cast brass
- Stainless-steel spindle
- Plug with soft seal made of EPDM for control passage and mixing passage
- Stuffing box with O-ring seal
- Water quality as per VDI 2035

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	16 bar
	Operating temperature	2120 °C
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	VDI/VDE 2173
	Pressure Equipment Directive	2014/68/EU (fluid group II)

Overview of types

I The BUT control valve must not be used as a through valve or diverting valve; mixing passage is not reduced.

Туре	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	G1⁄2 B	0.38
BUT010F410	10	3	1 m³/h	G½ B	0.38
BUT010F420	10	3	$0.63 \text{ m}^3/\text{h}$	G½ B	0.38
BUT015F210	15	3	$2.5 \text{ m}^3/\text{h}$	G¾ B	0.33
BUT015F410	15	3	$2.5 \text{ m}^3/\text{h}$	G¾ B	0.42
BUT015F400	15	4	$3.5 \text{ m}^3/\text{h}$	G¾ B	0.42
BUT020F200	20	4	$4.5 \text{ m}^3/\text{h}$	G1 B	0.36
BUT020F400	20	4	$4.5 \text{ m}^3/\text{h}$	G1 B	0.5

Accessories Type Description 0378133010 1 threaded sleeve, R¾, flat-sealing, with cap nut and flat seal, G½ - R¾ 0378133015 1 threaded sleeve, R½, flat-sealing, with cap nut and flat seal, G¾ - R½

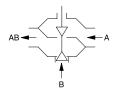


BUT015F210



BUT015F400













ValveDim app



Туре	Description
0378133020	1 threaded sleeve, R^{3} 4, flat-sealing, with cap nut and flat seal, $G1$ - R^{3} 4
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, $G \!\!\! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, $G^{3}\!\!/_{\!4}$
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1
0378145015	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 15, flat-sealing, $G^3\!\!/\!\!/$
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, G1

Combination of BUT with electric actuators

- *I 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 difference across the valve in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve.
- i Definition of Δp_{max}: Max. permissible pressure difference across the valve in control mode at which the actuator reliably opens and closes the valve. Data for a static pressure of 6 bar.

Pressure differences with motorised actuators

Actuator	AXM217F200	AXM217F202	AXM217SF402 AXM217SF404
Page	161	161	164
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	2-/3-point	2-/3-point	0/210 V, 05 V, 510 V, 0/420 mA
Running time	13 s/mm	13 s/mm	8 s/mm
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BUT010F200 BUT010F400 BUT010F410 BUT010F420	1.7	1.7	1.7
BUT015F210 BUT015F410	1.4	1.4	1.4
BUT015F400	1.2	1.2	1.2
BUT020F200 BUT020F400	1.0	1.0	1.0
		1.0	1.0

Pressure differences with thermal actuators

Actuator	AXT411F11 AXT411F12 AXT411F12 AXT411F15	:0 :0H	AXT411F210 AXT411F220 AXT411F250	AXT411F11 AXT411F12 AXT411F12 AXT411F15	2 2H	AXT411F212 AXT411F222 AXT411F252
Page						
Voltage	230 VAC		230 VAC	24 VAC/DC		24 VAC/DC
Control signal	2-point		2-point	2-point		2-point
Running time	ne 47 s/mm		47 s/mm	60 s/mm		60 s/mm
As control valve	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]
BUT010F200 BUT010F400 BUT010F410 BUT010F420	1.7	1.8	1.7	1.7	1.8	1.7
BUT015F210 BUT015F410	1.4	1.5	1.4	1.4	1.5	1.4
BUT015F400	1.2	1.3	1.2	1.2	1.3	1.2
BUT020F200 BUT020F400	1.0	1.1	1.0	1.0	1.1	1.0
Cannot be used as	distribution va	lve				



Pressure differences with thermal, continuous actuators

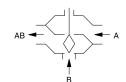
Actuator	AXS215SF122 AXS215SF122B AXS215SF222 AXS215SF222B	
Page		
Voltage	24 VAC	
Control signal	010 V	
Running time	4760 s/mm	
As control valve	Δp _{max} [bar]	Δp _s [bar]
BUT010F200 BUT010F400 BUT010F410 BUT010F420	1.7	1.8
BUT015F210 BUT015F410	1.4	1.5
BUT015F400	1.2	1.3
BUT020F200 BUT020F400	1.0	1.1
Cannot be used as	distribution valve	





BXL025F200





BXL: 3-way unit valve, PN 16

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		
	Operating temperature for valve	2130 °C
	Operating temperature in combination with 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

Туре	Nominal diameter	K _{vs} value	Weight
BXL025F200	DN 25	6.5 m ³ /h	1200 g
BXLO40F200	DN 40	9.5 m³/h	2350 g

Accessories	
Туре	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

- i 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 \Delta p_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	161	161	164
Voltage	230 V~	24 V~/=	24 V~/=
Control signal	2-/3-point	2-/3-point	0/210 V, 05 V, 510 V, 0/420 mA
Running time	38 s	38 s	38 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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	AXT411F110 AXT411F120 AXT411F120H AXT411F150	AXT411F210 AXT411F220 AXT411F250	AXT411F112 AXT411F122 AXT411F122H AXT411F152	AXT411F212 AXT411F222 AXT411F252	AXS215SF222 AXS215SF222B AXS215SF122 AXS215SF122B
Page					
Voltage	230 VAC	230 VAC	24 VAC/DC	24 VAC/DC	24 VAC
Control signal	2-point	2-point	2-point	2-point	010 V
Running time	47 s/mm	47 s/mm	60 s/mm	60 s/mm	30 s/mm
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BXL025F200	0.5	2.0	2.0	0.5	0.5
BXL040F200	2.0	2.0	2.0	2.0	2.0
Cannot be used as	Cannot be used as distribution valve				



Actuators for unit valves

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

Overview of actuators for unit valves







Type designation	AXF 217S	AXM 217	AXM 217S
Technical data			
Max. nominal stroke (mm)	6	6.3	5.5
Max. pushing force (N)	160	120	120
Direction of closure	-	-	-
Running time	8 s/mm	13 s/mm	8 s/mm
Power supply (V)	24	24/230	24
Method of operation			
Stroke indicator	-	_	_
Status indicator	•	-	•
Thermal	-	_	_
Motor	•	•	•
Reset function	•	-	-
Control			
2-point	-	•	_
3-point	-	•	-
Positioner	•	-	•
Combination options with valve	VUL, BUL, VDL, VXL, VUT, BUT, BXL	VUL, BUL, VDL, VXL, VUT, BUT, BXL	VUL, BUL, VDL, VXL, VUT, BUT, BXL
Further information	Page 159	Page 161	Page 163

AXF 217S: Motorised actuator for unit valves with positioner

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
- Electrical reset function
- 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



Ambient conditions

ower supply		
	Power supply	24 V~ ±15%, 5060 Hz
		24 V= ±15%
	Power consumption	5 VA while charging,
	·	2,5 VA during operation,
		1 W at standstill

Parameters1)		
	Direction of operation	1 or 2 (adjustable)
	Nominal stroke	Max. 6 mm
		Automatic stroke adjustment
	Running time	8 s/mm
	Closing dimension	H0:10 mm
	Actuating power	160 N
	Sound pressure level	< 30 dB (A)
	Control signal	0(2)10 V; 510 V; 05 V
		$R_i > 100 \text{ k}\Omega;$
		0(4)20 mA
		$R_i = 500 \Omega$
	Feedback signal	010 V=, ±5%
	Charging time	150 s (supercapacitor)

	Ambient temperature	050 °C, no condensation
	Max. operating temperature at valve	95 °C
	Storage and transport temperature	−2065 °C
	Ambient humidity	< 90% rh
Construction		
	Weight	0.2 kg
	Housing	Two-piece, light grey (RAL 7035)
	Housing material	Plastic

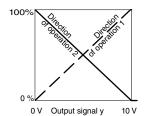
	Power cable	1.50 m long, halogen-free 4 × 0.5 mm², light grey, insertable
Standards, directives		
	Type of protection	IP54 (EN 60529)

Nickel-plated brass M30 × 1.5



AXF217SF404 AXF217SF405









Thread

The direction of operation and the control voltage can be set using accessory 0550360010 (configurator); factory setting "1" (DA). Direction of operation 1: Control signal increasing = actuator moves out (valve VUT, VUL, VXL, VDL, BUL, BUT closes, valve BXL (control passage) opens). Direction of operation 2: Control signal increasing = actuator moves in (valve VUT, VUL, VXL, VDL, BUL, BUT opens, valve BXL (control passage) closes)

Protection class		III (IEC 60730)
CE conformity according to	EMC Directive 2014/30/EU	60730-1, 60730-2-14

Overview of types			
Туре	Features		
AXF217SF404	Motorised actuator for unit valves with positioner, automatic stroke adjustment, electrical reset function:Spindle extends (EFSD)		
AXF217SF405	Motorised actuator for unit valves with positioner, automatic stroke adjustment, electrical reset function:Spindle retracts (EFSU)		

Accessories	
Туре	Description
0550360010	Configurator for changing control signal, direction of operation, characteristic, direction of reset function
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 25/8, 34 mm
0371361001	Adapter for fitting to Herz valves, type Herz-TS'90
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, plastic

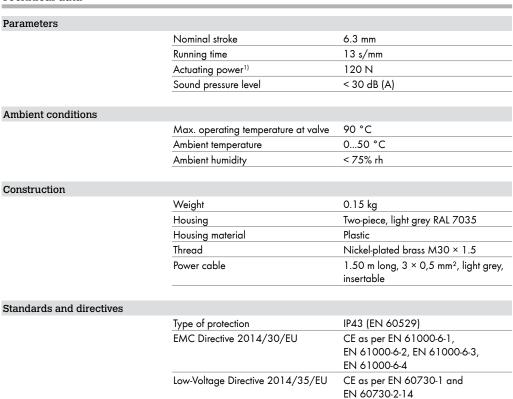


AXM 217: Motorised actuator for unit valves

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





Overview of types				
Туре	Power supply	Power consumption	Protection class	
AXM217F200	230 V~, ±10%, 5060 Hz	6.5 VA, 2 W	II (IEC 60730)	
AXM217F202	24 V~, ±15%, (5060 Hz)	2.5 VA, 1.5 W	III (IEC 60730)	

AXM217F202: Voltage 24V= with relay circuit only

Accessories	
Туре	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

Actuating power min. 100 N, max. 150 N



AXM217F20







Туре	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)
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV 25/8, 34 mm
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm, plastic
0371361001	Adapter for fitting to Herz valves, type Herz-TS'90
0371363001	Adapter for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)



AXM 217S: Motorised actuator for unit valves with positioner

Features

- Stepping motor with electronic activation and cut-out
- Attached to valve with M30 \times 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 VAC/DC, ±15%, 5060 Hz
	Power consumption	2.5 VA / 1.5 W
Parameters1)		
	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; 510 V; 05 V $R_i > 100 \text{ k}\Omega$;
		0(4)20 mA $R_i = 500 \Omega$
Ambient conditions		
	Ambient temperature	050 °C, no condensation
	Max. operating temperature at valve	95 °C
	Storage and transport temperature	-2065 °C
	Ambient humidity	< 75% rh
Construction		
	Weight	0.15 kg
	Housing	Two-part, 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, pluggable
		3.0 m long, halogen-free (F404)
Standards and directives		
	Type of protection	IP43 (EN 60529)
	Protection class	III (IEC 60730)

EMC Directive 2014/30/EU

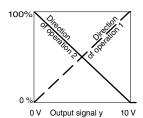
61000-6-1, 61000-6-2, 61000-6-3

and EN 61000-6-4



AXM217SF402 AXM217SF404









CE conformity according to

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			
Туре	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	
Туре	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 \times 1)
0371361001	Adapter for fitting to Herz valves, type Herz-TS'90
0371363001	Adapter for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)
0550393001	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm, nickel-plated brass
0550393002	Adapter for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adapter for fitting to Danfoss valves, type RAV 25/8, 34 mm
0550393004	Adapter for fitting to Danfoss valves, type RA 2000, 22 mm, plastic



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)	1550	1550	1550	1550
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)
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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)	1550	65100	1550	65100
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
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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)	1550	65100	1550	65100
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 190	Page 194	Page 196	Page 200







T	VUG	BUG	VIID
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)	15150	15150	40150
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)
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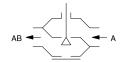


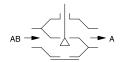
	~	
Type designation	VUS	BUS
Application		
Preheater for ventilation & air-conditioning	•	•
Cooler for ventilation & air-conditioning	•	-
Steam humidifier for ventilation & air-conditioning	•	•
Reheater for ventilation & air-conditioning	•	•
Chilled ceiling, underfloor heating	-	-
Static heating	•	•
Cooling tower (open systems)	-	-
Multi-boiler system	•	•
Local heating	•	•
District heating	•	•
Steam	•	-
Version		
2-way	•	-
3-way	-	•
Flange	•	•
Nominal diameter (DN)	15150	15150
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 212	Page 214



VUN032F300







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

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	\leq 0.02% of K _{vs} value
Ambient conditions		
	Operating temperature ¹⁾	-10130 °C
	Operating pressure up to 120 °C	16 bar
	Operating pressure up to 130 °C	13 bar

Overview of types					
Туре	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	G11/4" B	1 kg	
VUN025F300	DN 25	$10 \text{ m}^3/\text{h}$	G1½" B	1.3 kg	
VUN032F300	DN 32	16 m³/h	G2" B	1.74 kg	
VUN040F300	DN 40	22 m³/h	G21/4" B	2.52 kg	
VUN050F300	DN 50	28 m³/h	G2¾" B	3.44 kg	
VUN050F200	DN 50	40 m ³ /h	G2¾" B	3.44 ka	

Accessories	
Туре	Description
0361951015	Screw fitting for male thread with flat seal DN 15
0361951020	Screw fitting for male thread with flat seal DN 20
0361951025	Screw fitting for male thread with flat seal DN 25
0361951032	Screw fitting for male thread with flat seal DN 32



Use stuffing box heater at temperatures below 0 $^{\circ}$ C; use temperature adapter (accessory) at temperatures above

Туре	Description
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	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 100130 °C (recommended for temperatures <10 °C)
0372249002	Adaptor required when temperature of the medium is 130150 °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 1550

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 \Delta p_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.
- i Definition of Δp_{max} : Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the

Pressure differences

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	218	218	221	219	221
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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	e			

Actuator	AVM321F110 AVM321F112	AVM321SF132	AVF124F13 AVF124F23		AVF125SF1 AVF125SF2	
Page	227	230	240		243	
Actuating power	1000 N	1000 N	500 N		500 N	
Control signal	2-/3-point	2-/3- point, 010 V, 420 m A	3-point		2-/3- pt., 010 V,	420 mA
Running time	48/96 s	32/96 s	60/120 s		60/120 s	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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



Actuator	AVM321F110 AVM321F112	AVM321SF132	AVF124F13 AVF124F23	~	AVF125SF1 AVF125SF2	
Page	227	230	240		243	
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} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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



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



Parameters		
raiailleteis	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	\leq 0.05% of k_{vs} value
	Leakage rate, mixing passage	≤ 1% of K _{vs} value
	Nominal stroke	8 mm
Ambient conditions		
	Operating temperature ¹⁾	-10130 °C
	Operating pressure up to 120 °C	16 bar
	Operating pressure up to 130 °C	13 bar

Overview of types						
Туре	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	G11/4" 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	G21/4" B	2.52 kg		
BUN050F300	DN 50	28 m³/h	G2¾" B	3.44 kg		
BUN050F200	DN 50	40 m ³ /h	G2¾" B	3.44 kg		

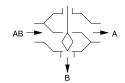
Accessories	
Туре	Description
0361951015	Screw fitting for male thread with flat seal DN 15
0361951020	Screw fitting for male thread with flat seal DN 20
0361951025	Screw fitting for male thread with flat seal DN 25
0361951032	Screw fitting for male thread with flat seal DN 32

Use stuffing box heater at temperatures below 0 °C; use temperature adapter (accessory) at temperatures above

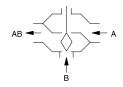


BUN032F300





Distribution valve



Control valve



	_	

Туре	Description
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	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 100130 °C (recommended for temperatures <10 °C)
0372249002	Adaptor required when temperature of the medium is 130150 °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 1550

Combination of BUN 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 \Delta p_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.
- i Definition of Δp_{max} : Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the

Pressure differences

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	218	218	221	219	221
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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				

Cannot	المعادة	as distrib	ution valve

Actuator	AVM321F110 AVM321F112	AVM321SF132			AVF125SF132 AVF125SF232	
Page	227	230	240		243	
Actuating power	1000 N	1000 N	500 N		500 N	
Control signal	2-/3-point	2-/3- point, 010 V, 420 m A	3-point		2-/3- pt., 010 V, 420 mA	
Running time	48/96 s	32/96 s	60/120 s		60/120 s	
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp_{max} [bar]	Δp_s [bar]
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
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

Actuator	AVM321F110 AVM321F112	AVM321SF132			AVF125SF132 AVF125SF232	
Page	227	230	240		243	
BUN050F300 BUN050F200	4.0	4.0	4.0 1.8 1.8		1.8	1.8
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _s [bar]
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





V6R15F300











ValveDim app

V6R: 2-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
- 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

TCCITITCAT GATA		
Parameters		
	Control ratio	> 50:1
	Leakage rate	\leq 0.05% of K _{vs} value
	Valve stroke	14 mm
	Nominal pressure	16 bar
Ambient conditions		
	Operating temperature ¹⁾	-15130 °C
	Operating pressure up to 120 °C	16 bar
	Operating pressure up to 130 °C	13 bar
Standards, directives		
	Pressure and temperature data	DIN 2401
	Flow parameters	VDI/VDE 2173

Overview of types						
Туре	Nominal di- ameter	K _{vs} value	Valve characteristic	Materials for valve plug	Type of con- nection	Weight
V6R15F350	DN 15	$0.4 \text{m}^3/\text{h}$	Equal-percentage	Stainless steel	G½"	1.2 kg
V6R15F340	DN 15	$0.63 \text{m}^3/\text{h}$	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	$2.5 \text{ m}^3/\text{h}$	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 m ³ /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
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



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

Accessories	
Туре	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, Rp1 $\frac{1}{2}$ - G1 $\frac{1}{2}$
0360391050	Screw fitting incl. seal, 2 pcs. required, Rp2 - G2
0360427000	Stuffing box, complete with O-ring, 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

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 \Delta p_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.
- i 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	AVF234	SF132			AVM322F120 AVM322F122	AVM3225F132
Page	238	245		245		227	230
Actuating power	2500 N	2000 N		2000 N		1000 N	1000 N
Control signal	2-/3- point, 010 V, 4 20 mA	2-/3- point, 0 20 mA	10 V, 4	2-/3-poin 420 m/	t, O10 V,	2-/3-point	2-/3- point, 010 V, 42 0 mA
Running time	28/56/84 s	28/56/8	4 s	28/56/8	4 s	120/240 s	120/80 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]
V6R15F350 V6R15F340 V6R15F330 V6R15F320 V6R15F310 V6R15F300 V6R15F200 V6R25F310 V6R25F300 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
Closes with the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]
V6R15F350 V6R15F340 V6R15F330 V6R15F320 V6R15F310 V6R15F300 V6R15F200	3.0	3.0	16.0	3.0	16.0	4.0	4.0



Actuator	AVM234SF132	AVF234SF132		AVF234SF232		AVM322F120 AVM322F122	AVM322SF132
Page	238	245		245		227	230
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

^{ightharpoonup} Accessories required: Mounting set 0372338001 for AVM 234 and AVF 234



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

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	\leq 0.05% of K _{vs} value	
	Leakage rate of mixing passage B-AB	\leq 1% of K _{vs} value	
	Valve stroke	14 mm	
	Valve characteristic, mixing passage	Linear	
Ambient conditions			
	Operating temperature ¹⁾	-15130 °C	
	Operating pressure up to 120 °C	16 bar	
	Operating pressure up to 130 °C	13 bar	
Standards, directives			
	Pressure and temperature data	DIN 2401	
	Flow parameters	VDI/VDE 2173	

Overview of types						
Туре	Nominal di- ameter	K _{vs} value	Valve characteristic	Materials for valve plug	Type of con- nection	Weight
B6R15F330	DN 15	1 m³/h	Equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F320	DN 15	$1.6 \text{m}^3/\text{h}$	Equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F310	DN 15	$2.5 \text{ m}^3/\text{h}$	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	$6.3 \text{ m}^3/\text{h}$	Equal-percentage	Brass	G1"	1.6 kg
B6R25F300	DN 25	$10 \text{ m}^3/\text{h}$	Equal-percentage	Brass	G1"	1.6 kg
B6R25F210	DN 25	$6.3 \text{ m}^3/\text{h}$	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
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



B6R25F300











ValveDim app



At temperatures below 0 °C, use stuffing box heater (accessory)

Accessories	
Туре	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
0360427000	Stuffing box, comlete with o-ring, max. 130 °C
0360429000	Adhesive label for distribution valve

- 0217268*** Stuffing box heater 15 W, light alloy housing, IP54, 3 × 0.75 mm² power cable, earth connector, length 1 m, ferrule
- 9360429 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.
- **1** 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.
- i 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	AVM3225F132
Page	238	245		245		227	230
Actuating power	2500 N	2000 N		2000 N		1000 N	1000 N
Control signal	2-/3- point, 010 V, 4 20 mA	2-/3- point, 010 V, 4 20 mA		2-/3-point, 010 V, 420 mA		2-/3-point	2-/3- point, 010 V, 42 0 mA
Running time	28/56/84 s	28/56/84 s		28/56/84 s		120/240 s	120/80 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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



Actuator	AVM234SF132	AVF2345	F132	AVF2345	F232	AVM322F120 AVM322F122	AVM322SF132
Page	238	245		245		227	230
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

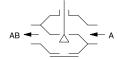


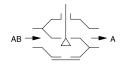
Accessories required: Mounting set 0510240012 for AVM 322(S)



VUD032F300







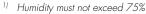
VUD: 2-way flanged valve, PN 6 (el.)

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 actuators to linear, equalpercentage 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

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	\leq 0.05% of K _{vs} value
	Valve stroke	8 mm
Ambient conditions ¹⁾		
	Operating temperature ²⁾	−10150 °C
	Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a line- ar interpolation can be performed
Standards, 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			
Туре	Nominal diameter	K _{vs} value	Weight
VUD015F320	DN 15	1.6 m ³ /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



²⁾ At temperatures below 0 °C, use stuffing box heater. Use adapter (accessory) at temperatures above 100 °C





Туре	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	
Туре	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Temperature adapter for AVM 321(S), required when temperature of the medium > 100130 $^{\circ}$ C (recommended for temperatures < 10 $^{\circ}$ C) DN 1550
0372249002	Adaptor required when temperature of the medium is 130150 °C, DN 1550
0378284100	Stuffing box heater 230 VAC, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 VAC, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 1550

Combination of VUD with electric actuators

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

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

Actuator	AVM105F100	AVM105F120 AVM105F122	AVM105SF132	AVM115F120 AVM115F122	AVM115SF132
Page	218	218	221	219	221
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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 a	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	240		243	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 010 V, 420 r	nA
Running time	60/120 s		60/120 s	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	48/96 s	32/96 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]
VUD015F320 VUD015F310 VUD015F300 VUD020F300 VUD025F300 VUD032F300 VUD040F300	6.0	6.0
VUD050F300 VUD050F200	4.0	4.0
Closes with the pressure	Δp _{max} [bar]	Δp _{max} [bar]
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



VQD: 2-way flanged valve, PN 6

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, equalpercentage 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



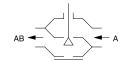
Parameters		
	Nominal pressure	PN 6
	Connection	Flange as per EN 1092-2, form B
	Valve characteristic	Equal-percentage
	Control ratio of valve	> 30:1
	Stuffing box	2 EPDM O-rings
	Leakage rate	Class III as per DIN EN 60534-4 (0.001 x K _{vs})
	Valve stroke	20 mm (DN 6580) 40 mm (DN 100)
Ambient conditions ¹⁾		
	Operating temperature ²⁾	−10150 °C
	Operating pressure	Up to 120 °C 6 bar At 150 °C 5.4 bar Between 120 °C and 150 °C, a line- ar 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			
Туре	Nominal diameter	K _{vs} value	Weight
VQD065F300	DN 65	63 m³/h	18.0 kg
VQD080F300	DN 80	100 m ³ /h	25.3 kg
VQD100F300	DN 100	160 m³/h	37.1 kg



VQD







¹⁾ Humidity must not exceed 75%

²⁾ At temperatures below 0 °C, use stuffing box heater

Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0378284100	Stuffing box heater 230 VAC, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 VAC, 15 W for medium below 0 °C
0378369101	Complete replacement stuffing box for DN 65150

Combination of VQD with electric actuators

- *i* 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.
- **1** Definition of Δp ; 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.
- i 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	227	230	
Actuating power	1000 N	1000 N	
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA	
Running time	120/240 s	120/80 s	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	
VQD065F300	2.5	2.5	
VQD080F300	1.5	1.5	
Cannot be used to close with the pressure			

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

Actuator	AVF234SF132		AVF234SF232		AVM234SF132
Page	245	245			238
Actuating power	2000 N		2000 N		2500 N
Control signal	2-/3-point, 010	V, 420 mA	2-/3-point, 010	V, 420 mA	2-/3-point, 010 V, 420 mA
Running time for DN 65, DN 80	40/80/120 s		40/80/120 s		40/80/120 s
Running time for DN 100150	80/160/240 s		80/160/240 s		80/160/240 s
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]
VQD065F300	3.0	5.1	3.0	5.1	1.2
VQD080F300	3.0	3.4	3.0	3.4	3.0
VQD100F300	2.0 2.2		2.0	2.2	2.0
Cannot be used to a	close with the press	sure			

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



^{*} At temperatures above 130 °C, accessories are required

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

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

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⁾	−10150 °C
	Operating pressure	Up to 120 °C; 6 bar At 150 °C; 5.4 bar Between 120 °C and 150 °C, a line ar interpolation can be performed
Standards, 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

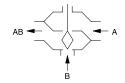
Overview of types			
Туре	Nominal diameter	K _{vs} value	Weight
BUD015F320	DN 15	1.6 m ³ /h	3200 g
BUD015F310	DN 15	2.5 m³/h	3200 g
BUD015F300	DN 15	4 m³/h	3200 g
BUD020F300	DN 20	6.3 m³/h	4100 g

¹⁾ Humidity must not exceed 75%

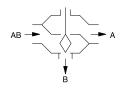


BUD032F300





Control valve



Distribution valve



²⁾ At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C

Туре	Nominal diameter	K _{vs} value	Weight
BUD025F300	DN 25	10 m³/h	4700 g
BUD032F300	DN 32	16 m³/h	7100 g
BUD040F300	DN 40	22 m³/h	8400 g
BUD050F300	DN 50	28 m³/h	10900 g
BUD050F200	DN 50	40 m³/h	11200 g

Accessories	
Туре	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100130 $^{\circ}$ C (recommended for temperatures <10 $^{\circ}$ C)
0372249002	Adapter required when temperature of the medium is 130150 °C
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 1550

Combination of BUD with electric actuators

- *i* 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.
- **1** 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	218	218	221	219	221
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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	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	240		243	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 010 V, 420 mA	
Running time	60/120 s		60/120 s	
As control valve	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _s [bar]
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} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	48/96 s	32/96 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]
BUD015F320 BUD015F310 BUD015F300 BUD020F300 BUD025F300 BUD032F300 BUD040F300	6.0	6.0
BUD050F300 BUD050F200	4.0	4.0
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]
BUD015F320 BUD015F310 BUD015F300 BUD020F300	6.0	6.0
BUD025F300	5.0	5.0
BUD032F300	4.0	4.0
BUD040F300	2.5	2.5
BUD050F300 BUD050F200	1.5	1.5

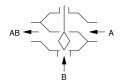
At temperatures above 100 °C, accessories are required



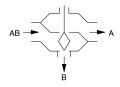


BQD





Control valve



Distribution valve

BQD: 3-way flanged valve, PN 6

- 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

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 $(0.001 \times K_{vs})$
	Valve stroke	20 mm (DN 6580) 40 mm (DN 100)
Ambient conditions ¹⁾		
	Operating temperature ²⁾	-10150 °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 per- formed
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			
Туре	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

Humidity must not exceed 75%





At temperatures below 0 °C, use a stuffing box heater

Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 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 \Delta p_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.
- i 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	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	120/240 s	120/80 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]
BQD065F300	2.5	2.5
BQD080F300	1.5	1.5
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]
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	AVF234SF132		AVF234SF232		AVM234SF132
Page	245		245		238
Actuating power	2000 N		2000 N		2500 N
Control signal	2-/3-point, 010) V, 420 mA	2-/3-point, 010	V, 420 mA	2-/3-point, 010 V, 420 mA
Running time for DN 65, DN 80	40/80/120 s		40/80/120 s		40/80/120 s
Running time for DN 100150	80/160/240 s		80/160/240 s		80/160/240 s
As control valve	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]
BQD065F300	3.0	5.1	3.0	5.1	3.0
BQD080F300	3.0	3.4	3.0	3.4	3.0
BQD100F300	2.0	2.2	2.0	2.2	2.0
As distribution valve	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]
BQD065F300	1.0	6.0	1.0	6.0	1.0
BQD080F300	0.8	6.0	0.8	6.0	0.8
BQD100F300	0.5	6.0	0.5	6.0	0.5

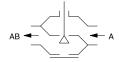
At temperatures above 130 °C, accessories are required

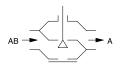




VUE032F300















ValveDim app

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

- 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 actuators to linear, equalpercentage 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

recinical 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⁾	-10150 °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 line- ar interpolation can be performed
Standards, 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				
Туре	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	

Humidity must not exceed 75%.



At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C

Туре	Nominal diameter	K _{vs} value	Weight
VUE015F330	DN 15	1 m³/h	3.2 kg
VUE015F320	DN 15	1.6 m³/h	3.2 kg
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	
Туре	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100130 $^{\circ}$ C (recommended for temperatures <10 $^{\circ}$ C)
0372249002	Adapter required when temperature of the medium is 130150 °C
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 $^{\circ}$ C
0378284102	Stuffing box heater 24 V~, 15 W for medium below 0 $^{\circ}$ C
0378368001	Complete replacement stuffing box for DN 1550

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.
- i 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 \Delta p_{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	218	218	221	219	221
Actuating power	250 N	250 N	250 N	500 N	500 N
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 \
Running time	30 s	120 s	35/60/120 s	120 s	60/120 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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

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

Actuator	AVF124F130 AVF124F230		AVF125SF132 AVF125SF232	
Page	240		243	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 010 V, 420 r	nA
Running time	60/120 s		60/120 s	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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

Combination of VUE with electric actuator, actuating power 1000 N

Actuator	AVM321F110 AVM321F112	AVM3215F132
Page	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	48/96 s	32/96 s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]
VUE015F350 VUE015F340 VUE015F330 VUE015F320 VUE015F310 VUE015F300 VUE020F300 VUE025F300 VUE032F300	10.0	10.0
VUE040F300	6.0	6.0
VUE050F300 VUE050F200	4.0	4.0



Actuator	AVM321F110 AVM321F112	AVM321SF132
Page	227	230
Closes with the pressure	Δp _{max} [bar]	Δp _{max} [bar]
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

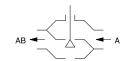
At temperatures above 100 °C, accessories are required





VQE





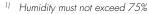
VQE: 2-way flanged valve, PN 16

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, equalpercentage 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

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 100150)
Ambient conditions ¹⁾		
	Operating temperature ²⁾	-10150 °C
	Operating pressure	Up to 120 °C 16 bar At 150 °C 14.4 bar Between 120 °C and 150 °C, a line- ar 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			
Туре	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



²⁾ At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 130 °C



Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 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 \Delta p_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.
- i 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	227	230	
Actuating power	1000 N	1000 N	
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA	
Running time	120/240 s	120/80 s	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	
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	AVF234SF132		AVF234SF232		AVM234SF132	
Page	245		245		238	
Actuating power	2000 N		2000 N		2500 N	
Control signal	2-/3-point, 010 V, 420 mA		2-/3-point, 010 V, 420 mA		2-/3-point, 010 V, 420 mA	
Running time for DN 65, DN 80	40/80/120 s		40/80/120 s		40/80/120 s	
Running time for DN 100150	80/160/240 s		80/160/240 s		80/160/240 s	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	
VQE065F300	3.0	5.1	3.0	5.1	3.0	
VQE080F300	3.0	3.4	3.0	3.4	3.0	
VQE100F300	2.0	2.2	2.0	2.2	2.0	
VQE125F300	1.4	1.4	1.4	1.4	1.5	
VQE150F300	1.0	1.1	1.0	1.1	1.0	
Cannot be used to close with the pressure						

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

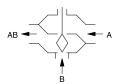


At temperatures above 130 °C, accessories are required

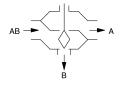


BUE032F300





Control valve



Distribution valve

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

- 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

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 conditions1)		
	Operating temperature ²⁾	-10150 °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 line- ar interpolation can be performed
Standards, directives		
Standards, directives	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)
	Pressure Equipment Directive	97/23/EC (fluid group II)
	Trouble Equipment Processe	No CE label Article 3.3



Humidity must not exceed 75%

At temperatures below 0 °C, use a stuffing box heater. Use adapter (accessory) at temperatures above 100 °C

Overview of types			
Туре	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	
Туре	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adapter required when temperature of the medium is 100130 $^{\circ}$ C (recommended for temperatures <10 $^{\circ}$ C)
0372249002	Adapter required when temperature of the medium is 130150 °C
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 1550

Combination of BUE with electric actuators

- i 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.
- **1** 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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the

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

	218 250 N 2-/3-point	221 250 N 2-/3-point, 010 V	219 500 N	221 500 N
-point			500 N	500 N
	2-/3-point	2-/3-point 0 10 V		1
		2-7 3-point, 0 10 ¥	2-/3-point	2-/3-point, 010 V
	120 s	35/60/120 s	120 s	60/120 s
∆p _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
4.0	4.0	4.0	6.0	6.0
2.8	2.8	2.8	6.0	6.0
2.1	2.1	2.1	5.2	5.2
1.4	1.4	1.4	3.3	3.3
0.9	0.9	0.9	2.0	2.0
	4.0 2.8 2.1 1.4	4.0 4.0 2.8 2.8 2.1 2.1 1.4 1.4 0.9 0.9	4.0 4.0 2.8 2.8 2.1 2.1 1.4 1.4 0.9 0.9 0.9	4.0 4.0 4.0 6.0 2.8 2.8 2.8 6.0 2.1 2.1 5.2 1.4 1.4 1.4 3.3 0.9 0.9 0.9 2.0

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

Actuator	AVF124F130 AVF124F230		AVF125SF132 AVF125SF232	
Page	240		243	
Actuating power	500 N		500 N	
Control signal	3-point		2-/3-pt., 010 V, 420 n	nA
Running time	60/120 s		60/120 s	
As control valve	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _s [bar]
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} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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

Combination of BUE with electric actuator, actuating power 1000 N

Actuator	AVM321F110 AVM321F112	AVM3215F132
Page	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	48/96 s	32/96 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]
BUE015F330 BUE015F320 BUE015F310 BUE015F300 BUE020F300 BUE025F300 BUE032F300	10.0	10.0
BUE040F300	6.0	6.0
BUE050F300 BUE050F200	4.0	4.0
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]
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

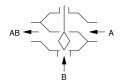
At temperatures above 100 °C, accessories are required



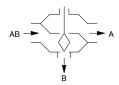


BQE





Control valve



Distribution valve









ValveDim app

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 100150)
Ambient conditions		
	Operating temperature ¹⁾	−10150 °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 per- formed
	Humidity	Max. 75% rh, no condensation
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, (page 3)
	Pressure Equipment Directive	2014/68/EU (fluid group II) With CE label

Overview of types				
Туре	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⁾ At temperatures below 0 °C, use a stuffing box heater. Use adapter at temperatures above 130 °C (see accessories)

Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0378284100	Stuffing box heater 230 V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 V~, 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 \Delta p_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.
- i 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	227	230
Actuating power	1000 N	1000 N
Control signal	2-/3-point	2-/3-point, 010 V, 420 mA
Running time	120/240 s	120/80 s
As control valve	Δp _{max} [bar]	Δp _{max} [bar]
BQE065F300	2.5	2.5
BQE080F300	1.5	1.5
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]
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 2000 N and 2500 N

Actuator	AVM234SF132	AVF234SF132		AVF234SF232	
Page	238	245		245	
Actuating power	2500 N	2000 N		2000 N	
Control signal	2-/3-point, 010 V, 420 mA	2-/3-point, 010 V, 420 mA		2-/3-point, 010 V, 420 mA	
Running time for DN 65, DN 80	40/80/120 s	40/80/120 s		40/80/120 s	
Running time for DN 100150	80/160/240 s	80/160/240 s		80/160/240 s	
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
BQE065F300	1.0	1.0	16.0	1.0	16.0
BQE080F300	0.8	0.8	16.0	0.8	16.0
BQE100F300 BQE125F300 BQE150F300	0.5	0.5	16.0	0.5	16.0

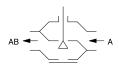
At temperatures above 130 °C, accessories are required.

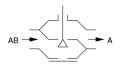




VUG032F304

















ValveDim app



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

- Continuous control of cold and hot water in closed circuits, and of steam
- In combination with valve actuators AVM 322(S), AVM 234S, AVN 234S 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 (VUG065F316: 16 bar)
- Not suitable for drinking water
- Standard compliance for control units according to DIN EN 14597 (VUG065F316 does not have TÜV approval)
- 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 made 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
Ambient conditions		
	Operating temperature ¹⁾	-20200 °C
	Operating pressure ²⁾	PN 16: -16 bar at 30120 °C 14 bar at 200 °C PN 25: 25 bar at 30120 °C 21.7 bar at 200 °C
Standards, directives		
Standards, unconves	Decrees and transcriber data	EN 744 EN 1222
	Pressure and temperature data	EN 764, EN 1333

Flow parameters

Test mark³⁾

When the VUG065F316 is combined with the AVN224S actuator, the permissible media temperature is > 0 °C.

202

EN 60534

TÜV ID: 14392

For cold water applications from -20...30 °C, the VUG***F3**S versions with a stuffing box containing silicone (e.g. VUG015F304S) must be used.

The VUG***F3**S valves do not comply with the standard for control 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

 $^{^{2)}\,\,}$ For operating pressures, see diagram "Pressure / temperature assignment"

^{3]} VUG065F316 does not have TÜV approval. The valve does not bear the test centre identification number and falls under category I of the Pressure Equipment Directive. The 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

Overview of ty	pes					
Туре	Nominal diame- ter	K _{vs} value	Valve stroke	Connection	Weight	Approval
VUG015F374	DN 15	$0.16 \text{m}^3/\text{h}$	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F364	DN 15	0.25 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F354	DN 15	0.4 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F344	DN 15	0.63 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F334	DN 15	1 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F324	DN 15	1.6 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F314	DN 15	2.5 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG015F304	DN 15	4 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
VUG020F304	DN 20	6.3 m³/h	20 mm	PN 25/16	5 kg	CE, TÜV
VUG025F304	DN 25	10 m³/h	20 mm	PN 25/16	5.6 kg	CE, TÜV
VUG032F304	DN 32	16 m³/h	20 mm	PN 25/16	9.1 kg	CE, TÜV
VUG040F304	DN 40	25 m³/h	20 mm	PN 25/16	11.2 kg	CE, TÜV
VUG050F304	DN 50	40 m³/h	20 mm	PN 25/16	13.8 kg	CE, TÜV, UKCA
VUG065F316	DN 65	63 m³/h	40 mm	PN 16	25 kg	CE, UKCA
VUG065F304	DN 65	63 m³/h	40 mm	PN 25	25 kg	CE, TÜV, UKCA
VUG080F304	DN 80	100 m ³ /h	40 mm	PN 25/16	37 kg	CE, TÜV, UKCA
VUG100F304	DN 100	160 m³/h	40 mm	PN 25	50 kg	CE, TÜV, UKCA
VUG125F304	DN 125	250 m³/h	40 mm	PN 25	75 kg	CE, TÜV, UKCA
VUG150F304	DN 150	340 m³/h	40 mm	PN 25	100 kg	CE, TÜV

VUG with DN 150: Not used in the United Kingdom of Great Britain and Northern Ireland (UK)

Markets for valve-actuator combinations

	AVM322F120 AVM322F122	AVM322SF132 AVM234SF132	AVF234SF132 AVF234SF232	AVN224SF132	AVN224SF232
VUG015F374					
VUG015F364					
VUG015F354					
VUG015F344					
VUG015F334					
VUG015F324					
VUG015F314					
VUG015F304					
VUG020F304	1, 3	1, 3	1, 3	2, 3, 4	2, 3
VUG025F304					
VUG032F304					
VUG040F304					
VUG050F304					
VUG065F304					
VUG080F304					
VUG100F304					
VUG125F304					
VUG065F316	1, 3	1, 3	1, 3	2, 3	2, 3
VUG150F304	2, 3	2, 3	2, 3	2, 3, 4	2, 3

Key:

- Intended for the United Kingdom of Great Britain and Northern Ireland (UK)
- Combination not allowed in UK
- Intended for the European Union (EU) for control functions
- Approval in the EU for safety functions. Cat. IV of the PED. TÜV certificate



Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0372336240	Adapter (required when temperature of the medium is 180200 °C)
0378284100	Stuffing box heater 230 VAC, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 VAC, 15 W for medium below 0 °C
0378384001	Torsion protection DN 65150
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.
- **1** 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.
- 1 Definition of Δρ_{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	AVF234SF	132	AVF234SF	232	AVN224S AVN224S		
Page	227	230	238	245		245		248		
Actuating power	1000 N	1000 N	2500 N	2000 N	2000 N		2000 N		1100 N	
Control signal	2-/3-point	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V, 420 mA	2-/3- point, 01 mA	0 V, 420	2-/3-point, 420 mA	010 V,	2-/3-point, 420 mA		
Running time for DN 1550	120/240 s	80/120 s	40/80/120 s	40/80/12	0 s	40/80/12	0 s	40/80/12	0 s	
Running time for DN 65150	-	-	80/160/240 s	80/160/2	40 s	80/160/2	40 s	80/160/2	40 s	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	
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	1 <i>7</i> .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	



Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF	132	AVF234SF	232	AVN224S AVN224S	
Page	227	230	238	245		245		248	
Closes with the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
VUG015F374 VUG015F364 VUG015F354 VUG015F334 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
VUG100F304	-	-	3.0	2.2	25.0	2.2	25.0	1.1	25.0
VUG125F304	-	-	2.0	1.6	25.0	1.6	25.0	0.8	25.0
VUG150F304	-	-	1.5	1.0	25.0	1.0	25.0	0.6	25.0



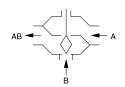
Combination with AVN 224S: with safety function as per DIN EN 14597



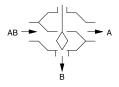


BUG032F304





Control valve



Distribution valve



BUG: 3-way flanged valve, PN 25/16 (el.)

