Catalogue 2012

Product and Systems Information

SAUTER

Creating Sustainable Environments.


SAUTER
Für Lebensräume mit Zukunft
3
55

Experience and innovation fuel improved energy efficiency

Dear customers and business partners

Energy efficiency in building automation is a hot topic. True to our brand promise, "Creating Sustainable Environments", energy-efficient building management is the focus of our innovations and our entire product and service range.

The success of effective building automation lies in the smooth interaction of all the system's elements, spanning energy generation, its distribution and consumption. Sensor technology, for example, makes an essential contribution to energy-efficient room automation. Our new NDIR CO_2 sensors – both in room and duct versions – are based on groundbreaking technology and the key to fast and extremely accurate measurement recordings.

New modules and functionality have been added to our SAUTER EY-modulo family of systems to optimise energy efficiency in your buildings. The SAUTER ecos500 room automation station guarantees unrivalled flexibility in room layouts, with regard to planning and usage. The SAUTER ecoLink remote I/O modules simplify installation in room automation and greatly expand the potential uses of SAUTER room controllers. SAUTER room operating units are as varied as the demands placed on your rooms. They combine the most modern technology with stylish and customisable design. And to enable you to monitor all of your systems effectively, the web-based SAUTER moduWeb Vision provides you with a user-friendly, secure visualisation facility.

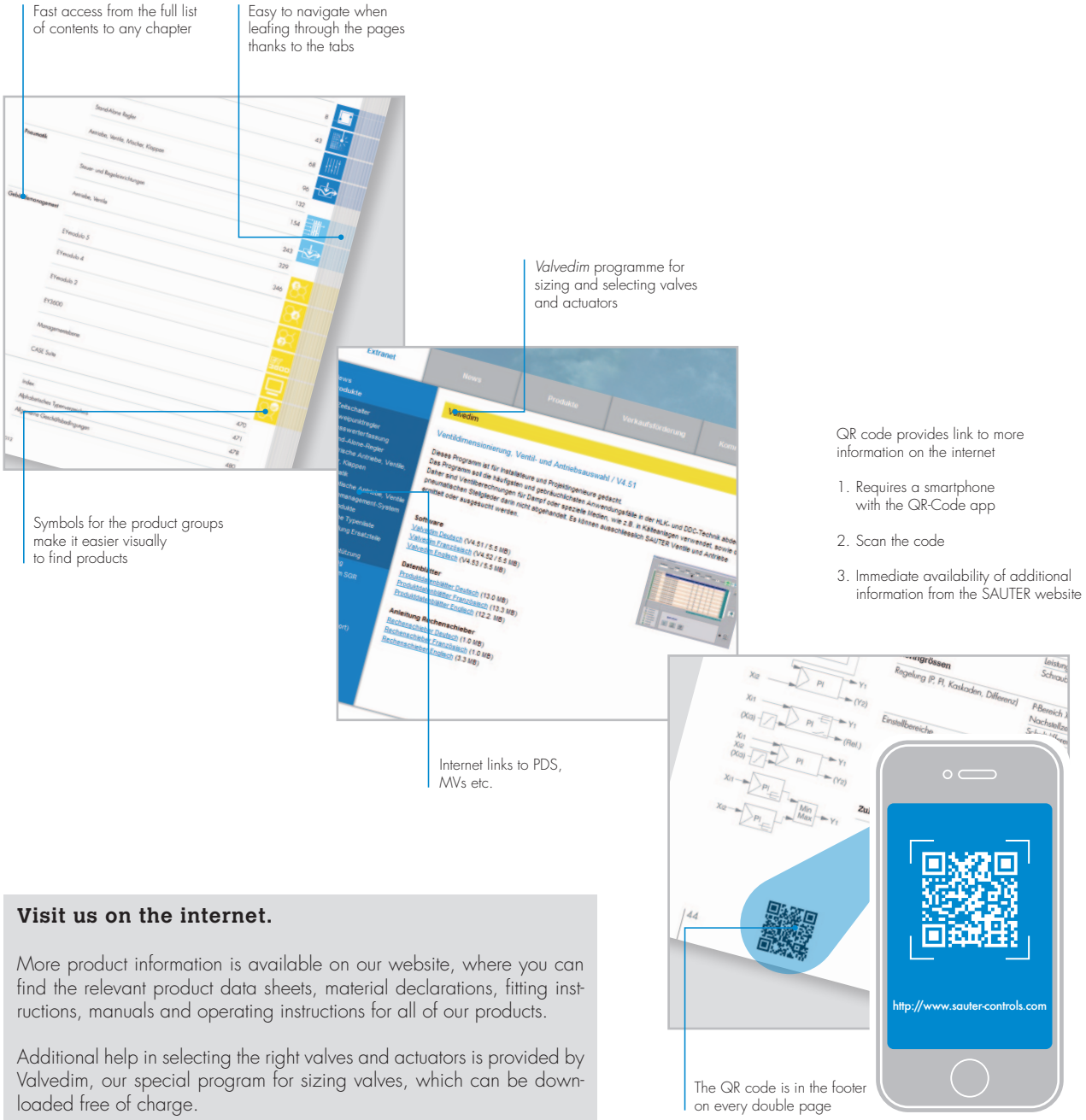
These are just a few highlights selected from our extensive product range. Making a significant contribution to the energy efficiency of your systems, projects and buildings is not only the focus of our products and systems – it is also the shared objective of all our employees around the world. This shapes our work every day, as we continually strive to develop new solutions with our customers and partners. We look forward to hearing about how we could make a difference together.

Yours,
Bertram Schmitz
CEO SAUTER Group

The **new SAUTER catalogue:** how to **find things quickly.**

Easier to find products and easier to place orders.

The new SAUTER catalogue leads you quickly to the right information and enables you to order products more easily. The catalogue has been laid out more clearly and logically, providing you with a better overview of the whole SAUTER product range. The various products are listed clearly in tables, which facilitates comparisons and makes it easier to find the right model for your particular requirements.



Visit us on the internet.

More product information is available on our website, where you can find the relevant product data sheets, material declarations, fitting instructions, manuals and operating instructions for all of our products.

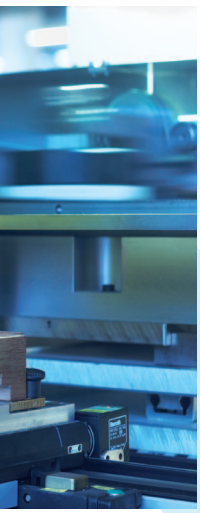
Additional help in selecting the right valves and actuators is provided by Valvedim, our special program for sizing valves, which can be downloaded free of charge.

List of contents



Continuous innovation and quality represent the keystone of the SAUTER product and system spectrum. Our products and solutions follow this formula for success down to the smallest detail. For over a century, we have converted competence into impact.

Building automation solutions that achieve **maximal comfort** and **minimal energy consumption** via innovative, **environmentally** responsible technologies present a win-win situation for people, buildings - and for nature.



Around the world and around the corner

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

Swiss quality

Our head office in Switzerland houses research, development and production under one roof. This close functional proximity facilitates know-how for the manufacture of complex products and affords the highest quality. Our brand name stands for reliability, high precision and ecologically sensitive materials.

A partner for life

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

Widely recognised

As the winner of the Building Efficiency Award for the best automation system in 2009, and the award for Best Energy Service 2010, SAUTER is excellently qualified to issue users and operators with a concise summary of energy flow and consumption. This is the key to reducing costs and increasing efficiency. SAUTER fulfils all basic criterias for Green Buildings and LEED. We also have IQNet, eu.bac and BTL BACnet certification. These seal our proven dedication to uncompromising quality, functionality and precision.

New products

[1] **SAUTER EGP100 transducer for fine differential pressure**

The new versions of the EPG100 (150 Pa, 300 Pa) enable them to be used for more applications, such as on-site visualisation of differential pressures in ventilation ducts and clean rooms, or the measurement of air volumes for the purpose of room-air balancing in laboratories.

[2] **SAUTER SGU100 sash sensor**

The SAUTER SGU100 extends the product range for controlling laboratory fume cupboards. It enables the precise measurement of the position of vertical sashes in fume cupboards, thereby permitting the air volume to be matched to the amount that the sash is open.

[3] **SAUTER Duct CO_2 sensor SAUTER EGQ212**

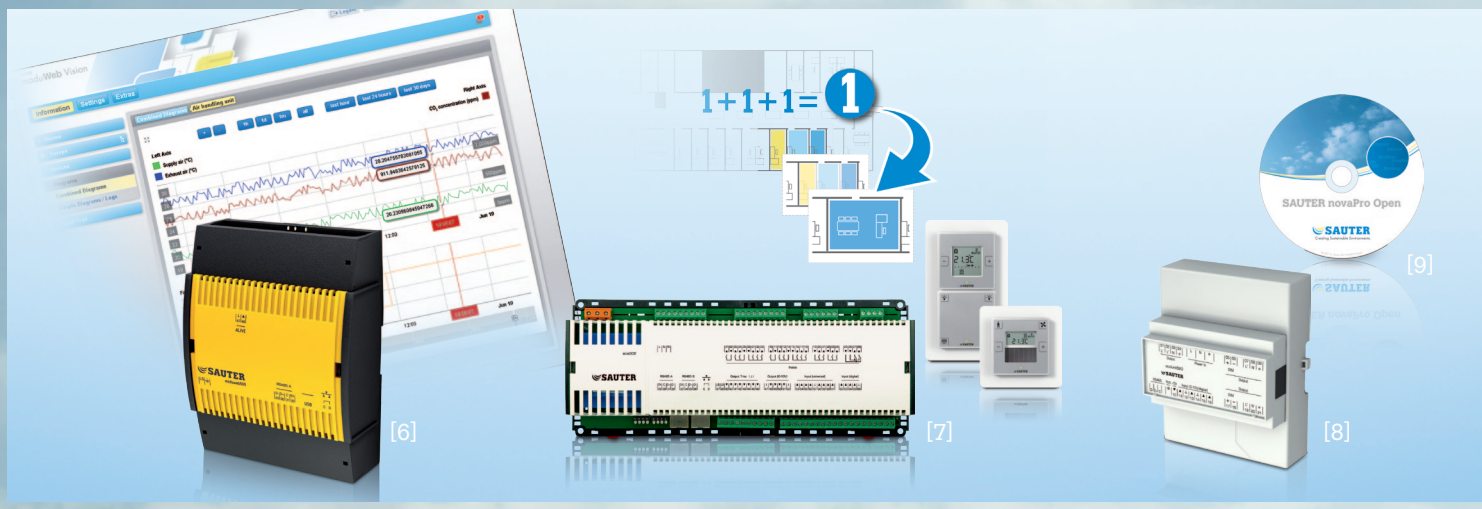
The innovative dual-beam measuring method, which does not drift and is stable in the long term, is now also used in the SAUTER EGQ212. This sensor is used to measure temperature and CO_2 values in the ventilation duct.

[4] **SAUTER ASM105 and AKM115 actuators**

Thanks to innovative motor technology and the latest electronics, SAUTER's ASM105 damper actuator and the AKM115 rotary actuator are amongst the fastest in their class. In ventilation or waste-water applications, the actuators' improved performance leads to reduced response times in the system.

[5] **SAUTER Valveco DN 25...DN 32**

The SAUTER Valveco range for automatically controlling the hydraulic balance has been extended by the addition of nominal diameters of up to DN 32.



[6] **SAUTER moduWeb Vision**

moduWeb Vision by SAUTER is and inexpensive and user-friendly method of controlling a building management system from any location via the internet. This integrative system is based on BACnet/IP and is distinguished by its interoperability, stability and reliability. Using a web browser, the data from all the HVAC installations can be visualised, making monitoring and operation much easier.

[7] **SAUTER ecos500**

The SAUTER EY-modulo family of systems completes the product range for room control. SAUTER's new ecos500 room automation station provides integrated room management for controlling the lighting, the shading and the room temperature. It ensures full flexibility in room layouts, because it can be configured on the management level.

[8] **SAUTER ecoLink**

The remote I/O modules extend the areas of usage of the SAUTER room controllers, increase the flexibility during planning and simplify installation.

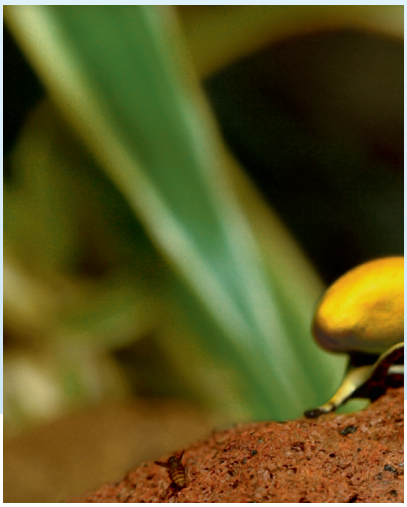
[9] **SAUTER novaPro Open**

The novaPro Open SCADA management system has an attractive and informative trend module; it makes it easy to alter the room layout via the graphic user surface.

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.



On/off controllers

Thermostats

Frost protection monitors

Pressure switches

Humidistats

Protective tubes

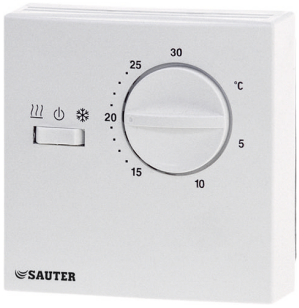
Fan-coil room temperature controllers

SAUTER's fan-coil controllers are used for demand-orientated control of fan-coil units and ensure that they are operated with optimum use of energy. There are controllers for fan-coil units with three-speed fan and for the continuous control of EC motors. The controllers are suitable for two- and four-pipe installations and also for fan-coil units with an electric reheater.