- Continuous control of cold and hot water in closed circuits
- In combination with valve actuators AVM 322(S), AVM 234S, AVN 234S 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 (BUG065F316: 16 bar)
- Not suitable for drinking water
- Standard compliance for control units according to DIN EN 14597 (BUG065F316 does not have TÜV approval)
- Regulating valve, free of silicone grease, painted black
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- The control passage is closed when the spindle is moved out
- Can be used as a control valve or a distribution 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

Parameters		
raiailleleis	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 at max. Δps	Leakage rate, control passage	≤ 0.05% of K _{vs} value
	Leakage rate, mixing passage	≤ 1.0% of K _{vs} value
Ambient conditions		
Ambient conditions	Operating temperature ¹⁾	−20200 °C
Ambient conditions	Operating temperature ¹⁾ Operating pressure ²⁾	-20200 °C PN 16: -16 bar at 30120 °C 14 bar at 200 °C PN 25: 25 bar at 30120 °C 21.7 bar at 200 °C
Ambient conditions Standards, directives		PN 16: -16 bar at 30120 °C 14 bar at 200 °C PN 25: 25 bar at 30120 °C

130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, use water with anti-freeze and brine solu-





For cold water applications from -20...30 °C, use versions BUG***F3**S with a stuffing box containing silicone (e.g.: BUG015F304S). The BUG***F3**S valves do not comply with the standard for control units as per DIN EN 14597. BUG***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

For operating pressures, see diagram "Pressure/temperature assignment"

Flow parameters	EN 60534
Test mark ³⁾	TÜV ID: 18388

Overview of tw	nog					
Overview of ty	_	1/				
Туре	Nominal diame- ter	K _{vs} value	Valve stroke	Connection	Weight	Approval
DU 001 5500 /		2 0 //	0.0	D) 0.5 /3 /	0.1.1	or ring
BUG015F334	DN 15	1 m³/h	20 mm	PN 25/16	3.1 kg	CE, TÜV
BUG015F324	DN 15	1.6 m ³ /h	20 mm	PN 25/16	3.1 kg	CE, TÜV
BUG015F314	DN 15	2.5 m³/h	20 mm	PN 25/16	3.1 kg	CE, TÜV
BUG015F304	DN 15	4 m³/h	20 mm	PN 25/16	3.1 kg	CE, TÜV
BUG020F304	DN 20	6.3 m³/h	20 mm	PN 25/16	4 kg	CE, TÜV
BUG025F304	DN 25	10 m³/h	20 mm	PN 25/16	4.7 kg	CE, TÜV
BUG032F304	DN 32	16 m³/h	20 mm	PN 25/16	7.2 kg	CE, TÜV
BUG040F304	DN 40	25 m³/h	20 mm	PN 25/16	9.2 kg	CE, TÜV
BUG050F304	DN 50	40 m³/h	20 mm	PN 25/16	11.9 kg	CE, TÜV UKCA
BUG065F316	DN 65	63 m³/h	40 mm	PN 16	26.8 kg	CE, UKCA
BUG065F304	DN 65	63 m³/h	40 mm	PN 25	27.1 kg	CE, TÜV UKCA
BUG080F304	DN 80	100 m³/h	40 mm	PN 25/16	36.3 kg	CE, TÜV UKCA
BUG100F304	DN 100	160 m³/h	40 mm	PN 25	53 kg	CE, TÜV UKCA
BUG125F304	DN 125	250 m³/h	40 mm	PN 25	79.1 kg	CE, TÜV UKCA
BUG150F304	DN 150	340 m³/h	40 mm	PN 25	108.7 kg	CE, TÜV

BUG 150F304 is not approved in the United Kingdom of Great Britain and Northern Ireland (UK).

Approval for valves with actuator

	AVM322F120 AVM322F122	AVM322SF132 AVM234SF132	AVF234SF132 AVF234SF232	AVN224SF132	AVN224SF232
BUG015F334 BUG015F324 BUG015F314 BUG015F304 BUG020F304 BUG025F304 BUG032F304 BUG040F304 BUG050F304 BUG065F304 BUG080F304	1, 3	1, 3	1, 3	2, 3, 4	2, 3
BUG100F304 BUG125F304					
BUG065F316	1, 3	1, 3	1, 3	2, 3	2, 3
BUG150F304	2, 3	2, 3	2, 3	2, 3, 4	2, 3

Key:

- 1 Approval in the United Kingdom of Great Britain and Northern Ireland (UK)
- 2 No approval in the UK
- 3 Approval in the European Union (EU) for control functions



 $^{^{3)}}$ BUG065F316 does not have TÜV approval. The valve does not bear the test centre identification number and falls under category I of the Pressure Equipment Directive. The valve can be used with the AVN224SF*** actuator, but not as a safety device.

Use stuffing box heater at temperatures below 0 $^{\circ}$ 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 the BUG065F316 is combined with the AVN224S actuator, the permissible media temperature is > 0 °C.

4 Approval in the EU for safety functions. Cat. IV of the PED. TÜV certificate

Accessories	
Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0372336240	Adapter (required when temperature of the medium is 180200 °C)
0378284100	Stuffing box heater 230 VAC, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24 VAC, 15 W for medium below 0 °C
0378384001	Torsion protection DN 65150
0560260001	Stuffing box for VUG/BUG for cold water application with grease containing silicone

Combination of BUG 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.
- **1** 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.
- i Definition of Δρ_{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	AVF234SI	132	AVF234SI	-232	AVN224S AVN224S	
Page	227	230	238	245		245		248	
Actuating power	1000 N	1000 N	2500 N	2000 N		2000 N	2000 N		
Control signal	2-/3-point	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V, 420 mA	2-/3- point, 01 mA	0 V, 420	2-/3-point, 420 mA	010 V,	2-/3-point, 010 V, 420 mA	
Running time for DN 1550	120/240 s	80/120 s	40/80/120 s	40/80/12	0 s	40/80/12	0 s	40/80/120 s	
Running time for DN 65150	-	-	80/160/240 s	80/160/2	40 s	80/160/2	40 s	80/160/240 s	
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
BUG015F334 BUG015F324 BUG015F314 BUG015F304 BUG020F304	16.0	16.0	16.0	16.0	25.0	16.0	25.0	16.0	25.0
BUG025F304	15.2	15.2	16.0	16.0	25.0	16.0	25.0	16.0	17.0
BUG032F304	9.4	9.4	16.0	16.0	21.0	16.0	21.0	10.5	10.5
BUG040F304	6.1	6.1	16.0	13.5	13.5	13.5	13.5	6.5	6.5
BUG050F304	4.0	4.0	11.0	8.5	8.5	8.5	8.5	4.0	4.0
BUG065F316	-	-	<i>7</i> .1	5.6	5.6	5.6	5.6	-	-
BUG065F304	-	-	<i>7</i> .1	5.6	5.6	5.6	5.6	3.0	3.0
BUG080F304	-	-	4.7	3.4	3.4	3.4	3.4	2.0	2.0
BUG100F304	-	-	3.0	2.2	2.2	2.2	2.2	1.1	1.1
BUG125F304	-	-	2.0	1.6	1.6	1.6	1.6	0.8	0.8
BUG150F304	-	-	1.5	1.2	1.2	1.2	1.2	0.6	0.6
As distribution valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
BUG015F334 BUG015F324 BUG015F314 BUG015F304 BUG020F304 BUG025F304 BUG032F304	6.0	6.0	6.0	6.0	25.0	6.0	25.0	6.0	25.0



Actuator	AVM322F120 AVM322F122	AVM322SF132	AVM234SF132	AVF234SF	132	AVF234SF	232	AVN224S AVN224S	
Page	227	230	238	245		245		248	
BUG040F304	5.5	5.5	4.0	6.0	25.0	6.0	25.0	6.0	25.0
BUG050F304	3.5	3.5	6.0	6.0	25.0	6.0	25.0	4.0	25.0
BUG065F316	-	-	4.5	4.5	25.0	4.5	25.0	-	-
BUG065F304	-	-	4.5	4.5	25.0	4.5	25.0	2.6	25.0
BUG080F304	-	-	3.5	3.4	25.0	3.4	25.0	1.7	25.0
BUG100F304	-	-	3.0	2.2	25.0	2.2	25.0	1.1	25.0
BUG125F304	-	-	2.0	1.6	25.0	1.6	25.0	0.8	25.0
BUG150F304	-	-	1.0	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



VUPO40F304







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

- 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⁾	−20200 °C
	Operating pressure	Up to 120 °C, 25 bar
		Up to 200 °C, 20 bar
Standards and directives		
		TÜV ID: 06973

Overview of t	Overview of types						
Туре	Nominal diameter	K _{vs} value	Valve stroke	Weight			
VUP040F304	DN 40	25 m³/h	14 mm	10000 g			
VUP050F304	DN 50	40 m³/h	25 mm	14000 g			
VUP065F304	DN 65	63 m³/h	25 mm	18000 g			
VUP080F304	DN 80	100 m ³ /h	25 mm	25500 g			
VUP100F304	DN 100	160 m³/h	40 mm	36500 g			
VUP125F304	DN 125	250 m³/h	40 mm	56500 g			
VUP150F304	DN 150	350 m³/h	40 mm	84500 g			

Accessories	
Туре	Description
0372336180	Adaptor (required when temperature of the medium is 130180 °C)
0372336240	Adaptor (required when temperature of the medium is 180200 °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

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.





Туре	Description
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0378356001	Replacement pack for stuffing box DN 4080
0378357001	Replacement pack for stuffing box DN 100150

Combination of VUP with electrical actuators

- i 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 \Delta p_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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the

Pressure differences

27			AVF234SF132		234SF132 AVF234SF232		AVN224SF132 AVN224SF232		
	230	238	245		245		248		
N 000	1000 N	2500 N	2000 N		2000 N		1100 N		
/3-point	•	2-/3- point, 010 V, 420 mA	Incint () 1() V 4 /() 1		2-/3-point, 010 V, 420 mA		2-/3-point, 010 \ 420 mA		
4/168 s	56/84 s	28/56/84 s	28/56/84	28/56/84 s 28/56/84		28/56/84 s 28/56/8		6/84 s	
	-	50/100/150 s	50/100/1	0/100/150 s 50/10		50/100/150 s		50/100/150 s	
	-	80/160/240 s	80/160/240 s		240 s 80/160/240 s		80/160/240 s		
Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
-	-	25.0	25.0	25.0	25.0	25.0	20.0	25.0	
-	-	25.0	25.0	25.0	25.0	25.0	16.0	17.0	
-	-	25.0	25.0	25.0	25.0	25.0	12.0	15.0	
-	-	25.0	20.0	22.0	20.0	22.0	9.0	12.0	
-	-	19.0	14.0	20.0	14.0	20.0	6.0	6.0	
-	-	15.0	10.0	15.0	10.0	15.0	4.0	4.0	
4,	Δp _{max} [bar] 25.0	/3-point point, 010 V, 420 mA /168 s - - Δp _{max} [bar] Δp _{max} [bar] 25.0 25.0	23-point point, 010 V, 420 point, 010 V, 420 mA mA 1/168 s 56/84 s 28/56/84 s - 50/100/150 s - 80/160/240 s Δρ _{max} [bar] Δρ _{max} [bar] Δρ _{max} [bar] 25.0 25.0 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - 25.0 - -	23-point	Point, O10 V, 420 Point, O10 V	Point, 010 V, 420 Point, 010 V	23-point	Point, O10 V, 420 Point, O10 V	

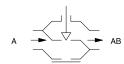
Combination with AVN 224S: with safety function as per DIN EN 14597





VUSO40F305





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

- 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

recinical 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⁾	-10260 °C
	Operating pressure	40 bar at -1050 °C
		36.3 bar at 120 °C
		29.4 bar at 220 °C
		27.8 bar at 260 °C
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534

Overview of ty	pes			
Туре	Nominal diameter	K _{vs} value	Valve stroke	Weight
VUS015F375	DN 15	0.16 m ³ /h	20 mm	5.1 kg
VUS015F365	DN 15	0.25 m ³ /h	20 mm	5.1 kg
VUS015F355	DN 15	0.4 m ³ /h	20 mm	5.1 kg
VUS015F345	DN 15	0.63 m ³ /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 m ³ /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 m ³ /h	30 mm	25.1 kg
VUS100F305	DN 100	160 m³/h	30 mm	36.4 kg

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)



Accessories	
Туре	Description
0372336180	Adaptor (required when temperature of the medium is 130180 °C)
0372336240	Adaptor (required when temperature of the medium is 180260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220260 °C; DN 1550
0378373002	Stuffing box with graphite seal for temperatures of 220260 °C; DN 65100

Combination of VUS with electric actuators

- i 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 \Delta p_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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AVM322F120 AVM322F122	AVM3225F132	AVM234SF132	AVF234SF13	AVF234SF132		2
Page	227	230	238	245		245	
Actuating power	1000 N	1000 N	2500 N	2000 N		2000 N	
Control signal	2-/3-point	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V	, 420 mA	2-/3-point, 010 V, 420 mA	
Running time for DN 1550	120/240 s	80/120 s	40/80/120 s	40/80/120 s		40/80/120 s	
Running time for DN 65100	-	-	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	80/160/240 s		s
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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
Cannot be used to a	close with the pressure						

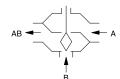
At temperatures above 130 °C, accessories are required





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...100; 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

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	\leq 0.05% of K _{vs} value
	Leakage rate, mixing passage	≤ 1.0% of K _{vs} value
Ambient conditions		
	Operating temperature ¹⁾	-10260 °C
	Operating pressure	40 bar at -1050 °C
		36.3 bar at 120 °C
		29.4 bar at 220 °C
		27.8 bar at 260 °C
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534

Overview of types							
Туре	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		

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)



Туре	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

Accessories	
Туре	Description
0372336180	Adaptor (required when temperature of the medium is 130180 °C)
0372336240	Adaptor (required when temperature of the medium is 180260 °C)
0378373001	Stuffing box with graphite seal for temperatures of 220260 °C; DN 1550
0378373002	Stuffing box with graphite seal for temperatures of 220260 °C; DN 65100



Combination of BUS 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 \Delta p_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 \Delta p_{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	AVF234SF13	2	AVF234SF23	2
Page	227	230	238	245		245	
Actuating power	1000 N	1000 N	2500 N	2000 N		2000 N	
Control signal	2-/3-point	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V, 420 mA	2-/3- point, 010 V	, 420 mA	2-/3-point, 0 420 mA	.10 V,
Running time for DN 1550	120/240 s	80/120 s	40/80/120 s	40/80/120 s		40/80/120 s	
Running time for DN 65100	-	-	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
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
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
BUS100F205	-	-	2.5	1.9	2.5	1.9	2.5

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	820 mm	1020 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 218	Page 220	Page 222	Page 224





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 226	Page 229

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 237	Page 244	Page 247



AVM1*5F***



AVM 105, 115: Valve actuator

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 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

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 230 VAC	±15%, 5060 Hz
		•
Parameters		
	Actuator stroke ¹⁾	08 mm
	Response time	200 ms
Ambient conditions		
	Ambient temperature	−1055 °C
	Media temperature	Max. 100 °C
	Ambient humidity	595% rh, no condensation
Function		
	Control	2-/3-point
Construction		
	Weight	0. <i>7</i> 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, 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 12100:2018

Overview of types						
Туре	Voltage	Actuating power	Running time	Power consumption		
AVM105F100	230 V~	250 N	30 s	2.4 W, 4.5 VA		
AVM105F120	230 V~	250 N	120 s	2.0 W, 4.0 VA		

¹⁾ Stroke 10 mm for AVM115F901





Туре	Voltage	Actuating power	Running time	Power consumption
AVM105F122	24 V~	250 N	120 s	1.6 W, 1.7 VA
AVM115F120	230 V~	500 N	120 s	2.0 W, 4.0 VA
AVM115F122	24 V~	500 N	120 s	1.6 W, 1.7 VA
AVM115F901	230 V~	500 N	160 s	2.0 W, 4.0 VA

AVM115F901: For SAUTER Valveco VCL040 and VCL050, inverse scale, inverse connection

Accessories	
Туре	Description
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372249001	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 100 130 $^{\circ}$ 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



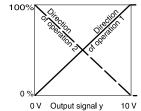
Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator





AVM1*5SF***





AVM 105S, 115S: Valve actuator with SAUTER Universal Technology (SUT)

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 gear unit
- 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

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-1020%
Parameters		
	Actuator stroke ¹⁾	08 mm
	Response time	200 milliseconds
Positioner	Control signal	010 V, R_i > 100 kΩ
	Positional feedback signal	010 V, load > 10 k Ω
	Starting point U ₀	0 or 10 V
	Control span ΔU	10 V
	Switching range X _{sh}	200 mV
Ambient conditions		
	Ambient temperature	-1055 °C
	Ambient humidity	595% rh, no condensation
	Media temperature	Max. 100 °C
Construction		
	Weight	0. <i>7</i> kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m, 5 × 0.75 mm ²
Standards, 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 AVM 115SF901

Overview of types						
Туре	Voltage	Actuating power	Running time	Power consumption		
AVM105SF132	24 V~/=	250 N	35/60/120 s	4.8 W, 8.5 VA		
AVM115SF132	24 V~/=	500 N	60/120 s	4.9 W, 8.7 VA		
AVM115SF901	24 V~/=	500 N	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	
Туре	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 AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 100 130 $^{\circ}$ C
0372249002	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 130 150 $^{\circ}$ C
0372273001	Adapter for Siemens valve VVG/VXG 44, 48
0372286001	Potentiometer 130 Ω
0372286002	Potentiometer 1000 Ω
0372286003	Potentiometer, 5000 Ω



Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator





AVM215F120R



AVM 215: Valve actuator

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

Power supply		
	Power supply	230 V~ ±15%, 5060 Hz
Parameters		
	Actuator stroke	820 mm
	Response time	200 ms
Ambient conditions		
	Ambient temperature	-1055 °C
	Media temperature	Max. 100 °C
	Ambient humidity	585% rh, no condensation
Function		
1 unotion	Control	2-/3-point
		7 F -
Construction		
	Weight	1 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
	Power cable	$1.2 \text{ m long}, 3 \times 0.75 \text{ mm}^2$
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 12100:2018

Overview of types				
Туре	Voltage	Actuating power	Running time	Power consumption
AVM215F120R	230 V~	400 N	7.5 s/mm	3.2 W 7.0 VA

Accessories	
Туре	Description
0510390029	Mounting set for SAUTER VDL valves with 15 mm stroke, thread DN 40 and DN 50 for AVM215(S)F***R
0510390030	Mounting set for SAUTER VU*/BU* valves with 8 mm stroke for AVM215(S)F***R
0510390031	Mounting set for SAUTER VU*/BU* valves with 20 mm stroke for AVM215(S)F***R





Туре	Description
0510390032	Mounting set for SAUTER V6*/B6* and VX*/BX* valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390033	Mounting set for IMI TA-Fusion valves, thread DN 32 to DN 50 for AVM215(S)F***R
0510390034	Mounting set for IMI TA-Fusion valves, thread DN 65 to DN 80 for AVM215(S)F***R
0510390035	Mounting set for IMI CV valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390036	Mounting set for IMI KTM 512 valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390037	Mounting set for IMI KTM 512 valves, thread DN 65 to DN 100 for AVM215(S)F***R
0510390038	Mounting set for Frese valves up to 20 mm stroke, flange DN 50 to DN 80 for AVM215(S) $F^{***}R$
0510390039	Mounting set for Danfoss VFS/VL/VF valves: thread DN 15 to DN 50, VEFS2: DN 25 to DN 50 for AVM215(S)F***R
0510390040	Mounting set for Danfoss VRB/VRG valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390060	Adapter set for AVM 2*5 for Schneider V241/V341
0510480003	Dual auxiliary switch unit for valve actuators AVM215(S), AVM321(S) with 8 mm stroke
0510480004	Double auxiliary contact
0372320001	Hexagon key as visualisation for position indicator



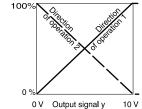
Accessory 0510390029 can also be used for SAUTER Valveco compact DN 40 and DN 50





AVM215SF132





AVM 215S: Valve actuator with SAUTER Universal Technology (SUT)

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, forcedependent 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 (loadfree)
- Connection with valve spindle performed semi-automatically after control voltage is applied
- Fitting vertically upright to horizontal, not suspended

Power supply		
rower suppry	Power supply 24 VAC	±20%, 5060 Hz
		-1020%
	Power supply 24 VDC	-1020%
Parameters		
raiameters	Actuator stroke	820 mm
		200 milliseconds
B. III	Response time	
Positioner	Control signal	010 V, Ri > 100 kΩ
	Positional feedback signal	010 V, load > 10 kΩ
	Starting point U ₀	0 or 10 V
	Control span ∆U	10 V
	Switching range X _{sh}	200 mV
Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	585% rh, no condensation
	Media temperature	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, 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				
Туре	Voltage	Actuating power	Running time	Power consumption
AVM215SF132R	24 V~/=	500 N	,	3.5 W, 6.6 VA 2.7 W, 5.3 VA
AVM215SF132-7	24 V~/=	500 N	7.5 s/mm	3.5 W, 6.6 VA

AVM215SF132-7 including adapter set for VDL flanged valves DN 50, DN 65 and DN 80

Accessories	
Туре	Description
0510390029	Mounting set for SAUTER VDL valves with 15 mm stroke, thread DN 40 and DN 50 for AVM215(S)F***R
0510390030	Mounting set for SAUTER VU*/BU* valves with 8 mm stroke for AVM215(S)F***R
0510390031	Mounting set for SAUTER VU*/BU* valves with 20 mm stroke for AVM215(S)F***R
0510390032	Mounting set for SAUTER V6*/B6* and VX*/BX* valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390033	Mounting set for IMI TA-Fusion valves, thread DN 32 to DN 50 for AVM215(S)F***R
0510390034	Mounting set for IMI TA-Fusion valves, thread DN 65 to DN 80 for AVM215(S)F***R
0510390035	Mounting set for IMI CV valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390036	Mounting set for IMI KTM 512 valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390037	Mounting set for IMI KTM 512 valves, thread DN 65 to DN 100 for AVM215(S)F***R
0510390038	Mounting set for Frese valves up to 20 mm stroke, flange DN 50 to DN 80 for AVM215(S)F***R
0510390039	Mounting set for Danfoss VFS/VL/VF valves: thread DN 15 to DN 50, VEFS2: DN 25 to DN 50 for AVM215(S)F***R
0510390040	Mounting set for Danfoss VRB/VRG valves, thread DN 15 to DN 50 for AVM215(S)F***R
0510390060	Adapter set for AVM 2*5 for Schneider V241/V341
0510480003	Dual auxiliary switch unit for valve actuators AVM215(S), AVM321(S) with 8 mm stroke
0510480004	Double auxiliary contact
0372320001	Hexagon key as visualisation for position indicator

- 🛉 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





AVM32*F1**



AVM 321, 322: Valve actuator

- In ventilation air conditioning units11 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,
- 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 running time can be set using coding switches
- Crank handle for external manual adjustment with motor cut-off
- · Low operating noise
- Simple assembly onto 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
- \bullet Two break-out cable inlets for metric cable gland made of plastic M20 imes 1.5
- Fitting vertically upright to horizontal, not suspended

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-1020%
	Power supply 230 VAC	±15%
	Power consumption ²⁾	< 2.4 W, < 4.0 VA
	<u> </u>	(at nominal voltage, with movement)
Parameters		
	Nominal force ³⁾	1000 N
	Operating noise ⁴⁾	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Media temperature ⁵⁾	0100 °C
Ambient conditions		
	Operating temperature	−1055 °C
	Storage and transport temperature	-4080 °C
	Humidity without condensation	585% rh
Standards, directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730), III (EN 60730)

¹⁾ To be used outside HVAC applications only after consultation with the manufacturer



For power consumption in combination with accessory 0500570001, see section "Power consumption at nominal vollaae

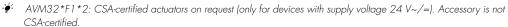
³¹ Actuating power 1000 N under nominal conditions (24 V or 230 V, 25 °C ambient temperature, 50 Hz). With boundary conditions (19.2 V~ / 28.8 V~ / 21. V= / 28.8 V=, -10 °C / 55 °C, 60 Hz) and running time, the actuating/tensile force is minimised to $800\ N$

Operating noise with the slowest running time, measuring distance 1 m

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)

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)
	Over-voltage categories	III
	Degree of contamination	II
	Max. altitude	2000 m
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100:2018

Overview of types						
Туре	Voltage	Nominal stroke	Running time	Power consumption	Dimensions W × H × D	Weight
AVM322F120	230 V~	20 mm	6 (12) s/mm	< 2.4 W, < 4.0 VA	160 × 241 × 88 mm	1.6 kg
AVM322F122	24 V~/=	20 mm	6 (12) s/mm	< 2.0 W, < 3.0 VA	160 × 241 × 88 mm	1.6 kg
AVM321F110	230 V~	8 mm	12 (6) s/mm	< 2.4 W, < 4.0 VA	160 × 187 × 88 mm	1.5 kg
AVM321F112	24 V~/=	8 mm	12 (6) s/mm	< 2.0 W, < 3.0 VA	160 × 187 × 88 mm	1.5 kg



Power consumption: at nominal voltage and with movement; for more power consumption data, see table "Power consumption for supply voltage".

γ	To supply valuage .
Accessories	
AVM 321, 322	
Туре	Description
0500570001	Energy module for reset function for valve actuators AVM321S/AVM322S and AVM321F112/AVM322F122
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	
Туре	Description
0372249001	Temperature adapter for AVM 321(S), required when temperature of the medium $>$ 100130 °C (recommended for temperatures $<$ 10 °C) DN 1550
0372249002	Adaptor required when temperature of the medium is 130150 °C, DN 1550
0510480003	Dual auxiliary switch unit for valve actuators AVM215(S), AVM321(S) with 8 mm stroke
AVM 322	
Туре	Description
0372336180	Adaptor for media temperature above 100 °C to 150 °C for AVM322(S)
0372336240	Adaptor for media temperature above 130 °C to 200 °C for AVM322(S)
0510240012	Mounting set for SAUTER V6** / B6** and VX*/BX* valves with 14 mm stroke for AVM322(S)
0510390006	Mounting set for Siemens valves with 20 mm stroke, spindle diameter 10 mm for AVM322(S)
0510390007	Mounting set for Johnson Controls valves up to 20 mm stroke for AVM322(S)
0510390008	Mounting set for Honeywell valves up to 20 mm stroke for AVM322(S)
0510390009	Mounting set for LDM valves up to 20 mm stroke for AVM322(S)
0510390010	Mounting set for ITT-Dräger valves up to 20 mm stroke for AVM322(S)
0510390012	Mounting set for Belimo valves up to 20 mm stroke for AVM322(S)



Valves, control valves, dampers, actuators | Regulating valves and valve actuators

Туре	Description
0510390028	Adapter set for non-SAUTER valves (Frese), stroke 20 mm
0510480004	_

Accessory is not CSA-certified.



AVM 321S, 322S: Valve actuator

Features

- In ventilation and 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
- 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), running 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 onto 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 \times 1.5
- Fitting vertically upright to horizontal, not suspended
- Nominal actuating power 1000 N

Power supply		
rower suppry		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-1020%
	Power supply 230 VAC	±15%
	Power consumption ¹⁾	< 1.7 W, < 3.5 VA
	·	(at nominal voltage, with movement)
Parameters		
	Nominal force ²⁾	1000 N
	Operating noise ³⁾	< 30 dB (A) at nominal force
	Response time	> 200 ms

For power consumption in combination with accessory 0500570001, see section "Power consumption at nominal volt-



AVM32*SF132







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 running time, the actuating/tensile force is minimised to 800 N

Noise level at the slowest running time, measuring distance 1 m



Media temperature ⁴⁾	0100 °C	
Nominal voltage		
Characteristic	Linear/equal percentage	
Control signal y ⁵⁾	010 V, R_i ≥ 50 kΩ	
	420 mA, R_i ≤ 50 Ω	
Positional feedback signal y ₀	010 V, load ≥ 5 kΩ	
Starting point U ₀	0 or 10 V	
Starting point I ₀	4 or 20 mA	
Control span ∆U	10 V	
Control span ∆I	16 mA	
Hysteresis X _{sh}	160 mV	
	0.22 mA	

Ambient conditions		
	Operating temperature	−1055 °C
	Storage and transport temperature	-4080 °C
	Humidity without condensation	585% rh

Standards, 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 12100:2018

Overview of types					
Туре	Voltage	Nominal stroke	Running time	Dimensions W × H × D	Weight
AVM321SF132	24 V~/=	8 mm	12 (4) s/mm	160 × 187 × 88 mm	1.5 kg
AVM322SF132	24 V~/=	20 mm	6 (4) s/mm	160 × 241 × 88 mm	1.6 kg

* CSA-certified actuators on request (only for devices with supply voltage 24 V~/=). Accessory is not CSA-certified.

Accessories	
AVM 3215, 3225	S
Туре	Description
0500570003	Constant 230 V module for valve actuators AVM321S and AVM322S
0500420001	Split-range unit module for setting sequences for valve actuators AVM321S and AVM322S
0500420002	420 mA feedback module
0500570001	Energy module for reset function for valve actuators AVM321S/AVM322S and AVM321F112/AVM322F122
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

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)</p>

 $^{^{5)}\,}$ Positional feedback signal: also for 2- or 3-point, depending on type of connection

Туре	Description
0510600007	Cable module, 5 m, 6-wire, PVC
0510600008	Cable module, 5 m, 6-wire, halogen-free
AVM 321S	
Туре	Description
0372249001	Temperature adapter for AVM 321(S), required when temperature of the medium > 100130 $^{\circ}$ C (recommended for temperatures < 10 $^{\circ}$ C) DN 1550
0372249002	Adaptor required when temperature of the medium is 130150 °C, DN 1550
0510480003	Dual auxiliary switch unit for valve actuators AVM215(S), AVM321(S) with 8 mm stroke
AVM 322S	
Туре	Description
0500240001	Adaptor for media temperature above 100 °C to 150 °C for AVM322(S)
0500240002	Adaptor for media temperature above 130 °C to 200 °C for AVM322(S)
0510240012	Mounting set for SAUTER V6** / B6** and VX*/BX* valves with 14 mm stroke for AVM322(S)
0510390006	Mounting set for Siemens valves with 20 mm stroke, spindle diameter 10 mm for AVM322(S)
0510390007	Mounting set for Johnson Controls valves up to 20 mm stroke for AVM322(S)
0510390008	Mounting set for Honeywell valves up to 20 mm stroke for AVM322(S)
0510390009	Mounting set for LDM valves up to 20 mm stroke for AVM322(S)
0510390010	Mounting set for ITT-Dräger valves up to 20 mm stroke for AVM322(S)
0510390012	Mounting set for Belimo valves up to 20 mm stroke for AVM322(S)

Accessory is not CSA-certified.

0510390028

0510480004

Adapter set for non-SAUTER valves (Frese), stroke 20 mm



The CASE Components configuration tool can be downloaded from the CASE Suite product page (GZS 100, 150) on the SAUTER homepage.



AVM322F12*R



Features

- In ventilation and air conditioning units11 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 onto 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
- ullet Two break-out cable inlets for metric cable gland made of plastic M20 imes 1.5
- Fitting position vertically upright to horizontal, not suspended

Toomnour data		
Power supply		
rower supply	Power supply 24 VAC	±20%, 5060 Hz
		-1020%
	Power supply 24 VDC	
	Power supply 230 VAC	±15%
	Power consumption ²⁾	< 2.4 W, < 4.0 VA
		(at nominal voltage, with movement)
Parameters		
	Nominal force ³⁾	1000 N
	Operating noise ⁴⁾	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Media temperature ⁵⁾	0100 °C max.
Ambient conditions		
	Operating temperature	-1055 °C
	Storage and transport temperature	-4080 °C
	Humidity without condensation	585% rh
Construction		
	Dimensions W × H × D	160 × 114 × 88
	Weight	0.94
Standards and directives		
	Type of protection	IP54 (EN 60529)
	Protection class	II (EN 60730), III (EN 60730)

¹⁾ To be used outside HVAC applications only after consultation with the manufacturer





For power consumption in combination with accessory 0500570001, see section "Power consumption at nominal voltaae

³¹ 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

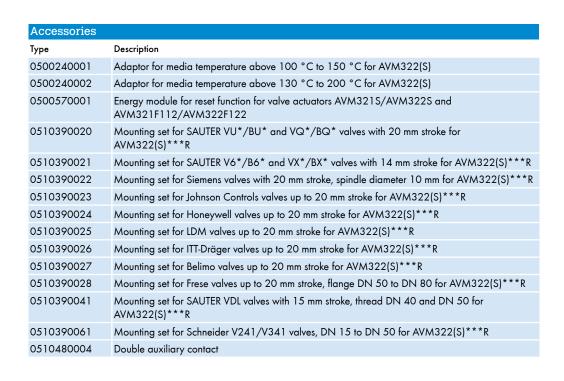
Operating noise with the slowest positioning time, measuring distance 1 $\mbox{\scriptsize m}$

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)

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
	Degree of contamination	II
	Max. altitude	2,000 m
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100:2018

Overview of types				
Туре	Voltage	Nominal stroke	Running time	Power consumption
AVM322F12OR	230 V~	20 mm	6 (12) s/mm	< 2.4 W, < 4.0 VA
AVM322F122R	24 V~/=	20 mm	6 (12) s/mm	< 2.4 W, < 4.0 VA

Power consumption: at nominal voltage and with movement; for more power consumption data, see table "Power consumption for supply voltage"







AVM322SF132R



AVM 322S-R: Retrofit actuator

Features

- In ventilation and air conditioning units¹⁾ 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 onto 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 1000 N

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-1020%
	Power supply 230 VAC	±15%
	Power consumption ²⁾	< 1.7 W, < 3.5 VA
		(at nominal voltage, with movement)
Parameters		
	Positioning time (s/mm)	6 (4)
	Nominal force ³⁾	1000 N
	Nominal stroke	20 mm
	Operating noise ⁴⁾	< 30 dB (A) at nominal force
	Response time	> 200 ms
	Media temperature ⁵⁾	0100 °C

¹⁾ To be used outside HVAC applications only after consultation with the manufacturer

⁵¹ 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)</p>



^{2]} For power consumption in combination with accessory 0500570001, see section "Power consumption at nominal voltage"

³⁾ 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

⁴⁾ Noise level with the slowest positioning time, measuring distance 1 m

	Nominal voltage	24 V~/=
	Characteristic	Linear/equal percentage
	Control signal y ⁶⁾	010 V, R _i ≥ 50 kΩ
		420 mA, R_i ≤ 50 Ω
	Positional feedback signal y ₀	010 V, load ≥ 5 kΩ
	Starting point U ₀	0 or 10 V
	Starting point I ₀	4 or 20 mA
	Control span ∆U	10 V
	Control span ∆I	16 mA
	Hysteresis X _{sh}	160 mV
		0.22 mA
Ambient conditions		
anibient contantions	Operating temperature	-1055 °C
	Storage and transport temperature	-4080 °C
	Humidity without condensation	585% rh
Construction		
	Dimensions W × H × 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	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	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 12100:2018

Overview of types				
Туре	Voltage	Nominal stroke	Running time	Power consumption
AVM322SF132R	24 V~/=	20 mm	6 (4) s/mm	< 1.7 W,
				< 3.5 VA

Accessories	
Туре	Description
0500240001	Adaptor for media temperature above 100 °C to 150 °C for AVM322(S)
0500240002	Adaptor for media temperature above 130 °C to 200 °C for AVM322(S)
0500420001	Split-range unit module for setting sequences for valve actuators AVM321S and AVM322S
0500420002	420 mA feedback module for valve actuators AVM321S and AVM322S
0500570001	Energy module for reset function for valve actuators AVM321S/AVM322S and AVM321F112/AVM322F122
0500570003	Constant 230 V module for valve actuators AVM321S and AVM322S
0510390020	Mounting set for SAUTER VU*/BU* and VQ*/BQ* valves with 20 mm stroke for AVM322(S)***R
0510390021	Mounting set for SAUTER V6*/B6* and VX*/BX* valves with 14 mm stroke for AVM322(S)***R
0510390022	Mounting set for Siemens valves with 20 mm stroke, spindle diameter 10 mm for AVM322(S)***R
0510390023	Mounting set for Johnson Controls valves up to 20 mm stroke for AVM322(S)***R
0510390024	Mounting set for Honeywell valves up to 20 mm stroke for AVM322(S)***R
0510390025	Mounting set for LDM valves up to 20 mm stroke for AVM322(S)***R
0510390026	Mounting set for ITT-Dräger valves up to 20 mm stroke for AVM322(S)***R
0510390027	Mounting set for Belimo valves up to 20 mm stroke for AVM322(S)***R
0510390028	Mounting set for Frese valves up to 20 mm stroke, flange DN 50 to DN 80 for AVM322(S)***R

⁶⁾ Positional feedback signal: also for 2- or 3-point, depending on type of connection

Valves, control valves, dampers, actuators | Regulating valves and valve actuators

Туре	Description
0510390041	Mounting set for SAUTER VDL valves with 15 mm stroke, thread DN 40 and DN 50 for AVM322(S)***R
0510390061	Mounting set for Schneider V241/V341 valves, DN 15 to DN 50 for AVM322(S)***R
0510480004	Double auxiliary contact

- * Accessory is not CSA-certified.
- * The CASE Components configuration tool can be downloaded from the CASE Suite product page (GZS 100, 150) on the SAUTER homepage.



AVM 234S: SUT valve actuator with positioner

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, V6R/B6R and VDL
- 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, forcedependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented
- 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 VAC / 24 VDC; 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 \times 1.5 (2 \times) and M16 \times 1.5
- Fitting vertically upright to horizontal, not suspended

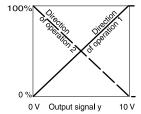
Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	±15%
	Power supply 230 VAC	±15%, 5060 Hz (with accessories)
	Power consumption ¹⁾	24 VAC/24 VDC
	·	10 W/20 VA
		230 VAC (with accessories)
		13 W/28 VA
D		
Parameters		
	Running time	2/4/6 s/mm
	Actuator stroke	049 mm
	Response time for 3-point	200 milliseconds
Positioner	Control signal 1	010 V, R_i >100 k Ω
	Control signal 2	420 mA, R_i = 50 Ω
	Positional feedback signal	010 V, load > 2.5 kΩ
	Starting point U ₀	0 or 10 V
	Control span ∆U	10 V
	Switching range X _{sh}	300 mV
Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	< 95% rh, no condensation
	Media temperature ²⁾	Max. 120 °C

Choose transformers for this value, otherwise malfunctions may occur



AVM234SF132









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	Flame-retardant plastic
Standards, directives		
	Type of protection	IP66 (EN 60529)
	Protection class	III (IEC 60730)
	Over-voltage categories	III
	Degree of contamination	III
CE/UKCA conformity ³⁾	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-14
	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-14
	EMC-D 2014/30/EU (CE)	EN 61000-6-2, EN 61000-6-4
	EMC-2016 (UKCA) ⁴⁾	EN 61000-6-2, EN 61000-6-4
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
	RoHS-2012 (UKCA)	EN IEC 63000:2018

Overview of types

i Actuator for valves: VQD/BQD, VQE/BQE, VUG/BUG, VUP, VUS/BUS

i Actuator with mounting set (see accessories) for valves: V6R, B6R

Туре	Voltage	Actuating power	Running time	Power consumption
AVM234SF132	24 VAC/DC	2500 N	2/4/6 s/mm	10 W, 20 VA
AVM234SF132-5	24 VAC/DC	2500 N	2/4/6 s/mm	10 W, 20 VA
AVM234SF132-6	-	2500 N	-	-
AVM234SF132-7	24 VAC/DC	1700 N	2/4/6 s/mm	10 W, 20 VA

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences

Modules can be added for 2-point/3-point and continuous activation; additional power 2 VA

Туре	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage

Auxiliary change-over contacts (2 each) 12...250 VAC

Туре	Description
0372333001	Auxiliary change-over contacts (sets of 2), 12250 VAC, infinitely variable, min. 100 mA and 12 V permissible load $6(2)$ A
0372333002	Auxiliary change-over contacts (sets of 2), 12250 VAC, gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A

Potentiometers

Туре	Description
0372334001	Potentiometer, 2000 Ω , 1 W, 24 V
0372334006	Potentiometer, 1000 Ω , 1 W, 24 V

Adapters for high temperatures

Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0372336240	Adapter (required when temperature of the medium is 180200 °C)



Explanation of abbreviations in the "Additional technical information" section of the product data sheet and in the appendix to SAUTER product catalogues

⁴⁾ EN 61000-6-2: (HF immunity limitation. Feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A)

Mounting set for AVM234SF132 on SAUTER valves (no adapter needed for 0372338 002)

Туре	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65150, 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

Туре	Description
0372376010	Siemens with 20 mm stroke or 10 mm spindle diameter
0372376014	Siemens with 40 mm stroke or 14 mm spindle diameter
0372376015	Siemens VXF32, PN 10, DN 100150; VXF22, PN 6, DN 100
0372377001	Johnson Controls DN 15150, 14, 25, 40 mm stroke, spindle diameter 10, 12, 14 mm
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 1532
0372389002	ITT-Dräger, DN 4050
0378263001	End stop (needed for V/BXD, V/BXE DN 1550, V/B6 DN 15 with kvs \leq 1 m ³ /h)
0386263001	Cable gland M16 × 1.5
0386263002	Cable gland 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





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

Power supply		
	Power supply	230 V~, ±15%, 5060 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	O8 mm
	Response time	200 ms
Ambient conditions		
	Ambient temperature	560 °C
	Media temperature	Max. 100 °C
	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					
Туре	Voltage	Nominal stroke	Running time	Power consumption	Reset function
AVF124F130	230 V~	8 mm	60/120 s	4 W, 7.6 VA	Spindle retracted
AVF124F230	230 V~	8 mm	60/120 s	4 W, 7.6 VA	Spindle extended







- 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	
Туре	Description
0370881001	Auxiliary change-over contacts, single
0372249001	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 100 130 $^{\circ}$ C
0372249002	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 130 150 $^{\circ}$ 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~





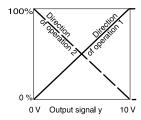
AVF125SF132



AVF125SF132



AVF125SF232

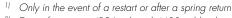


AVF 125S: SUT valve actuator with spring return

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

Power supply		
rower suppry	Power supply	24 V~, ±20%, 5060 Hz
	Power consumption	5 W, 8.4 VA
		30 VA (max. 1 s)
	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	08 mm
Positioner	Control signal 1	010 V, R _i = 100 kΩ
	Control signal 2	420 mA, R_i = 50 Ω
	Positional feedback signal	010 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		
	Ambient temperature	-1055 °C
	Ambient humidity	< 95% rh, no condensation
	Media temperature	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)



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 12100:2018

Overview of types

i For valves with equal-percentage characteristic; can be changed to linear

Туре	Voltage	Nominal stroke	Running time	Power consumption	Reset function
AVF125SF132	24 V~	8 mm	60/120 s	5 W, 8.4 VA	Spindle retracted
AVF125SF232	24 V~	8 mm	60/120 s	5 W, 8.4 VA	Spindle extended

- AVF125SF132: Actuator spindle normally retracted; valve normally closed (NC) with: VUD, BUD, VUE, BUE, VUN,
- AVF125SF232: Actuator spindle normally extended; valve normally open (NO) with: VUD, BUD, VUE, BUE, VUN, BUN

Accessories	
Туре	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0370881001	Auxiliary change-over contacts, single
0372249001	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 100 130 $^{\circ}$ C
0372249002	Temperature adapter for AVM1x5(S), AVF12x(S), AVM321(S), media temperature > 130 150 $^{\circ}$ 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~





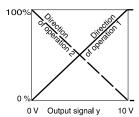
AVF234SF132



AVF234SF132



AVF234SF232



AVF 234S: SUT valve actuator with spring return

- 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 (0...10 V, 4...20 mA) output
- Spring return moves to end position in the event of a power failure/interruption or when a limit controller is
- Stepping motor with SAUTER Universal Technology (SUT) electronic control unit and electronic, forcedependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented
- 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 VAC or 24 VDC; 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 \times 1.5 (2 \times) and M16 \times 1.5
- Fitting vertically upright to horizontal, not suspended

Technical data

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	±15%
	Power supply 230 VAC	±15%, 5060 Hz (with accessories)
	Power consumption ¹⁾	24 VAC/24 VDC
	•	10 W, 20 VA
		230 VAC (with accessories)
		13 W/28 VA
Parameters		
	Running time of motor	2/4/6 s/mm
	Running time of spring ²⁾	1530 s
	Actuating power	2000 N
	Response time for 3-point	200 ms
	Number of spring returns	> 40 000
Positioner	Control signal 1	010 V, $R_i = 100 \text{ k}\Omega$
	Control signal 2	420 mA, R_i = 50 Ω

Positional feedback 0...10 V

Starting point U₀ Control span ΔU

Switching range X_{sh}



Return time equates to a stroke of 14...40 mm and does not depend on the set running time





0...10 V, load > 2.5 k Ω

0 V or 10 V

10 V

300 mV

Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	< 95% rh, no condensation
	Media temperature ³⁾	Max. 130 °C (180 °C or 240 °C with accessories)
Construction		
	Weight	5.6 kg
	Housing	Two-part, yellow
	Housing material	Flame-retardant plastic
Standards, directives		
	Type of protection	IP66 (EN 60529)
	Protection class	III (IEC 60730)
	Over-voltage categories	III
	Degree of contamination	III
CE/UKCA conformity ⁴⁾	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-14
	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-14
	EMC-D 2014/30/EU (CE)	EN 61000-6-2, EN 61000-6-4
	EMC-2016 (UKCA) ⁵⁾	EN 61000-6-2, EN 61000-6-4
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
	RoHS-2012 (UKCA)	EN IEC 63000:2018

Overview of types					
Туре	Voltage	Stroke	Running time	Power consumption	Direction of opera- tion of spring
AVF234SF132	24 VAC/DC	1440 mm	2/4/6 s/mm	10 W, 20 VA	Spindle retracted
AVF234SF132-5	24 VAC/DC	14 mm	2/4/6 s/mm	10 W, 20 VA	Spindle retracted
AVF234SF232	24 VAC/DC	040 mm	2/4/6 s/mm	10 W, 20 VA	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	
Туре	Description
0313529001	Split-range unit for setting sequences
Modules can be	added for 2-point/3-point and continuous activation; additional power 2 VA
Туре	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage
Auxiliary change	-over contacts (2 each) 12250 VAC
Туре	Description
0372333001	Auxiliary change-over contacts (sets of 2), 12250 VAC, infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Auxiliary change-over contacts (sets of 2), 12250 VAC, gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A

An adapter is needed for higher temperatures (180 °C or 240 °C) (see accessories)

⁴⁾ Explanation of abbreviations in "Additional technical data" section

 $^{^{5)}}$ EN 61000-6-2: HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A

Туре	Description
0372334001	Potentiometer, 2000 Ω , 1 W, 24 V
0372334006	Potentiometer, 1000 Ω , 1 W, 24 V

Adapters for high temperatures

Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0372336240	Adapter (required when temperature of the medium is 180200 °C)

Mounting set for AVF234SF*32 onto SAUTER valves (no adapter needed for 0372338 002)

Туре	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65150, 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

Туре	Description
0372376010	Siemens with 20 mm stroke or 10 mm spindle diameter
0372376014	Siemens with 40 mm stroke or 14 mm spindle diameter
0372377001	Johnson Controls DN 15150, 14, 25, 40 mm stroke, spindle diameter 10, 12, 14 mm
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 1532
0372389002	ITT-Dräger, DN 4050
0378263001	End stop (needed for V/BXD, V/BXE DN 1550, V/B6 DN 15 with kvs \leq 1 m ³ /h)
0386263001	Cable gland M16 × 1.5
0386263002	Cable gland 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

- ightharpoons Potentiometer 130 Ω : This potentiometer must only be used as a voltage divider.



AVN 224S: SUT valve actuator with safety function

- 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, forcedependent cut-off
- Simple assembly with valve; spindle is automatically connected after control voltage is applied (patented
- 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 reinitialisation
- 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
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three break-out cable inlets for M20 \times 1.5 (2 \times) and M16 \times 1.5
- Fitting vertically upright to horizontal, not suspended

The following features and certifications do not apply to the United Kingdom of Great Britain and Northern Ireland (UK):

• TÜV certification

The product is not designed for use in the United Kingdom.

Power supply 24 VAC	±20%, 5060 Hz
Power supply 24 VDC	±15%
Power supply 230 VAC	±15%, 5060 Hz (with accessories)
Power consumption	24 VAC/24 VDC
	10 W, 18 VA
	230 VAC (with accessories)
	11 W / 24 VA

		, =
arameters		
	Running time of motor	2/4/6 s/mm
	Running time of spring ¹⁾	1530 s
	Actuating power	1100 N
	Number of spring returns	> 40 000
	Response time for 3-point	200 ms
Positioner	Control signal 1	010 V, R_i = 100 k Ω
	Control signal 2	420 mA, R_i = 50 Ω
	Positional feedback signal	010 V, load > 2.5 k Ω
	Starting point U ₀	0 V or 10 V
	Control span ∆U	10 V
	Switching range X _{sh}	300 mV

Spring return time equates to a stroke of 14...40 mm and does not depend on the set running time



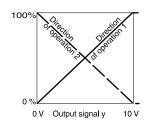
AVN224SF132



AVN224SF132



AVN224SF232











Ambient conditions		
	Ambient temperature	−1055 °C
	Ambient humidity	< 95% rh, no condensation
	Media temperature	Max. 130 °C
Construction		
	Weight	5.6 kg
	Housing	Two-part, yellow
	Housing material	Flame-retardant plastic
Standards, directives		
	Type of protection	IP66 (EN 60529)
	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 mark ⁴⁾	TÜV ID: 18388

Overview of ty	/pes				
Туре	Voltage	Nominal stroke	Running time	Power consumption	Direction of opera- tion of spring
AVN224SF132	24 VAC/DC	40 mm	2/4/6 s/mm	10 W, 18 VA	Spindle retracted
AVN224SF232	24 VAC/DC	40 mm	2/4/6 s/mm	10 W, 18 VA	Spindle extended

- AVN224SF132: Valve normally closed (NC) with: VUG, BUG (as per DIN EN 14597); valve normally open (NO)
- AVN224SF232: Valve normally open (NO) with: VUG, BUG; valve normally closed (NC) with: VUP (as per DIN EN 14597)

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences
Modules can be a	dded for 2-point/3-point and continuous activation; additional power 2 VA
Туре	Description
0372332001	230 V ±15%, supply voltage
0372332002	100 V ±15%, supply voltage
Auxiliary change-c	over contacts (2 each) 12250 VAC
Туре	Description
0372333001	Auxiliary change-over contacts (sets of 2), 12250 VAC, infinitely variable, min. 100 mA and 12 V permissible load $6(2)$ A
0372333002	Auxiliary change-over contacts (sets of 2), 12250 VAC, gold-plated contacts, from 1 mA, to max. 30 V, wider range $3(1)$ A
Potentiometers	
Туре	Description
0372334001	Potentiometer, 2000 Ω , 1 W, 24 V
0372334006	Potentiometer, 1000 Ω , 1 W, 24 V

 $^{^{2)}}$ EN 61000-6-2: HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise

³⁾ Only for VUP, VUG and BUG valves. See PDS for the valves.

⁴⁾ For the United Kingdom of Great Britain and Northern Ireland (UK): Use is not permitted.

Adapters for high temperatures

Туре	Description
0372336180	Adapter (required when temperature of the medium is 130150 °C)
0372336240	Adapter (required when temperature of the medium is 180200 °C)

Mounting set for AVN224SF*32 onto SAUTER valves (no adapter needed for 0372338 002)

Туре	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65150, 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

Туре	Description
0372376010	Siemens with 20 mm stroke or 10 mm spindle diameter
0372376014	Siemens with 40 mm stroke or 14 mm spindle diameter
0372377001	Johnson Controls DN 15150, 14, 25, 40 mm stroke, spindle diameter 10, 12, 14 mm
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 1532
0372389002	ITT-Dräger, DN 4050
0378263001	End stop (needed for V/BXD, V/BXE DN 1550, V/B6 DN 15 with kvs \leq 1 m ³ /h)
0386263001	Cable gland M16 × 1.5
0386263002	Cable gland 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, remote heating, air recirculation devices and plant segments. SAUTER Valveco and eValveco prevent under- or oversupply and the resulting temperature variations caused by pressure changes in the distribution network.

Overview of dynamic regulating valves







	9 Tan		
Type designation	UVC 106 eValveco	UVC 102, 103 eValveco	UVC102MF065100 eValveco
Application			
Preheater for ventilation / air-conditioning, cooler	-	•	•
Chilled ceiling, underfloor heating	•	-	-
Static heating	-	•	•
District heating	-	-	-
Version			
2-way	-	•	•
3-way	-	•	-
6-way	•	-	-
Female thread	-	•	-
Male thread	•	•	-
Flange	-	-	•
Temperature measurement	•	•	•
Electronic control	•	•	•
Nominal pressure	PN 16	PN 16	PN 16
Communication			
Interfaces	-	-	Bluetooth
Protocols	Modbus RTU, BACnet MS/TP	Modbus RTU	Modbus RTU, BACnet MS/TP
Combination options with actuator	integrated	integrated	integrated
Further information	Page 252	Page 254	Page 256



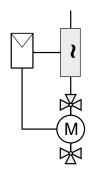




Type designation	VDL 010032 Valveco compact	VDL 040, 050 Valveco compact	VDL 050100 Valveco flange
Application			
Preheater for ventilation / air-conditioning, cooler	•	•	•
Chilled ceiling, underfloor heating	•	•	-
Static heating	•	•	•
District heating	-	-	•
Version			
2-way	•	•	•
3-way	-	-	-
6-way	-	-	-
Female thread	-	•	-
Male thread	•	-	-
Flange	-	-	•
Temperature measurement	-	-	-
Electronic control	_	-	-
Nominal pressure	PN 25	PN 25	PN 16
Combination options with actuator	AXF 217S, AXM 217(S)	AVM 215	AVM 215, AVM 234
Further information	Page 259	Page 259	Page 264



UVC106MF0*5 UVC106BF0*5











ValveDim app

UVC 106: Dynamic flow control system with 6-way ball valve, eValveco

Features

- Patented pressure-independent, variable flow control (EP 2307938)
- Integrated flow measurement with feedback
- Easy integration into every building management system
- Variable flow rate setpoint for heating and cooling modes
- For climate ceilings with changeover (4-pipe)
- Integration into the building management system via BACnet MS/TP or Modbus/RTU with RS-485 interface

Power supply	24 VAC, ±20%, 50 Hz
Rated power	3 W (4 VA)
during continuous operation	· ·
Power consumption when idle	1.5 W (2 VA)
Peak inrush current	5 A [3 ms]
Input signal	X _s : 010 VDC (0.17 mA), split-range
	0.54.5 VDC heating
	5.59.5 VDC cooling
	Ri ≥ 60 kΩ
Feedback signal ¹⁾	X _i : 010 VDC (max. 2 mA)
Feedback signal resolution	Approx. 100 mV

Parameters		
	Setpoint adjustment	Analogue (Y ₁) or via Modbus/RTU or BACnet MS/TP
	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	35 minutes after switching on
Valve and actuator	Nominal pressure	PN16
	Differential pressure $\Delta p^{4)}$	Max. 2 bar (200 kPa)
	Medium ⁵⁾	Water (glycol-free)
	Media temperature	590 °C
	Leakage rate in % of K _{vs}	0.001 %
	Control characteristic	Equal-percentage (factory setting) or linear
	Operating noise (unloaded) ⁶⁾	< 30 dB (A)

Interfaces, communication	on	
	Interface	STP cable, 1 × 2-wire, twisted
BMS integration	Protocol	Modbus/RTU, slave (MF) or BACnet MS/TP (BF)
	Connection ⁷	RS-485, 2-core twisted (with shared lead)
	Cable type	Shielded 2-core cable, STP or FTP

 $^{^{1)}\,\,}$ In relation to the measured actual flow

⁷⁾ Not electrically isolated



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

Measuring distance 1 m, actuator not under load

4

		Valves, control valves, dampers,
	Baud rate ⁸⁾	9600, 19200, 38400 baud
	Terminating resistor	At both ends 120 Ω
Construction		
	Power cable	PVC cable, $7 \times 0.5 \text{ mm}^2$ (length 1 m)
	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" (male thread) DN 25 ISO228/1: 6 × G1" (male thread)
Ambient conditions		
	Ambient temperature	1045 °C
	Storage temperature	−2050 °C
	Ambient humidity	Max. 85% rh, non-condensing
Standards and directives		
	Type of protection ⁹⁾	IP54 (EN 60529), horizontal
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 (2007) EN 61000-6-3 (2007) (A1: 2011 / AC: 2012)
	PED 2014/68/EU	Fluid group II, no CE label (Art. 4.3)

Overview of ty	pes				
Туре	Description	Protocol	Flow range	K _{vs} value	Weight
UVC106MF015	Flow control valve with 6-way ball valve, DN 15	Modbus/RTU	01400 l/h	1.4 m ³	2.5 kg
UVC106BF015	Flow control valve with 6-way ball valve, DN 15	BACnet MS/TP	01400 l/h	1.4 m ³	2.5 kg
UVC106MF025	Flow control valve with 6-way ball valve, DN 25	Modbus/RTU	02500 l/h	2.5 m ³	4 kg
UVC106BF025	Flow control valve with 6-way ball valve, DN 25	BACnet MS/TP	02500 l/h	2.5 m ³	4 kg

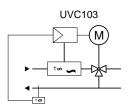
Accessories	
Туре	Description
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25

Factory setting: 38400 baud, 8 data bits, even parity, 1 stop bit

9 See fitting instructions P100017045



UVC102











ValveDim app

UVC 102, 103: Dynamic flow control system with 2- or 3way 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

Technical data

recrifical data		
Electronic power supply		
	Power supply	U _v : 24 V~ (±20%) 50 Hz
	Rated power during continuous operation	2.5 W (3 VA)
	Power consumption when idle	1.0 W (1.5 VA)
	Peak inrush current	6.4 A [3 ms]
	Input signal	Y_1 : 010 V= Ri ≥ 60 kΩ
	Feedback signal ¹⁾	X ₁ : 010 V= (max. 2 mA)
	Feedback signal resolution	Approx. 100 mV
Volume flow control		
	Setpoint adjustment	Analogue (Y ₁) or via Modbus or oper- ating 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	1 <i>77</i> 0 l/h
	Readiness for operation	5-10 minutes after switching on
Valve and actuator		
	Nominal pressure	PN 16 (16 bar)
	Differential pressure Δp	Max. 2.4 bar
	Medium ⁴⁾	Water (glycol-free)
	Media temperature	5 °C90 °C
	Leakage rate in % of K _{vs}	0.001 %
	Operating noise (unloaded) ⁵⁾	< 30 dB (A)
Temperature sensor		
remperature sensor	Measuring element	Pt500 as per EN 60751, Class B
Interfaces, communication		
	Bus connector	STP cable, 2x double twisted
BMS integration	Protocol	Modbus/RTU, slave
	Connection	RS-485 double twisted cable (with shared lead)
		-1.11.1-

¹⁾ In relation to the measured actual flow



Cable type

Shielded 2-core cable, STP or FTP

²⁾ Unit in []: Factory setting

In relation to the measured actual flow

In accordance with VDI 2035 sheet 2

Measuring distance 1 m, actuator not under load

	Baud rate	9600, 19 200 or 38 400
	Terminating resistor	120 Ω both sides
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		
	Ambient temperature	1045 °C
	Storage temperature	−2050 °C
	Ambient humidity	Max. 90% rh, non-condensing
Standards, directives		
	Type of protection ⁶⁾	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 ty	pes	
Туре	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



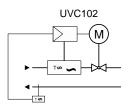
⁶⁾ See fitting instructions P100017043



UVC102MF065



UVC102MF100



BACnet













ValveDim app

UVC102MF065...100: Dynamic flow control system with 2way valve and energy monitoring, eValveco

Features

- Patented pressure-independent variable flow control
- Dynamic hydronic balancing at full and partial load
- Integrated flow measurement with feedback and temperature measurement
- Energy monitoring
- Remote commissioning and troubleshooting
- Bluetooth interface for commissioning and maintenance via smartphone app
- Available as 2-way globe valve, version DN 65...DN 100

Power supply 24 VAC	±10%, 50 Hz
	•
Power supply 24 VDC	±10%
Power consumption	DN 65: 6.5 W / 8 VA
	DN 80: 9.5 W / 11 VA
	DN 100: 13.5 W / 19 VA
Power consumption when idle	DN 65: 5.5 W / 6 VA
·	DN 80: 8.5 W / 9 VA
	DN 100: 8.5 W / 9 VA
Input signal	Y ₁ : 010 V= (0.17 mA)
	Ri ≥ 60 kΩ
Feedback signal ¹⁾	X ₁ : 010 V= (max. 2 mA)
Additional sensor input	Y ₂ : 010 V= (0.17 mA)
Feedback signal resolution	Approx. 100 mV

Parameters		
Volume flow control	Setpoint adjustment ²⁾	Analogue (Y ₁) or via Modbus RTU
		(can be switched to BACnet MS/TP)
	Type of sensor	TTM ultrasonic sensor, no moving parts
	Unit of measurement ³⁾	[m ³ /h], l/s, l/min, gpm (UK)
	Readiness for operation	510 min. after switching on
	Control characteristic ⁴⁾	[Equal percentage] or linear
	Control accuracy	5% of setpoint
	Measuring accuracy	±3% (in relation to the measured ac-
		tual flow)
	Actuator running time	4 s/mm
Valve	Nominal pressure	PN 16 (16 bar)
	Medium	Water (glycol-free)
	Media quality	According to VDI 2035
	Media temperature ⁵⁾	5130 °C
	Leakage rate	Class III as per DIN EN 60534-4
		(0.001 × k _{vs})
Temperature sensor	Type of sensor	2 × Pt1000 as per EN 60751,
		class B
	Cable length	2 m per sensor
Interfaces, communicatior		
	Wireless	Bluetooth (max. range 10 m)

¹⁾ In relation to the measured actual flow



²⁾ In relation to the measured actual flow

Factory setting in []

Factory setting in []

⁵⁾ For media temperatures above 100 °C, use temperature adapter (DN 65 and DN 80).



	Electric wiring (incl. bus connection)	PVC cable, 7 × 0.5 mm ² , cable length 2 m
	Protocol	Modbus RTU/TCP, slave BACnet MS/TP, slave
	Connection ⁶	RS-485 twisted pair cable with shared lead
	Cable type	Shielded 2-core cable, STP or FTP
	Baud rate ⁷⁾	9600, 19 200 or [38 400] 1 start bit Parity [even]/odd/no parity 8 data bits 1 stop bit
	Topology	Multi-drop bus, max. length 1000 m
	Terminating resistor	At both ends 120 Ω
	Indicator/display	Status LEDs
Construction		
	Material of water-bearing parts	Brass, bronze, EPDM, stainless steel (1.4401, 1.4122,1.4301), thermo- plastic, ceramic
	Material of flow meter housing	Steel, polypropylene
	Material of actuator housing	Flame-retardant plastic
	Connections	PN16, flange as per EN 1092-2 type 21
Ambient conditions		
	Operating temperature	1045 °C
	Storage and transport temperature	−2050 °C
	Humidity	585% rh (non-condensing)
	Maintenance / calibration	Maintenance-free / factory calibrated
	Max. altitude	2000 m above sea level
Standards, directives		
	Type of protection	IP54 (EN 60529), horizontal
	Protection class	III
CE conformity according to	Measuring Instruments Directive 2014/32/EU	EN 1434-4:2007
	EMC Directive 2014/30/EU	Volume flow sensor: EN 61000-3-2, EN 61000-3-3 EN 61000-6-1, EN 61000-6-3 AVM234: EN 61000-6-2, EN 61000-6-4 AVM322: EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	PED 2014/68/EU	Fluid group II, no CE label
	Low-Voltage Directive 2014/35/EU	AVM 322 and AVM 234 EN 60730-1, EN 60730-2-14
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534

Overview of types							
Туре	Nominal diame- ter	Volume flow range	Volume flow at 30 kPa pressure drop	K _{vs} value	Weight		
UVC102MF065	DN 65	0.17548.8 m³/h	26.7 m³/h	48.8 m³/h	37.4 kg		
UVC102MF080	DN 80	0.28070.7 m ³ /h	38.7 m³/h	$70.7 \text{ m}^3/\text{h}$	46.1 kg		
UVC102MF100	DN 100	0.420118.7 m ³ /h	65 m³/h	118.7 m³/h	69.5 kg		

Not electrically isolated

Standard factory setting in []



Accessories					
UVC102MF065, UVC102MF080					
Туре	Description				
0510480004	Double auxiliary contact				
0500240001	Adaptor for media temperature above 100 °C to 150 °C for AVM322(S)				
0378369101	Complete replacement stuffing box for DN 65150				

UVC102MF100

Туре	Description
0372333001	Auxiliary change-over contacts (sets of 2), 12250 VAC, infinitely variable, min. 100 mA and 12 V permissible load $6(2)$ A
0372333002	Auxiliary change-over contacts (sets of 2), 12250 VAC, gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A
0378369101	Complete replacement stuffing box for DN 65150

Flow rate

	DN [mm]		V _{Min} [m³/h]	V ₅ [m ³ /h]	V ₁₀ [m ³ /h]	V ₂₀ [m ³ /h]	V ₃₀ [m ³ /h]	V _{Max} [m ³ /h]
UVC102MF065	65	48.8	0.1 <i>75</i>	10.9	15.4	21.8	26.7	48.8
UVC102MF080	80	70.7	0.280	15.8	22.3	31.6	38.7	70.7
UVC102MF100	100	118. <i>7</i>	0.420	26.5	37.5	53.0	65.0	118. <i>7</i>

 $\begin{array}{lll} \Delta p & \text{Maximum closing pressure} \\ V_{\text{Min}} & \text{Minimum controllable flow} \\ K_{\text{vs}} & \text{Actual flow rate with valve fully open and 1 bar (100 kPa) pressure difference} \end{array}$

 $\begin{array}{lll} V_5 & & \text{Flow range at } \Delta p \; 5 \; \text{kPa} \\ V_{10} & & \text{Flow range at } \Delta p \; 10 \; \text{kPa} \\ V_{20} & & \text{Flow range at } \Delta p \; 20 \; \text{kPa} \\ V_{30} & & \text{Flow range at } \Delta p \; 30 \; \text{kPa} \\ \end{array}$

Max Maximum controllable flow. The maximum flow is reached at a differential pressure of 1 bar (100 kPa). The target flow can be set to a value that is equal to or less than the maximum flow

VDL 010...050: 2-way regulating valve for dynamic hydronic balancing, PN 25, Valveco compact

Features

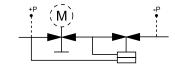
- Regulating valve with three functions: Control, preset maximum volume flow, automatic flow regulation
- Range 30...11500 l/h
- Easy to preset the max. required volume flow
- Versions with and without pressure measurement nipple
- The valve is closed when the spindle is moved in
- Closes against the pressure
- Slight adaptation of the proven SAUTER actuator technology
- Regulating valve with male (DN 10...DN 32) or female thread (DN 40 and DN 50) according to **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

Parameters		
	Nominal pressure	25 bar
	Maximum operating pressure	PN 25
	Valve characteristic	Linear
	Leakage rate	0.01%
Ambient conditions		
	Operating temperature for valve	0120 °C
	Operating temperature in combination with AXM 217(S) and AVM 215(S)	100 °C at the valve
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, page 3

Overview of types							
Туре	Nomi- nal di- ameter (DN)	Volume flow range (I/h)	Control range min Δpmax Δp (kPa)	Valve stroke (mm)	Connection / tol- erance class	Pressure meas- urement nipple	Weight (kg)
VDL010F200	10	65370	14800	5	G ½" B	-	0.36
VDL010F201	10	65370	14800	5	G ½" B	•	0.45
VDL010F210	10	30200	14800	2.5	G ½" B	-	0.36
VDL010F211	10	30200	14800	2.5	G ½" B	•	0.45
VDL015F200	15	100575	14800	2.5	G ¾" B	-	0.38
VDL015F200H	15	2201330	8800	5	G ¾" B	-	0.38
VDL015F201	15	100575	14800	2.5	G ¾" B	•	0.47
VDL015F210	15	65370	14800	5	G ¾" B	-	0.38
VDL015F201H	15	2201330	8800	5	G ¾" B	•	0.47
VDL015F211	15	65370	14800	5	G ¾" B	•	0.47
VDL015F220	15	30200	14800	2.5	G ¾" B	-	0.38
VDL015F221	15	30200	14800	2.5	G ¾" B	•	0.47
VDL020F200	20	2201330	15800	5	G 1" B	-	0.4
VDL020F201	20	2201330	15800	5	G 1" B	•	0.5



VDL015F210







VDL040F201





Туре	Nominal diameter	Volume flow range (I/h)	Control range min Δpmax Δp (kPa)	Valve stroke (mm)	Connection / tol- erance class	Pressure meas- urement nipple	Weight (kg)
VDL020F210	20	160990	15800	4	G 1" B	-	0.4
VDL020F210H	20	3001800	8800	5.5	G 1" B	-	0.4
VDL020F211	20	160990	15800	4	G 1" B	•	0.5
VDL020F211H	20	3001800	8800	5.5	G 1" B	•	0.5
VDL020F220	20	100575	14800	2.5	G 1" B	-	0.4
VDL020F221	20	100575	14800	2.5	G 1" B	•	0.5
VDL025F200	25	6003609	8800	5.5	G 11/4" B	-	1.02
VDL025F201	25	6003609	8800	5.5	G 11/4" B	•	1.12
VDL025F210	25	2801800	8800	5.5	G 11/4" B	-	0.51
VDL025F211	25	2801800	8800	5.5	G 11/4" B	•	0.62
VDL032F200	32	5504001	8800	5.5	G 1½" B	-	1.17
VDL032F201	32	5504001	8800	5.5	G 1½" B	•	1.27
VDL040F201	40	13709500	8800	15	G 1½" B	•	3.28
VDL050F201	50	140011500	8800	15	G 2" B	•	3.71

- * Valves DN 40 and DN 50 with female thread
- ₹ Valves DN 10...DN 32 with male thread

Accessories	
Туре	Description
0378133010	1 threaded sleeve, R3%, flat-sealing, with cap nut and flat seal, $G^{1/2}$ - R3%
0378133015	1 threaded sleeve, $R \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $
0378133020	1 threaded sleeve, $R\frac{3}{4}$, flat-sealing, with cap nut and flat seal, G1 - $R\frac{3}{4}$
0378134010	1 solder nipple, Ø 12, flat-sealing, with cap nut and flat seal, $G {\it V}_{\it 2}$
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G^{3}_{4}
0378134020	1 solder nipple, Ø 22, flat-sealing, with cap nut and flat seal, G1
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0510390029	Mounting set for SAUTER VDL valves with 15 mm stroke, thread DN 40 and DN 50 for AVM215(S)F***R
0361951015	Screw fitting for male thread with flat seal, G1 - $Rp\ensuremath{\rlap{/}\!\!/}_2$
0361951020	Screw fitting for male thread with flat seal, G $1\frac{1}{4}$ - Rp^{3} /4
0361951025	Screw fitting for male thread with flat seal, G1 $\frac{1}{2}$ - Rp1
0360391040	Screw fitting incl. seal, 2 pcs. required, Rp1 $\frac{1}{2}$ - G1 $\frac{1}{2}$
0360391050	Screw fitting incl. seal, 2 pcs. required, Rp2 - G2
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of VDL with electric actuators

- i 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 Δp₅: 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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the





In combination with VDL010F20*, VDL015F21* and VDL020F20*: The volume flow range is reduced by 10%.

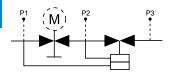
Actuator	AXS215SF122	
Page		
Voltage	24 VAC	
Control signal	010 V	
Running time	30 s/mm	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]
VDL010F200 VDL010F201 VDL010F210 VDL010F211 VDL015F200 VDL015F201 VDL015F201 VDL015F201 VDL015F201 VDL015F211 VDL015F211 VDL015F221 VDL020F200 VDL020F201 VDL020F210 VDL020F210 VDL020F211 VDL020F221 VDL020F211	8.0	6.0
VDL025F211 VDL025F200 VDL025F201 VDL032F200	8.0	8.0
Cannot be used to a	close with the pressure	

In combination with VDL010F20*, VDL015F21* and VDL020F20*: The volume flow range is reduced by 10%.

Actuator	AVM215F120R		AVM215SF132R	
Page	222		225	
Voltage	230 V~		24 V~/=	
Control signal	2-/3-pt.		010 V	
Running time	7.5 s/mm		7.5 s/mm	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
VDL040F201 VDL050F201	8.0	8.0	8.0	8.0
Cannot be used to close with the pressure				



VDL065F501











ValveDim app

VDL 050...100: 2-way regulating valve for dynamic hydronic balancing, PN 16, Valveco flange

Features

- Regulating valve with three functions: Control, preset maximum volume flow, automatic flow regulation
- Control of low and mean temperature domestic hot water, cooled water, water with anti-freeze in closed circuits¹⁾
- Volume flow range: 3.7...90.9 m³/h
- Easy to preset the max. required volume flow
- All types with three pressure measurement nipples
- The valve is closed when the spindle is moved in
- Closing procedure against the pressure
- Simple connection to SAUTER actuators AVM 215 for DN 50...80 and AVM 234 for DN 100
- \bullet Regulating valve with flange connection (DN 50...DN 100) according to EN ISO 7005-2
- Flat-sealing regulating valve
- Differential pressure across the control unit is kept constant; valve authority 1
- Valve body DN 50...80 made of grey cast iron (GJL-250); DN 100 made of ductile cast iron (GJS-400)
- Stainless-steel spindle

Parameters		
- 4141101010	Nominal pressure	16 bar
	Volume flow setting range	3.790.9 m ³ /h
	Maximum operating pressure	PN 16 (EN 1333)
	Connection	Flange as per ISO 7005-2
	Valve characteristic	Linear (VDI/VDE 2173)
	Control ratio	1:100
	Leakage rate	Max. 0.01% of the volume flow with the valve fully open (Class IV, EN 1349)
Ambient conditions		
	Operating temperature for valve	1120 °C
Construction		
	Pressure measurement nipple	3 pcs, G¼ inch, suitable for 2 × 40 mm probes
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534, page 3
	PED 2014/68/EU ²⁾	Fluid group 2 as per Art. 13 Pressure equipment as per Art. 1.1
	EAC Directive	All types EAC-compliant (Eurasian conformity)

Overview of types					
Туре	Nominal diameter (DN)	Volume flow range	Control range min Δpmax Δp (kPa)	Valve stroke (mm)	Weight (kg)
VDL050F501	50	3.714.3	13600	20	15
VDL050F501H	50	5.724.6	30600	20	15
VDL065F501	65	4.524.4	28600	20	19

 $^{^{1)}}$ Water quality must comply with VDI 2035, water with anti-freeze permissible

²⁾ No special valve test required at operating temperature ≤ 110 °C. This also applies to valves with PS x DN < 1000. In both cases the valves do not have a CE label



Туре	Nominal diameter (DN)	Volume flow range	Control range min Δpmax Δp (kPa)	Valve stroke (mm)	Weight (kg)
VDL065F501H	65	6.437.7	30600	20	19
VDL080F501	80	6.835.7	18600	20	28
VDL080F501H	80	8.549.0	22600	20	28
VDL100F501	100	12.269.6	18600	40	46
VDL100F501H	100	14.890.9	20600	40	46

Туре	Fluid group 2	Average flow ac	ccuracy
VDL050F501	No CE marking as per PED,		
VDL050F501H	Article 4.3		
VDL065F501		\pm 10% of Δp_{min}	± 5%
VDL065F501H	With CE marking as per PED,	up to 70 kPa	at 70600 kPa
VDL080F501	Article 14.2 (conformity assessment procedure: Category I, Module A)		
VDL080F501H			
VDL100F501	With CE marking as per PED,	± 10% of Δp _{min}	± 5%
VDL100F501H	Article 14.2	up to 105 kPa	at 150600 kPa

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.
- i Definition of $\Delta p_{\vec{s}}$ 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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the
- **Definition of** Δp_{min} : Minimum differential pressure across the control passage of the valve for the differential pressure regulator to operate reliably.

Actuator	AVM215SF132-7		AVM234SF132-7	
Page	225		238	
Voltage	24 V~/=		24 VAC/DC	
Control signal	010 V		010 V	
Running time	7.5 s/mm		2/4/6 s/mm	
Actuating power	500 N		1700 N	
Media temperature	Max. 120 °C		Max. 120 °C	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
VDL050F501 VDL050F501H VDL065F501 VDL065F501H VDL080F501 VDL080F501H	6.0	7.0	-	-
VDL100F501 VDL100F501H			6.0	6.0
Cannot be used to a	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)	1550	1550	1550	1550
Nominal pressure	PN 40	PN 40	PN 40	PN 40
Combination options with actuator	AKM 105(S) AKM 115(S) AKM 115SA AKF 112 AKF 113(S)			
Further information	Page 268	Page 272	Page 276	Page 279

Overview of cut-off and changeover ball valves









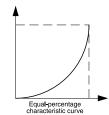


Type designation	VKAI	VKAA	BKLI	BKTI	BKTA
Application					
Single-room control	•	•	•	•	•
Preheater for ventilation & air-conditioning	•	•	•	•	•
Preheater, cooler for ventilation & air-conditioning	•	•	•	•	•
Reheater for ventilation & air-conditioning	•	•	•	•	•
Version					
2-way	•	•	-	-	-
3-way	-	-	•	•	•
Female thread	•	-	•	•	-
Male thread	-	•	-	-	•
Nominal diameter (DN)	1550	1550	1550	1550	1550
Nominal pressure	PN 40				
Combination options with actuator	AKM 105(S) AKM 115(S) AKM 115SA AKF 112 AKF 113(S)				
Further information	Page 282	Page 284	Page 287	Page 290	Page 293



VKRO40F300





VKR: 2-way regulating ball valve with female thread, PN 40

- 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), 115SA 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

Parameters		
	Nominal pressure	40 bar
	Valve characteristic	Equal-percentage
	Control ratio of ball valve	500:1
	Control ratio with actuator	> 50:1
	Leakage rate	Watertight as per EN 60534-4 L/1, better than class 4
	Angle of rotation	90°
Ambient conditions		
	Operating temperature ¹⁾	-10130 °C, no condensation
	Operating pressure	40 bar (–1050 °C) 35 bar (130 °C)
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)

Overview of types				
Туре	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"	$2.5 \text{ m}^3/\text{h}$	0.29 kg
VKR015F320-FF	DN 15	Rp ½"	4 m³/h	0.29 kg
VKR015F310-FF	DN 15	Rp ½"	6.3 m ³ /h	0.29 kg
VKR015F300-FF	DN 15	Rp ½"	10 m³/h	0.29 kg
VKR020F320-FF	DN 20	Rp 3/4"	4 m³/h	0.32 kg
VKR020F310-FF	DN 20	Rp ¾"	6.3 m ³ /h	0.32 kg
VKR020F300-FF	DN 20	Rp ¾"	10 m³/h	0.32 kg
VKR025F320-FF	DN 25	Rp 1"	6.3 m ³ /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 11/4"	10 m³/h	0.73 kg



¹⁾ At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.