Overview of fan-coil room-temperature controllers

Models				
Type codes	TSO, TSH	TSHK 621...661	TSHK 670...672	TSHK 681, 682
Further information	p. 11	p. 13	p. 15	p. 17
Indicating and operating elements				
Mode switch for heating	•	•	•	–
Mode switch for cooling	•	•	•	–
Mode switch for fan	•	•	•	•
Setpoint adjuster	•	•	•	•
LCD	–	–	•	•
Mode of operation				
Load (A)	≤ 10	≤ 6	≤ 10	≤ 6
External sensor	–	–	–	•
2-pipe installation	–	•	–	•
4-pipe installation	–	•	•	•
Change-over	–	–	–	•

TSO, TSH: Room thermostat

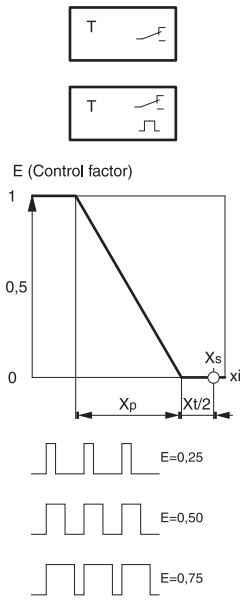


Features

- 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

Technical data

Electrical supply		
	Load[1]	230 V~ 10(2.5) A, 24 V= max. 1 A, 24 V~ min. 0.2 A
Specifications		
	Setting range	5...30 °C
	Night-time reduction (N/R)	approx. 5 K
	Time constant in still air	17 min
	Time constant in moving air (0.2 m/s)	13 min
Thermal feedback	P-band	approx. 3 K
	Shortest switching interval	approx. 19 min (E = 0.5)
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
Structural design		
	Weight	0.11 kg
	Earth	76 x 76 mm
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	wall/recessed
	Cable inlet	at rear
	Socket	black thermoplastic with membrane sensor and contact system
	Screw terminals	for electric wire of up to 1.5 mm²
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	II (IEC 60730)



Overview of types

i *Power supply: 10% more voltage means P-band approx. 4 K, switching interval = 15 min, actual-value reduction = approx. 0.5 K*

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

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

TSO670F001, TSO672F001: Switching difference 1.3 K without thermal feedback[2]

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

[2] *Devices without thermal feedback are pure on/off 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.*

- *TSH670F002, TSH676F002: dynamic switching difference 0.5 K with thermal feedback[3)]*
- *TSH676F002: Additional feature N/R (normal/reduced) for external clock*

Accessories

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

[3)] *Devices with thermal feedback are switched through an installed heating element. The control factor drops as the temperature increases, i.e. the controller has proportional behaviour. A small temperature variation of ±0.1…0.5 K occurs as a result of pulsing, depending on the time constant of the room*

TSHK 621...661: Fan-coil room temperature controller, electromechanical

Features

- Variable room temperature as setpoint based on printed temperature scale
- Switch from heating to cooling via switch or connection type
- On/off toggle switch for mains voltage, plus other slide switches for operating mode and fan, depending on the type
- More constant room temperature thanks 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
- Two-point pulsed activation

Technical data

Electrical supply

Power supply [1]	230 V~, approx. ±10%, 50...60 Hz
Load	6(3) A, 230 V~
Fan load	6(3) A, 230 V~

Specifications

Setting range	5...30 °C
Setting range	5...30 °C
P-band	3 K
Hysteresis[2]	approx. ±0.1...0.5 K
Shortest switching interval	approx. 19 min (E = 0.5)
Time constant in still air	20 min
Dead time in still air	2 min
Time constant in moving air (0.2 m/s)	15 min
Dead time in moving air (0.2 m/s)	1 min

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Structural design

Weight	0.18 kg
Housing	pure white (RAL 9010)
Housing material	fire-retardant thermoplastic (fire classification UL94 HB)
Socket	black thermoplastic with bimetal sensor and contact snap mechanism with permanent magnet
Cable inlet	at rear, screw terminals for electric cables of up to 2.5 mm²

Standards and directives

Type of protection	IP 30 (EN 60529)
Protection class	II (IEC 60730)

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

[2] *Devices with thermal feedback are switched through an installed heating element. The control factor reduces as the temperature increases (i.e. the controller has proportional behaviour). A small temperature variation of ±0.1...0.5 K occurs as a result of switching, depending on the time constant of the room.*

Overview of types

Type	Operating mode:
TSHK621F001	Heating/cooling; 2-pipe
TSHK642F001	Heating only/cooling only; 2-pipe
TSHK643F001	Heating/cooling; 4-pipe
TSHK644F002	Heating/cooling; 4-pipe

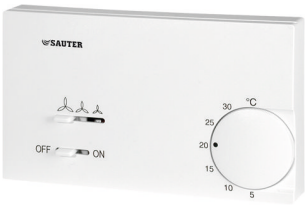
TSHK 644F002: power supply 230/24 V~

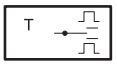
	TSHK 621	TSHK 642	TSHK 643	TSHK 644
Mains switch on/off	•	•	•	•
Operating mode switch	♨ ❄	—	♨ ❄	♨ ⅄ ❄
Fan speeds	⅄ ⅄ ⅄	⅄ ⅄ ⅄	⅄ ⅄ ⅄	—
Fan mode	—	—	—	ON/AUTO

Accessories

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

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





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
- Two-point pulsed activation

Technical data

Electrical supply		
	Power supply	230 V~, approx. ±10%, 50...60 Hz
	Load	10(4) A, 230 V~
	Fan load	6(3) A, 230 V~
Specifications		
	Setting range	5...30 °C
	P-band	2 × 3 K
	Sequence dead zone	2 K ±0.7
	Hysteresis[1)]	approx. ±0.1...0.5 K
	Shortest switching interval	approx. 19 min (E = 0.5)
	Time constant in still air	20 min
	Dead time in still air	2 min
	Time constant in moving air (0.2 m/s)	15 min
	Dead time in moving air (0.2 m/s)	1 min
Permissible ambient conditions		
	Permissible ambient temperature	0...55 °C
Function		
	Operating mode:	Heating/cooling sequence; 4-pipe
Structural design		
	Weight	0.18 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic (fire classification UL94 HB)
	Socket	black thermoplastic with NTC sensor
	Cable inlet	at rear, screw terminals for cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)

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

Overview of types

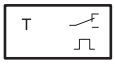
Type	Number of switches
TSHK670F001	0
TSHK671F001	1
TSHK672F001	2

	TSHK670	TSHK671	TSHK672
Mains switch on/off	—	•	•
Operating mode switch	—	—	—
Fan speeds	—	—	
Indicators	—	—	1 LED

Accessories

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

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



Features

- LCD display for viewing the room temperature or setpoint, with two buttons (±) for adjusting the setpoint
- Output for heating or cooling depending on connection type, or change in direction of travel with external switch
- With main switch for the mains voltage and slide switches for three fan speeds
- Suitable for wall mounting or fitting on recessed junction boxes
- Electronics unit and switching relay
- Quasi-continuous temperature control
- Two-point pulsed activation

Technical data

Electrical supply		
	Power supply [1]	230 V~, approx. ±10, 50...60 Hz
	Load	3(2) A, 230 V~
	Fan load	6(3) A, 230 V~
Specifications		
	Setting range	5...30 °C; resolution 0.5 °C
	P-band	3 K
	Display of actual value	0...40 °C; resolution 0.1 °C
	Hysteresis[2]	approx. ±0.1...0.5 K
	Shortest switching interval	approx. 18 min (E = 0.5)
	Time constant in still air	20 min
	Dead time in still air	2 min
	Time constant in moving air (0.2 m/s)	15 min
	Dead time in moving air (0.2 m/s)	1 min
Permissible ambient conditions		
	Permissible ambient temperature	0...55 °C °C
Structural design		
	Weight	0.18 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic (fire classification UL94 HB)
	Socket	black thermoplastic with NTC sensor
	Cable inlet	at rear, screw terminals for cables of up to 2.5 mm²
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)

Overview of types

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

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

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

	TSHK681	TSHK682
Mains switch on/off	•	(•)
Operating mode switch	—	OFF
Fan speeds		
Indicators	°C digital	°C digital

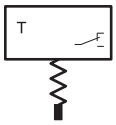
Accessories

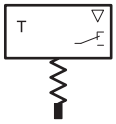
Type	Description
0362237001	Room sensor in housing 75 × 75 mm, for external temperature measurement (max. 50 m)
0362238001	Cable-type sensor, 4 m long, made of PVC, for external temperature measurement (max. 50 m)
0362239001	pure white intermediate cover plate, suitable for various recessed junction boxes

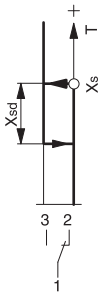
Universal thermostats

SAUTER's universal thermostats are used for monitoring, limiting and regulating the temperature. They provide control, monitoring and limitation in accordance with demand, and require no external energy.

Models	
Type codes	RAK
Further information	p. 20







RAK: Universal thermostat

Features

- Variants as temperature controllers (TR), temperature monitors (TW), temperature limiters (TB) or safety temperature limiters (STB)
- Thermostat with remote sensor
- Clamp-on thermostat
- Thermostat with and without protective tube
- Double thermostat, e.g. as TW and STB
- Sealable
- Suitable for flue gas pipes

Technical data

Electrical supply

Max. load	Terminal 1-2 TW, TB	10(2.6) A, 250 V~
	Terminal 11-12 STB	10(6) A, 250 V~
	Terminal 1-4 TW	4(0.6) A, 250 V~
	Min. load	500 mA, 40 V

Specifications

	Calibration point	23 °C ±2 °C (Tu 23), 37 °C ±2 °C (Tu 37) (RAK13.5050S)
Time characteristic in water	Time constant with protective tube (inner diameter 7)	< 45 s
	Time constant without protective tube	< 15 s
	Effect of temperature at instrument head[1)]	0.20...0.60 K/K

Permissible ambient conditions

	Storage and transport temperature	–25...75 °C
	Permissible ambient temperature	0...70 °C (T70) (housing)
	Permissible ambient temperature when used as a clamp-on sensor	max. 130 °C (water temperature)

Structural design

	Weight	0.22 kg
	Sensor cartridge	68 mm
	Housing	Lower section black, upper section yellow, including inspection window
	Housing material	plastic

Standards and directives

	Type of protection	IP 54 (EN 60529) with protective tube
	Protection class	I (IEC 60730)
	Test marks	ID: 0000006982 (RAK13.5050S)

Overview of types

Type	Setting range	Switching difference	Capillary tube	Max. temp., sensor
RAK13.5050S	130/120/110/100/95 °C	20 K	800 mm	170 °C
RAK582.4/3726	50...130 °C	4 K	800 mm	200 °C
RAK582.4/3728	15...95 °C	4 K	800 mm	200 °C
RAK582.4/3729	80...160 °C	4 K	1600 mm	200 °C
RAK582.4/3753	150...230 °C	4 K	1000 mm	280 °C
RAK582.4/3754	40...120 °C	4 K	1600 mm	200 °C
RAK582.4/3770	–10...50 °C	4 K	1600 mm	180 °C

1) *Type-dependent*

Type	Setting range	Switching difference	Capillary tube	Max. temp., sensor
RAK582.4/3773	5...30 °C	4 K	800 mm	200 °C
RAK584.4/3782	20...60 °C	10 K	800 mm	200 °C
RAK584.4/3783	50...130 °C	10 K	800 mm	220 °C

- *RAK13.5050S: STB, classed in PED 97/23/EC according to cat. IV, with protective tube, inner diameter 7, brass, 100 mm, according to DIN EN 14597, intrinsically safe with locking mechanism; irreversible grid step adjustment*
- *RAK582*: TW with protective tube, inner diameter 7, brass, 100 mm, according to DIN EN 14597, not classed in PED*
- *RAK584*: TB, open contact, with protective tube, inner diameter 7, brass, 100 mm, according to DIN EN 14597, not classed in PED*
- *RAK582.4/3729, RAK582.4/3753: Stainless-steel protective tube provided, stainless-steel protective tubes are preferable from approx. 130 °C; including 100 mm distance piece for temperatures > 130 °C*

Accessories

Type	Description
0364433001	Signal lamp: 250 V~ for indicating switching status to monitor
0364435001	Assembly kit for clamp-on and double thermostat with 2 plugs for upholding protection rating IP 54 and retaining strap for fitting to pipe ½"...3" (for RAK as clamp-on thermostat T < 120 °C)
0210240010	Distance piece, 100 mm (rod thermometer)

As thermostat with remote sensor

Type	Description
0296724000	Sensor holder for wall mounting
0303212000	Rubber grommet for holding the capillary tube when passing through into ventilation ducts; T < 50 °C
0364140000	Tension-relief piece for use when fitted in protective tubes
0364432001	Fixing kit for duct or wall mounting
0364434001	Sensor support spiral for direct fitting in air ducts
0036787000	Capillary tube port with stuffing box; R ½ made of brass, 12 bar, 180 °C

Other accessories

As stem-type thermostat		
Type	Description	Price
0364439***	Protective tubes (inner diameter 7), of brass R½, for 1 sensor cartridge	—
0364440***	Protective tubes (inner diameter 15), of brass R½, for 2-3 sensor cartridges	—

- *Protective tubes: See product data sheet on protective tubes*

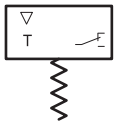
Frost protection monitors

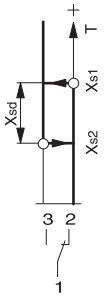
SAUTER's frost protection monitors protect ventilation systems against icing; they require no external energy. Because of their special construction and design, they are particularly suitable for compact installations and/or installations subject to vibrations.

Overview of frost protection monitors

Models			
Type codes	TFC	TFL 201	TFL 611
Further information	p. 23	p. 25	p. 27
Housing			
Plastic	–	•	•
Light metal	•	–	–
Sealable	•	•	–
Output signal			
Switched	•	•	•
Continuous	–	–	•
Certification			
Ingress protection	•	•	•

TFC: Frost protection monitor with capillary-tube sensor





Features

- Gold-plated silver contacts
- Upper and lower switching points can be set independently of each other
- Sealable
- Copper capillary tube (6 m)
- Splashproof
- With capillary-tube holders

Technical data

Electrical 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	10(2) A, 400 V~, 25 W, 250 V=
	Minimum load with silver-plated contacts[2]	100 mA, 24 V
Specifications		
	Setting range, switching points	0…15 °C
	Lowest switching difference[3]	2…3 K
	Permissible sensor temperature	–40…180 °C
Time characteristic	Time constant in moving air (0.3 m/s)	35 s
Permissible ambient conditions		
	Permissible ambient temperature[4]	0…70 °C
Structural design		
	Weight	0.9 kg
	Housing material	light metal with transparent cover
Standards and directives		
	Type of protection	IP 44 (EN 60529); IP 54 with accessory
	Protection class	I (IEC 60730)

Overview of types

Type
TFC7B12F001

Accessories

Type	Description
0044529000	Box spanner for set screw
0233310000	Aluminium cover with inspection window (IP 54 with accessory 0259299 000)
0259189000	Holder for raised wall mounting
0259299000	Cable screw fitting PG 13.5

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

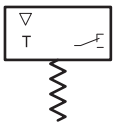
[2] *Take the RC circuit into account in the event of inductive loads*

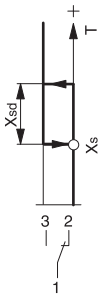
[3] *The low values apply for high setpoints, while the larger values apply for lower setpoints.*

[4] *The head of the instrument should be fitted in a warmer location than the sensor*

Type	Description
0259409000	Fixing bracket (provides 3-point mounting with accessory 0259189)
0303167000	Five holders for fitting the capillary tube

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





Features

- Gold-plated silver contacts
- Switching point and switching difference can be set
- Sealable
- With capillary-tube holders

Technical data

Electrical supply

	Maximum load with gold-plated contacts[1]	160 mA, 50 V
	Maximum load with silver-plated contacts[2]	10(3) A, 250 V~ 50 W, 250 V=
	Minimum load with gold-plated contacts	4 mA, 6 V
	Minimum load with silver-plated contacts	100 mA, 24 V

Specifications

	Setting range	–5…15 °C
	Factory setting	5 °C
	Tolerance of switching difference	max. ±1 K
	Permissible sensor temperature	–20…200 °C
Time characteristic[3]	Time constant in moving air (0.3 m/s)	35 s

Permissible ambient conditions

	Ambient temperature	–5…70 °C
	Temperature at instrument head[4]	–5…70 °C

Structural design

	Cover	transparent, made of impact-proof thermoplastic
	Weight	0.47 kg
	Housing-mounted plug	with female connector for cable of Ø 6…10 mm

Standards and directives

	Type of protection	IP 65 (EN 60529)
	Protection class	I (IEC 60730)

Overview of types

Type	Operation	Switching difference	Capillary tube
TFL201F001	X_{sd} = fixed	2.0 K	3 m
TFL201F011	X_{sd} = variable	2…6 K	3 m
TFL201F021	Limiter	2.0 K	3 m
TFL201F101	X_{sd} = fixed	2.0 K	1.5 m
TFL201F111	X_{sd} = variable	2…6 K	1.5 m
TFL201F121	Limiter	2.0 K	1.5 m
TFL201F601	X_{sd} = fixed	2.0 K	6 m

[1] *If the contacts are subjected to a greater load than 160 mA at 50 V, the gold plating will be damaged. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*

[2] *Take the RC circuit into account in the event of inductive loads*

[3] *The frost protection monitor always reacts to the coldest point (minimum length = 10 cm)*

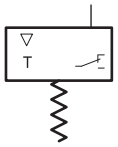
[4] *The head of the instrument should be fitted in a warmer location than the sensor*

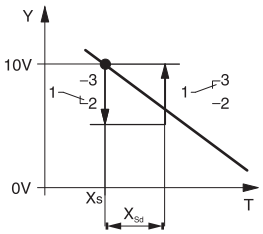
Type	Operation	Switching difference	Capillary tube
TFL201F611	X_{sd} = variable	2...6 K	6 m
TFL201F621	Limiter	2.0 K	6 m

Accessories

Type	Description
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0303167000	Five holders for fitting the capillary tube