Туре	Nominal diameter	Connection ISO 7/1 Rp	K _{vs} value	Weight
VKR032F310-FF	DN 32	Rp 11/4"	16 m³/h	0.73 kg
VKR032F300-FF	DN 32	Rp 11/4"	25 m³/h	0.73 kg
VKRO40F320-FF	DN 40	Rp 1½"	16 m³/h	1.1 kg
VKRO40F310-FF	DN 40	Rp 1½"	25 m³/h	1.1 kg
VKRO40F300-FF	DN 40	Rp 1½"	40 m³/h	1.1 kg
VKR050F320-FF	DN 50	Rp 2"	25 m³/h	1.76 kg
VKRO50F310-FF	DN 50	Rp 2"	40 m³/h	1.76 kg
VKR050F300-FF	DN 50	Rp 2"	63 m³/h	1.76 kg

Accessories	
Туре	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
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560284032	Screw fitting in brass, flat-sealing, female thread/male thread for DN 32
0560284040	Screw fitting in brass, flat-sealing, female thread/male thread for DN 40
0560284050	Screw fitting in brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

¹ unit delivered in each case, unless otherwise specified. See last page for dimensions and scope of delivery of



Combination of VKR with electric actuators

- *i* 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.
- **1** 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.
- **i** 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
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
VKR015F350-FF VKR015F340-FF VKR015F330-FF VKR015F310-FF VKR015F310-FF VKR020F320-FF VKR020F310-FF VKR020F300-FF VKR025F320-FF VKR025F310-FF VKR025F310-FF	1.8	1.8	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	2.4	2.4
Cannot be used to a	close with the pressure			

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
VKR015F350-FF VKR015F340-FF VKR015F330-FF VKR015F310-FF VKR015F300-FF VKR020F320-FF VKR020F310-FF VKR020F300-FF VKR025F320-FF VKR025F310-FF VKR025F310-FF	1.8	3.5	3.5	3.5



Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
VKR032F320-FF VKR032F310-FF VKR032F300-FF VKR040F320-FF VKR040F300-FF VKR040F300-FF VKR050F320-FF VKR050F3310-FF VKR050F3300-FF	1.2	2.4	2.4	2.4
VKR050F300-FF Cannot be used to	close with the pressure			

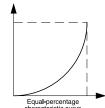
				1		1	
AKF112F12	:0	AKF112F122		AKF113F122		AKF113SF122	
307		307		307		308	
7 Nm		7 Nm		7 Nm		7 Nm	
2-point		2-point		3-point		010 V	
90 s		90 s		90 s		90 s	
230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]
3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4
2.4	3.5	2.4	3.5	2.4	3.5	2.4	3.5
	307 7 Nm 2-point 90 s 230 VAC Δp _{max} [bar] 3.5	307 7 Nm 2-point 90 s 230 VAC Δp _{max} [bar] Δp _s [bar]	307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] 3.5 5.4 3.5 2.4 3.5	307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _s [bar] 3.5 5.4 3.5 5.4 3.5 5.4 3.5 5.4	307 307 307 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC Δρ _{max} [bar] Δρ _s [bar] Δρ _{max} [bar] Δρ _{max} [bar] Δρ _{max} [bar] 3.5 5.4 3.5 3.5 3.5 2.4 3.5 2.4 3.5 2.4 3.5 2.4	307 307 307 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 24 VAC/DC 24 VAC/DC 24 VAC/DC Δρ _{max} [bar] Δρ _s [bar]	307 308 307 308 7 Nm 7 Nm 7 Nm 7 Nm 7 Nm 90 s 90 s 90 s 90 s 24 VAC/DC 25 VAC/DC 26 VAC/DC 26 VAC/DC 26 VAC/DC 26 VAC/DC 27 VAC/DC 28 VAC/DC 29 VAC/DC 29 VAC/DC 20 VAC/DC





VKRAO**F300





VKRA: 2-way regulating ball valve with male thread, PN 40

- 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), 115SA 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 x" 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

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⁾	-10130 °C, no condensation
	Operating pressure	Liquids: 40 bar (-1050 °C), 35 bar Gases: 20 bar
		04000. 20 04.
Standards, directives		
	Pressure and temperature data	EN 764, EN 1333
	Flow parameters	EN 60534 (page 3)

Overview of types						
Туре	Nominal diameter	Connection ISO 228-1	K _{vs} value	Weight		
VKRA015F350	DN 15	G 1" B	1 m³/h	360 g		
VKRA015F340	DN 15	G 1" B	1.6 m³/h	360 g		
VKRA015F330	DN 15	G 1" B	2.5 m³/h	360 g		
VKRA015F320	DN 15	G 1" B	4 m³/h	360 g		
VKRA015F310	DN 15	G 1" B	6.3 m³/h	360 g		
VKRA020F320	DN 20	G 11/4" B	4 m³/h	440 g		
VKRA020F310	DN 20	G 11/4" B	6.3 m³/h	440 g		
VKRA020F300	DN 20	G 11/4" B	10 m³/h	440 g		
VKRA025F320	DN 25	G 1½" B	6.3 m³/h	570 g		
VKRA025F310	DN 25	G 1½" B	10 m³/h	570 g		
VKRA025F300	DN 25	G 1½" B	16 m³/h	570 g		
VKRA032F320	DN 32	G 2" B	10 m³/h	840 g		
VKRA032F310	DN 32	G 2" B	16 m³/h	840 g		
,	2.,, 42	V = -		- · · · · · ·		



¹⁾ At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.

Туре	Nominal diameter	Connection ISO 228-1	K _{vs} value	Weight
VKRA032F300	DN 32	G 2" B	25 m³/h	840 g
VKRA040F320	DN 40	G 21/4" B	16 m³/h	1290 g
VKRA040F310	DN 40	G 21/4" B	25 m³/h	1290 g
VKRA040F300	DN 40	G 21/4" B	40 m³/h	1290 g
VKRA050F320	DN 50	G 2¾" B	25 m³/h	1980 g
VKRA050F310	DN 50	G 2¾" B	40 m³/h	1980 g
VKRA050F300	DN 50	G 2¾" B	63 m³/h	1980 g

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100~^{\circ}\text{C}$
0361951015	Screw fitting for male thread with flat seal, G1 - $\mbox{Rp}\ensuremath{\frac{1}{2}}$
0361951020	Screw fitting for male thread with flat seal, $G1\frac{1}{4}$ - $Rp\frac{3}{4}$
0361951025	Screw fitting for male thread with flat seal, G1 $\frac{1}{2}$ - Rp1
0361951032	Screw fitting for male thread with flat seal DN 32
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	Screw fitting for male thread with flat seal DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of VKRA with electric actuators

- i 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 \Delta p_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 \Delta p_{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	
Page	301	301	301	301	
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm	
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	
Running time	30/120 s	30/120 s	120 s	120 s	
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC	
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	
VKRA015F350 VKRA015F340 VKRA015F330 VKRA015F320 VKRA015F310 VKRA020F320 VKRA020F310 VKRA020F300 VKRA025F320 VKRA025F310 VKRA025F310 VKRA025F3300	1.8	1.8	3.5	3.5	



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Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
VKRA015F350 VKRA015F340 VKRA015F330 VKRA015F320 VKRA015F310 VKRA020F320 VKRA020F310 VKRA020F300 VKRA025F320 VKRA025F320 VKRA025F330	1.8	3.5	3.5	3.5
VKRA032F320 VKRA032F310 VKRA032F300 VKRA040F320 VKRA040F310 VKRA040F300 VKRA050F320 VKRA050F310 VKRA050F300	1.2	2.4	2.4	2.4
Cannot be used to a	close with the pressure			

Actuator	AKF112F12	20	AKF112F122		AKF113F122		AKF113SF122		
Page	307		307		307	307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm		
Control signal	2-point		2-point		3-point		010 V		
Running time	90 s		90 s		90 s		90 s		
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC		
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]							
VKRA015F350 VKRA015F340 VKRA015F330 VKRA015F320 VKRA015F310 VKRA020F320 VKRA020F310 VKRA020F300 VKRA025F320 VKRA025F330 VKRA025F330	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4	

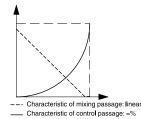
Actuator	AKF112F12	20	AKF112F12	22	AKF113F12	22	AKF113SF	122
Page	307		307		307		308	
VKRA032F320 VKRA032F310 VKRA032F300 VKRA040F320 VKRA040F310 VKRA040F300 VKRA050F320 VKRA050F310 VKRA050F300	2.4	3.5	2.4	3.5	2.4	3.5	2.4	3.5





BKR025F310





BKR: 3-way regulating ball valve with female thread, PN 40

- 3-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), 115SA and AKF 112, 113(S) as a control unit
- Control contour in the ball directly integrated
- 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

Parameters		
	Nominal pressure	40 bar
	K _{vs} value, mixing passage	-1030% through the control pas-
		sage
	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	Watertight as per EN 60534-4 L/1,
		better than class 4
	Leakage rate, mixing passage	< 1%
	Angle of rotation	90°
Ambient conditions		
	Operating temperature ¹⁾	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C)
		35 bar (130 °C)

Overview of ty	pes			
Туре	Nominal diameter	Connection ISO 7/1 Rp	K _{vs} value, control pas- sage	Weight
BKR015F340-FF	DN 15	Rp 1/2"	$1.6 \text{m}^3/\text{h}$	0.31 kg
BKR015F330-FF	DN 15	Rp 1/2"	$2.5 \text{ m}^3/\text{h}$	0.31 kg
BKR015F320-FF	DN 15	Rp 1/2"	4 m³/h	0.31 kg
BKR015F310-FF	DN 15	Rp 1/2"	6.3 m³/h	0.33 kg
BKR020F320-FF	DN 20	Rp 3/4"	4 m³/h	0.4 kg
BKRO20F310-FF	DN 20	Rp 3/4"	6.3 m³/h	0.4 kg
BKRO25F310-FF	DN 25	Rp 1"	10 m³/h	0.63 kg
BKR032F310-FF	DN 32	Rp 11/4"	16 m³/h	0.97 kg
BKRO40F310-FF	DN 40	Rp 1½"	25 m³/h	1.4 kg
BKRO50F310-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	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560284032	Screw fitting in brass, flat-sealing, female thread/male thread for DN 32
0560284040	Screw fitting in brass, flat-sealing, female thread/male thread for DN 40
0560284050	Screw fitting in brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50



Combination of BKR 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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.

	301 4 Nm 2-/3-point 30/120 s	301 8 Nm 2-/3-point	301 8 Nm 2-/3-point
	2-/3-point		
	<u> </u>	2-/3-point	2 /3 point
	30/120 s		2-/ 3-poiiii
	00/ 1200	120 s	120 s
	24 VAC	230 VAC	24 VAC
_{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
1.8	1.8	2.0	2.0
1.2	1.2	2.0	2.0
			1.2 1.2 2.0





Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKR015F340-FF BKR015F330-FF BKR015F320-FF BKR015F310-FF BKR020F320-FF BKR020F310-FF BKR025F310-FF	1.8	2.0	2.0	2.0
BKR032F310-FF BKR040F310-FF BKR050F310-FF	1.2	2.0	2.0	2.0

Cannot be used as distribution valve

307 7 Nm 2-point 90 s 230 VAC \(\Delta_{pmax}\) [bar]		307 7 Nm 2-point 90 s 24 VAC/DC		307 7 Nm 3-point 90 s		308 7 Nm 010 V 90 s	
2-point PO s 230 VAC		2-point 90 s		3-point		010 V	
90 s 230 VAC		90 s		'			
230 VAC				90 s		90 s	
		24 VAC/DC					
∆p _{max} [bar]				24 VAC/DC		24 VAC/DC	
	Δp _s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]
2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4
2.0	3.5	2.0	3.5	2.0	3.5	2.0	3.5
st	2.0		2.0 3.5 2.0	2.0 3.5 2.0 3.5	2.0 3.5 2.0 3.5 2.0	2.0 3.5 2.0 3.5 2.0 3.5	2.0 3.5 2.0 3.5 2.0 3.5 2.0

BKRA: 3-way regulating ball valve with male thread, PN 40

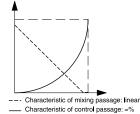
Features

- 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), 115SA and AKF112, 113(S)
- Control contour in the ball directly integrated
- 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 x" 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



BKRAO**F3*O







Parameters		
	Nominal pressure	40 bar
	K _{vs} value, mixing passage	-1030% through the control pas-
		sage
	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	Watertight 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⁾	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C) 35 bar (130 °C)
		Gases: 20 bar

Overview of ty	pes			
Туре	Nominal diameter	Connection ISO 228-1	K _{vs} value, control pas- sage	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 11/4" B	4 m³/h	0.52 kg
BKRA020F310	DN 20	G 11/4" 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
BKRAO40F310	DN 40	G 21/4" 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	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0361951015	Screw fitting for male thread with flat seal, G1 - $\mbox{Rp}\ensuremath{\ensuremath{\mbox{\ensuremath{\ensuremath{\mbox{\ensuremath{\ensuremath{\mbox{\ensuremath{\ensuremath{\ensuremath{\mbox{\ensuremath{\ens$
0361951020	Screw fitting for male thread with flat seal, $G1\frac{1}{4}$ - $Rp\frac{3}{4}$
0361951025	Screw fitting for male thread with flat seal, G1 $\frac{1}{2}$ - Rp1
0361951032	Screw fitting for male thread with flat seal DN 32
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	Screw fitting for male thread with flat seal DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of BKRA with electric actuators

- *i* 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.
- i 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
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKRA015F340 BKRA015F330 BKRA015F320 BKRA015F310 BKRA020F320 BKRA020F310 BKRA025F310	1.8	1.8	2.0	2.0
BKRA032F310 BKRA040F310 BKRA050F310	1.2	1.2	2.0	2.0

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKRA015F340 BKRA015F330 BKRA015F320 BKRA015F310 BKRA020F320 BKRA020F310 BKRA025F310	1.8	2.0	2.0	2.0
BKRA032F310 BKRA040F310 BKRA050F310	1.2	2.0	2.0	2.0

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Cannot	be used	l as d	istribu'	tion vo	ıΙνε

Actuator	AKF112F12	.0	AKF112F12	2	AKF113F12	22	AKF113SF1	22
Page	307		307		307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm	
Control signal	2-point		2-point		3-point		010 V	
Running time	90 s		90 s		90 s		90 s	
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
As control valve	Δp _{max} [bar]	Δp _s [bar]						
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





VKAIO40F300

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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), 115SA and AKF 112, 113(S)
- Fast cut-off in six seconds with the AKM115SF152 valve actuator
- 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

Parameters		
	Nominal pressure	40 bar
	Leakage rate	0.0001 x K _{vs} value
	Angle of rotation	90°
Ambient conditions		
	Operating temperature ¹⁾	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C) 35 bar (130 °C)

Overview of types				
Туре	Nominal diameter (DN)	Connection ISO 7/1 Rp	K _{vs} value	Weight
VKAI015F300	DN 15	Rp 1/2"	15 m ³ /h	275 g
VKAI020F300	DN 20	Rp ¾"	22 m ³ /h	370 g
VKAI025F300	DN 25	Rp 1"	22 m ³ /h	456 g
VKAI032F300	DN 32	Rp 11/4"	35 m ³ /h	700 g
VKAI040F300	DN 40	Rp 1½"	68 m ³ /h	1120 g
VKAI050F300	DN 50	Rp 2"	96 m ³ /h	1750 g

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560284032	Screw fitting in brass, flat-sealing, female thread/male thread for DN 32
0560284040	Screw fitting in brass, flat-sealing, female thread/male thread for DN 40
0560284050	Screw fitting in brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32



¹⁾ At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.

Туре	Description
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of VKAI with electric actuators

- $m{i}$ 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 \Delta p_{max}:** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the

Actuator	AKM105F100 AKM105F120	AKM105F122	AKM115F120	AKM115F122
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
VKAI015F300 VKAI020F300 VKAI025F300	1.8	1.8	3.5	3.5
VKAI032F300 VKAI040F300 VKAI050F300	1.2	1.2	2.4	2.4

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152	
Page	304	304	130	306	
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm	
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA	
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s	
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC	
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	
VKAI015F300 VKAI020F300 VKAI025F300	1.8	3.5	3.5	3.5	
VKAI032F300 VKAI040F300 VKAI050F300	1.2	2.4	2.4	2.4	

Actuator	AKF112F12	.0	AKF112F12	22	AKF113F12	22	AKF113SF1	22
Page	307		307		307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm	
Control signal	2-point		2-point		3-point		010 V	
Running time	90 s		90 s 9		90 s		90 s	
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _s [bar]
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

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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), 115SA and AKF 112, 113(S)
- Fast changeover in six seconds with the AKM115SF152 valve actuator
- Low torque due to collar mounted on O-ring
- \bullet Ball valve with male thread as per ISO 228-1 (G x" 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

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	-10130 °C, no condensation
	Operating pressure	Liquids: 40 bar (-1050 °C)
		35 bar (130 °C)
		Gases: 20 bar

Overview of ty	pes			
Туре	Nominal diameter (DN)	Connection ISO 228-1	K _{vs} value	Weight
VKAA015F300	DN 15	G 1" B	9 m^3	360 g
VKAA020F300	DN 20	G 11/4" B	$17 \mathrm{m}^3$	550 g
VKAA025F300	DN 25	G 1½" B	22 m ³	570 g
VKAA032F300	DN 32	G 2" B	35 m^3	840 g
VKAA040F300	DN 40	G 21/4" B	68 m ³	1290 g
VKAA050F300	DN 50	G 2¾" B	96 m ³	1980 g

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0361951015	Screw fitting for male thread with flat seal, G1 - $\mbox{Rp}\slash_2$
0361951020	Screw fitting for male thread with flat seal, $G1\frac{1}{4}$ - $Rp\frac{3}{4}$
0361951025	Screw fitting for male thread with flat seal, G1 $\frac{1}{2}$ - Rp1
0361951032	Screw fitting for male thread with flat seal DN 32
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	Screw fitting for male thread with flat seal DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32



Туре	Description
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of VKAA with electric actuators

- i 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** $\Delta \rho_{max}$: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the ball valve.
- **Definition of \Delta p_{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	AKM115F120	AKM115F122	
Page	301	301	301	301	
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm	
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point	
Running time	30/120 s	30/120 s	120 s	120 s	
Operating voltage	230 VAC	AC 24 VAC 230 VAC		24 VAC	
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	
VKAA015F300 VKAA020F300 VKAA025F300	1.8	1.8	3.5	3.5	
VKAA032F300 VKAA040F300 VKAA050F300	1.2	1.2	2.4	2.4	

AKM105SF132	AKM115SF132 AKM115SAF232 AKM115SF152		AKM115SF152	
304	304	130	306	
4 Nm	8 Nm	8 Nm	7 Nm	
2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA	
35/60/120 s	35/60/120 s	35/60/120 s	6 s	
24 VAC/DC	C 24 VAC/DC 24 VAC/DC		24 VAC/DC	
Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	
1.8	3.5	3.5	3.5	
1.2	2.4	2.4	2.4	
	304 4 Nm 2-/3-point, 010 V 35/60/120 s 24 VAC/DC Δp _{max} [bar] 1.8	304 304 4 Nm 8 Nm 2-/3-point, 010 V 2-/3-point, 010 V 35/60/120 s 35/60/120 s 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _{max} [bar] 1.8 3.5	304 304 130 4 Nm 8 Nm 8 Nm 2-/3-point, 010 V 2-/3-point, 010 V 010 V, BACnet MS/TP 35/60/120 s 35/60/120 s 35/60/120 s 24 VAC/DC 24 VAC/DC 24 VAC/DC Δρ _{max} [bar] Δρ _{max} [bar] Δρ _{max} [bar] 1.8 3.5 3.5	

Actuator	AKF112F120		AKF112F122		AKF113F122		AKF113SF122	
Page	307		307		307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm	
Control signal	2-point		2-point		3-point		010 V	
Running time	90 s		90 s		90 s		90 s	
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
	Δp _{max} [bar]	Δp _s [bar]						
VKAA015F300 VKAA020F300 VKAA025F300	3.5	5.4	3.5	5.4	3.5	5.4	3.5	5.4



Valves, control valves, dampers, actuators | Ball valves and ball valve actuators

Actuator	AKF112F120		AKF112F122		AKF113F122		AKF113SF122	
Page	307		307		307		308	
VKAA032F300 VKAA040F300 VKAA050F300	2.4	5.4	2.4	5.4	2.4	5.4	2.4	5.4
_								



BKLI: 3-way changeover ball valve (L) with female thread, PN 40

Features

- 3-way changeover 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), 115SA and AKF 112, 113(S).
- Fast changeover in six seconds with the AKM115SF152 valve actuator
- 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

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⁾	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C)
		35 bar (130 °C)

Overview of types					
Туре	Nominal diameter (DN)	Connection ISO 7/1 Rp	K _{vs} value, control passage	Weight	
BKLIO15F300	DN 15	Rp 1/2"	5 m³/h	306 g	
BKLI020F300	DN 20	Rp 3/4"	9 m³/h	375 g	
BKLI025F300	DN 25	Rp 1"	9 m³/h	604 g	
BKLI032F300	DN 32	Rp 11/4"	13 m³/h	949 g	
BKLIO40F300	DN 40	Rp 1½"	25 m³/h	1364 g	
BKLI050F300	DN 50	Rp 2"	$37 \text{m}^3/\text{h}$	2215 g	

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560284032	Screw fitting in brass, flat-sealing, female thread/male thread for DN 32
0560284040	Screw fitting in brass, flat-sealing, female thread/male thread for DN 40
0560284050	Screw fitting in brass, flat-sealing, female thread/male thread for DN 50

¹⁾ At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.



BKLI025F300







Туре	Description
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of BKLI with electric actuators

- *I 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.
- i Definition of Δρ_{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	AKM115F120	AKM115F122
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKLI015F300 BKLI020F300 BKLI025F300	1.8	1.8	2.0	2.0
BKLI032F300 BKLI040F300 BKLI050F300	1.2	1.2	2.0	2.0
-				

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKLI015F300 BKLI020F300 BKLI025F300	1.8	2.0	2.0	2.0
BKLI032F300 BKLI040F300 BKLI050F300	1.2	2.0	2.0	2.0



AKF112F12	0	AKF112F12	2	AKF113F12	2	AKF113SF1	22	
307		307		307		308		
7 Nm		7 Nm		7 Nm		7 Nm		
2-point		2-point		3-point		010 V		
90 s		90 s		90 s	90 s		90 s	
230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC		
Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp_s [bar]	
2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4	
	307 7 Nm 2-point 90 s 230 VAC Δp _{max} [bar]	7 Nm 2-point 90 s 230 VAC Δp_{max} [bar] Δp_{s} [bar]	307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar]	307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _s [bar]	307 307 307 307 7 Nm 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar]	307 307 307 307 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _s [bar] Δp _s [bar] Δp _s [bar]	307 307 308 7 Nm 7 Nm 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 010 V 90 s 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _{max} [bar]	





BKTI025F300



BKTI: 3-way changeover ball valve (T) with female thread, **PN 40**

Features

- 3-way changeover 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), 115SA and AKF 112, 113(S)
- Fast changeover in six seconds with the AKM115SF152 valve actuator
- 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

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⁾	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C) 35 bar (130 °C)

Overview of types					
Туре	Nominal diameter	Connection ISO 7/1 Rp	K _{vs} value, control pas- sage	Weight	
BKTIO15F300	DN 15	Rp 1/2"	12 m³/h	306 g	
BKTI020F300	DN 20	Rp 3/4"	16 m³/h	375 g	
BKTI025F300	DN 25	Rp 1"	16 m³/h	604 g	
BKTI032F300	DN 32	Rp 11/4"	25 m³/h	949 g	
BKTIO40F300	DN 40	Rp 1½"	49 m³/h	1364 g	
BKTI050F300	DN 50	Rp 2"	73 m³/h	2215 g	

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0560284025	Screw fitting in brass, flat-sealing, female thread/male thread for DN 25
0560284032	Screw fitting in brass, flat-sealing, female thread/male thread for DN 32
0560284040	Screw fitting in brass, flat-sealing, female thread/male thread for DN 40
0560284050	Screw fitting in brass, flat-sealing, female thread/male thread for DN 50



¹⁾ At operating temperatures <5 °C and >100 °C, the appropriate accessories must be used.

Туре	Description
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

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.
- i 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	AKM115F120	AKM115F122
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKTI015F300 BKTI020F300 BKTI025F300	1.8	1.8	2.0	2.0
BKTI032F300 BKTI040F300 BKTI050F300	1.2	1.2	2.0	2.0
-				

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKTI015F300 BKTI020F300 BKTI025F300	1.8	2.0	2.0	2.0
BKTI032F300 BKTI040F300 BKTI050F300	1.2	2.0	2.0	2.0



Valves, control valves, dampers, actuators | Ball valves and ball valve actuators

Actuator	AKF112F120		AKF112F122		AKF113F122		AKF113SF122	
Page	307		307		307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm	
Control signal	2-point		2-point		3-point		010 V	
Running time	90 s		90 s		90 s		90 s	
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp_s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp_s [bar]
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 changeover ball valve (T) with male thread, **PN 40**

Features

- 3-way changeover 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), 115SA and AKF 112, 113(S)
- Fast changeover in six seconds with the AKM115SF152 valve actuator
- Low torque due to collar mounted on O-ring
- Spindle with friction ring and double O-ring seal
- \bullet Ball valve with male thread as per ISO 228-1 (G x" 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

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	-10130 °C, no condensation
	Operating pressure	40 bar (-1050 °C) 35 bar (130 °C) Gases: 20 bar

Overview of types					
Туре	Nominal diameter	Connection ISO 228-1	K _{vs} value, control pas- sage	Weight	
BKTA015F300	DN 15	G 1" B	8 m³/h	450 g	
BKTA020F300	DN 20	G 11/4" B	13 m³/h	680 g	
BKTA025F300	DN 25	G 1½" B	13 m³/h	750 g	
BKTA032F300	DN 32	G 2" B	25 m³/h	1200 g	
BKTA040F300	DN 40	G 21/4" B	49 m³/h	1840 g	
BKTA050F300	DN 50	G 2¾" B	73 m³/h	2830 g	

Accessories	
Туре	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 $^{\circ}$ C
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0361951015	Screw fitting for male thread with flat seal, G1 - $Rp1/2$
0361951020	Screw fitting for male thread with flat seal, $G1\frac{1}{4}$ - $Rp\frac{3}{4}$
0361951025	Screw fitting for male thread with flat seal, G1 $\frac{1}{2}$ - Rp1
0361951032	Screw fitting for male thread with flat seal DN 32
0361951040	Screw fitting for male thread with flat seal DN 40
0361951050	Screw fitting for male thread with flat seal DN 50
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15



BKTAO**F300







Туре	Description
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 50

Combination of BKTA with electric actuators

- *i* 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.
- **1** 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.

Pressure differences

Actuator	AKM105F100 AKM105F120	AKM105F122	AKM115F120	AKM115F122
Page	301	301	301	301
Rotational torque	4 Nm	4 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point	2-/3-point
Running time	30/120 s	30/120 s	120 s	120 s
Operating voltage	230 VAC	24 VAC	230 VAC	24 VAC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKTA015F300 BKTA020F300 BKTA025F300	1.8	1.8	2.0	2.0
BKTA032F300 BKTA040F300 BKTA050F300	1.2	1.2	2.0	2.0
-				

Actuator	AKM105SF132	AKM115SF132	AKM115SAF232	AKM115SF152
Page	304	304	130	306
Rotational torque	4 Nm	8 Nm	8 Nm	7 Nm
Control signal	2-/3-point, 010 V	2-/3-point, 010 V	010 V, BACnet MS/TP	2-/3-point, 010 V, 420 mA
Running time	35/60/120 s	35/60/120 s	35/60/120 s	6 s
Operating voltage	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
BKTA015F300 BKTA020F300 BKTA025F300	1.8	2.0	2.0	2.0
BKTA032F300 BKTA040F300 BKTA050F300	1.2	2.0	2.0	2.0



AKF112F120		AKF112F122		AKF113F122		AKF113SF122		
307		307		307		308		
7 Nm		7 Nm		7 Nm		7 Nm		
2-point		2-point		3-point	3-point		010 V	
90 s		90 s		90 s		90 s		
230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC		
Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp _s [bar]	Δp _{max} [bar]	Δp_s [bar]	
2.0	5.4	2.0	5.4	2.0	5.4	2.0	5.4	
	307 7 Nm 2-point 90 s 230 VAC Δp _{max} [bar]	307 7 Nm 2-point 90 s 230 VAC Δp _{max} [bar] Δp _s [bar]	307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] γρ _{max} [bar]	307 307 7 Nm 7 Nm 2-point 90 s 90 s 230 VAC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _s [bar]	307 307 307 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar] Δp _{max} [bar]	307 307 307 7 Nm 7 Nm 7 Nm 2-point 2-point 3-point 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC Δρ _{max} [bar] Δρ _s [bar] Δρ _s [bar] Δρ _s [bar] Δρ _s [bar]	307 307 308 7 Nm 7 Nm 7 Nm 7 Nm 2-point 3-point 010 V 90 s 90 s 90 s 90 s 230 VAC 24 VAC/DC 24 VAC/DC 24 VAC/DC 24 VAC/DC Δp _{max} [bar] Δp _s [bar] Δp _{max} [bar]	



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



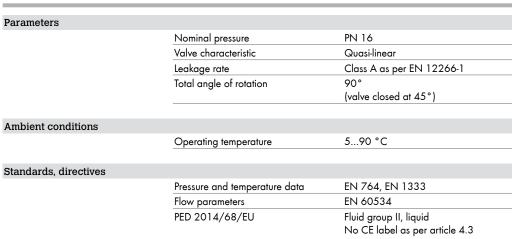
Type designation	B2KL
Application	
Single-room control	•
Preheater for ventilation & air-conditioning	•
Preheater, cooler for ventilation & air-conditioning	•
Reheater for ventilation & air-conditioning	•
Chilled ceiling	•
Static heating	•
Multi-boiler system	•
Local heating	•
Version	
Nominal pressure	PN 16
Combination options with actuator	AKM 115(S) AKM 115SA AKF 112
Further information	AKF 113(S) Page 297

B2KL: 6-way ball valve with male thread, PN 16

Features

- 6-way ball valve for changeover or continuous 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), 115SA and AKF 112, 113(S) as a control unit
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035





Overview of types					
Туре	Nominal diameter	Connection	K _{vs} value without or- ifice plate	Material	Weight
B2KL015F400	DN 15	G ¾" B	1.25 m³/h	Moulded brass CW617N	980 g
B2KL015F401	DN 15	G ¾" B	1.25 m³/h	Moulded brass CW602N	980 g
B2KL020F411	DN 20	G ¾" B	2.8 m³/h	Moulded brass CW602N	1870 g

 $\stackrel{\bullet}{=}$ K_{vs} value without orifice plate. K_{vs} values can be adapted using orifice plates.

Orifice plates for setting the K_{vs} value

, , , , , , , , , , , , , , , , , , , ,	
Orifice plate set for B2KL DN15	Part number
K _{vs} value	0589540001
0.25 m ³ /h	Supplied with the 6-way ball valve
$0.4 \text{ m}^3/\text{h}$	
0.63 m ³ /h	
1 m ³ /h	

Orifice plate set for B2KL DN20	Part number
K _{vs} value	0589540002
0.7 m ³ /h	Supplied with the 6-way ball valve
1 m ³ /h	
1.6 m ³ /h	
2.1 m ³ /h	



B2KL015F400







Accessories	
Туре	Description
0378133015	1 threaded sleeve, R½, flat-sealing, with cap nut and flat seal, G $^3\!4$ - R½
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, $G^{3}\!\!/\!\!/$
0580240002	Insulation shell for 6-way ball valve DN 15
0580240003	Insulation shell for 6-way ball valve DN 20
0560284015	Screw fitting in brass, flat-sealing, female thread/male thread for DN 15
0560284020	Screw fitting in brass, flat-sealing, female thread/male thread for DN 20
0580090001	Pliers for changing orifice plate on 6-way ball valve DN 15 and DN 20
0580240001	Fitting bracket for 6-way ball valve DN 15 and DN 20
0560332015	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, -10150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal (bronze), -10150 °C, mesh aperture 0.8 mm, DN 25

Combination of B2KL 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.
- **1** 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.
- **1** Definition of Δp max: Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AKM115F120	AKM115F122	AKM115SF132	AKM115SAF232
Page	301	301	304	130
Rotational torque	8 Nm	8 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point, 010 V	010 V, BACnet MS/TP
Running time	120 s	120 s	35/60/120 s	35/60/120 s
Operating voltage	230 VAC	24 VAC	24 VAC/DC	24 VAC/DC
	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
B2KL015F400 B2KL015F401 B2KL020F411	2.0	2.0	2.0	2.0
-				

Actuator	AKF112F12	0	AKF112F12	22	AKF113F12	2	AKF113SF1	22
Page	307		307		307		308	
Torque	7 Nm		7 Nm		7 Nm		7 Nm	
Control signal	2-point		2-point		3-point		010 V	
Running time	90 s		90 s		90 s		90 s	
Operating voltage	230 VAC		24 VAC/DC		24 VAC/DC		24 VAC/DC	
	Δp _{max} [bar]	Δp _s [bar]						
B2KL015F400 B2KL015F401 B2KL020F411	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 two- and three-way ball valves. Furthermore, they can be used for controllers with switching or continuous outputs.

Overview of actuators for ball valves









	The state of the s	· ·		ı
Type designation	AKM 105, 115	AKM105SF132 AKM115SF132	AKM115SAF232	AKM115SF152
Technical data				
Adjustable characteristic	Equal-percentage	Equal-percentage, linear, quadratic	Equal-percentage, linear, quadratic	Equal-percentage, linear, quadratic
Running time (s)	30/120	35/60/120	35/60/120	6
Return time (s)	-	-	-	-
Power supply (V)	24, 230	24	24	24
Control				
2-point	•	•	-	•
3-point	•	•	-	•
BACnet MS/TP	-	-	•	-
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 301	Page 303	Page 128	Page 305





Type designation AKF 112, 113 AKF 113S Technical data 4djustable characteristic – – Running time (s) 90 90 Return time (s) 15 15 Power supply (V) 24, 230 24, 230 Control *** • 2-point • • 3-point • • BACnet MS/TP – – Positioner – • High-speed – – Spring return • • Combination options with ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTI, BKTI, BKTA, B2KL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTA, B2KL			
Adjustable characteristic - - Running time (s) 90 90 Return time (s) 15 15 Power supply (V) 24, 230 24, 230 Control 2-point • • 3-point • • BACnet MS/TP - - Positioner - • High-speed - - Spring return • • Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Type designation	AKF 112, 113	AKF 113S
Running time (s) 90 90 Return time (s) 15 15 Power supply (V) 24, 230 24, 230 Control 2-point • • 3-point • • BACnet MS/TP - - Positioner - • High-speed - - Spring return • • Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Technical data		
Return time (s) 15 15 Power supply (V) 24, 230 24, 230 Control 2-point • • 3-point • • BACnet MS/TP - - Positioner - • High-speed - - Spring return • • Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Adjustable characteristic	-	-
Power supply (V) 24, 230 24, 230 Control 2-point • 3-point • • BACnet MS/TP - - Positioner - • High-speed - - Spring return • • Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Running time (s)	90	90
Control 2-point • • 3-point • • BACnet MS/TP - - Positioner - • High-speed - - Spring return • • Combination options with ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Return time (s)	15	15
2-point 3-point 6 8ACnet MS/TP 7 Positioner 8-Combination options WKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, with ball valve 9 Spring return 9 Spring return 9 SVKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL	Power supply (V)	24, 230	24, 230
3-point BACnet MS/TP Positioner High-speed Spring return Combination options with ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, BZKL VKR, VKRA, BKR, BKRA, VKAI, BKRA, BKR	Control		
BACnet MS/TP – – – Positioner – • High-speed – – – Spring return • • • Combination options vith ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL BKTA, B2KL - VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	2-point	•	•
Positioner – • High-speed – – – Spring return • • • • OKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, with ball valve BKTA, B2KL VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	3-point	•	•
High-speed	BACnet MS/TP	-	-
Spring return Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, with ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL BKTA, B2KL	Positioner	-	•
Combination options VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, with ball valve VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA, B2KL	High-speed	-	-
with ball valve BKTA, B2KL BKTA, B2KL	Spring return	•	•
Further information Page 307 Page 308	Combination options with ball valve		
	Further information	Page 307	Page 308

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 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 VAC	±15%, 5060 Hz
	Power supply 24 VAC	±20%, 5060 Hz
Parameters		
	Power cable	1.2 m, 3 × 0.75 mm ²
	Response time	Min. 200 ms
	Angle of rotation	90°
Ambient conditions		
	Ambient temperature	-1055 °C
	Ambient humidity	595% rh, no condensation
	Media temperature ¹⁾	Max. 100 °C
Function		
	Control	2-/3-point
Construction		
	Weight	0. <i>7</i> 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
, 3	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

Overview of types				
Туре	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



AKM115F12







²⁾ See fitting instructions P100001578

Accessories	
Туре	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 $> 100 ^{\circ}\text{C}$
0510240011	Adaptor required when temperature of the medium < 5 $^{\circ}$ 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

Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKII, BKTI, BKTA and 6-way ball valve B2KI
- 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 selecting 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		
1 ower suppry	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-10%20%
	Power consumption	4.9 W, 8.7 VA
Parameters	1)	05//0/200
	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	010 V, $R_i > 100 \text{ k}\Omega$
	Positional feedback signal	010 V, load > 10 k Ω
	Starting point U ₀	0 V or 10 V
	Control span ΔU	10 V
	Switching range X _{sh}	200 mV
Ambient conditions		
Ambient conditions	Media temperature ²⁾	Max. 100 °C
	Ambient temperature	-1055 °C
	Ambient humidity	595% rh, no condensation
Construction		
Constitution	Fitting	Vertically upright to horizontal, not suspended
	Weight	0. <i>7</i> kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
Standards, directives		
Standards, directives	Type of protection	IP54 as per EN 60529
	Type of profection	11 34 us per LIN 00327

III as per IEC 60730

EN 61000-6-4

EN 61000-6-1, EN 61000-6-3

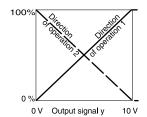
Protection class

EMC Directive 2014/30/EU













CE conformity according to



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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

Overview of types				
Туре	Voltage	Rotational torque	Running time	Power consumption
AKM105SF132	24 V~/=	4 Nm	35/60/120 s	4.9 W, 8.7 VA
AKM115SF132	24 V~/=	8 Nm	35/60/120 s	4.9 W, 8.7 VA

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences
0510420001	Adaptor required when temperature of the medium $> 100 ^{\circ}\text{C}$
0510240011	Adaptor required when temperature of the medium < 5 $^{\circ}$ 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 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
- 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
- Bracket and bayonet ring made of glass-fibre-reinforced plastic for fitting onto ball valve

Technical data

Technical data		
Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	-10%20%
	Power consumption	6.5 W, 9 VA (at nominal voltage)
Parameters		
	Rotational torque	8 Nm
	Operating noise (unloaded)	< 49 dB(A)
	Response time	10 ms
	Angle of rotation	90°
	Running time	6 s
	Characteristic	linear
Positioner	Positioning signal y	010 V / 210 V, R_i = 100 k Ω , 020 mA / 420 mA, R_i = 500 Ω
	Positional feedback signal y ₀	010 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	−2055 °C
	Media temperature ¹⁾	Max. 100 °C
	Storage and transport temperature	−3065 °C
	Ambient humidity	585% rh, no condensation
Construction		
	Fitting	Vertically upright to horizontal
	Dimensions W × H × D	70 × 138 × 127 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m, 6 × 0.5 mm ²

¹⁾ At media temperature > 100 °C, appropriate accessory must be used











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				
Туре	Voltage	Rotational torque	Running time	Power consumption
AKM115SF152	24 V~/=	7 Nm	6 s	6.5 W, 9 VA

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences
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 $^{\circ}$ C



AKF 112, 113: Rotary actuator with spring return for control ball valves

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

Technical data		
Power supply		
	Power supply 230 VAC	±10%, 5060 Hz
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 2448 V=	±20%
Parameters		
	Rotational torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Power cable	0.9 m, 0.75 mm ²
		(fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Ambient temperature	-3255 °C
	Ambient humidity	595% rh
Construction		
	Weight	1.2 kg
	Housing	Two-piece
	Housing material	Cast aluminium
Standards and directives		
Standards and directives	T f	IDE 4 EN 40520
	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
Only 101 AKI 1201 120		
	Over-voltage categories	III

Overview of types				
Туре	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~/2448 V=	
AKF113F122	3.5 W, 5.0 VA	3-point	24 V~/2448 V=	

Degree of contamination

Accessories	
Туре	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B



AKF112F122



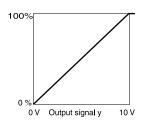






AKF113SF122





AKF 113S: Rotary actuator with spring return and positioner

Features

- For operating 2- and 3-way ball valves VKR, VKRA, BKR, BKRA, VKAI, VKAA, BKLI, BKTI, BKTA and 6-way ball valve B2KL
- \bullet 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 VAC	±20%, 5060 Hz
	Power supply 2448 V=	±20%
	Rated power	3.5 W, 5 VA
	during continuous operation	·
	Power consumption when idle	2.5 W, 2.5 VA
Parameters		
Positioner	Positioning signal y	010 V, $R_i = 100 \text{ k}\Omega$
	Positional feedback signal	010 V (0100%)
	Admissible load	> 10 kΩ
	Starting point U ₀	0 V
	Control span ΔU	10 V
	Switching range X _{sh}	0.2 V
	Rotational torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Power cable	0.9 m, 4 × 0.75 mm ²
		(fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Ambient temperature	-3255 °C
	Ambient humidity	< 95% rh
Constant of the constant of th		
Construction	\A/ · I.	1.0.1
	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

Туре	Features
AKF113SF122	Rotary actuator with spring return and positioner

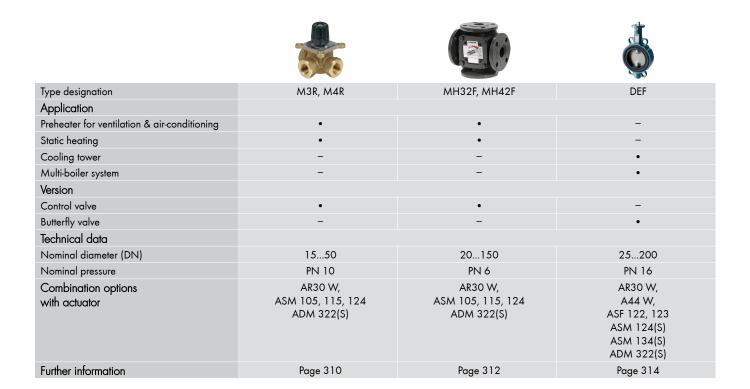
Accessories	
Туре	Description
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF



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





M3R015F200



M3R0**F200



M4R0**F200

M3R, M4R: Control valve with threaded connection, PN 10

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
- Body, cover, front gate and spindle made of brass

Technical data

Parameters		
	Nominal pressure	10 bar
	Angle of rotation	90°
	Valve characteristic	Linear
	Leakage rate	< 0.1%
Ambient conditions		
	Operating temperature	2110 °C
	Operating pressure	Max. 10 bar

Overview of types				
Туре	Nominal diameter	K _{vs} value	Weight	
M3R015F200	DN 15 (Rp½)	2.5 m³/h	0.8 kg	
M3R020F200	DN 20 (Rp3/4)	6 m³/h	0.7 kg	
M3R025F200	DN 25 (Rp1)	12 m³/h	1.2 kg	
M3R032F200	DN 32 (Rp1¼)	18 m³/h	1.2 kg	
M3R040F200	DN 40 (Rp1½)	26 m³/h	2.2 kg	
M3R050F200	DN 50 (Rp2)	40 m³/h	2.3 kg	
M4R020F200	DN 20 (Rp3/4)	6 m³/h	0.8 kg	
M4R025F200	DN 25 (Rp1)	12 m³/h	1.2 kg	
M4R032F200	DN 32 (Rp1¼)	18 m³/h	1.3 kg	
M4R040F200	DN 40 (Rp1½)	26 m³/h	2.3 kg	
M4R050F200	DN 50 (Rp2)	40 m³/h	2.5 kg	

Accessories	
Туре	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, MH32R/F, MH42R with ASM 105, 115



Combination of M3R/M4R with electric actuators

- i 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 \Delta p_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

Actuator	ASM105F100	ASM105F120	ASM105F122	ASM105SF132	ASM115F120	ASM115F122	ASM115SF132
Page	324	324	324	326	324	324	326
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, 010 V	2-/3-point	2-/3-point	2-/3-point, 010 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 =/~
As control valve	Δp _{max} [bar]						
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				I		

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM3225F122 ADM3225F152	ASM124F120 ASM124F122	ASM124SF132
Page	320	322	330	335
Torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 VAC/DC	24 V=/~ / 230 V	24 V=/~ / 230 V
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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

Accessories required: Assembly materials; see accessories. With ASM 124, it is not possible to fit auxiliary contacts or a potentiometer





MH32F40F200



MH32F**F200



MH42F**F200



3-way control valve



4-way control valve

MH32F, MH42F: Control valve with flange connection, PN 6

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 motorised actuators ADM 322 and ASM 105, 115, 124
- 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	2110 °C
	Operating pressure	Max. 6 bar

Overview of types				
Туре	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 made of grey cast iron, spindle made of stainless steel
- * MH42F32...50: 4-way valve: Cover made of grey cast iron, spindle made of stainless steel

Accessories	
Туре	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
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



Туре	Description
0361977001	Assembly materials for M3R, M4R, MH32F, MH42F with ASM 124
0361977002	Assembly materials for M3R, M4R, MH32R/F, MH42R with ASM 105, 115
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42

Combination of MH32F/MH42F with electric actuators

- i 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 \Delta p_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 control valve.