TFL 611: Continuous frost monitor with capillary sensor





Features

- Adjustable frost point
- Start-up function
- LED display for risk of frost
- Selectable restart lock-out
- Copper capillary tube
- Regulated housing heating for guaranteeing the measuring signal
- For air-side applications in installations, temperature monitoring in air/water heat exchangers and air ducts with continuous frost monitoring, frost protection switches and temperature monitoring

Technical data

Electrical supply		
	Power supply	24 V~, ±20%
	Power consumption	6 VA
	Max. load[1]	6(4) A, 250 V~
	Min. load	5 mA, 5 V~/=
Specifications		
	Measuring range	0…15 °C / 0…10 V=
	Control signal output	0…10 V=, max. ±1 mA
	Permissible cable length	300 m with 1.5 mm²
	Control signal input	0…10 V=, max. ±1 mA
	Switching difference X_{sd}	2 K
	Setting range X_s	1…10 °C
	Permissible sensor temperature	–15…110 °C
Time characteristic	Time constant in still air	90 s
	Time constant in moving air	40 s
	Time constant of active capillary tube[2]	min. 250 mm
	Factory setting	5 °C
Permissible ambient conditions		
	Temperature at instrument head[3]	–15…60 °C
	Ambient temperature	–15…60 °C
Structural design		
	Housing	two-piece
	Housing material	plastic
Standards and directives		
	Type of protection	IP 42 (EN 60529)
	Protection class	II (IEC 60730)

Overview of types

i *Accessories for duct fitting must be ordered separately.*

Type	Capillary tube	Weight
TFL611F200	2 m	0.34 kg
TFL611F600	6 m	0.41 kg

[1] *Take the RC circuit into account in the event of inductive loads*

[2] *Frost monitor always reacts to the coldest point (minimum length = 250 mm)*

[3] *Instrument head protected (by a heater) against frost in ambient temperatures down to –15 °C*

Accessories

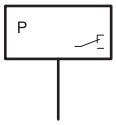
Type	Description
0292146001	Set for duct fitting consists of: 5 capillary-tube holders, 1 depth-adjustable flange
0303167000	Five holders for fitting the capillary tube
0374534001	Depth-adjustable flange

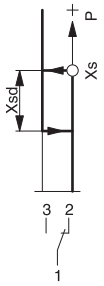
Pressure switches

SAUTER pressure switches can be used 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

Models					
Type codes	DSA	DSB	DSF	DSL	DSH
Further information	p. 30	p. 32		p. 34	
Pressure monitors	•	•	•	–	–
Pressure limiters					
For rising pressure	–	–	–	–	•
For falling pressure	–	–	–	•	–
Pressure sensors					
Of brass	•	•	–	•	–
Of stainless steel	–	–	•	–	•
Variable switching difference	–	•	•	–	–
Certification					
VdTÜV 100	–	•	•	•	•
EN 12952-11, EN 12953-9	–	•	•	•	•
Can be used for aggressive media	–	–	•	–	•
Can be used for aggressive media	–	–	•	–	•





DSA: Pressure switch

Features

- Gold-plated silver contacts
- Settable upper switching point
- Fixed switching difference, no hysteresis setting is necessary
- Sealable
- Pressure sensor of brass for non-aggressive media

Technical data

Electrical supply

Maximum load with gold-plated contacts[1)]	400 mA, 24 V, 10 VA
Minimum load with gold-plated contacts	4 mA, 5 V
Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Specifications

Setting range	1...10 bar
Pressure connection	G½" male

Permissible ambient conditions

Permissible sensor temperature	70 °C
Permissible ambient temperature	–20...70 °C

Structural design

Housing	transparent cover
Housing material	impact-proof thermoplastic
Housing-mounted plug	Standard plug with female cable connector for cable of Ø 6...10 mm

Standards and directives

Type of protection	IP 65 (EN 60529)
Protection class	I (IEC 60730)

Overview of types

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

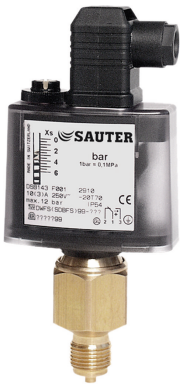
Accessories

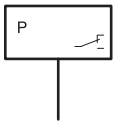
Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0114467000	1 m capillary tube for absorbing pressure surges, steel
0192222000	Cap nut with solder connector
0192700000	1 m capillary tube for absorbing pressure surges, copper
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0259239000	Reduction piece G½" to 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (±3% of the setting range, but a minimum of ±0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)

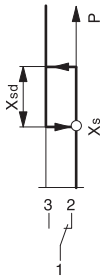
1) *If the contacts are subjected to a greater load, the gold coating will be damaged; the contacts are then classed only as silver contacts, since they lose the properties of gold contacts.*

Type	Description
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0292150001	Fixing bracket for wall mounting
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: with accessory 0292150001 only







DSB, DSF: Pressure monitors and pressure switches

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Variable switching point
- Variable switching difference
- Sealable
- Pressure sensor of brass for non-aggressive media
- Pressure sensor of stainless steel for aggressive media
- In accordance with DGRL 97/23/EC, cat. IV, VdTÜV 100, EN 12952-11 and EN 12953-9

Technical data

Electrical supply

	Maximum load with gold-plated contacts[1]	400 mA, 24 V, 10 VA
	Minimum load with gold-plated contacts	4 mA, 5 V
	Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
	Minimum load with silver-plated contacts	100 mA, 24 V

Specifications

	Setting range	0…1.6 bar –5…40 bar
	Pressure connection	G½" male

Permissible ambient conditions

	Permissible ambient temperature	–20…70 °C
	Temperature of medium	≤ 110 °C

Structural design

	Housing	Transparent cover
	Housing material	impact-proof thermoplastic
	Housing-mounted plug	with female cable connector for cable of 6…10 mm Ø

Standards and directives

	Type of protection	IP 65 (EN 60529)
	Protection class	I (IEC 60730)
	Test marks[2]	DWFS (SDBFS) ID: 0000006024
DIN CERTO	PED	Cat. IV

Overview of types

Type	Setting range	Switching difference	Maximum pressure	Max. sensor temperature	Permissible vacuum loading	Weight
DSB138F001	0…1,6 bar	0.25…0.65 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB140F001	0…2.5 bar	0.25…0.75 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB143F001	0…6 bar	0.3…1.6 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSB146F001	0…10 bar	0.8…3.7 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB152F001	6…16 bar	1…4 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB158F001	0…25 bar	1…7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSB170F001	5…40 bar	1.4…7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSF125F001	-1…1.5 bar	0.25…0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF127F001	-1…5 bar	0.3…1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF135F001	0…0.6 bar	0.12…0.60 bar	12 bar	110 °C	-1 bar	0.5 kg

[1] *If the contacts are subjected to a greater load, the gold coating will be damaged; the contacts are then classed only as silver contacts, since they lose the properties of gold contacts.*

[2] *DWFS (SDBFS): As a safety pressure limiter when an external electrical locking facility is included in the circuit*

Type	Setting range	Switching difference	Maximum pressure	Max. sensor temperature	Permissible vacuum loading	Weight
DSF138F001	0...1.6 bar	0.25...0.7 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF140F001	0...2.5 bar	0.25...0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF143F001	0...6 bar	0.3...1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF146F001	0...10 bar	0.8...3.0 bar	18 bar	110 °C	-1 bar	0.5 kg
DSF152F001	0...16 bar	1.2...3.8 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF158F001	0...25 bar	1.5...8.0 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF170F001	15...40 bar	1.7...8.2 bar	60 bar	110 °C	-1 bar	0.3 kg

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

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

Accessories

Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0114467000	1 m capillary tube for absorbing pressure surges, steel
0192222000	Cap nut with solder connector
0192700000	1 m capillary tube for absorbing pressure surges, copper
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0259239000	Reduction piece G½" to 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (±3% of the setting range, but a minimum of ±0.2 bar)
0292002000	Switching difference according to customers' wishes (±5% of the setting range, but a minimum of ±0.05 bar, with accessory 0292001 only)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0292150001	Fixing bracket for wall mounting
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

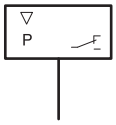
0296936000: With accessory 0292150001 only

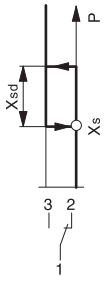
DSL, DSH: Pressure limiters, heavy duty

Features

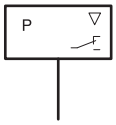
- Gold-plated silver contacts
- Settable switching point
- Sealable
- In accordance with PED 97/23/EC, cat. IV, VdTÜV 100, EN 12925-11 and EN 12953-9
- Sensor of either brass or stainless steel for use in aggressive media

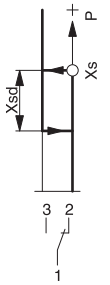
DSL





DSH





Technical data

Electrical supply

Maximum load with gold-plated contacts[1]	400 mA, 24 V, 10 VA
Minimum load with gold-plated contacts	4 mA, 5 V
Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Specifications

Pressure connection	G½" A

Permissible ambient conditions

Permissible ambient temperature	–20...70 °C

Structural design

Housing	transparent cover
Housing material	impact-proof thermoplastic
Housing-mounted plug	Standard plug with female cable connector for cable of Ø 6...10 mm

Standards and directives

Type of protection	IP 65 (EN 60529)
Protection class	I (IEC 60730)
Test marks[2]	DSL: SDBF ID: 0000006022 DSH: SDB ID: 0000006023 PED: Cat. IV

Overview of types

i *Min. change for reset: average values*

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

DSL: locks when the pressure falls (SDBF); pressure sensor of brass for use in non-aggressive media

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

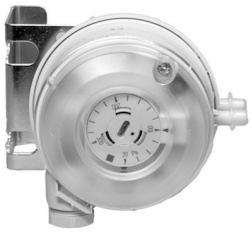
[1] *If the contacts are subjected to a greater load than that stated, the gold plating will be damaged. They are then classed merely as silver contacts and lose the properties of gold-plated contacts*

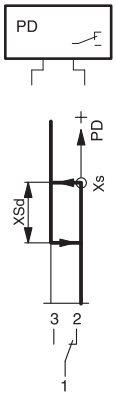
[2] *Certificates can be downloaded from www.tuv.com*

Accessories

Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0114467000	1 m capillary tube for absorbing pressure surges, steel
0192222000	Cap nut with solder connector
0192700000	1 m capillary tube for absorbing pressure surges, copper
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0259239000	Reduction piece G½" to 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (±3% of the setting range, but a minimum of ±0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0292150001	Fixing bracket for wall mounting
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0381141001	Profile sealing ring, copper, for G½"

0296936000: with accessory 0292150001 only





DDL: Monitor for fine differential pressure

Features

- For monitoring the air flows in a ventilation duct (e.g. filter monitoring)
- 0.2…20 mbar setting range for differential pressure
- Gold-plated contacts for 24 V~/= and 250 V~
- Very easy to fit
- Integrated cord grip
- High level of setting accuracy
- Switching points have long-term stability
- Measuring element: silicone diaphragm (does not emit gases)
- Settable upper switching point
- Setpoint can be seen on exterior
- Included in delivery: monitor with fixing bracket, connectors and 2 m of PVC tubing

Technical data

Electrical supply		
	Load	max. 5(0.8) A, 250 V~ min. 10 mA, 24 V~/=
Permissible ambient conditions		
	Permissible ambient temperature	–30…85 °C
	Max. permissible operating pressure	50 mbar
	Permissible temperature of medium	–30…85 °C
Structural design		
	Weight	0.1 kg
	Housing material	polycarbonate
	Cable inlet	PG 11
	Pressure connections	Ø 6.2 mm
Standards and directives		
	Type of protection	IP 54 (EN 60529)

Overview of types

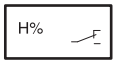
Type	Switching range	Switching difference
DDL103F001	0.02…0.3 kPa, 0.2…3 mbar	approx. 0.2 mbar
DDL105F001	0.05…0.5 kPa, 0.5…5 mbar	approx. 0.3 mbar
DDL110F001	0.1…1 kPa, 1…10 mbar	approx. 0.5 mbar
DDL120F001	0.5…2 kPa, 5…20 mbar	approx. 1 mbar
DDL150F001	1…5 kPa, 10…50 mbar	approx. 2.5 mbar

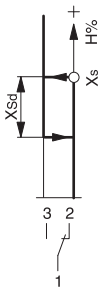
Humidistats

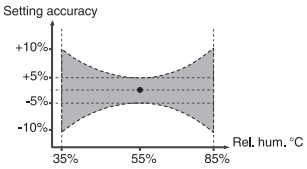
Room, fitted and duct humidistats are employed for monitoring and controlling devices that are used for humidity regulation (fans, driers and humidifiers).

Overview of humidistats

Models			
Type codes	HSC 120	HSC 101	HBC
Further information	p. 38	p. 40	p. 39
Areas of use			
Room	•	–	–
Fitted	–	•	–
Duct	–	–	•
Fitting location			
Wall	•	–	–
Ventilation duct	–	–	•
Housing	•	–	•
Device	–	•	–







HSC 120: Room humidistat

Features

- Variable relative humidity as setpoint based on printed scale in % rh
- Measurement taken via a measuring element of stabilised synthetic textile tape.
- Micro-switch with fixed switching difference X_{Sd}

Technical data

Electrical supply

Load	Maximum	5(3) A, 250 V~
	Minimum	100 mA, 24 V

Specifications

	Setting range	30...90% rh
	Setting accuracy[1)]	±5% rh
	Humidity calibration at	55% rh, 23 °C
	Switching difference	typ. 6% rh
	Long-term stability	approx. −1.5% rh/a
	Time constant in moving air (0.2 m/s)	approx. 5 min
	Temperature influence	0.5% rh/K

Permissible ambient conditions

	Permissible ambient temperature	0...40 °C
	Permissible ambient temperature without exposure to dew	−25...40 °C

Structural design

	Weight	0.09 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Screw terminals	for electric cable of up to 1.5 mm²

Standards and directives

	Type of protection	IP 20 (EN 60529)
	Protection class	II (IEC 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-13

Overview of types

Type	Features
HSC120F001	External setpoint adjuster
HSC120F010	Internal setpoint adjuster

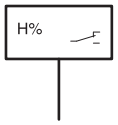
Accessories

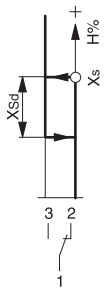
Type	Description
0362225001	Intermediate plate, pure white, for wall mounting on recessed junction box

[1)] *The setting accuracy of the humidistat is valid at calibration point ±5% rh at 55% rh, 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*

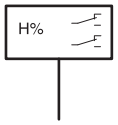
HBC: Duct humidistat

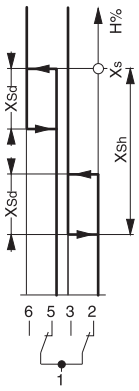
HBC111F001





HBC112F001





Features

- Temperature-compensated humidity sensor
- Variable relative humidity as setpoint based on printed scale in % rh
- Housing and sensor tube of glass-fibre-reinforced thermoplastic
- Includes fixing bracket with seal for duct or wall mounting
- With single-pole change-over contacts and fixed switching difference X_{Sd}
- Devices UL tested

Technical data

Electrical supply

Max. load	5(3) A, 250 V~
Min. load	100 mA, 24 V

Specifications

Setting range	15...95% rh
Setting accuracy	±5% rh
Humidity calibration at	55% rh, 23 °C
Temperature influence	compensated
Long-term stability	–1.5% rh/a
Time constant	approx. 3 min (v = 0.2 m/s)
Switching difference X_{sd}	4% rh (after humidity calibration)
Max. air speed	10 m/s

Permissible ambient conditions

Permissible ambient temperature	0...70 °C
Permissible ambient temperature without exposure to dew	–25...70 °C

Structural design

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 electric cable of up to 1.5 mm²

Standards and directives

Type of protection	IP 30 (EN 60529)
Protection class	II (IEC 60730)
UL register no.	E75924