Pressure differences

ASM105F100	ASM105F120	ASM105F122	ASM105SF132	ASM115F120	ASM115F122	ASM115SF132
324	324	324	326	324	324	326
5 Nm	5 Nm	5 Nm	5 Nm	10 Nm	10 Nm	10 Nm
2-/3-point	2-/3-point	2-/3-point	2-/3-point, 010 V	2-/3-point	2-/3-point	2-/3-point, 010 V
30 s	120 s	120 s	35/60/120 s	120 s	120 s	60/120 s
230 V~	230 V~	24 V~	24 V =/~	230 V~	24 V~	24 V =/~
Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
1.0	1.0	1.0	1.0	1.0	1.0	1.0
-	-	-	-	0.5	0.5	0.5
	324 5 Nm 2-/3-point 30 s 230 V~ Δp _{max} [bar]	324 324 5 Nm 5 Nm 2-/3-point 2-/3-point 30 s 120 s 230 V~ 230 V~ Δρ _{max} [bar] Δρ _{max} [bar]	324 324 324 324 5 Nm 5 Nm 5 Nm 2-/3-point 2-/3-point 2-/3-point 30 s 120 s 120 s 230 V~ 230 V~ 24 V~ Δρ _{max} [bar] Δρ _{max} [bar] Δρ _{max} [bar] 1.0 1.0 1.0 1.0	324 324 326 326 327 328 326 328 329 329 329 329 329 329 329 329 329 329	324 324 324 326 324 5 Nm 5 Nm 5 Nm 5 Nm 10 Nm 2-/3-point 2-/3-point 2-/3-point 2-/3-point 2-/3-point 30 s 120 s 35/60/120 s 120 s 230 V~ 24 V~ 24 V =/~ 230 V~ Δρ _{max} [bar] 1.0 1.0 1.0 1.0	324 324 324 324 326 324 324 324 5 Nm 5 Nm 5 Nm 5 Nm 10 Nm 10 Nm 10 Nm 2-/3-point 2-/3-p

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM322SF122 ADM322SF152	ASM124F120 ASM124F122	ASM124SF132
Page	320	322	330	335
Torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 VAC/DC	24 V=/~ / 230 V	24 V=/~ / 230 V
As control valve	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
MH32F20F200 MH32F25F200 MH32F32F200 MH32F40F200 MH42F32F200 MH42F40F200	1.0	1.0	1.0	1.0
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	-10130 °C
	Maximum operating pressure	16 bar

Overview of types				
Туре	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 m ³ /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 m ³ /h	12 kg	

Accessories	
Туре	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 25100) as per EN 1092-1 and PN 16 (DN 25200) 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 2565 for A44
0378111001	Assembly parts; DEF DN 80125 for A44
0378112001	Assembly parts; DEF DN 150200 for A44
0378113001	Assembly parts; DEF DN 25100 for ASF122/123
0372455001	Assembly part; DEF DN2565 for ASM 124/134
0372455002	Assembly part; DEF DN80100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150200 for ASM 134

¹⁾ At **∆**p 1.5 bar



Туре	Description
0510240014	ADM322 fitting kit with DEF DN2065
0510240015	ADM322 fitting kit with DEE 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.
- i Definition of $\Delta p_{\vec{s}}$ 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 \Delta p_{max}:** Max. admissible pressure drop in control mode at which the actuator reliably opens and closes the

Pressure differences

Actuator	ADM322F120 ADM322F122 ADM322HF120 ADM322HF122 ADM322PF120 ADM322PF122	ADM322SF122 ADM322SF152	ASM124F120 ASM124F122	ASM124SF132
Page	320	322	330	335
Torque	15 Nm	15 Nm	18 Nm	15 Nm
Control signal	3-point	2-/3-point, 010 V	2-/3-point	2-/3-point, 010 V
Running time	120 s	30/60/120 s	120 s	60/120 s
Operating voltage	24 V~/= / 230 V	24 VAC/DC	24 V=/~ / 230 V	24 V=/~ / 230 V
Closes against the pressure	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]	Δp _{max} [bar]
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	ASF122F ASF122F		ASF122I	122	ASF122	F222	ASF123I	F122	ASF1235	SF122
Page	340		340		340		340		342	
Torque	18 Nm		18 Nm 18 Nm 1		18 Nm		18 Nm			
Control signal	2-point		2-point		2-point	3-point	010 V			
Running time	90 s									
Operating voltage	230 V~		24 V~		24V~		24V~		24V~	
Closes against the pressure	Δp _{max} [bar]	Δp _s [bar]								
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				335	332
Rotational torque	30 Nm				
Control signal	3-point	3-point	010 V; 420 mA	010 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~
Closes against the pressure	Δp _{max} [bar]				
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



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





	UIII	(III
Type designation	ADM322F12*	ADM322SF1*2
Technical data		
Torque (Nm)	15	15
Running time for 90°/(s)	120 (240)	30, 60
Power supply (V~)	24, 230	24
Control		
3-point	•	•
Positioner	-	•
Further information	Page 319	Page 321









	¥	*		•
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 324	Page 326	Page 328	Page 330









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 332	Page 334	Page 336	Page 338





	- r	- 7"
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 340	Page 342

ADM 322: Rotary actuator

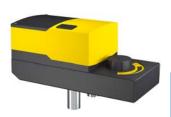
Features

- 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

Technical data		
Power supply		
	Power supply 24 VAC	± 20%, 5060 Hz
	Power supply 24 VDC	-10%20%
	Power supply 230 VAC	± 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	−2055 °C
	Storage and transport temperature	−4080 °C
	Humidity without condensation	585% rh
Construction		
	Dimensions W × H × D	194 × 116 × 86 mm
	Weight	1.5
	Fitting position	Vertically upright to horizontal, not fit- ted upside down
	Housing	Three-part
	Housing material	Flame retardant yellow/black plastic
	Cable inlet	With break-outs, for metric screw fit- tings 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
	Lavy Valtaria Direction 2014/25/511	EN 61000-6-4 EN 60730-1
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-14
		LI 4 00/ 00-2-14

¹⁾ Operating noise with the slowest running time



ADM322F12*







Over-voltage categories	III
Degree of contamination	II
Max. altitude	2000 metres
Machinery Directive 2006/42/EC	EN ISO 12100:2018

Overview of types					
Туре	Nominal voltage	Туре			
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	
Туре	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 DN2065
0510240015	ADM322 fitting kit with DEF DN80100
0510390002	Adapter set for control valve, Honeywell, DZ/ZR valves only
0510390003	Adapter set for control valve, Danfoss
0510390004	Adapter set for Caleffi control valve
0510390005	Adapter set for control valve, Coster



ADM 322S: Rotary actuator with positioner

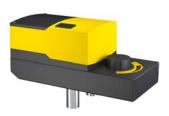
Features

- 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
- \bullet High-speed variant ADM322SF152 with 30 s or 60 s for angle of rotation 90 $^\circ$
- 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 VDC -10%20%
		24 VAC ± 20% (5060 Hz)
Parameters		
	Operating noise ¹⁾	< 30 dB(A) (loaded)
	Response time	< 200 ms
	Angle of rotation	Max. 95°
	Rotational torque and holding torque	15 Nm
ADM322SF122 positioner	Control signal y	010 V, R_i ≥ 50 kΩ, 020 mA,
		$R_i \leq 50 \Omega$
		210 V (420 mA)
	Positional feedback signal y ₀	010 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
ADM322SF152 positioner	Control signal y	010 V, R_i ≥ 50 kΩ, 420 mA,
		$R_i \leq 50 \Omega$
	Positional feedback signal yo	010 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
	Switching range X _{sh}	130 mV, 0.26 mA
	Control span ∆I	20 mA
	<u> </u>	

Operating noise with the slowest running time



ADM322SF1*2







	Max. admissible line resistance	stance 3 Ω	
Ambient conditions			
	Operating temperature	−2055 °C	
	Storage and transport temperature	-4080 °C	
	Humidity without condensation	585% rh	
Construction			
	Connection terminals	Screw terminals, max. 1.5 mm ²	
	Cable inlet	With break-outs, for metric screw fit- tings M20 × 1.5	
	Housing	Three-part	
	Housing material	Flame-retardant yellow/black plastic	
	Dimensions W × H × D	194 × 166 × 86 mm	
	Fitting position	Vertically upright to horizontal, not fit- ted upside down	
	Weight	1.5 kg	
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 61000-6-3, 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	
	Max. altitude	2000 m	
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100:2018	

Overview of types	
Туре	Description
ADM322SF122	Rotary actuator, continuous, 24 VDC/AC, running time 120 s, 15 Nm
ADM322SF152	Rotary actuator, continuous, 24 VDC/AC, running time 30 s, 15 Nm

Power consumption at nominal voltage

Туре	Running time for 90° [s]	Status	Active power P [W]	Apparent power S [VA]
ADM322SF122	120	Operation	< 2.5	5.0
		Standstill	< 0.3	-
		Sizing	3.0	6.0
ADM322F152	30 (60)	Operation	< 2.3	4.5
		Standstill	< 0.5	-
		Sizing	3.0	6.0

Accessories	
Туре	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 setting sequences
0510240013	ADM322 mounting kit with M3R, M4R, MH32, MH42
0510240014	ADM322 fitting kit with DEF DN2065

Туре	Description
0510240015	ADM322 fitting kit with DEF DN80100
0510390002	Adapter set for control valve, Honeywell, DZ/ZR valves only
0510390003	Adapter set for control valve, Danfoss
0510390004	Adapter set for Caleffi control valve
0510390005	Adapter set for control valve, Coster

ADM322SF152 only

Туре	Description
0500420002	420 mA feedback module for valve actuators AVM321S and AVM322S
0500570003	Constant 230 V module for valve actuators AVM321S and AVM322S





ASM105F122



ASM 105, 115: Damper actuator

- 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

Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 816 mm, □ 6,512.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Ambient conditions		
	Ambient temperature ¹⁾	-2065 °C
	Ambient humidity	585% rh, no condensation
Function		
	Control	2-/3-point
Construction		
	Weight	0. <i>7</i> kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m long, 3 × 0.75 mm ²
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				
Туре	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





Operating time approx. 80% up to 65 °C, 100% up to 55 °C only for ASM1 * 5F1 * 0

Accessories	
Туре	Description
0361977002	Assembly materials for M3R, M4R, MH32R/F, MH42R 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
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or drives with limit switch, incl. junction box

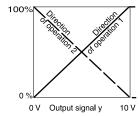
- Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V
- Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator





ASM105SF132





ASM 105S, 115S F132: Damper actuator with SAUTER Universal Technology (SUT)

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

Power supply		
	Power supply 24 VAC	±20%, 5160 Hz
	Power supply 24 VDC	±20%
Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 816 mm, 🗆 6,512.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
Positioner	Control signal y	010 V, $R_i > 100 \text{ k}\Omega$
	Positional feedback signal y ₀	010 V; load > 10 k Ω
	Starting point U ₀	0 or 10 V
	Control span ΔU	10 V
	Switching range X _{sh}	200 mV
Ambient conditions		
	Ambient temperature	-2055 °C
	Ambient humidity	< 95% rh, no condensation
Construction		
	Weight	0. <i>7</i> kg
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	$1.2 \text{ m long}, 5 \times 0.5 \text{ mm}^2$
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			
Туре	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	
Туре	Description
0313529001	Split-range unit for setting sequences
0361977002	Assembly materials for M3R, M4R, MH32R/F, MH42R 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

- 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





ASM115SF152



ASM 105S, 115S F152: High-speed damper actuator with SAUTER Universal Technology (SUT)

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 switch \bigcirc \bigcirc
- 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
- Maintenance-free
- Fitting: Vertically upright to horizontal, not suspended

Power supply		
,	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC	+20%, -10%
		·
Parameters		
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 816 mm, □ 6.512.5 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise (unloaded)	< 49 dB (A)
	Response time	10 ms (electrically compensated)
Positioner	Positioning signal y	$010 \text{ V} / 210 \text{ V}$, $R_i = 100 \text{ k}\Omega$,
		020 mA / 420 mA, $R_{\rm i}$ = 500 Ω
	Positional feedback signal y ₀	010 V, load > 10 k Ω
	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	−2055 °C
	Storage and transport temperature	−3065 °C
	Ambient humidity	585% rh, no condensation
Construction		
	Dimensions W × H × D	70 × 63 × 133 mm
	Weight	0.7 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
	Power cable	1.2 m long, 6 × 0.5 mm ²
Standards, 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
UL and CAN compliance (ASM105SF152U only)	Electrical safety	UL 60730-1 Part 1, UL 60730-2-14 Part 2, CAN/CSA-E60730-1:02 Part 1 and Annex 1

Overview of types

i Rotational torque and holding torque: Holding torque is typically 1.5 Nm when the actuator is without power

Туре	Rotational torque and holding tor-	Running time for 90°	Power consumption
	que		
ASM105SF152	5 Nm	3 s	6.0 W, 8.5 VA
ASM115SF152	10 Nm	6 s	6.5 W, 9.0 VA
ASM105SF152U	3 Nm	3 s	6.0 W, 8.5 VA

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences
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, MH32R/F, MH42R 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.

The UL compliances of the ASM105SF152U do not apply to the accessories





ASM124F12*

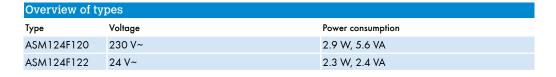


ASM 124: Damper actuator

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

Power supply		
	Power supply 230 VAC	±15%, 5060 Hz
	Power supply 24 VAC	±20%, 5060 Hz
Parameters		
	Rotational torque and holding torque	18 Nm
	Running time for 90°	120 s
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 1220 mm, 🗆 1016 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
	<u> </u>	
Ambient conditions		
	Ambient temperature	−2055 °C
	Ambient humidity	< 95% rh, no condensation
Construction		
	and the second s	
	Weight	1.2 kg
	Weight Housing	1.2 kg Lower section black, upper section yellow
		Lower section black, upper section yel-
	Housing	Lower section black, upper section yellow
	Housing Housing material	Lower section black, upper section yellow Flame-retardant plastic
Standards, directives	Housing Housing material	Lower section black, upper section yellow Flame-retardant plastic
Standards, directives	Housing Housing material	Lower section black, upper section yellow Flame-retardant plastic
Standards, directives	Housing Housing material Power cable	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm ² IP40 (EN 60529), IP43 (EN 60529),
Standards, directives	Housing Housing material Power cable Type of protection	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm ² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529)
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm ² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730)
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V Protection class 24 V	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730) III (EN 60730) EN 61000-6-1, EN 61000-6-2
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V Protection class 24 V EMC Directive 2014/30/EU Low-Voltage Directive 2014/35/EU	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730) III (EN 60730) EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V Protection class 24 V EMC Directive 2014/30/EU Low-Voltage Directive 2014/35/EU Over-voltage categories	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730) III (EN 60730) EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4 EN 60730-1, EN 60730-2-14
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V Protection class 24 V EMC Directive 2014/30/EU Low-Voltage Directive 2014/35/EU	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730) III (EN 60730) EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4 EN 60730-1, EN 60730-2-14 III II Type 1 AB (EN 60730)
Standards, directives	Housing Housing material Power cable Type of protection Protection class 230 V Protection class 24 V EMC Directive 2014/30/EU Low-Voltage Directive 2014/35/EU Over-voltage categories Degree of contamination	Lower section black, upper section yellow Flame-retardant plastic 1.2 m long, 3 × 0.75 mm² IP40 (EN 60529), IP43 (EN 60529), IP54 (EN 60529), IP55 (EN 60529) II (EN 60730) III (EN 60730) EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4 EN 60730-1, EN 60730-2-14 III

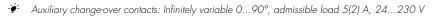






- Power consumption when idle:
- ASM124F120: 0.5 W, 5.1 VA
- ASM124F122: 0.03 W, 0.4 VA

Accessories	
Туре	Description
0361977001	Assembly materials for M3R, M4R, MH32F, MH42F with ASM 124
0370059000	Clamping lever for shaft, Ø 818 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 0370059000
0372455001	Assembly part; DEF DN2565 for ASM 124/134
0372455002	Assembly part; DEF DN80100 for ASM 124; DN125 for ASM 134







ASM134F130



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

Power supply		
	Power supply	230 V~, ±15%, 50 Hz
	Power consumption	3.7 W, 4.7 VA
	Tower consumption	5.7 TT, 4.7 TT
Parameters		
	Rotational torque and holding torque	30 Nm
	Running time for 90°	120/240 s
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 1220 mm, 🗆 1016 mm
	Admissible damper shaft (hardness)	Max. 300 HV
	Operating noise	< 30 dB (A)
	Response time	200 ms
	<u> </u>	
Ambient conditions		
	Ambient temperature	−2055 °C
	Ambient humidity	< 95% rh, no condensation
Construction		
	Weight	1.8 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, 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			
Туре	Rated power during continuous operation	Power consumption when idle	
ASM134F130	3.7 W, 4.7 VA	1.1 W, 2.7 VA	





Accessories	
Туре	Description
0361977001	Assembly materials for M3R, M4R, MH32F, MH42F with ASM 124
0370059000	Clamping lever for shaft, Ø 818 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 0370059000
0372455001	Assembly part; DEF DN2565 for ASM 124/134
0372455002	Assembly part; DEF DN80100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150200 for ASM 134

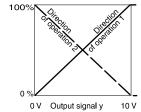
Auxiliary change-over contacts: Infinitely variable 0...90°, admissible load 5(2) A, 24...230 V





ASM1*4SF132





ASM 124S, 134S: Damper actuator with SAUTER Universal Technology (SUT)

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

Power supply		
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 24 VDC 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	010 V, R_i > 100 k Ω
	Positional feedback signal	010 V, load > 10 k Ω
	Starting point U ₀	0 or 10 V
	Control span ∆U	10 V
	Switching range X _{sh}	200 mV
Ambient conditions		
	Ambient temperature	−2055 °C
	Ambient humidity	< 95% rh, no condensation
Construction		
	Weight	1.6 kg
	Housing	Lower section black, upper section yellow
	Housing material	Flame-retardant plastic
	Power cable	1.2 m long, 2 × 0.75 mm ²
Standards, 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					
Туре	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 1220 mm, □ 1016 mm
ASM134SF132	30 Nm	30 Nm	120, 240 s	2.4 W, 4.3 VA	Ø 1220 mm, □ 1016 mm

- Power consumption when idle:
- ASM124SF132: 0.25 W, 0.46 VA
- ASM134SF132: 0.26 W, 0.48 VA

Accessories	
Туре	Description
0313529001	Split-range unit for setting sequences
0361977001	Assembly materials for M3R, M4R, MH32F, MH42F with ASM 124
0370059000	Clamping lever for shaft, Ø 818 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 0370059000
0372455001	Assembly part; DEF DN2565 for ASM 124/134
0372455002	Assembly part; DEF DN80100 for ASM 124; DN125 for ASM 134
0372455003	Assembly part; DEF DN150200 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

Technical data		
Power supply		
	Power supply 230 VAC	±10%, 5060 Hz
	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 2448 V=	±20%
Parameters		
	Rotational torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 6.420.5 mm, □ 6.413 mm
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
Ambient conditions		
	Ambient temperature	-3255 °C
	Ambient humidity	595% rh, no condensation
Construction		
	Housing	Cast aluminium
	Power cable	0.9 m, 0.75 mm ²
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				
Туре	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~/2448 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~/2448 V=	3.5 W, 5.0 VA	1.3 kg
ASF113F122	3-point	24 V~/2448 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 × 0.75 mm²



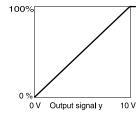
Accessories	
Туре	Description
0372245001	Lever adaptor for converting rotation into stroke
0372245002	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0510240001	Assembly kit for VK**/BK** ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B





ASF113SF122





ASF 113S: Damper actuator with spring return and positioner

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 VAC	±20%, 5060 Hz
	Power supply 2448 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
	Rotational torque	7 Nm
	Holding torque	7 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 6.420.5 mm, □ 6.413 mm
	Admissible damper surface area ¹⁾	1.5 m ²
Positioner	Control signal	010 V, R _i = 100 kΩ
	Positional feedback signal	010 V (0100%)
	Admissible load	> 10 kΩ
	Switching range X _{sh}	0.2 V
Setting range	Starting point U ₀	0 V
	Control span ΔU	10 V
A 1.1		
Ambient conditions	A 1	20. 55.00
	Ambient temperature	-3255 °C
	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

ype Feature

ASF113SF122 Damper actuator with spring return and positioner



¹⁾ Recommended value for smooth-running air dampers

Accessories	
Туре	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

Power supply		
,	Power supply 24 VAC	±20%, 5060 Hz
	Power supply 230 VAC	±10%, 5060 Hz
	Power supply 2448 V=	±20%
Parameters		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Rotational torque and holding torque	18 Nm
	Angle of rotation	Max. 90°
	Admissible damper shaft	Ø 825 mm, □ 618 mm
Ambient conditions		
	Ambient temperature	−3255 °C
	Ambient humidity	595% rh
Construction		
	Housing	Cast aluminium
	Power cable	0.9 m, 0.75 mm ²
Standards and directives		
Standards and directives	T	IDE 4 (ENI40E20)
	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				
Туре	Control function	Voltage	Power consumption	Weight
ASF122F120	2-point	230 V~	6 W, 8 VA	2 kg
ASF122F122	2-point	24 V~/2448 V=	5 W, 7 VA	2 kg
ASF122F220	2-point	230 V~	6 W, 8 VA	2.1 kg
ASF122F222	2-point	24 V~/2448 V=	5 W, 7 VA	2.1 kg
ASF123F122	3-point	24 V~/2448 V=	5 W, 7 VA	2 kg

 $[\]ref{SF122F220}$, ASF122F222: With double auxiliary contacts 6(2) A; 24...250 V~; with cable 0.9 m; 6 × 0.75 mm²



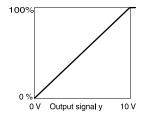
Accessories	
Туре	Description
0370997001	Lever adaptor for converting rotation into stroke
0370998001	Lever adaptor for converting rotation into stroke, with carrier plate for mounting on wall or plinth
0378113001	Assembly parts; DEF DN 25100 for ASF122/123





ASF123SF122





ASF 123S: Damper actuator with spring return and positioner

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 2448 V=	±20%
	Power consumption	5.4 W, 7.5 VA
	<u>.</u>	·
Parameters		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Rotational torque and holding torque	18 Nm
	Angle of rotation	Max. 95°
	Admissible damper shaft	Ø 825 mm, □ 618 mm
Positioner	Control signal	010 V, $R_i = 100 \text{ k}\Omega$
	Positional feedback signal	010 V (0100%)
	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		
	Ambient temperature	-3255 °C
	Ambient humidity	< 95% rh
Construction		
	Weight	2 kg
	Housing	Cast aluminium
	Power cable	$0.9 \text{ m}, 4 \times 0.75 \text{ mm}^2$
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 Feature

ASF123SF122 Damper actuator with spring return and positioner



Depending on fitting position, ensure IP54

Accessories	
Туре	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 25100 for ASF122/123



SAUTER modulo 6

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. 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. BACnet/SC is adding a further security level to product series.

The modulo 6 mobile app with augmented reality function shows real-time values and signal labels. Values can be altered easily on the touchscreen which helps increase service productivity.

The Building Data Integrity Manager uses blockchain technology. Thus, it represents a local solution for data integrity in the plant.











SAUTER modulo 6

HVAC automation

EY6AS80: modular BACnet automation station and web server, modu680-AS	347
EY6AS60: modular BACnet automation station, modu660-AS	351
EY6LC01: Module for separate I/O module supply, modu601-LC	356
EY6LC02: Coupling kit for I/O modules in cabinet, modu602-LC	358
EY6LC12: IP coupler for I/O modules with web server, modu612-LC	360
EY6IO30: 16 × DI/Cl inputs I/O module, modu630-IO	363
EY61O31: 8 × UI (DI/CI/AI), 8 × DI/CI I/O module, modu631-IO	365
EY61O50: 6 x relay (2A) outputs I/O module, modu650-1O	367
EY6IO70: $8 \times DI/CI/DO$ (OC) and $8 \times DI/CI$ I/O module, modu670-IO	369
EY61O71: 8 × AO and 8 × DI/CI I/O module, modu671-1O	371
EY6IO72: $4 \times$ AO, $4 \times$ DO(OC), $4 \times$ UI (DI/CI/AI) I/O module, modu672:IO	373
EY6LO00: Operating and indicating unit for I/O modules, modu600-LO	376
EY6CM20: Modbus/RTU (RS-485) communication module, modu620-CM	379
EY6CM30: M-Bus communication module, modu630-CM	381
EY6BM15: Building Data Integrity Manager, modu615-BM	384
EY6RT30: BACnet router and SC hub, modu630-RT	386

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
Parameters		
Power supply	24	V=
Connection of	·	ecoUnit room operating units, EnOcean wireless interce
I/O and COM extension modules	24 with modu601-LC (5 of	f which are COM modules)
Interfaces, communication		
Interfaces	2 × RS-485, WAN, LAN, REST API, Bluetooth, USB, microSD	RS-485, LAN, REST API, Bluetooth, USB, microSD
Ethernet/LAN	3 × RJ45 (switched)	2 × RJ45 (switched)
Ethernet/WAN	1 × RJ45	-
SLC/RS-485 interfaces		1
Modbus/RS-485 interfaces	1	-
Protocols	BACnet/IP, SLC, Modbus RTU, HTTP(S), NTP, SMTP, SMPP	BACnet/IP, SLC, HTTP(S), NTP, SMTP, SMPP
BACnet profile	B-I	BC
AMEV profile	A:	S-B
Objects		
Data points (BACnet objects)	1600 I/O, 3200 total	800 I/O, 1600 total
Historical data (Trend Log)	1600	800
Control (loop)	96	48
Sequences, scenes (Command)	16	
Calendars (Calendar)	3	2
Time programmes (Schedule)	6	04
Alarms (Notification Class)	3	2
Further information	Page 347	Page 351

EY6AS80: Modular BACnet automation station and web server, modu680-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 in HVAC
- Locally expandable with up to 24 modules via the SAUTER Extension Bus
- Can be locally equipped with ecoLink I/O modules and ASV actuators via SLC interface
- 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)
- BACnet profile B-BC
- AMEV profile AS-B
- REST API interface
- MQTT interface (MQTT Broker/Client)
- Integrated web server for local commissioning, visualisation and operation
- User administration for identification, authentication and access control
- Encryption of communication with TLS
- 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 VDC ± 10%
	Power consumption ¹⁾	≤ 2 W without load ≤ 24 W at maximum load
	Dissipated power	≤ 2 W without load ≤ 4 W at maximum load
	Peak inrush current ²⁾	≤ 20 A, ≤ 1 ms on the 24 V side
Parameters		
	Connection	5-pin spring-type terminal, pluggable, 0.51.5 mm ² (rigid) 0.52.5 mm ² , min. 8 mm wire strip- ped
	Battery (buffer: RTC)	CR2032, pluggable
	Earth connector	Spring contact against DIN rail and PE terminal
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2070 °C

Maximum load with 12 I/O modules



EY6AS80F021







²⁾ Measured value with EY-PSO21FO21 power supply unit

	Ambient humidity	1090% rh, no condensation
Function		
BACnet	BACnet data point objects	Up to 1600 I/O objects, 3200 total
	BACnet client links	600 (Peer-to-Peer)
	Control	96 (Loop)
	Active COV subscription	4800
	Structured view	128 (Structured View)
Dynamic objects	Sequences, scenes	16 (Command)
	Time programmes	64 (Schedule)
	Calendar	32 (Calendar)
	Notification	32 (Notification Class) intrinsically or extrinsically with Event Enrolment
	Historical data	1600 (Trend Log) up to 4 million entries
	BBMD in BDT	32
	FD in FDT	32
Services	Embedded web server	moduWeb Unity
	Web API (REST)	moduWeb Unity
	MQTT Broker/Client	MQTT/TCP(TLS), MQTT/WS
	Notification (client)	SMTP, SMPP
	Time synchronisation	NTP client,
		BACnet master or client, local or UTC
	Data integrity (client)	With modu615-BM
Architecture	_	
	Processor	ARM Cortex A8, 32-bit, 1 GHz
	RAM (memory)	512 MB (DDR3)
	Flash	512 MB
	Application data	Via CASE Engine
	Processes (BACnet programs)	Supports separated processes with d ferent cycle times and independent booting
	Cycle time	Adjustable for each process, min. 50 ms (50, 100, 500, 1000)
interfaces, communication		
Ethernet network #1 (WAN)	Communication protocols	HTTP(S), NTP, SMTP, SMPP, DHCP, MQTT
	Ethernet network	1 × RJ45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
Ethernet network #2 (LAN)	Communication protocols	BACnet/IP (DIX), HTTP(S), NTP, SMT SMPP, DHCP, MQTT
	Ethernet network	3 × RJ45 connector
	10/100 BASE-T(X) switched	10/100 Mbit/s
Connection, I/O and COM modules	Use ³⁾	1 × integrated iSEB interface for max. 12 modules, expandable with modu601-LC for max. 24 modules in total
RS-485 A connection	Communication protocol	Modbus/RTU / ASCII Modbus master according to V1.02
	Bus physics	1 unit load (UL), electrically isolated
	Bus speed	600115,200 bit/s Parity bit, stop bit, Rx/Tx bus timing
	Connection	Spring-type terminal, pluggable 0.21.5 mm ² stiff/flexible
		2 /4 : /0: /0 /6014 []
	Line ⁴⁾	3-/4-wire (D+/D-/COM reference), twisted, shielded, up to 1000 m

Performance-dependent
Performance-dependent

	Functions	Up to 600 Modbus channels for BAC- net I/O/V objects for up to 247 Mod- bus devices; FC01-06, 15, 16, 22; uni- cast and broadcast; access optimisa- tion
	120 Ω bus termination and pull-up/pull-down	Switchable via software (CASE Engine)
RS-485 B connection	Communication protocol	SLC master
	Use	ecoLink, ASV, ecoUnit, FCCP200
	Participant	Max. 8 ecoLink modules and 4 ecoUnit modules, max. 12 ASV units
	Power supply	2026 V=, max. 1.5 W, protected against short circuit, can be switched on/off (CASE Sun)
	Connection	Spring-type terminal, pluggable 0.21.5 mm ² stiff/flexible
	Line	4-wire, twisted, shielded
	Line length	Max. 100 m (30 m) with ecoUnit or ASV, up to 500 m, bus termination necessary (120 Ω)
	120 Ω bus termination and pull-up/pull-down	Switchable via software (CASE Sun)
Bluetooth	Version	BLE 4.0
	Range	< 10 m
	Frequency band	2.4022.480 GHz
	Radiation	6 mW
USB	Version	2.0, type A
	Current limitation	400 to max. 500 mA
SD memory expansion	Туре	microSD, suitable for industrial use
Construction		
	Fitting	On metallic DIN rail 35 × 7.5/15 as per EN 60715. Rail housing as per DIN 43880
	Dimensions W × H × D	92.6 (5 HP) × 100.9 × 58.3 mm
	Weight	260 g
Standards, directives		
	Type of protection	Connections: IP00 Front in DIN cut-out: IP30 (EN 60730-1)
	Protection class	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 (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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 62479
	RoHS Directive 2011/65/EU	EN IEC 63000
	RED Directive 2014/53/EU	EN 300328 (V2.1.1)

Overview of types

Туре Features

EY6AS80F021 Modular BACnet automation station and web server

Accessories

Plug-in I/O modules

Туре	Description
EY6IO30F001	modu630-IO 16 × DI/Cl inputs I/O module
EY6IO70F001	modu670-IO 8 × DI/CI/DO(OC), 8 × DI/CI I/O module
EY6IO31F001	modu631-IO 8 × UI(DI/CI/AI), 8 × DI/CI I/O module
EY6IO71F001	modu671-IO 8 × AO, 8 × DI/CI I/O module
EY6IO50F001	modu650-IO 6 × relay (2 A) outputs I/O module
EY6IO72F001	$modu672-IO 4 \times AO, 4 \times DO(OC), 4 \times UI (DI/CI/AI) I/O module (in planning)$

Connection modules

Type Description

EY6LC01F001 Module for separate I/O module supply

EY6LC02F001 Coupling kit for I/O modules in cabinet (P100017761 and P100017762)

Spare parts

Type Description
0929360602 AS bus cover with resistor, 5 pcs.

Function expansions

Туре	Description
Y6WS80F008	Activation code for the REST API on modu680-AS
Y6WS80F009	Data point extension activation code for moduWeb Unity on modu680-AS
Y6WS80F031	Network option activation code for modu680-AS
Y6FX02F001	Activation code for MQTT client
Y6FX02F002	Activation code for MQTT client and broker
Y6FX03F001	Activation code for RADIUS Supplicant

Manuals

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I

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 in HVAC
- Locally expandable with up to 24 modules via the SAUTER Extension Bus
- Can be locally equipped 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)
- BACnet profile B-BC
- AMEV profile AS-B
- REST API interface
- MQTT interface (MQTT Broker/Client)
- Integrated web server for local commissioning, expandable with visualisation and operation
- User administration for identification, authentication and access control
- Encryption of communication with TLS
- 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 VDC ± 10%
	Power consumption ¹⁾	≤ 2 W without load
		≤ 24 W at maximum load
	Dissipated power	≤ 2 W without load
		≤ 4 W at maximum load
	Peak inrush current ²⁾	\leq 20 A, \leq 1 ms on the 24 V side
Parameters		
	Connection	5-pin spring-type terminal, pluggable, 0.51.5 mm ² (rigid)
		0.52.5 mm ² , min. 8 mm wire stripped
	Battery (buffer: RTC)	CR2032, pluggable
	Earth connector	Spring contact against DIN rail and PE terminal
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2070 °C
	Ambient humidity	1090% rh, no condensation



EY6AS60F011







Maximum load with 12 I/O modules

²⁾ Measured value with EY-PSO21FO21 power supply unit

Function	DIG 11 11 11	11
	BACnet data point objects	Up to 800 I/O objects, 1600 total
	BACnet client links	300 (Peer-to-Peer)
	Control	48 (Loop)
	Active COV subscription	2400
	Structured view	128 (Structured View)
Dynamic objects	Sequences, scenes	16 (Command)
	Time programmes	64 (Schedule)
	Calendar	32 (Calendar)
	Notification	32 (Notification Class) intrinsically or
		extrinsically with Event Enrolment
	Historical data	800 (Trend Log) up to 2 million entries
	BBMD in BDT	32
	FD in FDT	32
Services	Embedded web server	moduWeb Unity, MQTT Commissioning Tool
	Web API (REST)	moduWeb Unity
	MQTT Broker/Client	MQTT/TCP(TLS), MQTT/WS
	Notification (client)	SMTP, SMPP
	Time synchronisation	NTP client,
	0)	BACnet master or client, local or UTC
	Data integrity (client)	With modu615-BM
Architecture		
	Processor	ARM Cortex A8, 32-bit, 1 GHz
	RAM (memory)	512 MB (DDR3)
	Flash	512 MB
	Application data	Via CASE Engine
	Processes (BACnet programs)	Supports separated processes with dif- ferent cycle times and independent booting
	Cycle time	Adjustable via process, min. 50 ms (50, 100, 500, 1000)
Interfaces, communication		
Ethernet network (LAN)	Communication protocols	BACnet/IP (DIX), HTTP(S), NTP, SMTP, SMPP, DHCP, MQTT
	Ethernet network	2 × RJ45 connector
	10/100 BASE-T(X) switched	10/100 Mbit/s
Connection, I/O and COM modules	Use ³⁾	1 × integrated iSEB interface for max. 12 modules, expandable with modu601-LC for max. 24 modules in total
RS-485 B connection	Communication protocol	SLC master
	Use	ecoLink, ASV, ecoUnit, FCCP 200
	Participant	Max. 8 ecoLink modules and 4 ecoUnit modules, max. 12 ASV units
	Power supply	2026 VDC, max. 1.5 W, protected against short circuit, can be switched on/off (CASE Sun)
	Connection	Spring-type terminal, pluggable 0.21.5 mm ² stiff/flexible
	Line	4-wire, twisted, shielded
	Line length	Max. 100 m (30 m) with ecoUnit or ASV, up to 500 m, bus termination necessary (120 Ω)
	120 Ω bus termination and pull-up/pull-down	Switchable via software (CASE Sun)
	1 / P * * * * * * * * * * * * * * * * * *	DIE 40
Bluetooth	Version	BLE 4.0
Bluetooth		BLE 4.0 < 10 m
Bluetooth	Version Range Frequency band	

³⁾ Performance-dependent

USB	Version	2.0, type A	
	Current limitation	400 to max. 500 mA	
SD memory expansion	Туре	microSD, suitable for industrial use	
Construction			
	Fitting	On metallic DIN rail 35 × 7.5/15 as per EN 60715	
	Dimensions W × H × D	Rail housing as per DIN 43880 92.6 (5 HP) x 100.9 x 58.3 mm	
	Weight	240 g	
Standards, directives			
	Type of protection	Connections: IP00 Front in DIN cut-out: IP30 (EN 60730-1)	
	Protection class	T	
	Environment class	3K3 (IEC 60721)	
	Software class ⁴⁾	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 (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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3	
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 62479	
	RoHS Directive 2011/65/EU	EN IEC 63000	
	RED Directive 2014/53/EU	EN 300328 (V2.1.1)	

Overview of types

C to tipe of			
Туре	Description		
EY6AS60F011	Modular BACnet automation station and web server		

Accessories

Plug-in I/O modules

Туре	Description
EY6IO30F001	modu630-IO 16 × DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 × UI(DI/CI/AI), 8 × DI/CI I/O module
EY6IO50F001	modu650-10 6 × relay (2 A) outputs I/O module
EY6IO70F001	modu670-IO 8 × DI/CI/DO(OC), 8 × DI/CI I/O module
EY6IO71F001	modu671-IO 8 × AO, 8 × DI/CI I/O module
EY6IO72F001	modu672-IO $4 \times AO$, $4 \times DO(OC)$, $4 \times UI$ (DI/CI/AI) I/O module (in planning)

Connection modules

Connection modules			
Туре	Description		
EY6LC01F001	Module for separate I/O module supply		
EY6LC02F001	Coupling kit for I/O modules in cabinet (P100017761 and P100017762)		
Spare parts			
Туре	Description		
0929360602	AS bus cover with resistor, 5 pcs.		