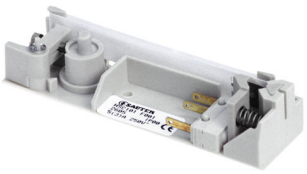
Overview of types

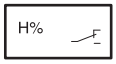
Type	Switching range	Number of switches	Weight
HBC111F001	–	1	0.33 kg
HBC112F001	6...25% rh	2	0.35 kg

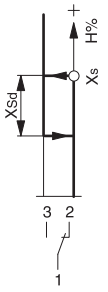
HBC 112: For 3-point control or min./max. monitoring and internally adjustable switching range X_{Sd}

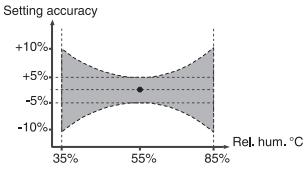
Accessories

Type	Description
0303538001	Set for increasing protection rating to IP 55 (housing lid with transparent cap for setpoint knob, seal, 1 cable screw fitting - PG 11, 1 plug - PG 11)
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm









HSC 101: Fitted humidistat (packing unit: 50 pieces)

Features

- Adjustment of change-over point via setpoint adjusting axis
- Suitable for fitted applications with protection class II
- Measurement taken with a measuring element made of stabilised synthetic textile tape
- Secured with bolting hole and fixing hole (blind hole)
- Micro-switch with single-pole change-over contact and fixed switching difference

Technical data

Electrical supply		
Load	Maximum	5(3) A, 250 V~
	Minimum	100 mA, 24 V
Specifications		
	Setting range	25...95% rh
	Setting accuracy[1)]	±5% rh
	Humidity calibration at	55% rh, 23 °C
	Switching difference[2)]	6% rh
	Long-term stability	–1.5% rh/a
	Time constant in moving air (0.2 m/s)	approx. 3 min
	Temperature influence	0.5% rh/K
Permissible ambient conditions		
	Permissible ambient temperature[3)]	0...40 °C
Structural design		
	Weight	0.03 kg
	Baseplate	thermoplastic
	Electrical connection	AMP terminals 2.8 mm
Standards and directives[4)]		
	Type of protection	IP 00 (EN 60529)
	Protection class	0 (IEC 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-13

Overview of types

Type
HSC101F001

1) *The setting accuracy of the humidistat is valid at calibration point ±5% rh at 55% rh, 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 application*

3) *Temperatures below freezing (max. –30 °C) are permissible, providing there is no condensation*

4) *The relevant safety standards must be observed in accordance with the method of fitting*

Protective tubes

Features

- Tested with 1.5 times nominal pressure (PN)
- Made of brass Cu Zn 37 (Material no. 2.0321) or stainless steel (Material no. 1.4435)
- Versions with cylindrical pipe thread (G½" male ISO 228/1, flat-sealing) or cone-shaped (R½" ISO 7/1, sealing in thread)[1]

Overview of types

Type	Internal diameter	Length	Materials	Thread	PN	T_{max}
0364439060	7	60 mm	brass	R½"	16 bar	200 °C
0364439120	7	120 mm	brass	R½"	16 bar	200 °C
0364439150	7	150 mm	brass	R½"	16 bar	200 °C
0364439225	7	225 mm	brass	R½"	16 bar	200 °C
0364439300	7	300 mm	brass	R½"	16 bar	200 °C
0364345120	7	120 mm	brass	G½" male	16 bar	200 °C
0364345225	7	225 mm	brass	G½" male	16 bar	200 °C
0364345300	7	300 mm	brass	G½" male	16 bar	200 °C
0364345450	7	450 mm	brass	G½" male	16 bar	200 °C
0226811060	7	60 mm	stainless steel	G½" male	25 bar	325 °C
0226811120	7	120 mm	stainless steel	G½" male	25 bar	325 °C
0226811225	7	225 mm	stainless steel	G½" male	25 bar	325 °C
0226811300	7	300 mm	stainless steel	G½" male	25 bar	325 °C
0226811450	7	450 mm	stainless steel	G½" male	25 bar	325 °C
0226811600	7	600 mm	stainless steel	G½" male	25 bar	325 °C
0364440120	15	120 mm	brass	R½"	16 bar	200 °C
0364346120	15	120 mm	brass	G½" male	16 bar	200 °C
0364346225	15	225 mm	brass	G½" male	16 bar	200 °C
0364346300	15	300 mm	brass	G½" male	16 bar	200 °C
0364346450	15	450 mm	brass	G½" male	16 bar	200 °C
0364258225	15	225 mm	stainless steel	G½" male	25 bar	325 °C
0364258450	15	450 mm	stainless steel	G½" male	25 bar	325 °C
0364258120	15	120 mm	stainless steel	G½" male	25 bar	325 °C
0364258600	15	600 mm	stainless steel	G½" male	25 bar	325 °C

LW 7: internal Ø 7 mm, external Ø 9 mm

LW 15: internal Ø 15 mm, external Ø 16 mm; including pressure spring[2]

Accessories

Type	Description
0311835000	Cord grip for cable-type sensors with flexible lead in the protective tube (inner diameter 7)
0312520000	Universal cord grip for cable-type sensors and thermostats with capillary tube
0364140000	Tension-relief piece for use when fitted in protective tubes
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0364264000	Welding sleeve of stainless steel, with female thread G½", flat seal of copper and PTFE (for aggressive media)

Other accessories

Type	Description	Price
0364144***	Pressure spring for sensor in protective tubes LW 15 with L=120; 225; 300; 450	—

[1] *G½" male, ISO 228/1, flat-sealing: For welding bushing with flat seal (accessory)*

[2] *For 2 or 3 sensors Ø 6.5 mm, e.g. combinations with thermostat and sensor cartridges*

Data capture

Accurate data form the basis for efficient control

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

Data capture

Temperature

Humidity

Indoor air quality

Flow and pressure

Other variables

Temperature sensors

SAUTER's temperature sensors are used for heating and air-conditioning systems. They can be used in residential and business premises and elsewhere. Due to the different types available, they have a wide range of applications. They are used to measure room, duct, outside and pipe temperature.When used in containers and pipes, they are fitted in protective tubes.

Overview of temperature sensors

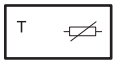
Models					
Type codes	EGT 301	EGT 401	EGT 311	EGT 411	EGT 354, 356
Further information	p. 46	p. 47	p. 48	p. 49	p. 52
Application					
Pipe/duct	–	–	–	–	–
Cable	–	–	–	–	•
Room (passive)	–	–	–	–	–
Room (active)	–	–	–	–	–
Clamp-on temperature	–	–	•	•	–
Outside temperature	•	•	–	–	–
Materials					
Nickel	•	–	•	–	•
Platinum	–	•	–	•	–

Models					
Type codes	EGT 355	EGT 456	EGT 330...335	EGT 336, 338	EGT 430
Further information	p. 54	p. 50	p. 55	p. 56	p. 57
Application					
Pipe/duct	–	–	–	–	–
Cable	•	•	–	–	–
Room (passive)	–	–	•	•	•
Room (active)	–	–	–	–	–
Clamp-on temperature	–	–	–	–	–
Outside temperature	–	–	–	–	–
Materials					
Nickel	•	–	•	•	–
Platinum	–	•	–	–	–

Overview of temperature sensors

Models			
Type codes	EGT 436	EGT 636	EGT 446, 447
Further information	p. 58	p. 59	p. 60
Application			
Pipe/duct	–	–	•
Cable	–	–	–
Room (passive)	•	•	–
Room (active)	–	–	–
Clamp-on temperature	–	–	–
Outside temperature	–	–	–
Materials			
Nickel	–	•	–
Platinum	•	–	•

Models			
Type codes	EGT 392...395	EGT 346...348	EGT 130
Further information	p. 62	p. 64	p. 66
Application			
Pipe/duct	•	•	–
Cable	–	–	–
Room (passive)	–	–	–
Room (active)	–	–	•
Clamp-on temperature	–	–	–
Outside temperature	–	–	–
Materials			
Nickel	•	•	•
Platinum	–	–	–



EGT 301: Outside-temperature sensor

Features

- Passive data capture
- Measurement using nickel thin-film sensor according to DIN 43760
- Extra protection against dust and humidity
- For weather-compensated heating and ventilation systems

Technical data

Specifications

Resistance values as per DIN 43760	Measuring range	–50…80 °C
	Nominal value at 0 °C	1000 Ω
	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}
	Self-heating	0.2 K/mW
Time characteristic	Time constant in moving air (1 m/s)	6 min
	Time constant in still air	10 min
	Dead time in moving air (1 m/s)	1 min
	Dead time in still air	1.5 min

Structural design

	Weight	0.1 kg
	Type of connection	Recessed/surface-mounted

Standards and directives

	Type of protection	IP 54 (EN 60529)

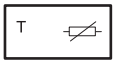
Overview of types

Type
EGT301F101

Accessories

Type	Description
0313346001	Module 0…10 V for Ni1000; 24 V~; IP 00 (IP 42 when fitted in housing), 4 temp. ranges: –50…0 °C; –50…50 °C; 0…50 °C; 0…100 °C
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9…11 mm

EGT 401: Outside-temperature sensor with platinum measuring element



Features

- Passive data capture
- Measurement is effected by a platinum thin-film sensor as per EN 60751
- Extra protection against dust and humidity (IP 54)
- For weather-compensated heating and ventilation systems

Technical data

Specifications

	Measuring range	–50…80 °C
	Nominal value at 0°C	1000 Ω
Resistance values as per EN 60751	Tolerance at 0 °C	±0.3 K, Class B
	Average temperature coefficient	0.00385 K^{-1}
	Self-heating	0.2 K/mW
Time characteristic	Time constant in still air	10 min
	Dead time in still air	1.5 min
	Time constant in moving air (1 m/s)	6 min
	Dead time in moving air (1 m/s)	1 min

Structural design

	Screw terminals	for electric cable of up to 1.5 mm^2
	Cable inlet	at rear or from below
	Weight	0.1 kg
	Housing	pure white (RAL 9010)
	Housing material	thermoplastic

Standards and directives

	Type of protection	IP 54 (EN 60529)

Overview of types

Type
EGT401F101

Accessories

Type	Description
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9…11 mm

EGT 311: Clamp-on temperature sensor

Features

- Passive data capture
- Includes retaining strap for pipes of Ø 10…100 mm and heat-conducting paste
- Measurement made using a nickel thin-film sensor according to DIN 43760

Technical data

Specifications		
	Measuring range	–30…130 °C
	Nominal value at 0 °C	1000 Ω
	Self-heating	0.1 K/mW
Time characteristic with heat-conducting paste (1 m/s)	Time constant	9 s
	Dead time	1 s
Resistance values as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}
Permissible ambient conditions		
	Max. temperature at instrument head	80 °C
Structural design		
	Weight	0.1 kg
	Screw terminals	for electric cable of up to 1.5 mm^2
	Cable inlet	PG 11
Standards and directives		
	Type of protection	IP 42 (EN 60529)

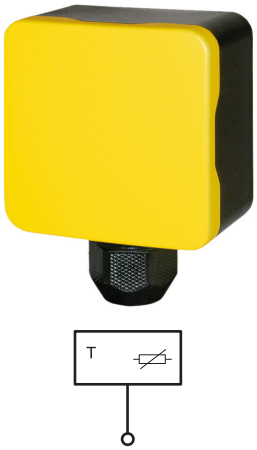
Overview of types

Type
EGT311F101

Accessories

Type	Description
0313346001	Module 0…10 V for Ni1000; 24 V~; IP 00 (IP 42 when fitted in housing), 4 temp. ranges: –50…0 °C; –50…50 °C; 0…50 °C; 0…100 °C

EGT 411: Clamp-on temperature sensor with platinum measuring element



Features

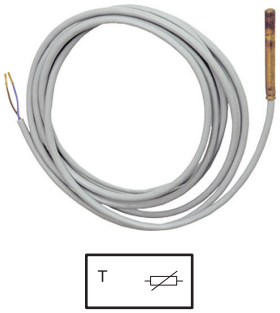
- Temperature measurement on pipes
- Passive measurement
- Retaining strap for pipes of ∅ 10...100 mm
- Heat-conducting paste is supplied with the sensor
- Measurement is effected by a spring-mounted platinum thin-film sensor as per EN 60751

Technical data

Specifications		
	Measuring range	–30...130 °C
	Nominal value at 0°C	1000 Ω
	Self-heating	0.1 K/mW
Resistance values as per EN 60751, Class B	Tolerance at 0 °C	±0.3 K
	Average temperature coefficient	0.00385 K^{-1}
Time characteristic with heat-conducting paste (1 m/s)	Time constant	9 s
	Dead time	1 s
Permissible ambient conditions		
	Max. temperature at instrument head	80 °C
Structural design		
	Weight	0.1 kg
	Housing	yellow and black
	Housing material	fire-retardant thermoplastic
	Screw terminals	for electric wire of up to 1.5 mm^2
	Cable screw fitting	PG 11
Standards and directives		
	Type of protection	IP 42 (EN 60529)

Overview of types

Type
EGT411F101



EGT 456: Cable-type temperature sensor with platinum measuring element

Features

- Passive data capture
- Particularly suitable for direct connection in installations with short distances between the controllers and the sensors
- Versatile sensor
- Used in pipes and containers using the optional protective tubes (inner diameter 7)
- Platinum thin-film sensor as per EN 60751

Technical data

Specifications		
	Measuring range	–40...180 °C
	Nominal value at 0 °C	1000 Ω
	Self-heating	0.11 K/mW
Time characteristic in water (0.4 m/s)	Time constant when clamped on pipe[1]	23 s
	Dead time when clamped on pipe[2]	approx. 7 s
	Time constant with protective tube (inner diameter 7)[3]	11 s
	Dead time with protective tube (inner diameter 7)[4]	approx. 3 s
Resistance values as per EN 60751, Class B	Tolerance at 0 °C	±0.3 K
	Average temperature coefficient	0.00385 K^{-1}
Structural design		
	Weight	0.12 kg
	Power cable	Ø 5 mm, standard version 1 m in length (fitted to the sensor)
	Cable cross-section	2 × 0.5 mm^2
Standards and directives		
	Type of protection	IP 55 (EN 60529)

Overview of types

Type
EGT456F101

Accessories

Type	Description
0311835000	Cord grip for cable-type sensors with flexible lead in the protective tube (inner diameter 7)
0312520000	Universal cord grip for cable-type sensors and thermostats with capillary tube
0313214001	Fixing kit for all applications (holder, heat-conducting paste, retaining strap)
0313220001	Heat-conducting paste, 20 g in injection

[1] *As a clamp-on sensor with holder and heat-conducting paste*

[2] *As a clamp-on sensor with holder and heat-conducting paste*

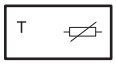
[3] *With heat-conducting paste*

[4] *With heat-conducting paste*

Other accessories

Type	Description	Price
0364345***	Protective tubes (inner diameter 7), of brass, G½ male	—
0364439***	Protective tubes (inner diameter 7), of brass, R½	—
0364346***	Protective tubes (inner diameter 15), G½ male, of brass, for a maximum of 3 sensors, Ø 6.5 mm	—
0364258***	Protective tubes (inner diameter 15), G½ male; of stainless steel; for a maximum of 3 sensors, Ø 6.5 mm	—
0313300***	Silicon cable: Custom length for EGT 456 available on demand	—

Protective tubes: See product data sheet on protective tubes



EGT 354, 356: Cable-type temperature sensor

Features

- Passive data capture
- Particularly suitable for direct connection in installations with short distances between the controllers and the sensors
- Versatile sensor
- Used in pipes and containers using the optional protective tubes (inner diameter 7)
- Measurement using a nickel thin-film sensor as per DIN 43760

Technical data

Specifications

	Nominal value at 0 °C	1000 Ω
Resistance values as per DIN 43760	Tolerance at 0 °C	±0.4 K
Time characteristic in water 0.4 m/s	Time constant when clamped on pipe[1]	23 s
	Dead time when clamped on pipe	approx. 7 s
	Time constant with protective tube (inner diameter 7)[2]	11 s
	Dead time with protective tube (inner diameter 7)	approx. 3 s
	Self-heating	0.11 K/mW
	Average temperature coefficient	0.00618 K^{-1}