⁴⁾ The product is not suitable for safety functions

Function expansions

Туре	Description
Y6WS60F008	Activation code for the REST API on modu660-AS (requires Y6WS60F021)
Y6WS60F009	Data point extension activation code for moduWeb Unity on modu660 AS (requires Y6WS60F021)
Y6WS60F021	Activation code for visualisation on modu660 AS
Y6FX02F001	Activation code for MQTT client
Y6FX02F002	Activation code for MQTT client and broker
Y6FX03F001	Activation code for RADIUS Supplicant

Manuals

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



SAUTER modulo 6 connection modules

The SAUTER modulo 6 connection modules offer more flexibility in the cabinet 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







		The state of the s	
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 356	Page 358	Page 360



EY6LC01

EY6LC01: Module for separated I/O module supply, modu601-LC

Features

- Part of the SAUTER modulo 6 system family
- Enables separate supply between automation station and I/O modules
- Power supply of I/O modules and connected LOI units (Local Override and Indication Device)
- Allows extension to up to 24 I/O modules
- Enables simple wiring tests of the I/O modules without the station, together with modu600-LO on the I/O

Technical data

Power supply		
	Power supply	24 V= ± 10%
	Dissipated power	< 0.5 W
	Power consumption	< 19 W at max. load
	Peak inrush current ¹⁾	≤ 2 A, ≤ 10 ms
Parameters		
	Connection	3-pin spring-type terminal, pluggable, 0.51.5 mm ² (rigid)
		0.52.5 mm ² , min. 8 mm wire stripped
		·
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Interfaces, communication		
	Connection, I/O bus	6-pin spring contacts left and 7-pin right
	Earth connector	Spring contact against DIN rail and PE feed connection
Construction		
	Fitting	On metal DIN rail 35 × 7.5/15 as per EN 60715 DIN rail housing as per DIN 43880
	Dimensions W × H × D	56 × 97 × 59 mm
	Weight	98 g
Standards, directives		
	Protection type (as per EN 60730)	Connections and terminals: IP00 Front in DIN cut-out: IP30
	Protection class	I
	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 50491-5-1, EN 50491-5-2, EN 50491-5-3

Overview of types

Туре Description

EY6LC01F001 Module for separate I/O module supply



¹⁾ Measured value with EY-PS021F021 power supply unit

Manuals

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I





EY6LC02

EY6LC02: Coupling kit for I/O modules in cabinet, modu602-LC

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 two modu602-LC per station

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
	Dissipated power	< 0.3 W incl. 3 m cable
Parameters		
	Max. number per station	2
	Max. cable length per station	3 m
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Interfaces, communication		
interfaces, communication	Connection	RJ45 connector
	Cable type	RJ45 type S/FTP, not crossed, at least
	7,00	AWG 24
	Connection, I/O bus	P100017761: 7-pin spring contacts,
		only left
		P100017762: 7-pin spring contacts,
		only right
	Earth connector	Spring contact against DIN rail
Construction		
Constituction	Fitting	On metal DIN rail 35 × 7.5/15 as pe
	Tilling	EN 60715
		DIN rail housing as per DIN 43880
	Dimensions W × H × D	27 × 97 × 59 mm
	Weight ¹⁾	95 g
Standards, directives		
	Protection type (as per EN 60730)	Connections and terminals: IPOO
		Front in DIN cut-out: IP30
	Protection class	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 50491-5-1, EN 50491-5-2,
		EN 50491-3-1, EN 50491-3-2, EN 50491-5-3
		1,1004/100

Overview of types

Туре	Description
EY6LC02F001	Coupling kit for I/O modules in cabinet (P100017761 and P100017762)

Manuals

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I

¹⁾ Total weight



Document number	Language	Title
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I





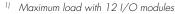
EY6LC12F011

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
- Two RJ45 connections switched for daisy chain
- Integrated web server for local commissioning
- Bluetooth interface for mobile commissioning and maintenance
- User administration and user identification (web server)

recrifical data		
Power supply		
	Power supply	24 VDC ± 10%
	Power consumption ¹⁾	≤ 2 W without load
	<u> </u>	≤ 24 W at maximum load
	Dissipated power	≤ 2 W without load
		≤ 4 W at maximum load
	Peak inrush current ²⁾	≤ 20 A, ≤ 1 ms on the 24 V side
Parameters		
	Connection	3-pin spring-type terminal, pluggable,
		0.51.5 mm ² (rigid)
		0.52.5 mm ² , min. 8 mm wire strip-
		ped
	Battery (buffer: RTC)	CR2032, pluggable
	Earth connector	Spring contact against DIN rail and PE terminal
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Architecture	-	
	Processor	ARM Cortex A8, 32-bit, 600 MHz
	Embedded web server	moduWeb Unity
	Application data	Via automation station
Tkf		
Interfaces, communication	Ed l	0 × 0145
Ethernet network	Ethernet network	2 × RJ45 socket, switched
	10/100 BASE-T(X) switched	10/100 Mbit/s
C		
Construction	Di i Marilia D	00 / 07 50 0
	Dimensions W × H × D	92.6 × 97 × 58.3 mm
	Fitting	On metal DIN rail
		35 × 7.5/15 as per EN 60715. Rail housing as per DIN 43880
		Kan hoosing as per bir 4 40000
Standards, directives		
	Type of protection	Connections: IPOO
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Front in DIN cut-out: IP30
		(EN 60730-1)
	Protection class	I
	Environment class	3K3 (IEC 60721)



²⁾ Measured value with EY-PSO21FO21 power supply unit





	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/UKCA conformity ³⁾	EMC-D 2014/30/EU (CE) EN 61000-6-1, EN 6100 EN 61000-6-3, EN 6100 EN 50491-5-1, EN 5049 EN 50491-5-3	
	EMC-2016 (UKCA)	See EMC Directive
	LV-D 2014/35/EU (CE)	EN 60730-1, EN 60730-2-9, EN 60950-1
	EESR-2016 (UKCA)	EN 60730-1, EN 60730-2-9, EN 60950-1
	RED 2014/53/EU (CE)	EN 300328 (V2.1.1)
	RER-2017 (UKCA)	EN 300328 (V2.1.1)
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000
	RoHS-2012 (UKCA)	EN IEC 63000

_	
Туре	Description
EY6LC12F011	IP coupler for I/O modules, with web server

Accessories

Plug-in I/O modules

Туре	Description
EY6IO30F001	modu630-IO 16 × DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 × UI(DI/CI/AI), 8 × DI/CI I/O module
EY6IO50F001	modu650-10 6 × relay (2 A) outputs I/O module
EY6IO70F001	modu670-IO 8 × DI/CI/DO(OC), 8 × DI/CI I/O module
EY6IO71F001	modu671-IO 8 × AO, 8 × DI/CI I/O module
EY6IO72F001	modu672-IO 4 × AO, 4 × DO(OC), 4 × UI (DI/CI/AI) I/O module (in planning)

Plug-in communication modules (COM)

Туре	Description
EY6CM20F011	Modbus/RTU (RS-485) communication module
EY6CM30F031	modu630-CM M-Bus communication module

Connection modules

Туре	Description
EY6LC01F001	Module for separate I/O module supply
EY6LC02F001	Coupling kit for I/O modules in cabinet (P100017761 and P100017762)



 $^{^{3)}}$ Explanation of abbreviations in the "Further information" section of the product data sheet and in the appendix to SAUTER's product catalogues

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	EY61O50F001
Product name	modu630	modu631	modu650
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Control panel optional	modu600-LO	modu600-LO	modu600-LO
Inputs/outputs			
Digital inputs	16	8	-
Universal inputs	_	8	-
Digital outputs	-	-	6
Analogue outputs	-	-	-
Digital inputs/outputs	_	-	-
Further information	Page 363	Page 365	Page 367







Type designation	EY6IO70F001	EY6IO71F001	EY6IO72F001
Product name	modu670	modu671	modu672
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Control panel optional	modu600-LO	modu600-LO	modu600-LO
Inputs/outputs			
Digital inputs	8	8	-
Universal inputs	-	-	4
Digital outputs	-	-	4
Analogue outputs	_	8	4
Digital inputs/outputs	8	-	-
Further information	Page 369	Page 371	Page 373

EY6IO30: 16 × DI/CI inputs I/O module, modu630-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu6*2-LC
- Receiving digital inputs (alarm, status or pulse counter) in operational systems, e.g. in HVAC engineering
- 16 digital inputs
- Power supply from automation station (modu6**-AS), link coupler (modu6*2-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO30F001

Technical data

recillical data		
Power supply		
	Power supply	From AS or LC via I/O bus
	Dissipated power ¹⁾	≤ 0.8 W
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	16
	Power supply for DI	Internal, ~13 V=
	Pulse counter ²⁾	≤ 50 Hz
Interfaces, communication		
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
	Earth connector	Spring contact against DIN rail
Construction		
	Fitting	On metal DIN rail
		35 x 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) x 100 x 59 mm
	Weight	130 g
Standards, directives		
	Protection type (as per EN 60730)	Connections and terminals: IPOO Front in DIN cut-out: IP30
	Environment class	3K3 (IEC 60721)
	Software class ³⁾	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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3

Overview of types

Туре

EY6IO30F001 16 x DI/CI inputs I/O module





¹⁾ Measured value without accessories

⁵⁰ Hz only with PC module, otherwise 5 Hz

The product is not suitable for safety functions

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



EY6IO31: $8 \times UI$ (DI/CI/AI), $8 \times DI/CI$ 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 modu6*2-LC link coupler
- Receiving digital inputs (alarm, status or pulse counter) and analogue inputs (Ni/Pt1000, R, U) in operational systems, e.g. in HVAC
- Eight digital inputs and eight universal inputs
- Power supply from automation station (modu6**-AS), link coupler (modu6*2-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO31F001

Technical data

Technical data		
Power supply		
	Power supply	From AS or LC via I/O bus
	Dissipated power ¹⁾	≤ 0.8 W
Ambient conditions		
Timbioni conditions	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1090% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Power supply for DI	Internal, ~13 V=
	Pulse counter	≤ 50 Hz
Universal inputs (UI)	Number of inputs	8
	Analogue	010 V, Ni1000, Pt1000, R
	Digital ²⁾	DI/CI: ≤ 50 Hz
Interfaces, communication		
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
	Earth connector	Spring contact against DIN rail
Construction		
Construction	Fitting	On metal DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) x 100 x 59 mm
	Weight	131 g
Standards, directives		
	Protection type (as per EN 60730)	Connections and terminals: IPOO Front in DIN cut-out: IP30
	Protection class	I
	Environment class	3K3 (IEC 60721)
	Software class ³⁾	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, EN 50491-5-1, EN 50491-5-2,

EN 50491-5-3





¹⁾ Measured value without accessories

 $^{^{2)}\,}$ DI: 50 Hz only with PC module, otherwise 5 Hz

³⁾ The product is not suitable for safety functions

Type Features

EY6IO31F001 $8 \times UI(DI/CI/AI)$ and $8 \times DI/CII/O$ module

Accessories

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



EY6IO50: 6 × 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 modu6*2-LC
- 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 (modu6*2-LC) or supply module
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO50F001

Technical data		
Power supply		
	Power supply	From AS or LC via I/O bus
	Dissipated power ¹⁾	≤ 1,3 W
Ambient conditions		
Ambient conditions	Operating temperature	045 °C
	Operating temperature	-2570 °C
	Storage and transport temperature Ambient humidity	1090% rh, no condensation
	Ambient numidity	1090% rn, no condensation
Inputs/outputs		
Digital outputs (DO)	Number of outputs	6
	Type of outputs	Relay (0-1), normally-open contact, go vanically isolated
	Load	24 VDC, 24250 VAC
		Resistive load: 2 A
		Inductive load: $\leq 1 \text{ A, } \cos \phi \geq 0.8$
		Start-up current: ≤ 5 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 conne
		tors
	Earth connector	Spring contact against DIN rail
Construction		
	Fitting	On metallic DIN rail
	9	35 x 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) x 100 x 59 mm
	Weight	124 g
Standards and directives		
Standards and directives	Destantian to a 1 EN 407201	Connections and terminals: IPOO
	Protection type (as per EN 60730)	Front in DIN cut-out: IP30
	Protection class	I
	Environment class	3K3 (IEC 60721)
	Software class ²⁾	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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1

¹⁾ Measured value without accessories





²⁾ The product is not suitable for safety functions

Type Features

EY6IO50F001 6 x relay (2 A) outputs I/O module

Accessories

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



EY6IO70: $8 \times DI/CI/DO$ (OC) and $8 \times DI/CI$ I/O module, modu670-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu6*2-LC link coupler
- Activation of actuators such as relays and displays of operational systems, e.g. in HVAC engineering
- Activation of displays in operational systems
- Receiving digital inputs (alarm, status or pulse counter) in operational systems
- Eight digital inputs and eight digital inputs/outputs
- Power supply from automation station (modu6**-AS), link coupler (modu6*2-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO70F001

Technical data		
Power supply		
	Power supply	From AS or LC via I/O bus
	Dissipated power ¹⁾	≤ 0,8 W
Ambient conditions	_	
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
Digital inputs (DI) CI)	Pulse counter ²⁾	≤ 50 Hz
Distribution of Australia (DIO)	Number of inputs/outputs	8
Digital inputs/outputs (DIO)		
	Type of inputs/outputs	Open collector, normally-open contact (0-1),
		outputs switched with respect to
		ground (any arrangement)
	Power supply for DO	External, positive ≤ 28 V=
	Load	0100 mA (max. 2 V voltage drop)
	Power supply for DI	Internal, ~13 V=
	Pulse counter ³⁾	≤ 50 Hz
	ruise counter ^s ,	≤ 30 HZ
Interfaces and communication	1	
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connec
		tors
	Earth connector	Spring contact against DIN rail
Construction		
Construction	Fitting	On metallic DIN rail
	Tilling	35 x 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) x 100 x 59 mm
	Weight	131 g
	···g···	
Standards and directives		
	Protection type (as per EN 60730)	Connections and terminals:IP00 Front in DIN cut-out:IP30
	Protection class	1

¹⁾ Measured value without accessories





²⁾ 50 Hz only with PC module, otherwise 5 Hz

³⁾ 50 Hz only with PC module, otherwise 5 Hz

	Environment class	3K3 (IEC 60721)
	Software class ⁴⁾	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU ⁵⁾	EN 61000-6-1, EN 61000-6-2,
		EN 61000-6-3, EN 61000-6-4,
		EN 50491-5-1, EN 50491-5-2,
		FN 50491-5-3

Type Features

EY6IO70F001 $8 \times DI/CI/DO(OC)$ and $8 \times DI/CI I/O$ module

Accessories

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I

⁴⁾ The product is not suitable for safety functions

⁵⁾ EN 61000-6-2: To comply with the standard, the connecting cables for the digital open collector outputs (DO-OC) may not be longer than 30 m

EY6IO71: 8 × AO and 8 × DI/CI I/O module, modu671-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu6*2-LC link coupler
- Activation with a standard signal (O(2)...10 V) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm, status or pulse counter) in operational systems
- Eight digital inputs and eight analogue outputs
- Power supply from automation station (modu6**-AS), link coupler (modu6*2-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO71F001

Technical data		
Power supply ¹⁾		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 1 W
	Dissipated power	≤ 0,8 W
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
U	Power supply for DI	Internal, ~13 V=
	Pulse counter ²⁾	≤ 50 Hz
Analogue outputs (AO)	Number of outputs	8
and ger corpora (c.c.)	Analogue	0(2)10 V=
	Load	≤ 2 mA
Interfaces and communication	ı	
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in conne tors
	Earth connector	Spring contact against DIN rail
Construction		
	Fitting	On metallic DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions $W \times H \times D$	55.7 (3 HP) x 100 x 59 mm
	Weight	130 g
Standards and directives		
	Protection type (as per EN 60730)	Connections and terminals:IP00 Front in DIN cut-out:IP30
	Protection class	I
	Environment class	3K3 (IEC 60721)
	Software class ³⁾	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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3

¹⁾ Measured values without accessories





²⁾ 50 Hz only with PC module, otherwise 5 Hz

³⁾ The product is not suitable for safety functions

Type Features

EY6IO71F001 $8 \times AO$ and $8 \times DI/CI$ I/O module

Accessories

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



EY6IO72: $4 \times AO$, $4 \times DO(OC)$, $4 \times UI$ (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(2)...10 V, 0(4)...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, four analogue outputs and four digital 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)



EY6IO72F001

Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	
	Dissipated power	
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Inputs/outputs		
Universal inputs (UI)	Number of inputs	4
	Analogue	O(2)10 V, O(4)20 mA, R, Ni1000, Pt1000, Pot
	Digital ¹⁾	DI/CI (≤ 50 Hz)
Analogue outputs (AO)	Number of outputs	4
	Analogue	0(2)10 V, 0(4)20 mA
	Load	≤ 20 mA
	Load ≥ 5 Ω	Output 010 V / 210 V
	Load ≤ 400 Ω	Output 020 mA / 420 mA
	Load voltage	< 2 V (0(4)20 mA)
Digital outputs (DO)	Number of outputs	4
	Type of outputs	Open collector, normally-open contacts (O-I), outputs switched with respect to
		ground (any arrangement)
	Power supply for DO	External, positive ≤ 28 V=
	Load	0100 mA (max. 2 V voltage drop)
		om too mat (mass 2 + tomage arop)
Interfaces and communicatio	n	
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 × 8-pin spring-loaded plug-in connectors
	Earth connector	Spring contact against DIN rail
		· •
Construction		
	Fitting	On DIN rail 35 × 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) × 100 × 59 mm
	Weight	

¹⁾ 50 Hz only with PC module, otherwise 5 Hz



Standards and directives		
	Type of protection	Connections and terminals:IPOO Front in DIN cut-out:IP30 As per 60730-1
	Protection class	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 50491-5-1, EN 50491-5-2,
		EN 50491-5-3

Type Feature

EY6IO72F001 $4 \times AO, 4 \times DO(OC), 4 \times UI (DI/CI/AI) I/O module (in planning)$

Accessories

Type Description

EY6LO00F001 Local operating and indicating unit for I/O modules

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I

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 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 376	



EY6LO00F001

EY6LO00: Operating and indicating unit for I/O modules, modu600-LO

Features

- Part of the SAUTER modulo 6 system family
- Pluggable element for direct operation and visualisation of displays for the modu6** I/O modules
- Automatic detection of the current I/O module configuration
- 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
- Simple 4-button operation
- LED indicator of I/O module modu6**-IO
- Manual operation of outputs
- Ready for use without parameterising

Technical data

Power supply		
	Power supply	From I/O module modu6**-IO
	Current consumption	≤ 12.5 mA
	Dissipated power	≤ 0,3 W
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	-2560 °C
	Ambient humidity	1090% rh, no condensation
Indicators, display, operation		
	Resolution	240 × 240 pixels, colour LCD
	Operation	Four buttons: Back/reject,
		Reverse/reduce,
		Forward/increase, Confirm
Interfaces and communication		
	Connection	4-pin, spring contacts
	Protocol	Proprietary
Standards and directives		
	Type of protection	Connections: IPOO
		front, plugged in: IP30
		(EN 60730-1)
	Protection class	III
	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 50491-5-1, EN 50491-5-2
		EN 50491-5-3

Overview of types

Туре	Features
EY6LO00F001	modu600-LO, operating and indicating unit for I/O modules

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Document number	Language	Title
D100386646	de	modu600-LO Bedienungsanleitung
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100408262	en	modu600-LO Operating instructions
D100402674	en	SAUTER modulo system description





Document number	Language	Title
D100410201	en	EY-modulo 6 - Best Practice I
D100408261	fr	modu600-LO Notice d'emploi
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



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	EY6CM30F031
Product name	modu620-CM	modu630-CM
Interfaces	RS-485	RS-232, M-Bus
Protocol	Modbus RTU / ASCII	M-Bus
Further information	Page 379	Page 381

EY6CM20: Modbus/RTU (RS-485) communication module, modu620-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
- Up to five 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
- Electrical isolation
- Configurable RS-485 network resistors (software)
- Baud rate 600...115 200 bit/s
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring with serial Modbus master tools

Dames supply		
Power supply	<u> </u>	5 AC 10 : 1/01
	Power supply	From AS or LC via I/O bus
	Power consumption	30 mA (AS-LC)
	Dissipated power	≤ 0.7 W
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Interfaces, communication		
RS-485 (Modbus)	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 re- sistors (LT, PU, PD) configurable via software
	Bus speed	600115 200 bit/s, parity bit, stop bit, Rx/Tx bus timing
	Connection	Pluggable spring-type terminals 2 × 5-pin
		0.21.5 mm ² rigid/flexible
	Line	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
	120 Ω bus termination and pull-up/pull-down	Switchable via software (CASE Engine)
Construction		
	Fitting	On metal DIN rail
	D:	35 × 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) × 100 × 59 mm
	Weight	110 g



EY6CM20F011





	Type of protection	Connections and terminals: IPOO
		Front in DIN cut-out: IP30
	Environment class	3K3 (IEC 60721)
	Software class ¹⁾	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU ²⁾	EN 61000-6-1, EN 61000-6-2,
		EN 61000-6-3, EN 61000-6-4,
		EN 50491-5-1, EN 50491-5-2,
		EN 50491-5-3
	RoHS Directive 2011/65/EU	EN IEC 63000

Features

EY6CM20F011 Modbus/RTU (RS-485) communication module

Accessories

Туре Description

0920360601 Placeholder module for modu6**CM

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I
Additional information		
P100018041	Fitting instructions	
MD 91.200	SAUTER Declaration on materials and the environment	

The product is not suitable for safety functions

HBES/BACS: 3 metres max. between EYPS and AS

EY6CM30: M-Bus communication module, modu630-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
- Up to four 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 for up to 80 unit loads, galvanically isolated
- 2-wire RS-232 connection for point-to-point communication
- Up to 256 devices and 600 values
- M-Bus master with up to four M-Bus communication profiles
- Integrated tunnelling function for commissioning and monitoring on the modulo 6 stations

Technical data

Technical data		
Power supply		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 0.35 mA
	Power consumption	7.42 W
	Dissipated power	2.56 W
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1090% rh, no condensation
Interfaces, communication		
RS-232 (M-Bus)	Communication protocol	M-Bus master (EN 13757-3)
	Bus physics	M-Bus (EN 13757-2), electrically isolited, mark voltage 36 V, short-circuit proof, overcurrent monitoring and protection (max. 135 mA)
	Bus speed	3009600 (19 200, 38 400) bit/s
	Connection	Pluggable spring-type terminals 2 × 5-pin
		0.21.5 mm ² rigid/flexible
	Line ¹⁾	2-wire (M+/M-) up to 1000 m; RS-232 (D+/D-/GND) up to 3 m
	Use	Integration of M-Bus meters
	Participant	Up to 80 M-Bus unit loads (UL of 1.5 mA); up to 256 M-Bus devices (with external M-Bus level converter vi RS-232)
	Functions	600 M-Bus channels for BACnet I/O/V objects for up to 256 M-Bus d vices; REQ_UD2, SND_NKE, SND_UD, primary/secondary addressing, readout (triggered, by offset or filter)
Construction		
	Fitting	On metal DIN rail 35 × 7.5/15 as per EN 60715
	Dimensions W × H × D	55.7 (3 HP) × 100 × 59 mm
	Weight	118 g

 $^{^{1)}}$ M-Bus cable lengths depend on the cable type (J-Y(ST)Y 4×0.5 mm 2 max. 1000 m, LiYY 2×1.5 mm 2 max. 4000 m), number of bus segments and the baud rate; see engineering notes



EY6CM30F031





Standards, directives		
	Type of protection	Connections and terminals: IPOO
		Front in DIN cut-out: IP30
	Environment class	3K3 (IEC 60721)
	Software class ²⁾	A (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,
		EN 50491-5-1, EN 50491-5-2,
		EN 50491-5-3
	RoHS Directive 2011/65/EU	EN IEC 63000

Type Features

EY6CM30F031 M-Bus communication module

Accessories

Type Description

0920360601 Placeholder module for modu6**CM

Document number	Language	Title	
D100397589	de	Systembeschreibung SAUTER modulo	
D100408512	de	EY-modulo 6 - Best Practice I	
D100402674	en	SAUTER modulo system description	
D100410201	en	EY-modulo 6 - Best Practice I	
D100402676	fr	Description du système SAUTER modulo	
D100410203	fr	EY-modulo 6 - Meilleures pratiques I	
Additional information			
P100018041	Fitting instructions		
MD 91.205	SAUTER Declaration on materials and the environment		

 $^{^{2)}\,\,}$ The product is not suitable for safety functions

³⁾ HBES/BACS: 3 metres max. between EY-PS and AS

Security in the building network

The IoT provides incredible opportunities for building automation thanks to its openness, availability and variety of solutions. On the other hand, it can pose a threat for exactly the same reasons. New devices must therefore be secure from the outset. Because of this, modulo 6 was developed according to the recommendations of IEC 62443-3-3. With modulo 6, the latest generation of building automation systems, SAUTER offers a security-oriented solution. The security concept is based on the international standard for cybersecurity in industrial automation, IEC 62443, which defines system security requirements and security levels. With BACnet Secure Connect (BACnet/SC), modulo 6 is now even more secure. The new BACnet data connection only supports encrypted communication and is based on the latest version of the encryption protocol, TLS 1.3. BACnet/SC is also ideally suited for enterprise IT due to the basic technologies used (TCP, WebSocket, TLS, IPv4, IPv6). Seamless integration into the existing infrastructure is made easy with BACnet/SC – BACnet/IP routers.

The latest member of the modulo 6 product family uses blockchain technology (patented). The modu6 15-BM, or Building Data Integrity Manager, provides a local solution for monitoring data integrity in the installation. It has an integrated web server for local commissioning, visualisation, operation and notification. A guided configuration process (wizard) creates the blockchain and starts the integrity check. Data from the automation stations is linked in the building network to form a blockchain ring. The current process and the state of the blockchain can be accessed in the dashboard at any time. In the event of an integrity violation, an email notification is sent. The affected automation station is isolated, automatically restored, and only then is it reintegrated into the building automation network. Proven security technologies provide encryption, authentication and access protection. This means the system is already well protected against cyber attacks on the automation level.



EY6BM15F011

EY6BM15: Building Data Integrity Manager, modu615-BM

Features

- Part of the SAUTER modulo 6 system family
- Blockchain-based solution for monitoring the data integrity of automation stations
- Encrypted communication in the building automation network
- Integrated web server for local commissioning, visualisation, operation and user administration
- Notification and device isolation or self-healing in the event of data integrity breach
- NTP client for time synchronisation and certificate protection
- Audit trail

Power supply		
	Power supply	24 VDC ± 10%
	Power consumption	≤ 2 W without load
	Dissipated power	≤ 2 W without load
	Peak inrush current ¹⁾	≤ 2 A, ≤ 10 ms
		·
Parameters		
	Connection	5-pin spring-type terminal, pluggable, 0.51.5 mm ² (rigid) 0.52.5 mm ² , at least 8 mm wire strip- ped
	Battery (buffer: RTC)	CR2032, pluggable
	Earth connector	Spring contact against DIN rail and PE terminal
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2070 °C
	Ambient humidity	1090% rh, no condensation
Function		
	Number of slaves	Max. 100
	Hash function	SHA-256 (for TLS)
Architecture		
7 i o i i o o i i o o i o o o o o o o o	Processor	ARM 8, 1 GHz
	RAM (memory)	512 MB (DDR3)
	Flash	512 MB
	Embedded web server	moduWeb Unity
	Operating system	Embedded Linux
	_ paramig system	
Interfaces, communication		
	Communication	Via SMTP, NTP, HTTPS, MQTT
Ethernet network	Ethernet network	3 × RJ45 connector
	10/100 BASE-T(X) switched	10/100 Mbit/s
	Use	Blockchain network
Construction		
	Fitting	On metal DIN rail 35 × 7.5/15 as per EN 60715. DIN rail housing as per DIN 43880
	Dimensions W × H × D	92.6 (5 HP) × 100.9 × 58.3 mm
	Weight	260 g



¹⁾ Measured value with EY-PS021F021 power supply unit

Standards, directives		
	Type of protection	Connections and terminals: IP00 Front in DIN cut-out: IP30
	Protection class	I
	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, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 62479
	RoHS Directive 2011/65/EU	EN IEC 63000
	RED Directive 2014/53/EU	EN 300328 (V2.1.1)

Overview of ty	Overview of types			
Туре	Features			
EY6BM15F011	Building D	ata Integrity Man	nager and web server	
Manuals				
Document number		Language	Title	
D100397589		de	Systembeschreibung SAUTER modulo	

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 - Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 - Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 - Meilleures pratiques I



EY6RT30F001

EY6RT30: BACnet router and SC hub, B/IP <-> B/SC, modu630-RT

Features

- Part of the SAUTER modulo 6 system family
- Suitable for use as BACnet router between BACnet networks
- Suitable for use as BACnet Secure Connect Hub (B/SC-Hub)
- BACnet profiles: B-RTR, B-SCHUB, B-BBMD
- BACnet data links: BACnet/IP (IPv4), BACnet/SC (IPv4, IPv6)
- BACnet/IP-BBMD or FD function
- Four RJ45 connections for two separate IP networks
- Three connections switched for daisy chain
- Encryption of communication with TLS 1.3
- Alive signal

Technical data		
Power supply		
	Power supply	24 VDC ± 10%
	Power consumption	≤ 2 W without load
	Dissipated power	≤ 2 W without load
	Peak inrush current ¹⁾	≤ 20 A, ≤ 1 ms (input side)
		, , , ,
Parameters		
	Connection	5-pin spring-type terminal, pluggable, 0.51.5 mm ² (rigid)
		0.52.5 mm ² , at least 8 mm wire stripped
	Battery (buffer: RTC)	CR2032, pluggable
	Earth connector	Spring contact against DIN rail and PE terminal
Ambient conditions		
Ambient Conditions	Operating temperature	045 °C
	Operating temperature	-2570 °C
	Storage and transport temperature	
	Ambient humidity	1090% rh, no condensation
Function		
	BACnet profiles	B-RTR (BACnet router) B-SCHUB (BACnet SC hub)
		B-BBMD (BACnet Broadcast Manager)
	BACnet router	BACnet/IP, BACnet/SC Data Links
Architecture		
Aromeoture	Processor	ARM Cortex A8, 32-bit, 1 GHz
	RAM (memory)	512 MB (DDR3)
	Flash	512 MB (55K5)
	Operating system	Embedded Linux
		Emboaded Emox
Interfaces, communication		
	Communication	Via BACnet/IP (UDP via IPv4) BACnet/SC (WebSockets, TCP via IPv4 or IPv6)
	Encryption	TLS V.1.3 (BACnet/SC)
Ethernet network #1	Ethernet network	1 × RJ45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/SC (IPv4, IPv6)



¹⁾ Measured value with EY-PS031F021 power supply unit



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Ethernet network #2	Ethernet network	3 × RJ45 connector
	10/100 BASE-T(X) switched	10/100 Mbit/s
	Communication protocols	BACnet/IP (IPv4), BACnet/SC (IPv4, IPv6)
Construction		
	Fitting	On metal DIN rail 35 × 7.5/15 as per EN 60715. Rail housing as per DIN 43880
	Dimensions $W \times H \times D$	92.6 (5 HP) × 100.9 × 58.3 mm
	Weight	260 g
Standards, directives		
	Type of protection	Connections and terminals: IP00 Front in DIN cut-out: IP30
	Protection class	I
	Environment class	3K3 (IEC 60721)
CE/UKCA conformity ²⁾	EMC-D 2014/30/EU (CE)	EN 55024, EN 55032 Class B
·	EMC-2016 (UKCA)	EN 55024, EN 55032 Class B
	LV-D 2014/35/EU (CE)	EN 62368-1
	EESR-2016 (UKCA)	EN 62368-1
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000
	RoHS-2012 (UKCA)	EN IEC 63000

Overview of ty	pes		
Туре	Features		
EY6RT30F001	BACnet ro	outer and SC hub	, BACnet/SC <> BACnet/IP
Manuals			
Document number		Language	Title
D100397589		de	Systembeschreibung SAUTER modulo
D100408512		de	EY-modulo 6 - Best Practice I
D100402674		en	SAUTER modulo system description
D100410201		en	EY-modulo 6 - Best Practice I
D100402676		fr	Description du système SAUTER modulo
D100410203		fr	EY-modulo 6 - Meilleures pratiques I

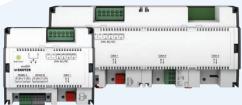
Explanation of abbreviations in the "Further information" section of the product data sheet and in the appendix to SAUTER's product catalogues

SAUTER room automation

High-performance, modular, communicative and ready for IoT.

SAUTER ecos guarantees both seamless integration in the building management system and in the automation system of the primary plants, while also providing maximum flexibility with minimum use of energy.









SAUTER ecos / modulo 5

Room automation

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SAUTER ecos room automation stations

The areas of use for the SAUTER ecos room automation stations range from precise room control with heating and cooling to integrated room automation with demand-controlled 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 the $\rm CO_2$ emissions while providing maximum comfort and well-being. The ecos devices enable the area usage to be adjusted flexibly during operation by dividing the area on each floor into room segments.

Overview of room automation stations







Type designation	EY-RC504F***	EY-RC505F0**	EY-RC311F001
Product name	ecos504	ecos505	ecos311
Parameters			
Power supply	24 V	'=/~	230 V~
Room segments	8	3	1
Room operating units	2 >	< 4	1
I/O extension modules	2 >	< 8	2
Inputs/outputs			
Universal inputs	-	-	5
Digital inputs		-	-
Analogue outputs		-	3
Digital outputs	-	-	4
Relay outputs (2 A / 10 A)	-	-	
Interfaces, communication			
Interfaces	RS-485,	RS-485, Ethernet	
Protocols	BACnet/IP, MQTT, Modbus RT	J, M-Bus, SLC, KNX, DALI, SMI	BACnet MS/TP, SLC
BACnet profile	B-I	B-BC	
Objects			
Data points (value objects)	60	00	50
Control (Loop)	32		6
Calendars (Calendar)	16		3
Time programmes (Schedule)	32		4
Historical data (Trend Log)	256		-
Alarms (Notification Class)	16		-
Further information	Page 391	Page 391	Page 396

EY-RC 504/505: Room automation station, ecos504/505

Features

- Part of the SAUTER modulo 5 system family
- Modular room automation station (AS) for up to eight rooms or eight flexible room segments
- BACnet/IP communication (EN ISO 164845) as BACnet Building Controller (B-BC)
- The ecoUnit 3 and ecoUnit 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 units, 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
- 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 simultaneous communication profiles
- Integrated tunnelling function for commissioning and monitoring with serial Modbus master tools
- Physical M-Bus interface and RS-232 interface for external M-Bus level converters
- Supports M-Bus baud rates of 300 to 38,400 bit/s
- M-Bus master function with up to four simultaneous communication profiles
- Integrated tunnelling function for commissioning and monitoring with M-Bus tools
- Time programme and calendar function; data recording
- Integrated moduWeb web server (EY-RC504F101 only)
- Integrated (EY-RC504F202 only) or licensable MQTT functionality (MQTT Broker / Client)
- Engineering/programming using SAUTER CASE Suite (based on IEC 61131-3)
- Integration into the building management system via BACnet/IP with Ethernet interface

Power supply			
	Power supply	24 VDC ±10% 24 VAC +25%/-15%, 4863 Hz	
	Max. peak inrush current	23 A (10 milliseconds)	
	Connection Spring-type terminals 0.22.5 mm² rigid/flexible		
		Ampacity max. 5 A	
Ambient conditions			
	Operating temperature	045 °C	
	Storage and transport temperature	−2570 °C	
	Ambient humidity	1085% 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)	



EY-RC 504



EY-RC 505









Dynamic objects	Time programmes	32 (Schedule)	
,	Calendar	16 (Calendar)	
	Notification	16 (Notification Class)	
	Historical data	256 (Trend Log)	
		up to 60,000 entries	
	Chart	32 (Log View), moduWeb (F101) only	
	Command object	16 (Command)	
Services	Number of BBMDs in BDT	32	
	Number of FDs in FDT	32	
Gateway	Field bus protocols	KNX, DALI, SMI, Modbus, M-Bus, SLC, SLC/EnOcean	
	IP protocols	BACnet/IP as per ISO 16484-5, HTTP for moduWeb (F101 only), MQTT protocol V3.1.1/V5 as per ISO/IEC 20922 via TCP or TCP/TLS 1.2 (F202 only / licence)	
моп	MQTT Client	Number of topics / alias topics for max. number of BACnet objects (600	
	MQTT Broker	Number of topics, depending on CPU/memory resources (> 1000)	
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 milliseconds	
	-		
	Application data Embedded web server	Via CASE Engine	
	Ellipeaded web server	moduWeb (EY-RC504F101 only)	
Interfaces, communication			
Ethernet network	Communication protocol	BACnet/IP, HTTP (F101 only),	
Ethernet network		HTTP (F101 only), MQTT (F202 only or with licence), NTP client	
Ethernet network	Communication protocol	HTTP (F101 only), MQTT (F202 only or with licence),	
Ethernet network		HTTP (F101 only), MQTT (F202 only or with licence), NTP client	
Ethernet network RS-485 A, RS-485 B	Connection	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector	
	Connection Type	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched	
	Connection Type Communication protocol Use	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators	
	Connection Type Communication protocol	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2	
	Connection Type Communication protocol Use	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules	
	Connection Type Communication protocol Use Participant	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin	
	Connection Type Communication protocol Use Participant Power supply Connection	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible	
	Connection Type Communication protocol Use Participant Power supply	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin	
	Connection Type Communication protocol Use Participant Power supply Connection	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessa-	
RS-485 A, RS-485 B	Connection Type Communication protocol Use Participant Power supply Connection Line 1) Line length 2)	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary	
	Connection Type Communication protocol Use Participant Power supply Connection Line 1) Line length 2) Communication protocol	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessarry KNX TP1 (ISO/IEC 14543-3)	
RS-485 A, RS-485 B	Connection Type Communication protocol Use Participant Power supply Connection Line 11 Line length 21 Communication protocol Power consumption	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessarry KNX TP1 (ISO/IEC 14543-3) KNX bus max. 6 mA	
RS-485 A, RS-485 B	Connection Type Communication protocol Use Participant Power supply Connection Line 1) Line length 2) Communication protocol Power consumption Bus power supply	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary KNX TP1 (ISO/IEC 14543-3) KNX bus max. 6 mA	
RS-485 A, RS-485 B	Connection Type Communication protocol Use Participant Power supply Connection Line 11 Line length 21 Communication protocol Power consumption	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary KNX TP1 (ISO/IEC 14543-3) KNX bus max. 6 mA Via external KNX power supply KNX bus terminal x4	
RS-485 A, RS-485 B	Connection Type Communication protocol Use Participant Power supply Connection Line 1) Line length 2) Communication protocol Power consumption Bus power supply	HTTP (F101 only), MQTT (F202 only or with licence), NTP client 2 × RJ-45 connector 10/100 BASE-TX switched 2 × RS-485, SLC ecoLink I/O modules; ecoUnit 1, ecoUnit 3 operating units; ASV 2 VAV actuators Max. 2 × 8 ecoLink modules Max. 2 × 4 ecoUnit 1, 3 or FCCP 2 Max. 2 × 12 ASV 2 5 V ±5% < 200 mA (sum of both RS-485), protected against short circuit Pluggable spring-type terminals 2 × 4-pin 0.21.5 mm² rigid/flexible 4-wire, twisted, shielded Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary KNX TP1 (ISO/IEC 14543-3) KNX bus max. 6 mA	

Example cable CAT-5, J-Y(ST)Y, RS-485 bus cable (e.g. Belden 9842)

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.