Structural design

	Power cable	Ø 5 mm (fitted to the sensor)
	Cable cross-section	2 × 0.5 mm^2

Standards and directives

	Type of protection	IP 55 (EN 60529)

Overview of types

Type	Cable length	Measuring range	Materials	Weight
EGT354F101	1 m	–20...100 °C	PVC	0.12 kg
EGT354F103	3 m	–20...100 °C	PVC	0.16 kg
EGT354F110	10 m	–20...100 °C	PVC	0.3 kg
EGT354F120	20 m	–20...100 °C	PVC	0.5 kg
EGT356F101	1 m	–40...180 °C	Silicone	0.12 kg
EGT356F103	3 m	–40...180 °C	Silicone	0.16 kg
EGT356F110	10 m	–40...180 °C	Silicone	0.3 kg
EGT356F120	20 m	–40...180 °C	Silicone	0.5 kg

Accessories

Type	Description
0311835000	Cord grip for cable-type sensors with flexible lead in the protective tube (inner diameter 7)
0312520000	Universal cord grip for cable-type sensors and thermostats with capillary tube
0313214001	Fixing kit for all applications (holder, heat-conducting paste, retaining strap)
0313220001	Heat-conducting paste, 20 g in injection

[1] *As a clamp-on sensor with holder and heat-conducting paste*

[2] *With heat-conducting paste*

Other accessories

Type	Description	Price
0364345***	Protective tubes (inner diameter 7), G½ male, of brass	—
0364439***	Protective tubes (inner diameter 7), of brass R½, for 1 sensor cartridge	—
0364244***	Protective tubes (inner diameter 15), R ½, of brass	—
0364346***	Protective tubes (inner diameter 15), G½ male, of brass, for a maximum of 3 sensors, Ø 6.5 mm	—
0364258***	Protective tubes (inner diameter 15), G½ male, of stainless steel, for a maximum of 3 sensors, Ø 6.5 mm	—
0313275***	PVC cable: Custom length for EGT 354 available on demand	—
0313300***	Silicone cable: Custom length for EGT 356 available on demand	—

Protective tubes: see product data sheet on protective tubes

EGT 355: Cable-type temperature sensor with immersion stem

Features

- Universal and direct fitting without protective tube via immersion stem made from stainless steel
- Passive data capture
- Particularly suitable for direct connection in installations with short distances between the controllers and the sensors
- Sensor element sealed in immersion pipe (Ø 6.35 mm), made from stainless steel
- Measurement made using a nickel thin-film sensor according to DIN 43760

Technical data

Specifications

	Measuring range	–30...130 °C
	Nominal value at 0°C	1000 Ω
	Self-heating (in air)	0.14 K/mW
	Nominal pressure	PN 16
Resistance value as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}
Time characteristic	Time constant in still air	300 s
	Dead time in still air	5 s
	Time constant in moving air (3 m/s)	60 s
	Dead time in moving air (3 m/s)	2 s
	Time constant in still water	12 s
	Dead time in still water	0.5 s
	Time constant in moving water (0.4 m/s)	9 s
	Dead time in moving water (0.4 m/s)	0.4 s

Structural design

	Weight	0.1 kg
	Power cable	vulcanised silicone cable Ø 8 mm
	Cable length	1.5 m
	Active length	20 mm

Standards and directives

	Type of protection	IP 42 (EN 60529)

Overview of types

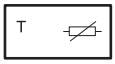
Type	Length of stem
EGT355F101	300 mm
EGT355F900	90 mm
EGT355F901	160 mm

Accessories

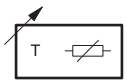
Type	Description
0312134000	Immersion screw fitting R ¼ (ISO 7/1) made of brass
0312135000	Immersion screw fitting R ¼ (ISO 7/1) made of stainless steel (DIN material no. 1.4401)

EGT 330...335: Room temperature sensor

EGT332



EGT330



Features

- Passive data capture
- Temperature measurement in dry rooms
- Variants with setpoint adjuster, presence button and status LED
- Parameterised using SAUTER EY3600 or a SAUTER flexotron® controller (EGT332)
- In-built resistor (EGT333) that adjusts the setpoint in conjunction with equitherm® controllers, with or without affecting the room temperature
- Nickel thin-film sensor as per DIN 43760

Technical data

Specifications

	Measuring range	–20...60 °C
	Nominal value at 0 °C	1000 Ω
Resistance values as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}
	Self-heating	0.17 K/mW
Time characteristic	Dead time in still air	50 s
	Time constant in still air	18 min

Structural design

	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Earth	76 × 76 mm
	Weight	0.1 kg
	Socket	can be slotted on; black
	Connection terminals	1.5 mm^2
	Cable inlet	at rear

Standards and directives

	Type of protection	IP 30 (EN 60529)

Overview of types

Type	Adjuster	Additional feature
EGT330F101	–	–
EGT332F101	2.5 kΩ	for flexotron® + DDC
EGT333F101	±4 K	for equitherm® + RDT7**
EGT335F101	2.5 kΩ	for DDC

EGT332F101: not for flexotron 100

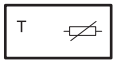
EGT333F101: 1000 Ω when adjuster knob is in the middle position

EGT335F101: with occupancy key and three LEDs

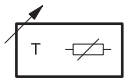
Accessories

Type	Description
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 × 76 mm

EGT336



EGT338



EGT 336, 338: Room temperature sensors

Features

- Room temperature measurement
- Room operating unit with a wide range of different functions, designs and colours
- Device insert with transparent front, fits into frame with aperture
- Frames can be ordered as accessories.
- Nickel thin-film sensor as per DIN 43760

Technical data

Specifications

	Measuring range	–20…60 °C
Resistance values as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Nominal value at 0 °C[1)]	1000 Ω
	Average temperature coefficient	0.00618 K^{-1}
	Self-heating	0.17 K/mW
Time characteristic	Dead time in still air	50 s
	Time constant in still air	12 min

Structural design

	Weight	0.1 kg
	Connection terminals	Pluggable for wire 0.12…0.5 mm^2 (Ø 0.4…0.8 mm)
	Earth	55 × 55 mm
	Cable inlet	at rear

Standards and directives

	Type of protection	IP 30 (EN 60529)

Overview of types

Type	Adjuster	Additional feature
EGT336F101	-	-
EGT338F101	1.3…8 kΩ	for flexotron + DDC
EGT338F601	±4 K	for equitherm + RDT 7**

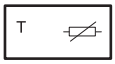
EGT338F101: Not for flexotron 100

Accessories

Type	Description
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

[1)] *EGT338F601: 1000 Ω when adjuster knob is in the middle position*

EGT 430: Room temperature sensor with platinum measuring element



Features

- Passive data capture
- Temperature measurement in dry rooms
- Platinum thin-film sensor as per EN 60751

Technical data

Specifications

Resistance values as per EN 60751, Class B	Measuring range	–20…60 °C
	Nominal value at 0°C	1000 Ω
	Tolerance at 0 °C	±0.3 K
Time characteristic	Time constant in still air	18 min
	Dead time in still air	50 s
	Average temperature coefficient	0.00385 K^{-1}
	Self-heating	0.17 K/mW

Structural design

	Screw terminals	for electric cable of up to 1.5 mm^2
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Weight	0.1 kg
	Cable inlet	at rear

Standards and directives

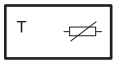
	Type of protection	IP 30 (EN 60529)

Overview of types

Type
EGT430F101

Accessories

Type	Description
0313347001	Cover plate, pure white, for 76 x 76 mm
0303124000	Recessed junction box



EGT 436: Room temperature sensor with platinum measuring element

Features

- Room temperature measurement
- Room operating unit in a wide range of designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- The frames should be ordered as accessories
- Platinum thin-film sensor as per DIN IEC 751

Technical data

Specifications

	Measuring range	–20...60 °C
	Nominal value at 0 °C	1000 Ω
Resistance values as per DIN IEC 751, Class B	Tolerance at 0 °C	±0.3 K
	Average temperature coefficient	0.00385 K^{-1}
Time characteristic	Time constant in still air	18 min
	Dead time in still air	50 s

Structural design

	Earth	60 x 60 x 25 mm
	Weight	0.1 kg
	Connection terminals	pluggable; for wire of 0.12...0.5 mm^2 (Ø 0.4...0.8 mm)
	Cable inlet	at rear

Standards and directives

	Type of protection	IP 30 (EN 60529)
CE conformity as per	EMC Directive 2004/108/EC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4

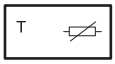
Overview of types

Type
EGT436F101

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0949241301	Cover, transparent, 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs

EGT 636: Room temperature sensor with NTC measuring element



Features

- Passive room temperature measurement
- NTC sensor (Negative Temperature Coefficient Thermistor)
- Room temperature sensor with a wide range of different functions, designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- For temperature measurement in dry rooms (e.g. in residential properties, offices and business premises)

Technical data

Specifications

	Nominal value at 25 °C	10 kΩ
	Measuring range	–20…60 °C
	Resistance values	R25 = 10 kΩ, $B_{25/85}$, 3977 K, ±0.75%
	Tolerance at 0 °C	±1%
	Self-heating	0.45 K/mW
Time characteristic	Time constant in still air	12 min
	Dead time in still air	50 s

Structural design

	Dimensions W x H x D	60 × 60 × 25 mm
	Weight	0.1 kg
	Housing material	fire-retardant thermoplastic
	Connection terminals	pluggable; for wire of 0.12…0.5 mm² (Ø 0.4…0.8 mm)
	Cable inlet	at rear

Standards and directives

	Type of protection	IP 30 (EN 60529)
CE conformity	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Description
EGT636F101	NTC room temperature sensor

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

EGT 446, 447: Stem-type temperature sensor with platinum measuring element

Features

- Passive measurement
- Used in pipes and containers using the optional protective tubes (internal dia. 7)
- Cable inlet with cord grip
- Platinum thin-film sensor as per DIN IEC 751

Technical data

Specifications

	Measuring range	–30...130 °C
	Nominal value at 0 °C	1000 Ω
	Self-heating (in air)	0.25 K/mW
Time characteristic without protective tube	Time constant in still air	330 s
	Dead time in still air	18 s
	Time constant in moving air (3 m/s)	60 s
	Dead time in moving air (3 m/s)	9 s
Time characteristic with protective tube[1)]	Time constant in still water	28 s
	Dead time in still water	7 s
	Time constant in moving water (0.4 m/s)	27 s
	Dead time in moving water (0.4 m/s)	6 s
Resistance values as per DIN IEC 751, Class B	Tolerance at 0 °C	±0.3 K
	Average temperature coefficient	0.00385 K^{-1}

Permissible ambient conditions

	Max. temperature at instrument head	80 °C

Structural design

	Housing	yellow and black
	Housing material	fire-retardant thermoplastic
	Screw terminals	for electric wire of up to 1.5 mm^2
	Cable screw fitting	PG 11
	Active length	15 mm
	Immersion stem	copper, Ø 6.5 mm (without protective tube)

Standards and directives

	Type of protection	IP 42 (EN 60529)

Overview of types

Type	Immersion stem	Weight
EGT446F101	120 mm	0.07 kg
EGT447F101	225 mm	0.08 kg

Accessories

Type	Description
0368840000	Holder for immersion stem on wall
0368839000	Holder for immersion stem in air duct
0313220001	Heat-conducting paste, 20 g in injection

1) *With heat-conducting paste*

Other accessories

Type	Description	Price
0364439***	Protective tubes (inner diameter 7), of brass R½, for 1 sensor cartridge	—
0226811***	Protective tubes (inner diameter 7), of stainless steel, G½ male	—

Protective tubes: See product data sheet on protective tubes

EGT 392...395: Stem-type temperature sensor for high temperatures

Features

- Temperature measurement for liquids and gases at high temperatures
- Passive data capture
- Suitable for fitting in air ducts without additional protective tube
- Measurement made using a nickel thin-film sensor according to DIN 43760

Technical data

Specifications		
	Measuring range	–40...180 °C
	Nominal value at 0°C	1000 Ω
	Self-heating (in air)	0.25 K/mW
Time characteristic without protective tube	Time constant in still air	530 s
	Dead time in still air	20 s
	Time constant in moving air (0.3 m/s)	63 s
	Dead time in moving air (0.3 m/s)	11 s
Time characteristic with protective tube[1)]	Time constant in still water	31 s
	Dead time in still water	8 s
	Time constant in moving water (0.4 m/s)	30 s
	Dead time in moving water (0.4 m/s)	7 s
Resistance value as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}
Permissible ambient conditions		
	Max. temperature at instrument head	80 °C
	Temperature of medium	–60...195 °C (approx. 15 min)
Structural design		
	Housing material	die-cast aluminium
	Connection terminals	for wire with cross-section 2 × 1.5 mm^2
	Cable screw fitting	PG 11
	Active length	20 mm
	Immersion stem	copper, Ø 9 mm (without protective tube)
Standards and directives		
	Type of protection	IP 54 (EN 60529)

Overview of types

Type	Immersion stem	Weight
EGT392F101	120 mm	0.2 kg
EGT393F101	225 mm	0.25 kg
EGT393F904	225 mm	0.25 kg
EGT395F101	450 mm	0.3 kg

EGT393F904: includes screw fitting for direct fitting without protective tube

1) *With heat-conducting paste*

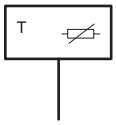
Accessories

Type	Description
0368839000	Holder for immersion stem in air duct
0368840000	Holder for immersion stem on wall
0313220001	Heat-conducting paste, 20 g in injection

Other accessories

Type	Description	Price
0364346***	Protective tubes (inner diameter 15), of brass	—
0364258***	Protective tubes (inner diameter 15), of stainless steel	—

Protective tubes: see product data sheet on protective tubes



EGT 346...348: Stem-type temperature sensors

Features

- Passive data capture
- Used in pipes and containers using the optional protective tubes (inner diameter 7)
- Cable inlet with cord grip
- Measurement made using a nickel thin-film sensor according to DIN 43760

Technical data

Specifications

	Measuring range	–30...130 °C
	Nominal value at 0 °C	1000 Ω
	Self-heating (in air)	0.25 K/mW
Time characteristic without protective tube	Time constant in still air	330 s
	Dead time in still air	18 s
	Time constant in moving air (3 m/s)	60 s
	Dead time in moving air (3 m/s)	9 s
Time characteristic with protective tube[1)]	Time constant in still water	28 s
	Dead time in still water	7 s
	Time constant in moving water (0.4 m/s)	27 s
	Dead time in moving water (0.4 m/s)	6 s
Resistance value as per DIN 43760	Tolerance at 0 °C	±0.4 K
	Average temperature coefficient	0.00618 K^{-1}

Permissible ambient conditions

	Max. temperature at instrument head	80 °C

Structural design

	Housing	yellow and black
	Housing material	fire-retardant thermoplastic
	Screw terminals	for electric cable of up to 1.5 mm^2
	Cable screw fitting	PG 11
	Active length	25 mm
	Immersion stem	copper, Ø 6.5 mm (without protective tube)

Standards and directives

	Type of protection	IP 42 (EN 60529)

Overview of types

Type	Immersion stem	Weight
EGT346F101	120 mm	0.07 kg
EGT347F101	225 mm	0.08 kg
EGT348F101	450 mm	0.1 kg

Accessories

Type	Description
0368840000	Holder for immersion stem on wall
0368839000	Holder for immersion stem in air duct
0313220001	Heat-conducting paste, 20 g in injection
0313282001	Clamping part Ø 15 mm / 7 mm for fitting sensor in protective tube, separate delivery

1) *With heat-conducting paste*

Type	Description
0313346001	Module 0...10 V for Ni1000; 24 V~; IP 00 (IP 42 when fitted in housing), 4 temp. ranges: –50...0 °C; –50...50 °C; 0...50 °C; 0...100 °C
0313346901	Module 0...10 V for Ni1000; R > 5 kΩ; 24 V=, ± 20%; IP 00 (IP 42 when fitted in housing), 4 temp. ranges: –50...0 °C; –50...50 °C; 0...50 °C; 0...100 °C

Other accessories

Type	Description	Price
0364345***	Protective tubes (inner diameter 7), of brass, G½ male	—
0364439***	Protective tubes (inner diameter 7), of brass, R½	—
0226811***	Protective tubes (inner diameter 7), of stainless steel, R½	—

Protective tubes: see product data sheet on protective tubes

EGT 130: Room-temperature transducer

Features

- Active measurement
- Suitable for fitting directly to walls
- Nickel thin-film sensor as per DIN 43760
- Possible to connect an external Ni1000 temperature sensor

Technical data

Electrical supply		
	Power supply	24 V~/=, ±20%
	Power consumption	1 VA
Specifications		
	Measuring range	0...50 °C
	Time constant	12 min
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	0...95% rh
Inputs and outputs		
	Output signal	0...10 V; load > 5 kΩ
Structural design		
	Cable inlet	at rear
	Screw terminals	for electric cable of up to 1.5 mm²
	Weight	0.1 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
Standards and directives		
	Type of protection	IP 30 (EN 60529)

Overview of types

Type
EGT130F001

Accessories

Type	Description
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 x 76 mm

EGT 361...366: Average-temperature sensor with Ni measuring element

Features

- Measures the average temperature in ventilation ducts
- Nickel sensor as per DIN 43760
- Active over the entire length
- Measuring element: Nickel wire, on EGT 361, the 4 sensors are distributed over the entire length
- Copper wire with plastic sheathing
- Connected via 2, 3 or 4 wires in IP 54 wiring box
- Included in delivery: sensor, holder, wiring box, screws, cable grommet and fitting instructions

Technical data

Electrical supply		
	Measuring current	approx. 1 mA
	Test voltage	1000 V=
Specifications		
	Tolerance at 0 °C	±0.4 K
	Measuring range	–30...70 °C
	Response time	$T_{0.5}$ approx. 30 s for v = 1 m/s (air)
Permissible ambient temperature		
	Permissible ambient temperature	–40...80 °C
Structural design		
	Power cable	Length 0.5 m, 2 × 0.75 mm²

Overview of types

Type	Nominal value at 0 °C	Length	Number of holders	Weight
EGT361F101	1000 Ω	1.5 m	3	0.25 kg
EGT363F101	1000 Ω	3 m	4	0.35 kg
EGT366F021	200 Ω	6 m	5	0.47 kg
EGT366F101	1000 Ω	6 m	5	0.52 kg

EGT 466: Average-temperature sensor with platinum measuring element

Features

- Measures the average temperature in a ventilation duct
- Pt characteristic
- Class of accuracy B (EN 60751)
- Active over the whole length
- Measuring element: 10 Pt thin-film sensors spread over the whole length
- Copper wire with plastic sheathing
- Connected via 2, 3 or 4 wires in IP 54 wiring box
- Included in delivery: sensor, holder, wiring box, screws, cable grommet and fitting instructions

Technical data

Electrical supply

Measuring current	approx. 1 mA
Test voltage	1000 V=

Specifications

Measuring range	–30...70 °C
Tolerance at 0 °C	±3 K
Response time	$T_{0.5}$ approx. 30 s for v = 1 m/s (air)

Permissible ambient conditions

Permissible ambient temperature	–40...80 °C

Structural design

Length	6 m
Power cable	0.5 m long, 2 × 0.75 mm²
Number of holders	5
Weight	0.41 kg

Overview of types

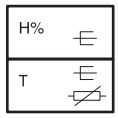
Type	Nominal value at 0 °C
EGT466F011	100 Ω
EGT466F101	1000 Ω

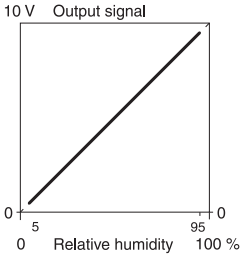
Humidity sensors

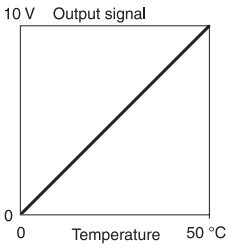
SAUTER's humidity sensors are used for the energy-efficient control and monitoring of ventilation systems. There are sensors available for measuring the relative or absolute humidity. They can be used in residential or business premises and can also be fitted in air ducts.

Overview of humidity sensors

Models				
Type codes	EGH 130	EGH 120	EGH 110...112	EGE
Further information	p. 70	p. 71	p. 72	p. 74
Areas of use				
Room	•	•	–	–
Air duct	–	–	•	•
Measurement				
Temperature	•	–	•	–
Relative humidity	•	•	•	–
Absolute humidity	–	–	–	•
Enthalpy	–	–	–	•







EGH 130: Room transducer for relative humidity and temperature

Features

- Measurement is effected by a fast capacitive sensor
- Active measurement
- Suitable for fitting directly to walls
- Converts the measured values into a continuous standard signal of 0...10 V

Technical data

Electrical supply		
	Power supply	24 V~/=, ±20%
	Power consumption	approx. 0.8 VA
Specifications		
	Resistance characteristic	½ DIN 43760 (Ni1000)
	Temperature measuring range	0...50 °C
	Output signal for temperature[1]	for 0...50 °C, 0...10 V, load > 5 kΩ
	Measuring range, humidity	5...95% rh
	Output signal, humidity	for 0...100% rF, 0...10 V, load > 5 kΩ
	Temperature influence	–0.15% rh/K
Time constant in moving air (0.2 m/s)	Time constant, humidity	approx. 18 s
	Time constant, temperature	approx. 12 min
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh
Structural design		
	Screw terminals	for electric cable of up to 1.5 mm²
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Weight	0.1 kg
	Cable inlet	at rear
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (IEC 60730)

Overview of types

Type
EGH130F001

Accessories

Type	Description
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 x 76 mm

[1] *The output can be changed to Ni1000 (by cutting two wire jumpers)*

EGH 120: Room transducer for relative humidity

Features

- Measurement is effected by a fast capacitive sensor
- Active measurement
- Suitable for fitting directly to walls

Technical data

Electrical supply

Power supply	24 V~/=, ±20%
Power consumption	approx. 0.8 VA

Specifications

Measuring range, humidity	10...95% rh
Output signal, humidity[1]	for 0...100% rF, 0(2)...10 V/0(4)...20 mA, load > 500 Ω
Temperature influence	±0.05% rh/K, compensated
Time constant in moving air (0.2 m/s)	approx. 18 s

Permissible ambient conditions

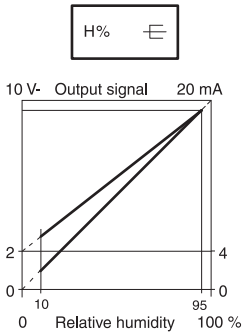
Permissible ambient temperature	0...40 °C
Permissible ambient humidity	5...95% rh

Structural design

Screw terminals	for electric cable of up to 1.5 mm²
Housing	pure white (RAL 9010)
Housing material	fire-retardant thermoplastic
Weight	0.1 kg
Cable inlet	at rear

Standards and directives

Type of protection	IP 30 (EN 60529)
Protection class	III (IEC 60730)



Overview of types

Type
EGH120F001

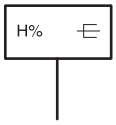
Accessories

Type	Description
0297441000	Cover plate, pure white, for various recessed junction boxes
0369573001	Surface junction box, pure white
0303124000	Recessed junction box

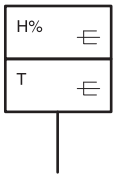
[1] *With a load of < 500 Ω, a change-over to 0...20 mA or 4...20 mA occurs automatically*

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

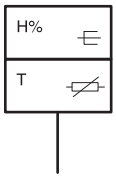
EGH110F002



EGH111F002



EGH112F002



Features

- Measurement is effected by a fast capacitive sensor
- Active measurement
- Unaffected by flow speeds and normal contamination
- The accuracy of the measurement of relative humidity can be set

Technical data

Electrical supply		
	Power consumption	approx. 1.5 VA
Specifications		
	Measuring accuracy	±3% rh (at 55% rh, 23 °C) ±10% rh can be set
	Resistance characteristic	DIN 43760 (Ni1000)
Time constant in moving air (3 m/s)	Humidity	approx. 24 s
	Temperature	approx. 2 min
Structural design		
	Weight	0.43 kg
	Housing material	thermoplastic
	Sensor tube	Ø 30 mm, glass-fibre-reinforced thermoplastic, black
	Immersion depth	40...156 mm
Standards and directives		
	Degree of protection (head of instrument)	IP 40 (EN 60529)
	Degree of protection with PG 11 screw fitting	IP 54
	Protection class	III (IEC 60730)

Overview of types

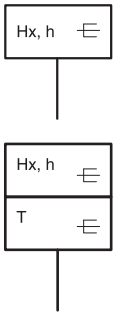
Type	EGH110F002	EGH111F001	EGH111F002	EGH112F001	EGH112F002
Measuring range, humidity	0...95% rh	10...95% rh	10...95% rh	10...95% rh	10...95% rh
Output signal, humidity	0(2)...10 V	0...10 V	0...10 V	0...10 V	0...10 V
Temperature measuring range	–	-20...70 °C	-20...70 °C	0...50 °C	0...50 °C
Output signal for temperature	–	Ni1000	Ni1000	0...10 V	0...10 V
Power supply	24 V~/=, ±20%	24 V~/=, ±20%	24 V~/=, ±20%	24 V~, ±20%, 50...60 Hz	24 V~, ±20%, 50...60 Hz
Output signal	0(2)...10 V, load > 500 Ω	0...10 V, load > 5 kΩ	0...10 V, load > 5 kΩ	0...10 V, load > 5 kΩ	0...10 V, load > 5 kΩ
Temperature influence	±0.05% rh/K	-0.15% rh/K	-0.15% rh/K	±0.05% rh/K	±0.05% rh/K
Permissible ambient temperature	-20...80 °C	-20...70 °C	-20...70 °C	-20...70 °C	-20...70 °C
Permissible ambient humidity	0...100% rh, no condensation	5...95% rh, no condensation	5...95% rh, no condensation	5...95% rh, no condensation	5...95% rh, no condensation
Housing cover	yellow	pure white (RAL 9010)	Yellow	pure white (RAL 9010)	yellow

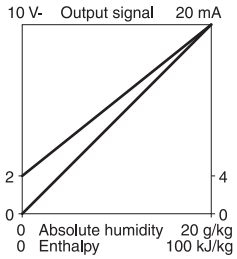
EGH 110: With a load of < 500 Ω, a change-over to 0...20 mA or 4...20 mA occurs automatically

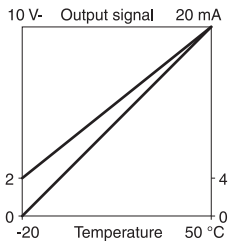
EGH 111, 112: Temperature is measured by a Ni1000 temperature sensor

Accessories

Type	Description
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm







EGE: Duct transducer for abolute humidity and enthalpy

Features

- Measurement is effected by a fast capacitive sensor
- Active measurement
- Unaffected by flow speeds and normal contamination
- Temperature measurement by Ni1000 temperature sensor (EGE112)
- Linear output signal 0(2)...10 V or 0(4)...20 mA
- Includes fixing bracket with seal for duct or wall mounting

Technical data

Electrical supply		
	Power supply	24 V~ ±20%, 50...60 Hz
	Power consumption	approx. 1.5 VA
Specifications		
	Measuring range, enthalpy	0...100 kJ/kg
	Measuring range, humidity	0...20 g/kg
	Max. air speed	10 m/s
Time characteristic	Time constant in moving air (3 m/s)	55 s
Permissible ambient conditions		
	Permissible ambient temperature	–20...70 °C
	Permissible ambient temperature at measuring tube	–20...80 °C
	Permissible ambient humidity	5...100% rh
	Effect of temperature x	±0.02 g/kg per K
	Effect of temperature h	±0.05 kJ/kg per K
Inputs and outputs		
	Output signal[1)]	0(2)...10 V, load > 500 Ω
Structural design		
	Screw terminals	for electric cable of up to 1.5 mm²
	Sensor tube	Ø 30 mm (black, glass-fibre-reinforced thermoplastic)
	Housing cover	thermoplastic, yellow
	Immersion depth	40...156 mm
Standards and directives		
	Protection class	III (IEC 60730)
	Degree of protection (head of instrument)	IP 40 (EN 60529)
	Degree of protection with PG 11 screw fitting	IP 54

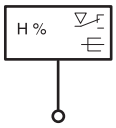
Overview of types

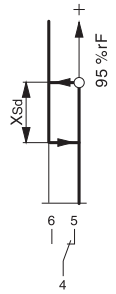
Type	Temperature measuring range	Weight
EGE110F002	–	0.46 kg
EGE112F002	–20...50 °C	0.44 kg

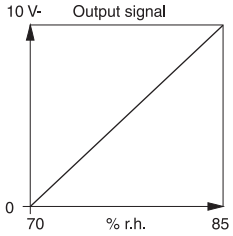
1) *With a load of < 500 Ω, a change-over to 0...20 mA or 4...20 mA occurs automatically*

Accessories

Type	Description
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm
0369585001	Housing cover, complete, pure white







EGH 102: Dew-point monitor and transducer

Features

- Measurement taken by a spring-mounted dew-point monitor
- Active measurement
- Version with external sensor
- Protects against dew formation on chilled beams
- Holding relay with change-over contacts
- Includes retaining strap for pipes of Ø 10...100 mm and heat-conducting paste

Technical data

Electrical supply		
	Power supply	24 V~/=, ±20%
	Power consumption	max. 1 VA
Specifications		
	Measuring range	70...85% rh
	Change-over contacts[1)]	1 A, 24 V~/=
	Response time in still air	80 to 99% rh, 99 to 80% rh, max. 3 min
	Exposure to dew	max. 30 min
	Switching difference	fixed, approx. 5% rh
	Switching point	95 ±4% rh
Permissible ambient conditions		
	Permissible ambient temperature	5...60 °C
Inputs and outputs		
	Output signal	approx. 70...85% rh, 0...10 V, load > 10 kΩ
Structural design		
	Screw terminals	for electric cable of up to 1.5 mm²
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Weight	0.1 kg
	Cable inlet	for Pg 11
Standards and directives		
	Type of protection	IP 40 (EN 60529)

Overview of types

Type	Clamp-on sensor
EGH102F001	on housing
EGH102F101	on cable

[1)] *When controlling relays, contactors etc. with cos φ < 0,3, it is recommended to use an RC circuit in parallel to the coil. This reduces contact pitting and prevents high-frequency interference*

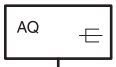
IAQ sensors

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 accurately, so that the ventilation system can be controlled in accordance with demand. In so doing, not only the indoor air quality is improved, but also the energy consumption is reduced by improving the operational efficiency of the ventilation system.