	Participant	Up to 64 KNX devices, depending on
	Functions	the external KNX power supply 256 KNX group addresses for BACnet
DALL (per COM module)	Communication protocol	I/O objects (256 channels) DALI (IEC 62386-101/-103)
DALI (per COM module)	Communication protocol Power consumption	DALI (ILC 02300-1017-103) DALI bus max. 2 mA (only when operating with external power supply)
	Bus power supply	Typ. 16 V, max. 116 mA (can be switched off for external bus power supply)
	Connection	Spring-type terminals 0.22.5 mm ² 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 ad- dressable 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), protec- ted against short circuit (30 mA)
	Connection	Spring-type terminals 0.22.5 mm ² rigid/flexible
	Line	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
RS-485 (COM module)	Communication protocol	Modbus/RTU and Modbus/ASCII Master as per V1.02 2-wire (2W)
	Bus physics	1 unit load (UL); electrically isolated; integrated RS-485 network resistors (LT, PU, PD) configurable via software
	Bus speed	600115,200 bit/s Parity bit, stop bit, Rx/Tx bus timing
	Connection	Pluggable spring-type terminals 2 × 5-pin
	2)	0.21.5 mm² rigid/flexible
	Line 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
M-Bus/RS-232 (COM module)	Communication protocol	M-Bus master (EN 13757-3)
	Bus physics	M-Bus (EN 13757-2); electrically isolated, mark voltage 36 V, short-circuit proof, overcurrent monitoring and protection
	Bus speed	3009600 (19 200, 38 400) bit/s
	Connection	Pluggable spring-type terminals 2 × 5-pin
		0.21.5 mm ² rigid/flexible

³⁾ Example cable CAT-5, J-Y(ST)Y, RS-485 bus cable (e.g. Belden 9842)

	Line ⁴⁾	2-wire (M+/M-) up to 1000 m; RS-232 (RX/TX/C) up to 15 m Integration of M-Bus meters Up to 40 M-Bus unit loads (UL of 1.5 mA); up to 256 M-Bus devices (with external M-Bus level converter via RS-232)		
	Use			
	Participant			
	Functions	400 M-Bus channels for BACnet I/O/V objects for up to 256 M-Bus devices; REQ_UD2, SND_NKE, SND_UD, primary/secondary addressing, readout (triggered, by offset or filter)		
Construction				
	Fitting	DIN rail 35 × 7.5/15 EN 50022 Rail housing DIN 43880		
	Dimensions W × H × D	EY-RC 504: 105 (6 HP) × 90 × 58 mm EY-RC 505: 210 (12 HP) × 90 × 58 mm		
Standards, directives				
mandad, uncouves	Type of protection	Connections and terminals: IPOO Front in DIN cut-out: IP30 IP30 (EN 60529), with accessory ter- minal cover		
	Energy class ⁵	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC		
	Environment class	3K3 (IEC 60721)		
	Protection class	I (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		
eu.bac certificate	Energy Performance of Buildings Directive 2010/31/EU	EN 15500		
	eu.bac licence	No. 2166		

Overview of types						
Туре	COM1	COM2	СОМЗ	Weight	Current consumption (max.)	Power consumption
EY-RC504F001	-	-	-	220 g	0.33 A	4 W / 8 VA
EY-RC504F101	-	-	-	220 g	0.33 A	4 W / 8 VA
EY-RC504F202	-	-	-	220 g	0.33 A	4 W / 8 VA
EY-RC504F011	KNX	-	-	240 g	0.33 A	4 W / 8 VA
EY-RC504F021	DALI	-	-	245 g	0.43 A	6 W / 10 VA
EY-RC504F041	SMI	-	-	240 g	0.33 A	4 W / 8 VA
EY-RC504F0C1	RS-485	-	-	243 g	0.33 A	5 W / 9.5 VA
EY-RC504F0D1	M-Bus	-	-	253 g	0.48 A	6.9 W / 10 VA
EY-RC505F031	KNX	DALI	-	385 g	0.61 A	7 W / 10 VA
EY-RC505F051	SMI	DALI	-	410 g	0.61 A	7 W / 11 VA
EY-RC505F061	KNX	SMI	-	385 g	0.33 A	4 W / 8 VA
EY-RC505F071	KNX	SMI	DALI	420 g	0.61 A	7 W / 11 VA
EY-RC505F081	-	DALI	DALI	410 g	0.61 A	9 W / 14 VA
EY-RC505F091	SMI	SMI	DALI	430 g	0.61 A	8 W / 12 VA

 $^{^{4)}}$ M-Bus cable lengths depend on the cable type (J-Y/ST)Y 4 \times 0.5 mm 2 up to 1000 m, LiYY 2 \times 1.5 mm 2 up to 4000 m), the number of bus segments and the baud rate; see engineering notes

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

Туре	COM1	COM2	COM3	Weight	Current consumption (max.)	Power consumption
EY-RC505F0A1	KNX	DALI	DALI	420 g	0.61 A	9 W / 14 VA
EY-RC505F0B1	SMI	SMI	-	400 g	0.33 A	4 W / 8 VA
EY-RC505F0E1	RS-485	M-Bus	-	405 g	0.48 A	7.1 W / 10.6 VA
EY-RC505F0F1	RS-485	DALI	-	405 g	0.61 A	6 W / 10 VA
EY-RC505F0G1	RS-485	SMI	DALI	430 g	0.61 A	7 W / 10 VA
EY-RC505F0H1	KNX	RS-485	DALI	420 g	0.61 A	9 W / 14 VA
EY-RC505F0J1	RS-485	DALI	DALI	440 g	0.61 A	9 W / 14 VA
EY-RC505F0K1	KNX	RS-485	-	385 g	0.61 A	7 W / 10 VA

- * F*0*: EY-RC504F001 (ecos504, standard), EY-RC504F101 (ecos504, moduWeb), EY-RC504F202 (ecos504-loT, BACnet-MQTT gateway)
- DALI: DALI interface with bus power supply (116 mA)
- * RS-485: RS-485 interface for Modbus/RTU and Modbus/ASCII
- SMI: SMI interface for SMI or SMI/LoVo

Accessories	
Туре	Description
0940240001	ecos504/505 terminal covers (2 pcs)
0450573001	Transformer 230 VAC / 24 VDC, 42 VA; for DIN rail 35 mm, dimensions: $78 \times 74 \times 52$ mm (W×H×D)
EY-CM581F081	ecosCom581 EnOcean wireless interface
EY-RU 1 * *	ecoUnit 1 room operating units with EnOcean wireless technology (via EY-CM581F081)
EY-RU 3 * *	ecoUnit 3 room operating units
EY-EM51*	Remote ecoLink I/O modules (24 V)
EY-EM52*	Remote ecoLink I/O modules (230 V)
YY-FX502F001	ecos-IoT: MQTT Client, licence for ecos504/505
YY-FX502F002	ecos-IoT: MQTT Client + Broker, licence for ecos504/505

¹ HP = one horizontal pitch with 17.5 mm





EY-RC311F001

EY-RC 311: Room controller, ecos311

Features

- Part of the SAUTER modulo 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, demandcontrolled 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., 5060 Hz
	Power consumption	Max. 14 VA
	Dissipated power	5 W / 8 VA
		,
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2070 °C
	Humidity	1085% rh, no condensation
Inputs / outputs		
Relay outputs	Туре	O-I relays, normally-open contacts with
kelay oulpuis	туре	shared power supply
	Load	230 VAC / 30 VDC
		2 A resistive load, total max. 5 A 230 VAC; 10 A resistive load
	Switching frequency	> 3 × 10 ⁵ cycles (2 A)
	ownerming mediciney	> 2 × 10 ⁵ cycles (10 A)
Saminan duatar autouta (MAOS EET)	T	0-I, 24 VAC/DC, switched to ground
Semiconductor outputs (MOS-FET)	Type Load	0.5 A
	Lodd	Max. peak current 1 A (< 20 ms)
Analogue outputs	Туре	010 V / 2 mA
Universal inputs	Analogue	010 V
·	Digital	0-I, max. 2 Hz
	Potentiometer	110 kΩ (for potentiometer)
	Resistance	1002500 Ω
	Ni1000/Pt1000	-20100 °C
Interfaces and communication		
	Interface	1 × RS-485 electrically isolated, ½ load
	Protocol	BACnet MS/TP
	Line	2-wire, twisted with reference, shielded
	Line length	1000 m with bus termination
SAUTER Local Communication in		
	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)





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	Room operating units	Max. 1; EY-RU 31*/355/110/146 (via EY-CM581)
	I/O modules	Max. 2; EY-EM 51*, 52*
Construction		
	Dimensions $W \times H \times D$	178 × 103 × 53 mm
	Weight	674 g
	Fitting	DIN rail; TH35×7.5/15 EN 50022
Standards and directives		
	Type of protection	IPOO (EN 60529) IP20 (cover with front aperture)
	Protection class	II (EN 60730-1)
	Energy class ¹⁾	I to VIII = up to 5%
	C,	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

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

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.

SAUTER ecos room operating units

SAUTER ecoUnit 3 and ecoUnit 1 room operating units combine technology with design. The buttons can be freely assigned with various functions. Due to the standard internal dimensions of 55×55 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, occupan- cy, fan	Temperature sensor, set- point correction, occupan- cy, fan, and control of lighting and window blinds
Use	ecos 5, ecos311			
Interface	RS-485			
Indicator/display	-	-	-	-
Temperature sensor	•	•	•	•
Button functions	-	-	2	4
Fan speeds	-	- AUTO-0-1-2-3		-0-1-2-3
Setpoint correction	-	Rotary knob		
Room occupancy	-	- 3 modes		odes
Further information	Page 400	Page 400	Page 400	Page 400













Type designation	EY-RU365FO**	EY-RU355F***	EY-SU358F081
Product name	ecoUnit365	ecoUnit355	ecoUnit358
Housing colour	Traffic white / Jet black	Traffic white / Jet black	Traffic white / Jet black
Function	Temperature sensor, 12 setpoints with 4 functions (temperature, lights, blinds and fans)	Temperature sensor, setpoint cor- rection, occupancy, fan	Push-button unit
Use	modulo 6, ecos 5	modulo 6, ecos 5, ecos 311	Connection to ecoUnit355
Interface	SLC/RS-485		-
Indicator/display	TFT colour display	LCD display	-
Temperature sensor	•	•	-
Button functions	32 on 6 pages with 6 tiles each	5	2, 4, 8
Fan speeds	•	AUTO-0-1-2-3	-
Setpoint correction	Digitally adjustable via buttons		-
Room occupancy	•	3 modes	-
Further information	Page 402	Page 405	Page 408







Type designation	EY-RU110F201	EY-RU146F201	EY-SU106F100
Product name	ecoUnit110	ecoUnit146	ecoUnit106
Function	Temperature sensor	Temperature sensor, setpoint cor- rection, occupancy, fan, and con- trol of lighting and window blinds	Solar panel supply, control of lighting and window blinds
Use	With ecosCom581 for: ecos 5, ecos311, modulo 6		Connection to ecoUnit1**
Interface	EnOcean wireless		-
Indicator/display	-	LCD display	-
Temperature sensor	•	•	-
Button functions	-	6	6
Fan speeds	_	AUTO-0-1-2-3	-
Setpoint correction	-	Digitally adjustable via buttons	-
Room occupancy	_	3 modes	-
Further information	Page 410	Page 412	Page 414



EY-RU316F001



EY-RU310F001

EY-RU 310...316: Room operating unit, ecoUnit310...316

Features

- Part of the SAUTER 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
- \bullet 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

Power supply		
,	Power supply	From automation station
	Current consumption	≤ 25 mA
	•	≤ 38 mA with 2 × EY-SU306
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Parameters		
Sensors	Measuring range	040 °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
	Line length ¹⁾	\leq 100 m (30 m) with bus termination
	Connection terminals	Pluggable; for wire of 0.120.5 mm ² (Ø 0.40.8 mm)
Construction		
	Fitting	Recessed/surface-mounted (see accessories)
	Dimensions $W \times H \times D$	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			
Туре	Features	Buttons	
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	
Туре	Description
EY-SU306F001	Push-button unit, without frame
Fitting	
Туре	Description
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
0949360004	Push-in terminal RU/SU (for wire), 2×10 pcs. 2-pin (01/02, 03/04)
0949241301	Transparent cover for EY-RU and EY-SU, 10 pcs.
0949241302	RAL 9010 white cover for EY-CM581, EY-RU and EY-SU (10 pcs.)





EY-RU365F00*



EY-RU365F0A*

EY-RU 365: Touch room operating unit, ecoUnit365

Features

- Part of the SAUTER modulo 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 predefined functions (temperature, lights, blinds, fans)
- Up to 32 values/channels 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
- Supply voltage 24 VAC/DC
- SLC/RS-485 communicative interface for ecos 5, modulo 6
- 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 (BLE 4.0) for using the "ecoUnit" app on a smartphone

Power supply		
	Power supply	24 VAC/DC, ±20% - SELV 0 / 50/60 Hz or from EY-PS of station
	Rated power during continuous operation	< 2.6 W
	<u> </u>	
Ambient conditions		
Operation	Operating temperature	045 °C
	Ambient humidity	1085% rh, no condensation
Transport	Ambient humidity	< 85% rh, no condensation
•	Storage and transport temperature	−2570 °C
Parameters		
	Values/channels	Up to 32 values/channels, parameter- isable as setpoint, switching command or value display; 12 of which for com- plete setpoint inputs
	Symbol	Various symbols: e.g. 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, blind control (position/an- gle), value displays (feedback), switch- ing function with various predefined symbols (lamp type, mode, scenes)
	Special functions	°C/°F changeover for temperature function; home button; navigation dis- play; (title) labelling for pages, tiles and functions
	Screensaver display	None, time, actual temperature or any value (channel)
Temperature sensor	Type of sensor	NTC 10k Ω
	Measuring range	040 °C

	Resolution	0.1 K
	Accuracy	± 1 K at typ. 0.1 ms
	,	dependent on environment (e.g. air flow)
	Refresh interval	1 s
	Drift	< 0.1 °C/year
	Position	Bottom left
nputs	Number of inputs	6
	Type of inputs	For potential-free switching contacts
	Polling voltage	24 VDC unregulated
	Polling current	>3 mA (closed contact)
	Internal resistance	> 4.7 kΩ
	Input refresh interval	20 ms
	Switching thresholds	<10 V (voltage "rising") >6 V (voltage "falling")
	Switching hysteresis	>1 V
Audible feedback	Туре	Piezoelectric signal
	Application	Audio feedback when touch function executed
Display with backlight	Screen diagonal	3.5 inches (8.9 cm)
	Resolution	320 x 240 pixels
	Display refresh interval	60 Hz
	Туре	TFT
	Number of colours	262,000
	Brightness	500 cd/m ²
	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
*	010/00/05 01	
*	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)
Connection terminals	SLC/RS-485, DI, power supply Activation	for solid or braided wires, max.
Connection terminals		for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6)
Interfaces, communication Connection terminals Communication	Activation	1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated
Connection terminals	Activation Interface	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN
Connection terminals	Activation Interface Protocol	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shiel
Connection terminals	Activation Interface Protocol Line	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination
Connection terminals Communication	Activation Interface Protocol Line	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and
Connection terminals Communication	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity
Connection terminals Communication	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shie ded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2
Connection terminals Communication	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shie ded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN1740 1 simultaneously
Connection terminals Communication Wireless	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shie ded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN 1740 1 simultaneously 256 registered iOS 8.0 or higher
Connection terminals Communication Wireless Construction	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN1740 1 simultaneously 256 registered iOS 8.0 or higher Android 4.1 (Jelly Bean) or higher
Connection terminals Communication Wireless Construction	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants Supported OS Bluetooth app	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN 1740 1 simultaneously 256 registered iOS 8.0 or higher
Connection terminals	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants Supported OS Bluetooth app	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN1740 1 simultaneously 256 registered iOS 8.0 or higher Android 4.1 (Jelly Bean) or higher Recessed mounting Glass front: 86 × 86 mm²
Connection terminals Communication Wireless Construction	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants Supported OS Bluetooth app	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shielded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN1740 1 simultaneously 256 registered iOS 8.0 or higher Android 4.1 (Jelly Bean) or higher
Connection terminals Communication Wireless Construction	Activation Interface Protocol Line Line length Protection circuit Bluetooth specification Module Number of app participants Supported OS Bluetooth app Fitting Dimensions W × H	for solid or braided wires, max. 1.5 mm² (grid dimension 5 mm) From station (ecos 5, modulo 6) RS-485 with 115kbit/s (no integrated terminating resistor) SLC (SAUTER Local Communication) 2-wire twisted, shielded (D+, D-); MN terminal is reference for RS-485; shieded at controller ≤ 500 m with bus termination Protected against excess voltage and reversed polarity 4.0 Low Energy Class 2 Panasonic PAN1740 1 simultaneously 256 registered iOS 8.0 or higher Android 4.1 (Jelly Bean) or higher Recessed mounting Glass front: 86 × 86 mm² Plastic housing: 85 × 85 mm²

Housing	Colour	FOO*: White (similar to RAL 9010) FOA*: 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, directives		
	Software class	A (EN 60730)
	Plastic fire classification	UL94V2
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730)
	Environment class	3K3 (IEC 60721)
CE/UKCA conformity ¹⁾	EMC-D 2014/30/EU (CE)	EN 50491-5-2, EN 50491-5-3 ETSI EN 301 489-1 v.1.9.2
	EMC-2016 (UKCA)	EN 50491-5-2, EN 50491-5-3 ETSI EN 301 489-1 v.1.9.2
	LV-D 2014/35/EU (CE)	EN 62311
	EESR-2016 (UKCA)	EN 62311
	RED 2014/53/EU (CE)	ETSI EN 300 328 v2.1.1
	RER-2017 (UKCA)	ETSI EN 300 328 v2.1.1
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000:2018
	RoHS-2012 (UKCA)	EN IEC 63000:2018
Other applicable legal acts	Chemicals	REACH Regulation (EC) 1907/2006
	WEEE	WEEE Directive 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

Explanation of abbreviations in the "Further information" section of the product data sheet and in the appendix to SAUTER's product catalogues

EY-RU 355: Room operating unit, ecoUnit355

Features

- Part of the SAUTER modulo system family
- Room operating unit for ecos311, ecos504/505, modu680/660-AS, ASV2 and A*M***SA
- Local, intuitive operation for temperature, fan and occupancy
- Large backlit (BL) display for status information on the room condition
- Ergonomic 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
- \bullet Fits into standard frame with 55 imes 55 mm aperture
- Individually assignable keys with different symbols, can be ordered 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

Power supply		
	Power supply	F***: 1224 VDC, ± 20% (with BL) F0**/A**: 5 VDC, ± 20% (without BL) from ecos 5/ecos311/ASV2: 5 VDC from ecos311: 15 VDC from EY-PS, modu6**-AS, A*M-SA: 24 VDC
	Current consumption	≤ 7 mA (at 24 VDC, with BL) ≤ 10 mA (at 15 VDC, with BL) ≤ 9 mA (at 5 VDC, without BL) ≤ 12 mA with 2 x EY-SU 358 (24 VDC)
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1085% rh, no condensation
Parameters		
Sensor	Measuring range	040 °C
	Resolution	0.1 K
	Time constant	14 min.
	Measuring accuracy	0.5 K in 1535 °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, communication		
Connection to automation station, controller	Activation	ecos 5**, ecos311, modu6*0-AS, ASV215, A*M***SA
	Interface	RS-485



EY-RU355F051









Protocol	SLC	
Line	4-wire, twisted, shielded	
Line length ¹⁾	≤ 100 m with bus termination	
Connection terminals	Pluggable, for wire of 0.120.5 mm ² (Ø 0.40.8 mm)	

Fitting	Recessed/surface-mounted (see acces sories)
Dimensions W × H × D	55 × 55 × 23 mm
Weight	0.05 kg
Housing	F0xx/F1xx: traffic white
	FAxx/FBxx: jet black
Button printing	F0xx/F1xx: black
• •	FAxx/FBxx: white

Standards, directives		
	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE/UKCA conformity ²	EMC-D 2014/30/EU (CE)	EN 61000-6-1, EN 61000-6-2,
		EN 61000-6-3, EN 61000-6-4
	EMC-2016 (UKCA)	EN 61000-6-1, EN 61000-6-2,
		EN 61000-6-3, EN 61000-6-4
	RoHS-D 2011/65/EU &	EN IEC 63000:2018
	2015/863/EU (CE)	
	RoHS-2012 (UKCA)	EN IEC 63000:2018

Overview of types			
Туре	Features	Buttons _ = dummy button, PRA = presence	
EY-RU355Fx02	Operating device, LCD, NTC, 0T	No buttons supplied	
EY-RU355Fx21	Operating device, LCD, NTC, 2T	+ - _ _ _	
EY-RU355Fx31	Operating device, LCD, NTC, 3T	+ - _ PRA	
EY-RU355Fx32	Operating device, LCD, NTC, 3T	+ - _ FAN _	
EY-RU355Fx41	Operating device, LCD, NTC, 4T	+ - _ FAN PRA	
EY-RU355Fx42	Operating device, LCD, NTC, 4T	+ - ECO _ PRA	
EY-RU355Fx51	Operating device, LCD, NTC, 5T	+ - ECO FAN PRA	
EY-RU355Fx52	Operating device, LCD, NTC, 5T	+ - UP DOWN PRA	
EY-RU355Fx53	Operating device, LCD, NTC, 5T	+ - UP DOWN LIGHT	
EY-RU355Fx54	Operating device, LCD, NTC, 5T	+ - ECO FAN °C/°F	
EY-RU355Fx55	Operating device, LCD, NTC, 5T	+ - UP DOWN FAN	

-**∳**- All types:

 $x = 0 \triangleq traffic white, 5/12...24 VDC$

 $x = 1 \triangleq traffic white, 12...24 VDC$

 $x = A \triangleq jet black, 5/12...24 VDC$

 $x = B \triangleq jet black, 12...24 VDC$

Accessories		
Туре	Description	Colour
EY-SU358F021	Push-button unit with 2 button functions	Traffic white
EY-SU358FA21	Push-button unit with 2 button functions	Jet black
EY-SU358F041	Push-button unit with 4 button functions	Traffic white
EY-SU358FA41	Push-button unit with 4 button functions	Jet black
EY-SU358F081	Push-button unit with 8 button functions	Traffic white
EY-SU358FA81	Push-button unit with 8 button functions	Jet black

 $^{^{1)}\,}$ SLC/RS-485 permits a line length of up to 500 m (decentralised supply)

Explanation of abbreviations in the "Further information" section of the product data sheet and in the appendix to SAUTER's product catalogues

Fitting accessories, spare parts

Туре	Description
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
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.
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 94.055)
0949360004	Push-in terminal RU/SU (for wire), 2 × 10 pcs. 2-pin (01/02, 03/04)
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	Screw terminal RU/SU (optional for stranded cable), 2 × 10 pcs. 2-pin (01/02, 03/04)





EY-SU358F081



EY-SU358FA81

EY-SU 358: Push-button unit for room operating unit, ecoUnit358

Features

- Part of the SAUTER 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
- \bullet Fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory

Technical data

Power supply

- ower suppry		
	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	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1085% 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 8 <i>77</i> C)
Construction	<u>-</u>	
	Fitting	Recessed/surface-mounted (see list of accessories)
	Dimensions W × H × D	55 × 55 × 23 mm
	Weight	0.04 kg
	Buttons	FO21: two (dual buttons, dummy but- tons) FO41: four (dual buttons) FO81: eight (single buttons)
Standards, directives		1707 (7) (4 7 7 7 7)
	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			
Туре	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	
Туре	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***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
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.
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 94.055)





EY-RU110F201



EY-RU 110: Room sensor, EnOcean, ecoUnit110

Features

- Part of the SAUTER modulo system family
- Room sensor with integrated digital temperature sensor
- Compatible with ecosCom581 and EnOcean interfaces from third-party manufacturers
- Battery-free with integrated solar panel
- Expandable with ecoUnit106 as additional solar panel supply
- \bullet Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Frames and foils in many colours and designs possible

Technical data		
Power supply		
	Power supply	3 V, from integrated solar panel (external battery operation optional)
	Illuminance	Min. 250 lux, min. 5 hours daily in 5 of 7 days
	Dark period ¹⁾	60 h of full operation, additional 7 days at least in low power mode
Parameters		
	Technology	EnOcean, STM 300
	Frequency	868 MHz band (868.3 MHz)
	Range	Up to 30 m, depending on building structure (planning recommendation: 10 m)
Sensor (temperature)	Measuring range	040 °C
	Resolution ²⁾	0.2 K (hysteresis)
	Time constant	Approx. 7 min.
	Measuring accuracy, temperature	Typ. 0.5 K in the 1535 °C range
Ambient conditions ³⁾		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	585% rh, no condensation
Interfaces and communication		
	Connection ⁴⁾	No wiring necessary, teach-in (pairing) with ecosCom581 or ecoMod580 wireless interface via SLC/RS-485
	EnOcean Equipment Profile ⁵⁾	EEP: A5-10-01 (unidirectional)
Construction		
	Weight	0.05 kg
	Dimensions W × H × D	59.5 × 59.5 × 27.8 mm
	Housing	Pure white (similar to RAL 9010)
	Labelling insert	Silver (similar to Pantone 877 C)
		· · · · · · · · · · · · · · · · · · ·

 $^{^{1)}\,}$ Bridging time without lighting when the internal energy storage/battery is fully charged



²⁾ Measurement value hysteresis for spontaneous transmission (EnOcean telegram)

³⁾ The device may be active during transport. The device is equipped with a permanently installed lithium cell (energy storage/battery)

⁴⁾ See quick reference for ecosCom581/ecoMod580

⁵⁾ EEP V2.6.8 or highe

The ecoUnit 110 room sensor currently only supports the temperature value of EEP A5-10-01 and no other EEP as a temperature sensor, such as A5-02-05 (temp. sensor 0...40 °C)

	Fitting	Recessed/surface-mounted (see 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 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1
	RED Directive 2014/53/EU	ETSI EN 300220-2 (V3.1.1)
	RoHS Directive 2011/65/EU	EN IEC 63000

Overview of types

Туре	Description
EY-RU110F201	Room sensor, EnOcean, temperature sensor, solar panel

- The device is supplied with a silver-coloured labelling insert. Spare inserts: 0940001510 (10 pcs.)
- Order frame and mounting plate separately (see accessories)

Accessories	
Туре	Description
EY-SU106F100	Push-button unit with solar panel, 6 push-buttons, without frame
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
0949241301	Transparent cover for EY-RU and EY-SU, 10 pcs.
0949360004	Push-in terminal RU/SU (for wire), 2×10 pcs. 2-pin (01/02, 03/04)
0940360012	Screw terminal RU/SU (optional for stranded cable), 2×10 pcs. 2-pin (01/02, 03/04)
0949570001	Battery pack, 10 pcs.
0940001510	Labelling insert, foil, silver, without button symbols, 10 pcs.

- EY-SU106F100: Can be used as an extended solar panel for the EY-RU110F201 room sensor, but not as a pushbutton unit.
- 0949570001: Suitable as energy supply in permanently darkened rooms.





Features

- Part of the SAUTER modulo system family
- Room operating unit with integrated digital temperature sensor
- Bidirectional and compatible with ecosCom581 (EnOcean SMART ACK)
- Compatible with EnOcean interfaces of third-party manufacturers
- Battery-free with LCD, ecoUnit106 push-button unit can be added
- Display with extensive status information on room conditions
- \bullet Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Room climate can be adapted individually
- Selection of three operating modes for room occupancy
- Control of a fan with three speed levels
- Control of window blinds, windows and lights (on/off/dim)
- Frame can be ordered as an accessory
- Frames and foils in many colours and designs possible

Power supply		
	Power supply	3 V, from integrated solar panel (external battery operation optional)
	Illuminance	Min. 250 lux, min. 5 hours daily in 5 of 7 days
	Dark period ¹⁾	50 h of full operation, 60 h all of most important functions, additional 7 days at least in low power mode
Parameters		
	Technology	EnOcean, STM 300
	Frequency	868 MHz band (868.3 MHz)
	Range	Up to 30 m, depending on building structure (planning recommendation: 10 m)
Sensor (temperature)	Measuring range	040 °C
	Resolution ²⁾	0.1 K (display), 0.2 K (hysteresis)
	Time constant	Approx. 7 min.
	Measuring accuracy, temperature	Typ. 0.5 K in the 1535 °C range
Ambient conditions ³⁾		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	585% rh, no condensation
Function		
	Setpoint correction	Adjustable and resettable
	Room occupancy (presence)	3 modes, LCD
	Fan speeds	5 functions, LCD





¹⁾ Bridging time without lighting when the internal energy storage/battery is fully charged

²⁾ 0.2 K (hysteresis): Measurement value hysteresis for spontaneous transmission (EnOcean telegram)

The device may be active during transport. The device is equipped with a permanently installed lithium cell (energy storage/battery)

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Ы	5/-	

Totaliana and management and		
Interfaces and communication		
	Connection ⁴⁾	No wiring necessary, teach-in (pairing) with ecosCom581 or ecoMod580 wireless interface via SLC/RS-485
	EnOcean Equipment Profile ⁵⁾	EEP: D2-00-01 (bidirectional, SMART ACK) EEP: A5-10-01 (unidirectional) EEP: F6-03-01 (buttons 3, 4, [712 with ecoUnit106])
Construction		
	Weight	0.055 kg
	Dimensions W × H × D	59.5 × 59.5 × 27.8 mm
	Housing	Pure white (similar to RAL 9010)
	Labelling insert	Silver (similar to Pantone 877 C)
	Fitting	Recessed/surface-mounted (see accessories)
Standards and directives		
Standards and directives		1700 (7) ((0.700)
	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 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1
	RED Directive 2014/53/EU	ETSI EN 300220-2 (V3.1.1)
	RoHS Directive 2011/65/EU	EN IEC 63000

Overview of types

Туре	Description
EY-RU146F201	Room operating unit, EnOcean, LCD, temperature sensor, solar panel, 6 buttons: dXs setpoint correction (+/-), fan, presence, 2 free buttons (window blind/light)

- * The device is supplied with a silver-coloured labelling insert. Spare inserts: 0940001533 (10 pcs.)
- Order frame and mounting plate separately (see accessories)

Accessories	
Туре	Description
EY-SU106F100	Push-button unit with solar panel, 6 push-buttons, without frame
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
0949241301	Transparent cover for EY-RU and EY-SU, 10 pcs.
0949360004	Push-in terminal RU/SU (for wire), 2 × 10 pcs. 2-pin (01/02, 03/04)
0940360012	Screw terminal RU/SU (optional for stranded cable), 2 × 10 pcs. 2-pin (01/02, 03/04)
0949570001	Battery pack, 10 pcs.
0940001511	Labelling insert, foil, silver, (symbols: +, -), 10 pcs.
0940001521	Labelling insert, foil, silver, (symbols: +, -, presence), 10 pcs.
0940001522	Labelling insert, foil, silver, (symbols: +, -, fan), 10 pcs.
0940001523	Labelling insert, foil, silver, (symbols: +, -, presence, fan), 10 pcs.
0940001531	Labelling insert, foil, silver, (symbols: +, -, presence, two lights), 10 pcs.
0940001532	Labelling insert, foil, silver, (symbols: +, -, fan, two lights), 10 pcs.
0940001533	Labelling insert, foil, silver, (symbols: +, -, presence, fan, two lights), 10 pcs.

⁴⁾ See quick reference for ecosCom581/ecoMod580 5) EnOcean Equipment Profile (EEP) V2.6.8 or higher



EY-SU106F100

EY-SU 106: Push-button unit for EnOcean room operating unit, ecoUnit106

Features

- Part of the SAUTER modulo system family
- Integrated solar cell for additional solar panel supply of ecoUnit 1 EnOcean devices
- Push-button unit to supplement the ecoUnit 14* room operating unit
- Control of window blinds and lighting (on/off, dim)
- Up to six button functions
- \bullet Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Frames and foils in many colours and designs possible

Technical data

Power supply		
	Power supply ¹⁾	Not required
Parameters		
Connection	Line	4-wire
	Length ²⁾	≤ 1 m
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1085% rh, no condensation
Construction		
	Fitting	Recessed/surface-mounted (see accessories)
	Dimensions W × H × D	59.5 × 59.5 × 27.8 mm
	Weight	0.047 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 61000-6-3
	RoHS Directive 2011/65/EU	EN IEC 63000

Overview of types

Туре	Features
EY-SU106F100	Push-button unit with up to 6 button functions, integrated solar cell

Accessories	
Туре	Description
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
0949241301	Transparent cover for EY-RU and EY-SU, 10 pcs.
0949360004	Push-in terminal RU/SU (for wire), 2 × 10 pcs. 2-pin (01/02, 03/04)
0940360012	Screw terminal RU/SU (optional for stranded cable), 2 × 10 pcs. 2-pin (01/02, 03/04)
0940001541	Labelling insert, foil, silver, (symbols: two lights, two window blinds), 10 pcs.
0940001542	Labelling insert, foil, silver, (symbols: two lights), 10 pcs.
0940001543	Labelling insert, foil, silver, (symbols: two window blinds), 10 pcs.

The power supply is provided by the connected device (ecoUnit14* or ecoUnit110)





²⁾ See connection diagram

EY-CM581F081

EY-CM 581: Wireless interface, EnOcean, ecosCom581

Features

- Part of the SAUTER modulo system family
- Bidirectional wireless communication according to EnOcean (ISO/IEC 14543-3-10)
- Internal, optimised wireless antenna (no BNC antenna necessary)
- Integration of EnOcean devices: SAUTER ecoUnit110 room sensor and ecoUnit146 room operating unit and other EnOcean devices from third-party manufacturers
- Wide-range supply voltage for compatibility with ecos 5 and ecos311 room controllers and modulo 6 automation stations
- RS-485 interface for remote, optimum positioning of the wireless interface in the room
- Firmware update via SLC/RS-485
- \bullet Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame and white cover front can be ordered as accessories
- Frames and foils in many colours and designs possible

Power supply		
	Power supply	524 V DC ±20% ecos 5:+5 V, ecos311:+15 V/+5 V, modulo 6:+24 V
	Current consumption	5 V: typ. 36 mA, 68 mA peak 15 V: typ. 14 mA, 24 mA peak 24 V: typ. 10 mA, 17 mA peak
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	585% rh, no condensation
Interfaces and communication		
	Wireless technology	EnOcean, TCM 300
	Frequency	868 MHz band (868.3 MHz)
	Protocol	EnOcean EEP (see EEP list)
	Range	Up to 30 m, depending on building structure (planning recommendation: 10 m)
Connection to automation station	Interface	RS-485, 115.2 kbit/s
	Protocol	SLC (SAUTER Local Communication)
	Activation	ecos 5, ecos 311, modulo 6
	Line	4-wire twisted (shielding, RS-485:line end resistance recommen- ded)
	Line length	≤ 100 m
a:		
Construction	W. I.	0.071
	Weight	0.07 kg 59.5 × 59.5 × 27.8 mm
	Dimensions W × H × D	Pure white (similar to RAL 9010)
	Housing Labelling insert	Silver (similar to Pantone 877 C)
	Fitting	Recessed/surface-mounted (see acces sories)
Standards and directives		
Standards and directives	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	LITALIONINGIN CIQ22	3K3 (IEC 00/ 21)









Overview of types

Туре	Description
EY-CM581F081	COM module EnOcean, SLC/RS-485, 524 V DC, 868 MHz

Accessories	
Туре	Description
0940240***	For frames, mounting plates and adapters for third-party frames, see product data sheet 94.055
0949241301	Transparent cover for EY-RU and EY-SU, 10 pcs.
0949241302	RAL 9010 white cover for EY-CM581, EY-RU and EY-SU (10 pcs.)
0949360004	Push-in terminal RU/SU (for wire), 2×10 pcs. 2-pin (01/02, 03/04)
0940360012	Screw terminal RU/SU (optional for stranded cable), 2 × 10 pcs. 2-pin (01/02, 03/04)



SAUTER smart sensors

Smart multi-sensors in a mesh network for precise detection of presence/motion, brightness, temperature, humidity, air quality (VOC) and noise levels in rooms or room zones for optimum indoor air and indoor environment quality.

Overview of smart sensors









Type designation	FMS116F111	FMS116F121	FMS116F121A	FMS196F111	FMS196F121	FMS196F121A
Housing colour	Traffic	white	Jet black	Traffic	white	Jet black
Sensors						
Temperature sensor (digital / FIR)	• / -	• / •	• / •	• / -	• / •	• / •
Humidity sensor (digital)	•	•	•	•	•	•
VOC sensor (air quality, digital)	•	•	•	•	•	•
PIR sensor (presence and motion detector)	•	•	•	•	•	•
Light sensor	•	•	•	•	•	•
Noise level sensor (SL)	•	•	•	•	•	•
Display and operation						
LED ring			12 LED, 24-bi	t RGB colours		
Push-button, capacitive	•	•	•	•	•	•
Interfaces, communication						
Interfaces	Bluetooth Mesh, Bluetooth Beacon, NFC, UART Ethernet, Bluetooth Mesh, Bluetooth Beacon, UART		th Beacon, NFC,			
Ethernet protocols	MQTT client, MQTT TCP/TLS		P/TLS			
Bluetooth mesh profile/model	Sensor server Sensor server and client		ient			
Further information	Page 418 In planning					



FMS116F111



FMS116F121A

FMS 116, 196: Smart Fusion mesh multi-sensor

Features

- Multi-sensor for detection of temperature, humidity and air quality (VOC) for the indoor air quality (IAQ)
- Multi-sensor for detecting the indoor environment quality (IEQ) such as presence/motion, light intensity and noise level
- Multiple measuring sensors can be linked together for more precise information on the state of the room (sensor fusion)
- For ceiling fitting (recessed/surface-mounted)
- Flexible positioning of the sensor possible thanks to mesh network
- Freely controllable, coloured LED ring to indicate the room status for room users (room reserved/free, room air quality good/bad, ready for room cleaning, etc.)
- Bluetooth Beacon function for locating the room user with a smartphone and optimised use of SAUTER Mobile Building Services (Mobile Room Control app)
- Simple integration into the SAUTER automation system with viaSens196
- For up to 16 sensors for one ecos504/505 room controller with CASE Suite
- Complete commissioning with CASE Suite and Bluetooth app
- Networking of the sensors via Bluetooth mesh technology
- Bluetooth mesh sensors viaSens116 combined in the sensor/gateway viaSens196
- "IoT ready" thanks to open interface in viaSens196 (MQTT via IP/Ethernet)
- Ideal for room climate automation according to the WELL Building Standard and the IAQ guidelines of AMEV, ASHRAE, BSRIA, REHVA, VDI
- Option to integrate other Bluetooth mesh devices

Power supply		
	Power supply	1234 VDC, typ. 24 VDC
	Current consumption	Typ. 125 mA at 24 VDC
	Power consumption	Typ. 3 W
Parameters		
Temperature sensor (digital)	Measuring range	040 °C (-40125 °C)
	Resolution	0.1 K
	Time constant	> 2 s
Temperature sensor (FIR) (FMS116/196F121(A))	Measuring range	1540 °C
	Resolution	0.1 K
Humidity sensor (digital)	Measuring range	0100%
	Resolution	1%
	Time constant	Approx. 8 s
VOC sensor (digital)	Method of measurement	CMOS technology (SGP40)
	Measuring range	1500 VOC index
	Resolution	1 VOC index
	Time constant	< 10 s (dew 63%)
PIR sensor (presence, movement)	Detection range	Ø 9 m and approx. 8 × 8 m area at 2.5 m fitting height
	Angle of detection	110°
Light sensor	Measuring range	016 000 lux
	Resolution	1 lux
Noise level sensor	Signal-to-noise ratio (SNR) ¹⁾	65 dB(A)
	Sensitivity	-26 dB(A) on the measuring range, ±1 dB tolerance
	Frequency spectrum	50 Hz 20 kHz
	Noise level (SPL) ²⁾	0116 dB



²⁾ SPL: Sound Pressure Level





Technology	Processor	Dual-Core ARM Cortex, 32-bit, 240 MHz		
Ambient conditions				
	Operating temperature	045 °C		
	Storage and transport temperature	-2570 °C		
	Ambient humidity	1085% rh, no condensation		
Disular and anaestica				
Display and operation	l- di	IED at a with 12 IED. 24 bit DCD		
	Indicator/display ³⁾	LED ring with 12 LEDs, 24-bit RGB (red, green, blue) Configurable animation profiles		
	Push-button, capacitive	For pairing, identification, reset (frontal		
Interfaces, communication				
Bluetooth mesh	Network	Bluetooth mesh node (2.4 GHz), up to 8 TTL hops		
	Radio frequency	2.4 GHz		
	Range ⁴⁾	Up to 15 m		
	Bluetooth mesh profile	V1.0, Sensor Server Model (FMS 116) Sensor Server and Client Model (FMS 196)		
	Localisation	iBeacon standard, indoor positioning		
Ethernet (FMS 196)	Ethernet network	1 × RJ-45 connector		
	10/100 BASE-T(X)	10/100 Mbit/s		
	Communication protocol	MQTT client V3.1.1/V5, MQTT/TLS V1.2 (ISO/IEC 20922)		
	NFC (near field communication)	For configuration parameters		
	Slide switch	Noise level measurement on/off (rear)		
	Serial port	UART for firmware update (point to point)		
Construction				
Construction	Dimensions	Surface Ø × D: 102 × 23 mm Recessed Ø × D: 56 × 20 mm		
	Housing material	Thermoplastic (ABS)		
	Fitting	Recessed (recessed junction box min. 45 mm deep) surface-mounted with accessories		
	Fitting height	2.55 m (ceiling)		
Q1 1 1 1' 1'				
Standards, directives	T f. o	ID20 (ENI 40520)		
	Type of protection	IP30 (EN 60529)		
	Protection class	 		
	Environment class	3K3 (IEC 60721)		
CE (') '	Plastic fire classification	UL94 V-2		
CE conformity according to	Low-Voltage Directive 2014/35/EU			
	EMC Directive 2014/30/EU			
	RED Directive 2014/53/EU			
	RoHS Directive 2011/65/EU			
	RoHS delegated directive (EU) 2015/863			

Overview of types				
Туре	Description	Weight	Housing	
FMS116F111	Smart mesh multi-sensor (T, rh, VOC, PIR, LUX, SPL), BT mesh	0.2 kg	Traffic white	
FMS116F121	Smart mesh multi-sensor (T+FIR, rh, VOC, PIR, LUX, SPL), BT mesh	0.2 kg	Traffic white	
FMS116F121A	Smart mesh multi-sensor (T+FIR, rh, VOC, PIR, LUX, SPL), BT mesh	0.2 kg	Jet black	
FMS196F111	Smart mesh multi-sensor with gateway, BT mesh, MQTT/Ethernet	0.3 kg	Traffic white	

Example application: Presence: LED ring off / blue, room climate / air quality: LED ring green / red

Depending on building and room structure; planning recommendation: Max. 10 m between two Bluetooth mesh nodes

Туре	Description	Weight	Housing
FMS196F121	Smart mesh multi-sensor with gateway, BT mesh, MQTT/Ethernet, $+$ FIR	0.3 kg	Traffic white
FMS196F121A	Smart mesh multi-sensor with gateway, BT mesh, MQTT/Ethernet, +FIR	0.3 kg	Jet black

- * FMS196F1*1(A) has the same sensor characteristics as FMS116F1*1(A). The additional Ethernet interface is a gateway of the Bluetooth mesh network and for integration into the automation with MQTT via TCP/TLS
- Housing: matt, traffic white similar to RAL 9016, jet black similar to RAL 9005

Abbreviations (sensor types)

T	Temperature measurement with digital measuring element		
T+FIR	Temperature measurement with digital measuring element and far infrared temperature element		
rh	Measurement of relative humidity with digital measuring element		
VOC	Measurement of volatile organic compounds		
PIR	Presence and motion detection with passive infrared sensor		
LUX	Measurement of illuminance		
SPL	Measurement of sound pressure level		

SAUTER ecos 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 plants. 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







	- 1		
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/Pt1000 inputs	2	2	_
DIM-10 V outputs	_	-	-
Normally-open relay contacts	3	-	-
Changeover relay contacts	_	-	-
Triac	3	3	2
Analogue outputs	3	3	3
Further information	Page 123	Page 423	Page 123





Type designation	EY-EM514F001	EY-EM515F001
Product name	ecoLink514	ecoLink515
Power supply	24 V~/=	24 V~/=
Inputs/outputs		
Universal inputs	4	4
0-10 V/digital inputs	-	-
Ni1000/Pt1000 inputs	-	-
DIM-10 V outputs	-	-
Normally-open relay contacts	4	-
Changeover relay contacts	-	-
Triac 24 V=	-	-
MOS-FET 24 V~/=	6	6
Analogue outputs	4	4
Further information	Page 425	Page 425







Type designation	EY-EM522F001	EY-EM523F001	EY-EM527F001
Product name	ecoLink522	ecolink523	ecoLink527
Power supply	230 V~	230 V~	230 V~
Inputs/outputs			
Universal inputs	4	4	4
0-10 V/digital inputs	-	-	-
Ni1000/Pt1000 inputs	-	-	-
Digital/meter inputs	-	-	4
DIM-10 V outputs	4	4	-
Normally-open relay contacts	4	-	4
Changeover relay contacts	-	-	-
Triac	-	-	-
Analogue outputs	4	4	-
Further information	Page 427	Page 427	Page 429