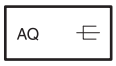
Overview of IAQ sensors

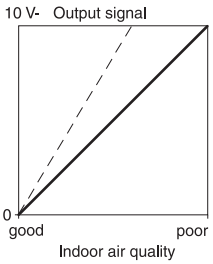
Models				
Type codes	EGQ 110	EGQ 120	EGQ 212	EGQ 222
Further information	p. 78	p. 78	p. 79	p. 79
Fitting				
Room	•	•	–	•
Duct	•	–	•	–
Main sensor				
CO_2	–	–	•	•
VOC	•	•	–	–
Temperature	–	–	•	•

EGQ 110



EGQ 120





EGQ 110, 120: VOC sensors for indoor air quality

Features

- Active VOC semi-conductor sensor for measuring the mixed-gas concentration
- Versions for room and duct mounting
- Adjustment of the measuring range of the output signal (sensitivity) via a trim potentiometer
- Measurement is made using a semi-conductor mixed-gas sensor as per VDMA 24772
- EGQ 120: suitable for fitting directly to walls
- EGQ 110: sensor tube Ø 30 mm of black, glass-fibre-reinforced thermoplastic
- EGQ 110: immersion depth 52...156 mm; includes fixing bracket
- EGQ 120: housing made of pure-white, fire-retardant thermoplastic (RAL 9010)

Technical data

Electrical supply		
	Power supply [1]	24 V~/=, ±20%
	Power consumption	approx. 2.5 VA
Specifications		
	Max. air speed	15 m/s
	Permissible load	> 5 kΩ
Permissible ambient conditions		
	Permissible ambient humidity	5...95% rh
Inputs and outputs		
	Output signal	0...10 V
Structural design		
	Screw terminals	for electric cable of up to 2.5 mm²
Standards and directives		
	Protection class	III (IEC 60730)

Overview of types

Type	Measurement location	Time constant in moving air (0.5 m/s)	Permissible ambient temperature	Type of protection	Weight
EGQ110F001	Duct	100 s	–20...70 °C	Instrument head, IP 40 (EN 60529); IP 54 with PG 11 screw fitting	0.28 kg
EGQ120F001	Room	60 s	0...40 °C	IP 30	0.1 kg

Accessories

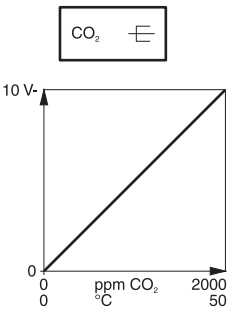
Type	Description
0303124000	Recessed junction box
0313187001	Complete filter, for exchanging
0313347001	Cover plate, pure white, for 76 x 76 mm
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm

[1] *The equipment should be permanently connected to the power supply and should not be used for safety applications*

EGQ 212, 222: NDIR CO_2 and temperature sensor

EGQ 212

EGQ 222



Features

- Active device for data acquisition
- Versions for room air and ducting
- With temperature compensation and 12-point calibration
- EGQ 222: NDIR CO_2 sensor with 2-beam technology, suitable for fitting directly to walls
- EGQ 212: NDIR CO_2 sensor with 2-beam technology, includes fixing bracket with seal for duct fitting
- The sensors meet the requirements of the DIN EN 13779, DIN EN 15751, VDI 6038 and 6040 directives
- EGQ 212: Sensor tube Ø 30mm of black, glass-fibre-reinforced thermoplastic
- EGQ 212: Immersion depth 130...166 mm

Technical data

Electrical supply

Power supply	24 V ~/=, ±20%
Power consumption	< 3 W
Operability	after 2 min

Specifications

Measuring range CO_2	0...2000 ppm
Temperature measuring range	0...50 °C
Measuring accuracy CO_2 [1]	±50 ppm
Measuring accuracy, temperature	±0.3 °C
Measuring cycle	< 1.4 s

Permissible ambient conditions

Operating temperature	0...50°C
Humidity	0...95% rh, no condensation

Structural design

Weight	0.3 kg
Housing	pure white (RAL 9010)
Housing material	fire-retardant thermoplastic
Earth	76 x 76 mm
Screw terminals	for electric cables of up to 1.5 mm²

Overview of types

Type	Type of protection
EGQ212F002	(Instrument head) IP 54 (EN 60529)
EGQ222F001	IP 30

Accessories

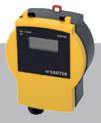
Type	Description
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 x 76 mm
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm

[1] *At variable temperature 0...50 °C: tolerance equates to ±5% of the indicated value and min. ±50 ppm (test medium: reference gas 1000 ppm ±2%). At high-frequency radiated interference, a reduction of the measuring accuracy may occur*

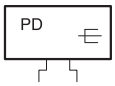
Flow and pressure sensors

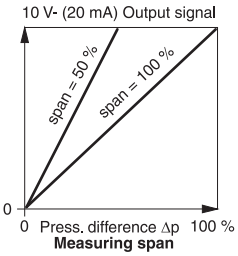
SAUTER's flow and pressure sensors enables the accurate measurement of air pressures and flow speeds in rooms and ventilation ducts. This includes: the measurement of duct pressures for accurate control and monitoring of ventilation systems; the measurement of room pressures in laboratories and clean rooms; and the monitoring of flows in fume cupboards.

Overview of flow and pressure sensors

Models				
Type codes	SDU 101	EGP 100	DSU	XAFP 100
Further information	p. 81	p. 82	p. 84	p. 86
Application				
Duct	•	•	–	•
Laboratories & clean rooms	•	•	–	•
Fume cupboards	–	•	–	•
Pressure monitoring in liquids, gases and vapours	–	–	•	–

SDU 101: Transducer for fine differential pressure





Features

- Static diaphragm pressure transducer
- Capacitive data acquisition
- Variable measuring ranges for optimal adaptation of measuring range for application
- Automatic current/voltage change-over

Technical data

Electrical supply		
	Power supply	24 V~, +15%/–20%, 50…60 Hz
	Power consumption	2 VA
Specifications		
	Permissible positive pressure	±5 kPa
Setting range	Measuring span	50…100% Δp
Permissible ambient conditions		
	Permissible operating pressure p_{stat}	±3 kPa
	Permissible ambient temperature	0…40 °C
	Permissible ambient humidity	< 90% rh
Inputs and outputs		
Output signal	Actual-value signal[1)]	0(2)…10 V, load > 500 Ω
	Linearity error	2% of 10 V
Structural design		
	Weight	0.8 kg
Standards and directives		
	Type of protection	IP 44 (EN 60529)

Overview of types

i *Measuring range: factory setting can be reduced to half using the 'span' adjuster*

Type	Measuring range Pa	Measuring range mbar
SDU101F001	0…100 Pa	0…1 mbar
SDU101F002	0…200 Pa	0…2 mbar
SDU101F003	0…400 Pa	0…4 mbar
SDU101F004	0…10000 Pa	0…10 mbar

Accessories

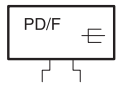
Type	Description
0010240300	Connection set, 6 mm, complete

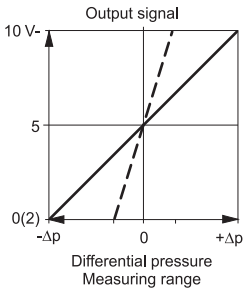
[1)] *With a load of < 500 Ω, a change-over to 0…20 mA or 4…20 mA occurs automatically; factory setting: 0…10 V, output protected against short circuit and excess voltage to 24 V~*

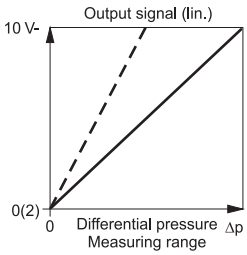
EGP 100: Differential pressure transducer

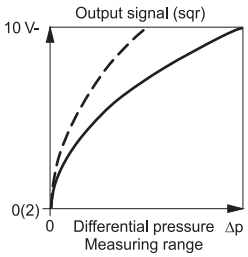
Features

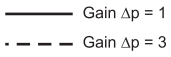
- Exact recording of excess pressures, vacuums and differential pressures of gases
- Can be ideally combined with XAFP100 pitot tube for precise measurement of volume flow
- Static dual-membrane-pressure sensor on capacitive basis
- Freedom to choose any fitting position
- Can be used for dusty air or air polluted with chemicals (not ATEX approved)
- Calibration certificate ex works
- Optimal adaptation of measuring range for application
- Variable zero point and filter time constant to suppress pressure surges in the system
- Display showing actual value and signal progression (depending on type)
- Status LED for immediate recognition of operating status (depending on type)
- Measuring range can be reduced to one third (depending on type)
- Fitted to either wall or top-hat rail (EN 60715)











Technical data

Electrical supply

Power supply	24 V~/=, ±20%
Power consumption	24 V~, 1 VA, 24 V=, 0.4 W

Specifications

Permissible positive pressure	±10 kPa
Influence of position[1]	±1% full span (FS) @ 150 Pa, ±0.75 Pa, ±75% FS @ 300 Pa, ±150 Pa
Linearity error	1% FS printable
Zero point stability	< 0.3% FS
Reproducibility	0.2% FS
Pneumatic connection[2]	6.2 mm
Parts in contact with media	PC/ABS blend, MQ, CuSn6, FR4

Permissible ambient conditions

Temperature of medium	0...70 °C
Permissible operating pressure p_{stat}[3]	±3 kPa
Permissible ambient temperature	0...60 °C
Permissible ambient humidity	5...95% rh, no condensation

Inputs and outputs

Output signal[4]	F*01: 0...10 V, load > 10 kΩ F*11: 0...10 V, load > 5 kΩ F*02/F*12: 0(2)...10 V, load < 500 Ω
Filter time constant	F*01: 0.05...2 s F*02, F*11, F*12: 0.15...5.2 s

Structural design

Screw terminals	for electric wire of up to 1.5 mm²

[1] *The sensor is calibrated at the factory to vertical fitting. The influence of position must be taken into account if fitting outside the vertical is planned*

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

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

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

Pressure connection	internal Ø 6 mm
Housing	PC/ABS
Cable screw fitting	M16

Standards and directives

Type of protection	IP 65
Protection class	III (EN 60730-1)

Overview of types

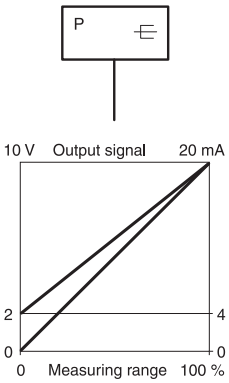
i *Output signal: analogue output limited to 10.6 V. Measured value can thus be transferred with an overflow of 6% of the measuring range*

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

Type	Measuring range	Display	Variable characteristic/LED	Weight
EGP100F101	±75 Pa, ±0.75 mbar	No	No	0.17 kg
EGP100F102	±75 Pa, ±0.75 mbar	No	Yes	0.18 kg
EGP100F111	±75 Pa, ±0.75 mbar	Yes	No	0.18 kg
EGP100F112	±75 Pa, ±0.75 mbar	Yes	Yes	0.19 kg
EGP100F201	±150, 1.5 mbar	No	No	0.17 kg
EGP100F202	±150, 1.5 mbar	No	Yes	0.18 kg
EGP100F211	±150, 1.5 mbar	Yes	No	0.19 kg
EGP100F212	±150, 1.5 mbar	Yes	Yes	0.19 kg
EGP100F301	0...150 Pa, 0...1.5 mbar	No	No	0.17 kg
EGP100F302	0...150 Pa, 0...1.5 mbar	No	Yes	0.18 kg
EGP100F311	0...150 Pa, 0...1.5 mbar	Yes	No	0.18 kg
EGP100F312	0...150 Pa, 0...1.5 mbar	Yes	Yes	0.19 kg
EGP100F401	0...300 Pa, 0...3.0 mbar	No	No	0.17 kg
EGP100F402	0...300 Pa, 0...3.0 mbar	No	Yes	0.18 kg
EGP100F411	0...300 Pa, 0...3.0 mbar	Yes	No	0.18 kg
EGP100F412	0...300 Pa, 0...3.0 mbar	Yes	Yes	0.19 kg

Accessories

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



DSU: Pressure transducer

Features

- Measuring principle is not subject to wear and tear due to inductive (i.e. non-contact) signal conversion
- Standard signal 0(2)...10 V or 0(4)...20 mA[1)]
- Pressure sensor of brass for non-aggressive media
- Pressure sensor of stainless steel for aggressive media
- Extensive range of accessories

Technical data

Electrical supply		
	Power supply	24 V~/=, ±20%, 50...60 Hz
	Power consumption	approx. 1 VA
Specifications		
	Measuring range	0...25 bar
	Hysteresis	approx. 1%
	Temperature coefficient	~0.03%/K
Permissible ambient conditions		
	Permissible ambient temperature	–20...70°C
Inputs and outputs		
	Output signal[2)]	0...10 V; load > 500 Ω
	Output signal can be switched to	2...10 V; load > 500 Ω
	Linearity	approx. 1%
Structural design		
	Weight	0.6 kg
	Housing	light metal with transparent cover
	Housing material	impact-proof thermoplastic
	Housing-mounted plug	with female cable connector for cable of 6...10 mm Ø (standard plug)
	Pressure connection	G½" male
Standards and directives		
	Type of protection	IP 65 (EN 60529)
	Protection class	III (EN 61140)

Overview of types

Type	Measuring range	Max. sensor values bar	Max. sensor values °C	Permissible vacuum loading
DSU101F001	0...1.0 bar	1.5 bar	70 °C	-0.7 bar
DSU103F001	0...2.5 bar	4 bar	70 °C	-0.7 bar
DSU106F001	0...6.0 bar	10 bar	70 °C	-0.7 bar
DSU110F001	0...10 bar	16 bar	70 °C	-0.1 bar
DSU116F001	0...16 bar	25 bar	70 °C	-0.1 bar
DSU125F001	0...25 bar	40 bar	70 °C	-0.1 bar
DSU206F001	0...6.0 bar	10 bar	110 °C	-0.7 bar
DSU210F001	0...10 bar	16 bar	110 °C	-0.1 bar
DSU216F001	0...16 bar	25 bar	110 °C	-0.1 bar
DSU225F001	0...25 bar	40 bar	110 °C	-0.1 bar

*DSU1**: Pressure sensor of brass for non-aggressive media*

1) *Load-dependent change-over 500 Ω*

2) *With a load of < 500 Ω, automatic change-over to 0...20 mA or 4...20 mA. Factory setting 0...10 V; output is protected against excess voltage and short circuits up to 24 V~*

*DSU2**: Pressure sensor of stainless steel for aggressive media*

Accessories

Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0192700000	1 m capillary tube for absorbing pressure surges, copper
0114467000	1 m capillary tube for absorbing pressure surges, steel
0192222000	Cap nut with solder connector
0311572000	Screw fitting for copper tubes of Ø 6 mm, brass
0259239000	Reduction piece G½" to 7/16" 20-UNF-2A for copper tubes of Ø 6 mm, brass
0259983000	Fixing bracket for rail: C-rail EN 50022-C20, C30
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0259984000	Bracket for 3-point fixing
0292018001	Damping screw for absorbing pressure surges in low viscosity media

XAFP 100: Flow sensor for ventilation ducts

Features

- Optimised flow profile for accurate measurement of operating pressure signals
- Can be used in atmospheres containing aggressive substances
- Length (396 mm) shortened on site, if necessary.