EY-EM 510...512: Remote I/O module, ecoLink510...512

Features

- Part of the SAUTER 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



EY-EM510F001

Technical data		
Power supply		
	Power supply	24 V~, ±20%, 5060 Hz
	Current consumption	≤ 0.2 A, without load current from Tri- ac 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
Analogue/digital inputs	Туре	010 V/O-I
Ni1000/Pt1000-Eingänge	Type	-20100 °C
Relay outputs	Туре	O-I, normally-open contacts
, .	Load ¹⁾	230 V~, 5 A
		(total max. 10 A)
	Switching frequency	> 3 × 10 ⁵ cycles
Triac outputs	Туре	0-I, 24 V~/0.5 A
Analogue outputs	Туре	010 V, 2 mA
Interfaces and communication	n	
	Activation	From ecos 500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Line length ²⁾	Up to 500 m with bus termination
Construction		
	Dimensions W × H × D	105 × 95 × 60 mm
	Weight	0.22 kg
Standards and directives		
Standards and anconves	Type of protection ³⁾	IPO0 (EN 60529)
	Protection class	II (EN 60730-1) for EY-EM 510,
	1 Totaciion ciass	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
, 4444.4	20, 00, 20	EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1

See the section "Digital outputs (relays)"





²⁾ See the section "Engineering notes"

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
010 V Out	3	3	2
Ni1000/Pt1000	2	2	0
010 V In, Digital In	4	4	4

Accessories	
Туре	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover
0450573001	Transformer 230 VAC / 24 VDC, 42 VA; for DIN rail 35 mm, dimensions: $78 \times 74 \times 52$ mm (W×H×D)

EY-EM 514, 515: Remote I/O module, ecoLink514, 515

Features

- Part of the SAUTER 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%, 5060 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation

Inputs/outputs		
Relay outputs	Туре	O-I relay, normally-open contacts
	Load	24250 V
		5 A resistive load
		Total max. 10 A
	Switching frequency	> 3 × 10 ⁵ cycles
Semiconductor outputs (FET)	Туре	0-l, 24 V~/=, 0.5 A,
		connected to ground
		max. peak current 1 A at 20 ms
Analogue outputs	Туре	010 V/2 mA
Universal inputs	Analogue	010 V/01 V
	Digital	O-I
	Resistance	1002500 Ω
	Potentiometer	110 kΩ
	Ni1000/Pt1000	-20100 °C

Connection to automation station	Activation	From ecos 500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Line length ¹⁾	Up to 500 m with bus termination

Dimensions $W \times H \times D$

Standards	and	diroctivos
Statitualus	anu	unectives

Type of protection ²⁾	IPOO (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)

105 × 95 × 60 mm



EY-EM514F001



EY-EM515F001





See the section "Engineering notes"

²⁾ IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted

CF (:: 1: .	FMC D: 1: 001 4 /20 /FM	FNI / 1000 / 1 FNI / 1000 / 0
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/FU	EN 60730-1 (EY-FM 514 only)

Overview of ty	pes	
Туре	Description	Weight
EY-EM514F001	Remote I/O module, 24 V~/=, 4 relays, 6 DO FET, 4 AO, 4 UI	270 g
EY-EM515F001	Remote I/O module, 24 V \sim /=, 6 DO FET, 4 AO, 4 UI	220 g

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	
Туре	Description
0949360003	Plug-in connector for ecolink RS-485, 10 pcs.
0900240020	Terminal cover
0450573001	Transformer 230 VAC / 24 VDC, 42 VA; for DIN rail 35 mm, dimensions: $78 \times 74 \times 52$ mm (W×H×D)

EY-EM 522, 523: Remote I/O module, ecoLink522, 523

Features

- Part of the SAUTER modulo 5 system family
- Remote I/O module for ecos500, 504, 505
- Switching and dimming of up to 4 lamps
- \bullet Can be located up to 500 m from the automation station

Power supply		
	Power supply	230 V~, ±10%, 5060 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
Relay outputs	Туре	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	Туре	110 V passive output for electronic ballasts as per EN 60929 Electrically isolated
Analogue outputs	Туре	010 V / 2 mA
Universal inputs	Analogue	010 V / 01 V
·	Digital	O-I
	Resistance	1002500 Ω
	Potentiometer	110 kΩ
	Ni1000/Pt1000	-20100 °C
Interfaces and communication		
Connection to automation station	Activation	From ecos 500, 504, 505
	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Line length ¹⁾	Up to 500 m with bus termination
Construction		
	Dimensions W × H × D	105 × 95 × 60 mm
	Weight	0.32 kg
Standards and directives		
	Type of protection ²⁾	IPOO (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

See the section "Engineering notes"



EY-EM522F001



EY-EM523F001





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

Type Description

EY-EM522F001 Remote I/O module, 230 V_{\sim} , 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

Туре	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover



EY-EM 527: Remote I/O module, ecoLink527

Features

- Part of the SAUTER 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

D		
Power supply		000 // 100/ 50 /0 //
	Power supply	230 V~, ±10%, 5060 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
Relay outputs	Туре	O-I relay, normally-open contacts
	Load	24250 V~ 5 A resistive load Total max. 10 A
	Switching frequency	> 3 × 10 ⁵ cycles
Universal inputs	Analogue	010 V / 01 V
·	Digital	0-l
	Resistance	1002500 Ω
	Potentiometer	110 kΩ
	Ni1000/Pt1000	-20100 °C
Digital inputs	Digital	0-l
	Meter	10 Hz (pulse duration 50 ms)
Interfaces and communication		
Connection to automation station	Activation	From ecos500, 504, 505
connection to ablemation station	Interface	RS-485
	Protocol	SLC
	Line	4-wire, twisted, shielded
	Line length ¹⁾	Up to 500 m with bus termination
Construction	5	105 05 (0
	Dimensions W × H × D	105 × 95 × 60 mm
	Weight	0.35 kg
Standards and directives		
	Type of protection ²⁾	IPOO (EN 60529)
	Protection class	II (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Environment class	3K3 (IEC 60721)

¹⁾ See the section "Engineering notes"



EY-EM527F001





²⁾ IP20 with terminal cover (accessory 0900240020); IP40 at front when fitted

Low-Voltage Directive 2014/35/EU EN 60730-1

Overview of types

Туре Description

EY-EM527F001 Remote I/O module, 230 $V\sim$, 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

Туре	Description
0949360003	Plug-in connector for ecoLink RS-485, 10 pcs.
0900240020	Terminal cover



SAUTER modulo 5 automation stations

SAUTER modulo 5 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	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 432	Page 432



EY-AS525F00* EY-AS524F001



EY-AS 524, 525: Modular automation station, modu524/525

Features

- Part of the SAUTER modulo 5 system family
- Modular automation station (AS)
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- 26 inputs and outputs
- Expandable with up to three modules (modu524) or eight 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 ten metres away
- Alive signal output pulsed

Technical data

Power supply		
	Power supply	See overview of types
	Power consumption	See overview of types
	Dissipated power	≤ 5 W (without accessories)
	Peak inrush current	See overview of types
Parameters		
	Battery (buffer: RTC/SRAM)	CR2032, pluggable
Inputs/outputs		
	Digital inputs	8 (alarm/status)
	Digital outputs	6 (relays, 24250 V~, 2 A)
	Universal inputs	8 (Ni1000/Pt1000, U/I/R, DI)
	Analogue outputs	4 (010 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
	Notification	16 (Notification Class)
	Chart	32 (Log View), only via moduWeb
	Command object	16
Architecture		
	Processor	32-bit, 400 MHz
	Flash	16 MB





16	a) -	
12	~	

	Embedded web server	moduWeb
	Application data	Via CASE Engine
	SDRAM (synchronous dynamic RAM)	32 MB
	SRAM (static RAM)	1 MB
Interfaces, communication		
	Ethernet network	1 × RJ-45 socket
	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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
	·	
Construction		
	Fitting	On DIN rail
	Dimensions W × H × D	160 × 170 × 115 mm
	Weight	0.8 kg
Standards, 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						
Туре	Power supply	Power consumption	Peak inrush current	Maximum number of modules	Maximum number of modules	
EY-AS524F001	230 V~, ±10%, 5060 Hz	≤ 13 VA/5 W (without accesso- ries)	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%, 5060 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%, 5060 Hz	≤ 11 VA/4 W (without accesso- ries)	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	

Only on front with terminal cover, blanking piece for LOI and transparent cover

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 reached, please refer to the system integrator's user program.

Accessories

Plug-in I/O modules

Туре	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 SO)
EY-IO534F001	Analogue inputs with galvanic isolation (8 Al 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)

Туре	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

Туре	Description
EY-LO625F001	Operation/indication, 6 Auto-0-l switches, 4 alarm/status LEDs, 4 setpoint transmitters (A-0 100%), 8 alarm/status LEDs
EY-LO630F001	Indication, 16 LEDs (bi-colour)
EY-LO650F001	Operation/indication, 6 Auto-0-1 switches, 4 LEDs
EY-LO650F002	Operation/indication, 3 Auto-0-I-II switches, 4 LEDs
EY-LO670F001	Operation/indication, 4 setpoint transmitters (A-0100%), 8 LEDs
EY-OP840F001	Local operating and display unit, modu840
0930240511	Front frame for 4 operating and indicating units
0930240540	Connection adaptor for RJ-45 operating and indicating units for front frame
0930240541	Connection adaptor for RJ-45 operating panel for front frame

Replacement relay

Туре	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including connection terminals)

Manuals

Туре	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				
Inputs/outputs					
Digital inputs	8	16	-	8 (4 × SO)	-
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 436	Page 438	Page 439	Page 440	Page 442











Type designation	EY-IO550F001	EY-IO551F001	EY-IO570F001	EY-IO571F001	EY-IO572F001
Product name	modu550	modu551	modu570	modu571	modu572
Power supply	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 444	Page 446	Page 448	Page 450	Page 452



EY-IO530F001

EY-IO 530: I/O module, digital and universal inputs, modu530

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

Toominour 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% 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 × H × 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 (0.52.5 mm²)
Otomolouda and discretize		
Standards and directives	T (, , ;	ID20 (EN (0500)
	Type of protection	IP30 (EN 60529)
	Protection class	I (EN 60730-1)
CF ('' '' '	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

Туре	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)

Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)





EY-IO531F001

EY-IO 531: I/O module, digital inputs, modu531

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	045 °C
	Storage and transport temperature	-2570 °C
	Humidity	1085% 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 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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

EY-IO531F001 I/O module, digital inputs, modu531

Accessories

Local operating and indicating units (LOI)

EY-LO630F001 Indication, 16 LEDs (bi-colour)



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Primary side of base station

Supply via base station

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



EY+IO532F001

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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
nputs/outputs		
	Universal inputs	16
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (≤ 3 Hz)
nterfaces and communication		
	Connection, LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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 61000-6-2

Overview of types

Type Features

EY-IO532F001 I/O module, universal inputs, modu532

Accessories

Local operating and indicating units (LOI)

Type Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)





¹⁾ Primary side of base station

²⁾ Supply via base station





EY-IO533F001

EY-IO 533: I/O module, universal, digital, S0 inputs, modu533

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		
Allibient conditions	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
	7 tillololii Holliany	Tomos /s III, the condensation
Inputs/outputs		
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I(2x)/R, Po
	Digital	DI (≤ 3 Hz)
	Digital inputs	8 (≤ 50 Hz)
	Fixed assignment	4
	Meter inputs SO	4 (as per IEC 62053-31)
Interfaces and communication		
interfaces and communication	Connection, LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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 Feature:

EY-IO533F001 I/O module, universal, digital, S0 inputs, modu533

²⁾ Supply via base station



¹⁾ Primary side of base station

Accessories

Local operating and indicating units (LOI)

Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)





EY-IO534F001

EY-IO 534: I/O module, analogue inputs with galvanic isolation, modu534

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
Annihi and annihitana		
Ambient conditions		0.45.00
	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Humidity without condensation	1085% 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		
interfaces and communication	Connection, I/O bus	12 min into mento d
	Connection terminals	12-pin, integrated 24, 0.52.5 mm ²
		· · · · · · · · · · · · · · · · · · ·
	Connection, LOI	6-pin, integrated
Construction		
	Fitting	On DIN rail
	Weight	0.285 kg
	Dimensions W × H × 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

Туре	Description
EY-IO534F001	I/O module, analogue inputs





Primary side of base station

²⁾ Supply via base station

Accessories

Local operating and indicating units (LOI)

Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)





EY-IO550F001

EY-IO 550: I/O module, digital outputs (relays), modu550

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

Toomista aata		
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
	<u> </u>	
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
	Digital outputs	6
	Type of outputs	Relay (0-I), NO contact, galvanically isolated
	Load	24250 V~/2 A
	Switching frequency, mechanical	10 ⁶ cycles
		,
Interfaces and communication	ı	
	Connection, LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	12 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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 Feature:

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)

Description Туре

EY-LO630F001 Indication, 16 LEDs (bi-colour)

EY-LO650F001 Operation/indication, 6 Auto-0-I switches, 4 LEDs EY-LO650F002 Operation/indication, 3 Auto-0-I-II switches, 4 LEDs

Components

Description Туре

PCB relays (2 × pluggable electronic PCB with 3 relays, including connection terminals) 0929360005





EY-IO551F001

EY-IO 551: I/O module, digital outputs (open collector), modu551

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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
	Digital outputs	16
	Type of outputs	Open collector, NO contacts (0-1) 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 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions $W \times H \times D$	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

Туре	Features
EY-IO551F001	I/O module, digital outputs (open collector), modu551

Primary side of base station





Supply via base station

EN 61000-6-2: In order to meet the European Standard, the power cables must not exceed 30 metres in length.

A	C	С	е	S	S	0	r	i	е	S

Local operating and indicating units (LOI)

туре	Description
EY-LO630F001	Indication, 16 LEDs (bi-colour)
F)/10/505001	0 " " " (

EY-LO650F001 Operation/indication, 6 Auto-0-1 switches, 4 LEDs EY-LO650F002 Operation/indication, 3 Auto-0-I-II switches, 4 LEDs





EY-IO 570: I/O module, analogue outputs and universal inputs, modu570

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

Teerinical 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% 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	-	
interfaces and communication		
	Connection, LOI	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.52.5 mm²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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

Туре	Features
EY-IO570F001	I/O module, analogue outputs and universal inputs, modu570





Primary side of base station

Supply via base station

Accessories

Local operating and indicating units (LOI)

Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)

EY-LO670F001 Operation/indication, 4 setpoint transmitters (A-0...100%), 8 LEDs



EY-IO 571: I/O module, digital inputs/outputs (open collector), modu571

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

recrimear 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Inputs/outputs		
	Digital inputs/outputs	16
	Type of inputs/outputs	Open collector, NO contacts (0-1), out- puts 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	n	
	Connection, modu6**	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.52.5 mm²)
Construction		
Construction	E:#:	On DIN rail
	Fitting Dimensions W × H × 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



Primary side of base station

Supply via base station

EN 61000-6-2: In order to meet the European Standard, the power cables must not exceed 30 metres in length.

Overview of types

EY-IO571F001 I/O module, digital inputs/outputs (open collector), modu571

Accessories

Local operating and indicating units (LOI)

Туре	Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)

EY-LO650F001 Operation/indication, 6 Auto-0-I switches, 4 LEDs EY-LO650F002 Operation/indication, 3 Auto-0-I-II switches, 4 LEDs





EY-IO572F001

EY-IO 572: I/O module, analogue outputs, universal and digital inputs, modu572

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

recnnical 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		
Ambient conditions	Operating temperature	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
	Ambient normally	1065 % III, IIO COIIdensalion
inputs/outputs		
	Analogue outputs	4× 010 V/020 mA (source)
	Load	≤ 20 mA
	Load ≥ 5 Ω	Output 010 V / 210 V
	Load ≤ 400 Ω	Output 020 mA / 420 mA
	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 (0.52.5 mm ²)
Construction		
Construction	Fitting	On DIN rail
	Dimensions W × H × D	42 × 170 × 115 mm
	Weight	0.29 kg
	vveigiii	0.27 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

Primary side of base station





Supply via base station

Overview of types

EY-IO572F001 I/O module, analogue outputs, universal and digital inputs, modu572

Accessories

Local operating and indicating units (LOI)

Description

EY-LO630F001 Indication, 16 LEDs (bi-colour)

EY-LO670F001 Operation/indication, 4 setpoint transmitters (A-0...100%), 8 LEDs





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 eight field modules per novaLink module with DC power supply; six modules 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

recillical data		
Power supply		
	Power supply	24 V=, ±10% 24 V~, +20%/-15%, 5060 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	045 °C
	Storage and transport temperature	−2570 °C
	Ambient humidity	1085% 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 (0.52.5 mm ²)
Construction		
	Fitting	On DIN rail
	Dimensions W × H × 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 Indication, 16 LEDs (bi-colour)

Field modules

Type Description

EY-FM164F001 moduLink164 digital output 4× 0-l (change-over relay)

EY-FM165F001 moduLink165 digital output 2× 0-l-ll (change-over relay)





Description Туре

 $EY-FM170F001 \qquad moduLink170 \ analogue \ output \ 4\times \ 0...10 \ V \ (2\times \ 0...20 \ mA)$

EY-FM174F001 moduLink174 digital input 16×



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 device	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-0100%), 8 LEDs	16 LEDs
For stations	modu525	modu525	modu525
For I/O modules	-	-	modu530533, modu550, modu551, modu571, modu570, modu572
Interfaces	I/O bus	I/O bus	I/O bus
Further information	Page 457	Page 459	Page 459







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-0100%), 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 459	Page 459	Page 459

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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% 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 × H × 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	Feature

EY-OP840F001 Local operating unit, modu840



EY-OP840F001





Accessories	
Туре	Description
7010035001	modu840 user manual, German
7010035002	modu840 user manual, French
7010035003	modu840 user manual, English
0930240511	Front frame for 4 operating and indicating units
0930240541	Connection adaptor for RJ-45 operating panel for front frame

EY-LO 625...670: Local operating and indicating units, modu625...670

Features

- Part of the SAUTER EY-modulo 5 system family
- Pluggable elements for direct operation/indication of modu524/525 automation station (AS) and novaLink and I/O modules
- Direct operation via switches/sliders (as per EN ISO 16484-2:2004 "Local override and indication devices")
- 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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Interfaces and communication		
	Connection for novaLink or I/O module, 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

Туре	EY-LO625F001	EY-LO630F001	EY-LO650F001	EY-LO650F002	EY-LO670F001
Use	modu521, modu524, modu525 (from hardware index C)	modu524/525, modu530590	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 consumption	≤ 40 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Operation	6 switches (A-0-1), 4 sliders (A-0100%)	-	6 switches (A-0-I)	3 switches (A-0-I-II)	4 sliding switches (A-0100%)
Indicator/display	4 LEDs (bi-colour), analogue: 8 LEDs (bi-colour)	•	4 LEDs (bi-colour)	4 LEDs (bi-colour)	8 LEDs (bi-colour)
Dimensions W × H × 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



EY-LO625F001



EY-LO630F001



EY-LO650F001



EY-LO650F002



EY-LO670F001





Accessories	
Туре	Description
0930240511	Front frame for 4 operating and indicating units
0930240540	Connection adaptor for RJ-45 operating and indicating units for front frame

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 462	Page 464





Type designation	EY-BU292F001	EYZ291F001
Product name	moduNet292	novaNet291
Property	Connection of novaNet to Ethernet/IP	Router
Fitting	Cabinet model	Cabinet model
Further information	Page 466	Page 468



EY-CM721F010

EY-CM 721: Communication module with EIA-232 and EIA-485 interfaces, modu721

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	045 °C
	Storage and transport temperature	-2570 °C
	Ambient humidity	1085% rh, no condensation
Architecture		
	Protocol processor	FPGA
	COM port	UART
	Memory	Flash memory (user and protocol data)
	Number of data points	≤ 200
	Number of loads	31 unit loads (UL)
Interfaces, 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	0.338.4 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 $W \times H \times D$	42 × 170 × 115 mm
	Weight	0.8 kg
Standards, 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					
Туре	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	
Туре	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)



EN 61000-6-1: EIA-232 cable max. 15 m in length; EIA-485: Shielded cable 2×2 twisted pair



EY-CM731F020

EY-CM 731: Communication module with M-Bus and EIA-232 interfaces, modu731

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 loads
- With external power supply: up to 50 M-Bus loads
- 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 150 loads on the M-Bus network ¹⁾	24 V~ (±20%)/24 V= (±20%)
	Power consumption	5 W, 6 VA (for 1150 loads on the M-Bus net- work)
	Screw terminals	2 (MM, LS)
Ambient conditions		
Ambient conditions		045 °C
	Operating temperature	-2570 °C
	Storage and transport temperature	
	Ambient humidity	1085% rh, no condensation
Architecture		
	Protocol processor	FPGA
	COM port	UART
	Memory	Flash memory (user and protocol data
	Number of data points	≤ 200
Interfaces, communication		
monacos, 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	0.39.6 (38.4) kbit/second
	Connection, I/O bus	12-pin, integrated in base
	Protocol	M-Bus (master)
Construction	Fina	0.001
	Fitting	On DIN rail
	Dimensions W × H × D	42 × 170 × 115 mm
	Weight	0.8 kg
Standards, directives		
	Type of protection	IP20 (EN 60529)
	· · ·	·



 $^{^{1)}}$ 1 load = 1.5 mA. M-Bus meters currently correspond to 1...4 loads.



	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 ²⁾	EN 61000-6-1, EN 61000-6-3,
,		EN 61000-6-4

Overview of types

Туре Features

EY-CM731F020 Communication module with M-Bus and EIA-232 interface, modu731

Α					

Туре	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)			



 $^{^{2)}\,}$ EN 61000-6-1: EIA-232 cable max. 15 m in length. M-Bus cable: Two-core, twisted pair





EY-BU292F001

EY-BU 292: novaNet-Ethernet interface, moduNet292

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% (5060 Hz)	
	Power consumption	6 VA, < 7 W	
Ambient conditions			
	Operating temperature	045 °C (32113 °F)	
	Storage and transport temperature	-2570 °C (-13158 °F)	
	Ambient humidity	1085% 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	DIN rail installation	
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							
Туре	Description	Dimensions W \times H \times D	novaNet	Weight			
EY-BU292F001	panel-fitted model	193 × 131 × 41 mm	1 × a/b terminal	650 g			





Accessories

Software

Description Type

GZS100F599 CASE Tools CD, latest version (CASE TPC, CASE HWC, CASE Sun, novaNet292 SW etc.)

Connecting cables

Туре	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

Туре	Description
0374509001	Connector, 3-pin, packaged
0010240105	Cable housing for 0374509 001, cable cord grip
0374677001	Installation kit for 2-DIN rail mounting





EYZ291F001

EYZ 291: Router, novaNet291

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	045 °C (32113 °F)
	Storage and transport temperature	-2570 °C (-13158 °F)
	Humidity	1090% 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)
		<u> </u>
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

Туре	Description Description
EYZ291F001	novaNet router

-									
Α	~	~	_	C	C	\sim	7		C
м	u	u	┖	Э	o	u		U	Э

Туре	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)



Management level

Building and energy management from anywhere at all times.

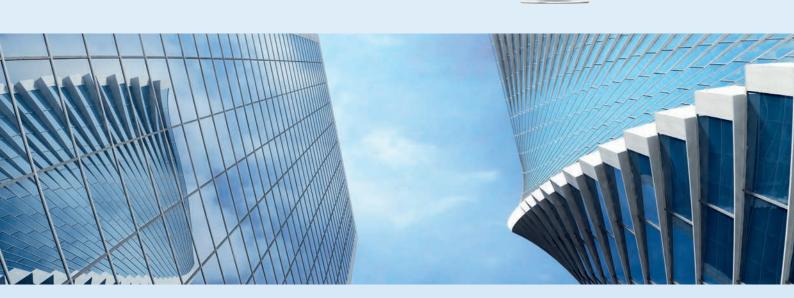
SAUTER Vision Center, the latest generation of web-based building management software guarantees optimum system monitoring and continuous operation. Energy management and monitoring modules provide additional benefits for the facility management to ensure optimum, energy-efficient operation of the systems, buildings and premises. SAUTER Vision Center 7 integrates both Advanced Energy Management and innovative, user-oriented operation.

SAUTER Mobile Building Services (MBS) is a SAUTER cloud application that is offered for various applications for buildings and premises. In combination with the Mobile Room Control (MRC) app available for smartphones and tablets, it can control room conditions.



thus ensuring ongoing efficient operation.





Management level

Software

YZP 480495: SAUTER Vision Center	472
YCS 200210: Mobile Building Services (MBS)	474
YCS 320325: Vision Services	475
YCS 451453: Digital Services - Remote Management	476
YCS451F001: Remote Management connector	477





YZP 480...495: SAUTER Vision Center

Central building management and visualisation of decentralised installations

SAUTER Vision Center (SVC) is a web-based building management and integration platform in the HTML5 standard for running and visualising the building operation. SVC is suitable for both 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, SVC gathers all of the data for the entire building and energy management and makes it available to the user from anywhere at all times.

In the energy monitoring, meters and other information can be mapped, thus making daily, weekly, monthly and yearly consumption from the plants, buildings and properties automatically available. Specific energy widgets, KPls and energy labels and other dashboard widgets are used to display the energy values and consumption.

With version 7, a powerful building analytics and energy management module (AEM) is integrated in SVC, which already contains all the energy monitoring functions. In addition, with chart types such as scatter and carpet plots, but also SANKEY and histogram displays with calculations of the Gaussian distribution, analytic tools are available to carry out energy inspections, to optimise systems in transition phases such as spring and autumn, for example, and thus to meet energy and $\rm CO_2$ reduction requirements, as demanded for companies in the context of certifications in accordance with ISO 50001.

The additional online analytics integrated in the AEM enables immediate information in dashboards as KPIs (traffic lights, circular or linear gauge etc.) or alarm messages in the event of abnormal plant operation. In this way, deviations from operating patterns and setpoints, as well as oscillations, are detected automatically and in real time.

The maintenance module for SVC is used for optimum planning and efficient performance of service and facility management tasks. Here, support is also provided by plant asset management, the definition of maintenance intervals and the automatic triggering of maintenance cycles based on building management information.

With energy monitoring, energy management and the building analytics and maintenance modules, SVC provides comprehensive information and tools to ensure continuous and constantly optimised and thus efficient and sustainable plant and building operation.

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 to plan and log them via calendar views.

For the integration of different equipment systems, SVC supports the manufacturer-independent BACnet standard, as well as connection to OPC UA servers, for integrating different protocols in the building automation. Thus, SVC is the first building and energy management system (BEMS) certified with a cross-platform profile B-XAWS 1.18. SVC supports device profiles B-AWS, B-ALWS, B-ACCWS and thus profile B-XAWS. As of SVC 7.1, the BACnet/SC protocol is also supported. It enables the encryption of the data traffic based on certificates. Ideally, this ensures a secure connection from local sites via BACnet/SC routers to Vision Services (SVC in the cloud) with full BACnet functionality.

In addition to the OPC UA client, operation as an OPC UA server is also implemented. An IoT client is also integrated that supports the connection of room controllers and automation stations via MQTT. TLS encryption ensures secure communication from decentralised automation stations, e.g. to connect SAUTER ecos or modulo 6 stations via the internet with an SVC located in the cloud.

Direct connection of moduWeb Vision via web services and SAUTER novaNet plants via OPC is available for comprehensive support of the integration options. 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.

SVC 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, SVC guarantees maximum user convenience.

SVC 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 (load balancing) to be implemented and used. 11 For optimum integration of the user structures of a company, it is possible to connect SVC to an existing LDAP server that additionally supports the latest communication types (LDAP signing & channel binding).

Overview of types

i SVC licences and options

Туре	Description
YZP480F000	Provision of all codes in a single ticket
YZP480F098	Latest SVC version on a USB stick
YZP480F200	Basic licence for 500 addresses with maintenance
YZP481F200	Additional 100 objects with maintenance
YZP481F210	Additional 1000 objects with maintenance
YZP481F220	Additional 10000 objects with maintenance
YZP481F230	Additional 25000 objects with maintenance
YZP482F101	Termination of the software maintenance
YZP482F210	Resumption of the software maintenance
YZP483F300	novaNet connection (YZP487F201 is a prerequisite)
YZP484F200	Licence key for VM
YZP484F310	Migration Manager for SVC from nP32 and nPO
YZP484F400	Vision Center Studio
YZP485F201	Energy monitoring with maintenance
YZP485F203	Analytics and energy management with maintenance
YZP485F210	Maintenance module with software maintenance
YZP485F220	Scenario manager with software maintenance
YZP485F230	Touch Panel server with 5 clients
YZP485F231	Touch Panel with 5 additional clients
YZP486F205	Upgrade from energy monitoring to analytics and energy management
YZP487F201	OPC UA client for SVC with maintenance
YZP487F203	OPC UA server with maintenance
YZP487F205	SVC MQTT client with maintenance (price per MQTT broker connection)
0900360001	Hardlock (dongle) for VM



Scalable via MS SQL Express up to SQL Enterprise depending on the specified properties, virtual IT environments and high-availability VMware & SQL Enterprise.



YCS 200...210: Mobile Building Services (MBS)

Features

- Connects the local building management, including the integral room automation, with the room operation via smartphone or tablet
- Control of lighting, temperature, window blinds and ventilation (depending on the building equipment)
- Direct access to information such as caretaker services, cafeteria schedule and other information
- Direct notification from the MRC app of caretaker services and other services such as comfort notifications, repair and cleaning requests, meeting room beverage orders, hotel and boarding house service requests
- Reservations for meeting rooms, mobile workstations, parking spaces or equipment items (assets)
- E-mail invitations including reservations directly from the MRC app
- Guest invitations: Sending temporary access codes for the agreed meeting period
- Access and rights management via unique access codes for each device based on user profiles (iBeacon) and dedicated room assignments
- Room identification and user access via iBeacon badges for smartphones and tablets (iOS and Android)
- Perfect for use in office buildings with meeting rooms and mobile workstations, hotels with business facilities, suites and rooms, as well as upscale apartment buildings
- High level of security and up-to-date functionality thanks to Microsoft Azure technology
- MRC app available free of charge in the Google Play Store and the Apple App Store

YCS200F300 MRC year date	Cription C app subscription per apartment (1-5 access codes per apartment), price per apartment per ur, annual subscription based on monthly use of the master access code per apartment, invoice e 1 year after project activation by basic subscription, automatically renewed
year date	r, annual subscription based on monthly use of the master access code per apartment, invoice
VCCCCCCCC	5 1 year after project activation by basic subscription, abiointalically renewed
scrip	C app subscription (without indoor localisation), price per device (badge) per room, annual sub- ption based on monthly use of access codes (badges), invoice date 1 year after project activa- by basic subscription, automatically renewed
for r	C app subscription (with indoor localisation), price per device (badge) including access profile rooms, annual subscription based on monthly use of access codes (badges), invoice date 1 year er project activation by basic subscription, automatically renewed
YCS200F200 MBS	S Cloud basic subscription < 50 rooms/apartments, annual subscription, automatically renewed
YCS200F210 MBS	S Cloud basic subscription < 150 rooms/apartments, annual subscription, automatically reved
YCS200F220 MBS	S Cloud basic subscription < 300 rooms/apartments, annual subscription, automatically reved
YCS200F230 MBS new	S Cloud Basic subscription > 300 rooms/apartments, annual subscription, automatically reved
inclu	S Cloud basic subscription for office with indoor localisation < 50 rooms, annual subscription uding iBeacon localisation and access profiles, automatically renewed for using YCS210F300 ess codes
inclu	S Cloud basic subscription for office with indoor localisation < 150 rooms, annual subscription uding iBeacon localisation and access profiles, automatically renewed for using YCS210F300 ess codes
inclu	S Cloud basic subscription for office with indoor localisation < 300 rooms, annual subscription uding iBeacon localisation and access profiles, automatically renewed for using YCS210F300 ess codes
inclu	S Cloud basic subscription for office with indoor localisation > 300 rooms, annual subscription uding iBeacon localisation and access profiles, automatically renewed for using YCS210F300 ess codes
YCS211F200 MBS	S Cloud Option Booking, subscription per MS Exchange Online



YCS 320...325: Vision Services

Vision Services: Powerful, efficient energy and building management from the cloud

SAUTER Vision Services are comprehensive, powerful modules from the SAUTER Cloud for energy monitoring, building management and energy management and analytics. The centralised approach of cloud operation means that the latest functions and extensions are always available for all building and energy management applications, without the need for time-consuming installations and migrations. Additionally, it saves the investment costs in hardware and software and shifts these investments and their support to the cloud. IoT clients are used to securely transfer local energy and automation data by means of the MQTT protocol with TLS encryption.

Features

- Vision Services Energy Monitoring with dashboards, diagrams, energy navigation, meter overview with correction and offset functions for meter replacement, alarms, reports and data import and export management
- Vision Services Building with dashboards, diagrams, alarms, object lists, scenario manager, reports and export function
- Vision Services Energy Management & Analytics with additional diagrams for energy and plant analysis such as SANKEY, carpet & scatter plots. Histogram plots with Gaussian distribution function and analytics functions for automatic detection of operating pattern deviations, setpoint deviations and oscillations. All Vision Services Energy Monitoring functions are included.

All Vision Services can be booked individually or in combination. For example, Vision Services Energy can be used to operate dedicated monitoring in the cloud that runs independently of the local building management. However, complete building and energy management with analytics from the cloud can also be booked as a subscription.

Overview of types			
Туре	Description		
YCS320F200	Vision Services Building, subscription incl. 1 admin & 1 standard user, 1 MQTT client		
YCS321F200	Vision Services Energy Monitoring, subscription incl. 1 admin & 1 standard user, 1 MQTT client		
YCS321F210	Vision Services Energy Management & Analytics, subscription incl. 1 admin & 1 standard user, 1 MQTT client		
YCS324F200	Object package 50 from 0500		
YCS324F201	Object package 100 from 5001000		
YCS324F202	Object package 100 from 1000		
YCS324F220	Additional standard user		
YCS325F010	Cloud Connection Service (project & user set-up) incl. 1 MQTT connection		
YCS325F020	Additional MQTT connection per device		
YCS325F400	Cancellation of project subscription; no option of single item cancellation		





YCS 451...453: Digital Services – Remote Management

Features

- Secure access to decentralised systems and applications
- Two-factor authentication via e-mail or SMS
- Fully transparent and secure network connection via browser and Windows client
- Remote access:
 - To applications such as SAUTER Vision Center or moduWeb Unity (via http://https)
 - To PCs and servers and their applications (via RDP/VNC)
 - Via VPN tunnel (Layer 2):
 The local PC appears in the remote network structure (use of all engineering and network tools from the local PC in the remote system)
- Rights administration with user and group management for the assignment of rights for individual systems and buildings, right up to distributed properties

Overview of t	ypes
Туре	Description
YCS451F010	G100 Remote Management connector with 2 Ethernet ports, incl. pre-installed OS and VPN licence
YCS451F002	3G/4G option for YCS451F001 (Huawei e3372 modem)
YCS452F200	Remote Management basic connector subscription incl. 5 secured connections
YC\$452F210	Remote Management connector subscription, additional 5-pack of secured connections
YCS452F220	Remote Management connector subscription, 5-pack of time-limited, unauthenticated links
YCS453F200	End user subscription, access to all predefined connections via dashboard and Windows client
YCS453F203	End user + 1 VPN channel subscription, access to all pre-defined connections via dashboard and Windows client, incl. VPN tunnel (layer 2 and 3)
YCS453F210	Engineering user subscription with full access to all protocols incl. VPN tunnel connection (layer 2) and Windows client
YCS453F220	Admin user subscription, full access to all protocols incl. VPN tunnel connection (layer 2) and Windows client, incl. user & group management

- The term of the connector subscription (YCS452F2**) is 12 months with automatic renewal. YCS452F200 must be ordered together with the universal gateway.
- * The user subscriptions (YCS453F2**) of the SAUTER Cloud for Remote Management are monthly subscriptions with automatic monthly renewal.



YCS451F001: Remote Management connector

Features

- VPN gateway for SAUTER Digital Services Remote Management
- Integrated web server for configuration and monitoring
- MicroSD, USB, watchdog, LED indicator
- \bullet Painted aluminium DIN rail housing as per DIN 43880

Technical data

Tooriniour data		
Power supply		
	Power supply	1224 V=, 2 A
D		
Parameters		
	Connection	Screw terminals, plug-in terminal block
	Battery (buffer: RTC)	CR2032, backup for up to 7 days
Ambient conditions		
	Operating temperature	045 °C
	Storage and transport temperature	-2070 °C
	Ambient humidity	1080% rh, no condensation
Function		
Tunction	Web server	Yes (Node.js, V 7.8.x)
	VPN/access point	Yes (Open SSL, L2TP)
	DHCP, DNS services	Yes, IPv4 and IPv6
	DITCI, DING Services	res, ii v4 unu ii v0
Architecture		
	Processor	H3 Quad-Core Cortex-A7
	RAM (memory)	1 GB (Low Power DDR2)
	Memory	microSDHC, 64 GB included, includes
		OS and software
		USB up to 64 GB
	Operating system	Embedded Linux (on SD card)
Interfaces, communication		
Ethernet/LAN	Ethernet network	1 × RJ45 connector, 10/100 BASE-
,		T(X)
	Transmission rate	10/100 Mbit/s
Wireless	WLAN	3 × USB type C
		(for accessory YCS451F002)
Construction		
	Fitting	On metal DIN rail 35 × 7.5/15 as pe
		EN 60715
	Dimensions $W \times H \times D$	71 (4 HP) × 102 × 62 mm
	Weight	300 g

Overview of types

Туре	Description
YCS451F001	SAUTER Remote Management connector – universal gateway, incl. pre-installed OS and VPN licence

^{*} The device can only be ordered together with a connector subscription, see accessories.

Accessories	
Туре	Description
YCS451F002	3G/4G option for YCS451F001 (Huawei e3372 modem)
YCS452F200	Remote Management basic connector subscription incl. 5 secured connections





Туре	Description
YCS452F210	Remote Management connector subscription, additional 5-pack of secured connections
YCS452F220	Remote Management connector subscription, 5-pack of time-limited, unauthenticated links
YCS453F200	End user subscription, access to all predefined connections via dashboard and Windows client
YCS453F210	Engineering user subscription with full access to all protocols incl. VPN tunnel connection (layer 2) and Windows client
YC\$453F220	Admin user subscription, full access to all protocols incl. VPN tunnel connection (layer 2) and Windows client, incl. user & group management

- * The term of the connector subscription (YCS452F2**) is 12 months with automatic renewal. YCS452F200 must be ordered together with the universal gateway.
- The user subscriptions (YCS453F2**) of the SAUTER Cloud for Remote Management are monthly subscriptions with automatic monthly renewal.

Related documents

Document number	Туре	Language	Title
D100471121	Datenblatt	de	Remote Management
D100471122	Data sheet	en	Remote Management
D100471123	Données techniques	fr	Remote Management



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: CASE Suite

482





GZS 100, 150

GZS 100, 150: CASE Suite

- 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)
- Licence is required for full use of the program

Technical data

System requirements		
Hardware	Processor	Intel 17 (recommended)
	Clock rate	2.4 GHz or higher
	RAM memory	Min. 8 GB RAM – recommended 16 GB RAM
	Storage capacity	Min. 20 GB free memory space
	Connections	USB (operating the VM licence dongle, program installation from USB stick), network
Software ¹⁾	Operating system	Windows 10 Pro (x64) or higher, web browser, MS IIS (Internet Information Services) installed
	Additional software ²⁾	MS Office 2010 (32-bit) or higher Graphics program [CorelDRAW Graphics Suite]

Overview of types

i All licences delivered without CASE Suite application software

Туре	Description	Running time
GZS150F010	CASE Suite Enterprise licence with maintenance [annual fees]	Unlimited
GZ\$150F011	CASE Suite Enterprise licence, excluding maintenance	Unlimited
GZ\$150F020	CASE Suite Enterprise time licence	365 days from activation
GZ\$150F021	CASE Suite Partner time licence	365 days from activation
GZ\$150F022	CASE Suite Designer time licence	365 days from activation
GZ\$100F699	CASE Suite, current software version on data carrier	-

Accessories

Туре	Description
0900360001	Hardlock VM



To be able to use all the functions of CASE Suite Enterprise, we recommend installing the following software.





Abbreviations used

The following abbreviations are used in the technical data under "Standards, directives":

ATEX-D	Explosive Atmospheres Directive 2014/34/EU
ATEX-2016	Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016 (UK)
CAN/CSA	Standards and norms of the Canadian CSA Group
CE	Manufacturer's Declaration of Conformity for the European Union (EU)
PED	Pressure Equipment Directive 2014/68/EU
EAC	Eurasian Conformity (Customs Union of Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan)
EESR-2016	Electrical Equipment (Safety) Regulations 2016 (UK)
EMC-D	Electromagnetic Compatibility Directive 2014/30/EU
EMC-2016	Electromagnetic Compatibility Regulations 2016 (UK)
Machinery-D	Machinery Directive 2006/42/EC
LVD	Low Voltage Directive 2014/35/EU
PESR-2016	Pressure Equipment (Safety) Regulations 2016 (UK)
RED	Radio Equipment Directive 2014/53/EU
RER-2017	Radio Equipment Regulations 2017 (UK)
RoHS-D	Restriction of Hazardous Substances in Electrical and Electronic Equipment Directives 2011/65/EU & 2015/863/EU
RoHS-2012	Restriction of Hazardous Substances (RoHS) Regulations 2012 (UK)
SMSR-2008	Supply of Machinery (Safety) Regulations 2008 (UK)
TÜV	Technical Inspection Association (technical safety inspection with certificate)
UKCA	Manufacturer's Declaration of Conformity for the United Kingdom of Great Britain and Northern Ireland (UK)
UL	Underwriters Laboratories (organisation for testing products, components, materials)
WEEE-D	Waste Electrical and Electronic Equipment Directive 2012/19/EU
WEEE-2013	Waste Electrical and Electronic Equipment Regulations 2013 (UK)

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Components

Services

Facility Services