Technical data

Specifications		
	Measurement tolerance	< 3%
	Area of use (mm)	DN 80...DN 400
Permissible ambient conditions		
	Operating temperature	0...50 °C
	Permissible ambient humidity	< 85% rh, no condensation
Function		
	Operation	Flow sensor
Structural design		
	Earth	65 × 40 × 396 mm (W × H × L)
	Bore	Ø 30...32 mm
Materials	Flow sensor	PA 6
	Seal	PE, physiologically safe
	Connecting tube	PU
Standards and directives		
Flow sensor	Electrical	UL 7468
	Inflammability	UL 94, IEC 60695-2-12, IEC 60695-2-13

Overview of types

Type
XAFP100F001

SGU 100: Sash sensor

Features

- Infinitely variable measurement of the position of the vertical sliding front door on laboratory fume cupboards
- Wear-free and exact sash position detection
- Fast and vibration-free volume flow control
- Easy fitting, preferably on the counterweight of the front sash
- Teach-in function for adjusting the travel of the sliding front door
- Easy to program using the SAUTER CASE Sensor software
- Integrated excess travel alarm
- Power cable 2.5 m long, 7 × 0.32 mm^2, fixed to housing
- Fitted as standard with halogen-free cable
- Remote access and remote maintenance: Commissioning and service via bus or external push-button
- 3-colour LED status indicator
- Acoustic status and alarm elements (deactivatable)

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=	±20%
	Power consumption 24 V~[1]	typically: 2 VA, 0.75 W, inactive buzzer, max.: 4 VA, 1.5 W, active buzzer
	Power consumption 24 V=[2]	typically: 0.6 W, inactive buzzer, max.: 1.1 W, active buzzer
Specifications		
	Linearity error	max. 1.5% based on working range, e.g.: 2…10 V = 8 V
	Hardware response time[3]	< 100 ms
	Filter time constant	0…5, 22 s, variable using SAUTER CASE sensor
Permissible ambient conditions		
	Operating temperature	0…55 °C
	Storage and transport temperature	–20…70 °C
	Humidity	85% rh, no condensation
Inputs and 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 output, 100 mV at I_{sink} 2 mA, V_{in} max.: 24 V=, 20% at I_{sink} = 0 mA
	Voltage output[4]	0/2…10 V, 1 mA max., V_{out} max.: 11.5 V, parametrisable, default 2…10 V
	Typical overall error	2.5% (unlinearity, hysteresis, offset, amplified; based on working range)
	Temperature influence	< 0.04 %/K

[1] *Default is buzzer active*

[2] *Inactive/active buzzer: Default is buzzer active*

[3] *The set filter time constant must be added*

[4] *Protected against short circuits and excess voltage to 24~*

Structural design

Weight	0.68 kg

Standards and directives

Type of protection	IP 10 (EN 60529)
Protection class	III (EN 60730)

Overview of types

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

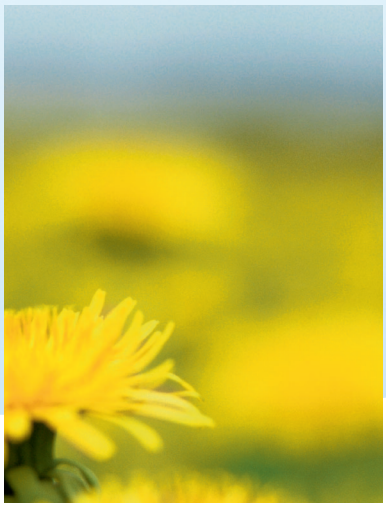
Accessories

Type	Description
0520450010	USB connection set for PC, incl. CASE Tools software

Single-room, heating and laboratory controllers

For all building situations: either stand-alone or networked.

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



Single-room, heating and laboratory controllers

equiflex® single-room control and VAV

equitherm® heating control

flexotron® controller for ventilation and air-conditioning

Room-temperature controllers

SAUTER's room controllers combine easy operability with a modern design. The wide range of models enables the controllers to be used in various applications in hotel, business or residential premises. They permit individual temperature control (for single rooms, whole apartments and zones) in 2- and 4-pipe systems. These versatile electronic room controllers from SAUTER are efficient, economical and easy to operate.

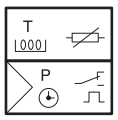
Overview of room controllers

Models						
Type codes	NRT 101	NRT 210, 220	NRT 105	NRT 107	NRT 300	NRT 114
Further information	p. 93	p. 95	p. 97	p. 99	p. 101	p. 103
Application						
Fan coil	–	–	•	–	–	–
Flow-temperature control	–	–	•	–	–	•
Outputs						
Continuous	–	–	• F061	–	• F061	–
Quasi-continuous, 2-point	•	• 2-point	•	•	• F041	–
3-point	–	–	–	•	• F041	•
Control						
2-point	•	•	–	–	–	–
PI	–	–	–	•	•	•
Cascade	–	–	–	•	–	•
Operating elements						
Display	•	–	•	•	–	•
Function						
Time programme	•	–	–	•	–	•
2-pipe systems	•	• NRT 210	•	•	•	–
4-pipe systems	–	• NRT 220	•	•	•	–

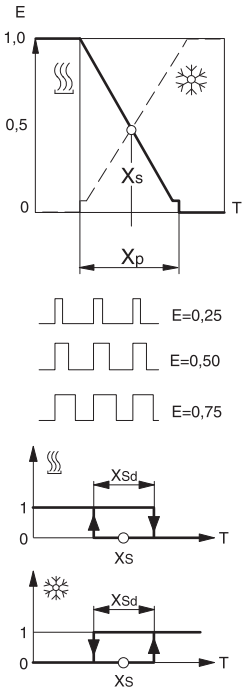
NRT 101: Electronic room-temperature controller with time programme, equiflex®

Features

- Measurement of room temperature by either integrated or external temperature sensor
- Large LCD and simple operation using keys make it easy to program the times and the temperatures
- Weekly and calendar switching programme with three temperature levels
- Automatic summertime/wintertime change-over
- Model with pilot timer output
- Hours-run counter
- Electronics unit in insertable housing



Technical data



Electrical supply		
	Power supply	2 × 1.5 V/110…230 V~
	Power consumption	< 1 VA
Specifications		
	Operating modes	Reduced/normal/comfort
	Direction of action	Heating/cooling (settable on service level)
	Setting range	8…38 °C
	Control characteristic	P, 2-point, pulse-pause
	On/off controller	Switching difference X_{sd} = 0.4…8 K
	Duty factor	Indicated in ten levels
	Frost-protection temperature	8 °C (when heating off)
	Thermal overload temperature	38 °C (when cooling off)
P controller	Proportional action	Switching cycle 4…30 min
	P-band	1…20 K
	Min. pulse	30 s
Temperature sensor, internal	Time constant	22 min
	Dead time	2 min
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Permissible ambient humidity	5…80% rh, no condensation
Function		
Time-switch	Accuracy	±1 s/d at 20 °C
	Back-up power supply	> 6 h (super cap, 20 °C, after 10 h of charging)
	Back-up power supply when battery changed	> 5 min
Weekly switching programme	Number of switching commands	Max. 42
	Min. switching interval	10 min
Calendar switching programme	Number of switching commands	Max. 6
	Min. switching interval	1 d
Structural design		
	Housing material	fire-retardant thermoplastic
	Housing	pure white (RAL 9010)
	Fitting	Wall fitting/recessed junction box
	Cable feed	at rear
	Screw terminals	for electric cable of up to 2.5 mm²
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)

CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Power supply	Load (heating/cooling)	Load on pilot timer	Weight
NRT101F002	2 batteries: LR6 1.5 V	5 (2) A, 24...250 V~	–	0.25 kg
NRT101F012	110...230 V~, ±15%, 50...60 Hz	5 (2) A, 24...250 V~	–	0.27 kg
NRT101F111	100...230 V~, ±15%, 50...60 Hz	5 (2) A not potential-free	5 (2) A, 24...250 V~; with extra-low voltage 0.2 A, < 60 V	0.28 kg

NRT101F002: Two alcaline manganese batteries, type LR6, AA, AM3 or Mignon (not included)

Accessories

Type	Description
0303124000	Recessed junction box

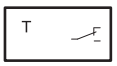
Other accessories

Type	Description	Price
AXT***	Thermal valve actuator (see product data sheet)	—
EGT***	External temperature sensor Ni1000 (for F012 and F111) (see product data sheet)	—

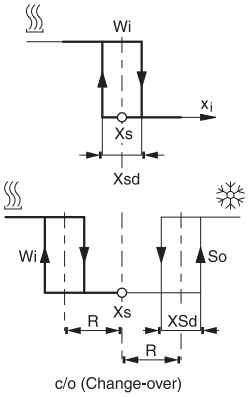
NRT 210, 220: Electronic room-temperature controller, equiflex®

Features

- Direct detection of room temperature via integrated temperature sensor
- Temperature setpoint changed with a rotary knob
- NRT 210 for 2-pipe systems
- NRT 220 for 4-pipe systems
- Inputs for c/o signal and for change-over between presence and absence modes
- 2-point control with relay outputs
- Versions with 24 V~ or 230 V~ power supply
- Electronics unit in insertable housing

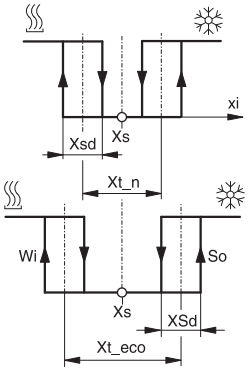


NRT 210



c/o (Change-over)

NRT 220



Technical data

Electrical supply		
	Power supply	24 V~/= / 230V~
	Tolerance in power supply	±15%, 50...60 Hz
	Power consumption	< 1 VA
Specifications		
	Setting range	10...30 °C
	Control characteristic	2-point
	Switching difference X_{sd}	0.5 K
Temperature sensor, internal	Time constant	22 min
	Dead time	2 min
Permissible ambient conditions		
	Storage and transport temperature	–25...65 °C
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
Structural design		
	Weight	0.1 kg
	Housing material	fire-retardant thermoplastic
	Housing	pure white (RAL 9010)
	Socket	electrical, with screw terminals for cables of up to 1.5 mm²
	Fitting	wall fitting/recessed junction box
	Cable feed	at rear
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class 24 V	III (IEC 60730)
	Protection class 230 V	II (IEC 60730)
	Conformity	EN 12098
CE conformity as per	EMC immunity	EN 61000-6-1, EN 61000-6-2
	EMC radiation	EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	NRT210F011	NRT210F021	NRT220F011	NRT220F021
Operation	H/C, 2-pipe	H/C, 2-pipe	H/C, 4-pipe	H/C, 4-pipe
Power supply	230 V~	24 V~/=	230 V~	24 V~/=
Number of inputs	2	2	1	1
Inputs	N/R, c/o	N/R, c/o	N/R	N/R
Load	5 (2) A; 1 relay	5 (2) A; 1 relay	2 (1.2) A; 2 relays	2 (1.2) A; 2 relays

Type	NRT210F011	NRT210F021	NRT220F011	NRT220F021
Dead zone X_t	–	–	normal 1.5 K, extended 7 K	normal 1.5 K, extended 7 K
Setpoint shift (R)	±3 K	±3 K	–	–

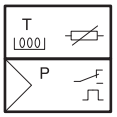
Accessories

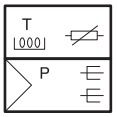
Type	Description
0303124000	Recessed junction box
0313347001	Cover plate, pure white, for 76 x 76 mm

Other accessories

Type	Description	Price
AXT***	Thermal valve actuators (see product data sheet)	—

NRT 105: Electronic fan-coil controller, equiflex®





Features

- P controller with pulse-pause or analogue (0...10 V) output
- Measurement of room temperature by either integrated or external temperature sensor
- Input for c/o signal
- Easy to use thanks to frontal keys and large LCD
- Three-speed fan control with settable on/off switching points for each level
- Frost protection/overheating protection
- Hours-run counter

Technical data

Electrical supply		
	Power supply	110...230 V~/24 V~
	Tolerance in power supply	±15%, 50...60 Hz
	Power consumption	< 1 VA
Specifications		
	Max. switching capacity of internal sensor (NTC)	2(1.6) A, 250 V~
	Max. switching capacity of external sensor (Ni1000)	5(3) A, 250 V~
	Setting range[1)]	8...37 °C
	P-band	1...20 K
	Operating modes	Normal, reduced (N/R)
	Dead zone (N/R)	0...10 K/0...12 K
Temperature sensor, internal	Time constant	22 min
	Dead time	2 min
Additional data to NRT105F011	Switching interval	4...30 min
	Duty factor	Indicated in ten levels
	Min. pulse	30 s
Permissible ambient conditions		
	Frost-protection temperature	8 °C (when heating off)
	Thermal overload temperature	38 °C (when cooling off)
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
Indicators, display, operation, running		
	Display range, actual temperature	–8...50 °C
Structural design		
	Weight	0.27 kg
	Housing material	fire-retardant thermoplastic
	Housing	pure white (RAL 9010)
	Screw terminals	for wire of up to 2.5 mm²
	Cable feed	at rear
	Fitting	wall fitting/recessed junction box
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

[1)] *Depends on the setting parameters P05, P08*

Overview of types

Type	Control characteristic	Power supply	Type of installation	Outputs for fan	Valve outputs
NRT105F011	P, quasi-continuous	110...230 V~	2-, 4-pipe	Relay, 3 stages	Relay
NRT105F061	P, continuous, 0...10 V	24 V~	4-pipe	Relay, 3 stages	0...10 V, load > 4 kΩ, max. 2.5 mA

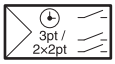
Accessories

Type	Description
0303124000	Recessed junction box

Other accessories

Type	Description	Price
AXT	Thermal valve actuator (see product data sheet)	—
AXM	Motorised valve actuator (see product data sheet)	—
EGT***	External temperature sensor Ni1000 (see product data sheet)	—
ZDR	See http://www.sauter-controls.com/en/zdr	—

NRT 107: Room- and flow-temperature controller, equiflex®



Features

- Optionally P, PI control or P-PI cascade control with 2-point, pulse-pause or 3-point outputs for 2- or 4-pipe systems
- Eight selectable basic control models for different application options
- Inputs for dew-point monitoring, for c/o signal, for adjusting the room temperature setpoint, for the inlet temperature
- Programmable input, e.g. for presence/absence detector, window contacts, fault indicator and for cooling lock
- Measurement of room temperature by either integrated or external temperature sensor
- Easy to use frontal keys and large LCD
- Integrated timer for weekly and calendar switching programmes with 3 temperature levels
- Automatic summertime/wintertime change-over
- Outputs for control units, pump and pilot timer
- Frost-protection, protection against overheating, anti-jamming function for pumps and valves
- Electronics unit in insertable housing

Technical data

Electrical supply		
	Power supply	24 V~/110...230 V~
	Tolerance in power supply	±15%, 50...60 Hz
	Power consumption	< 1.5 VA
Specifications		
	Setting range	8...38 °C
	Control characteristic	P, PI, P+PI
	Operating modes	Normal/Reduced/Off
Temperature sensor, internal	Time constant	22 min
PI controller	P-band X_p	2...100 K
	Integral action time	t_n = 15...6000 s
	Running time of valve	30...300 s
P controller	P-band X_p	1...20 K
	Period	4...30 min
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	–25...65 °C
Inputs and outputs		
	Number of inputs	1 digital, 2 analogue, 1 universal
	Digital input	Switching current approx. 1 mA
	Analogue inputs	2 Ni1000
	Universal inputs	digital or 0...10 V
	Number of outputs	1 relay, 2 triacs (see type list for data)
Function		
Time-switch	Accuracy	±1 s/d at 20 °C
	Back-up power supply	> 8 h (super cap, 20 °C) after 1 h of charging
Weekly switching programme	Number of switching commands	max. 42
	Min. switching interval	10 min
Calendar switching programme	Number of switching commands	max. 6
	Min. switching interval	1 d

Structural design

	Weight	0.28 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Screw terminals	for wire of up to 2.5 mm²
	Cable feed	at rear
	Fitting	wall/recessed junction box

Standards and directives

	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)
CE conformity as per	EMC Directive 2004/108/EC	61000-6-1, 61000-6-2, 61000-6-3, 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Power supply	Load on triac	Min. load on triac	Relay load
NRT107F031	110...230 V~	230 V~, 0.3 (0.5) A	10 mA	230 V~, 5 (2) A
NRT107F041	24 V~	24 V~, 0.3 (0.5) A	40 mA	50 V~/=, 5 (2) A

Triac 0.3 A: equates to operation of six AXT with NRT107F031 and three AXT with NRT107F041 with internal temperature sensor

Triac 0.5 A: equates to operation of eight AXT with NRT107F031 and five AXT with NRT107F041 with internal temperature sensor inactive

Accessories

Type	Description
0303124000	Recessed junction box
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP 30
7000986001	User manual, German
7000986002	User manual, French
7000986003	User manual, English

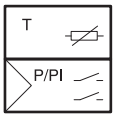
Other accessories

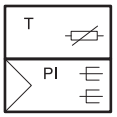
Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
AXT	Thermal valve actuator (pulse-pause) (see product data sheet)	—
EGT***	External temperature sensor Ni1000 (see product data sheet)	—

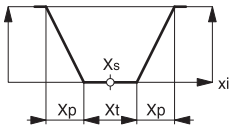
NRT 300: Electronic controller for air-conditioning, heating/cooling, equiflex®

Features

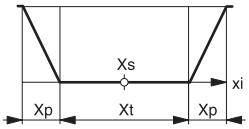
- Air-conditioning controller for 2- and 4-pipe systems (heating, cooling, heating/cooling)
- Measurement of room temperature by either integrated or external temperature sensor
- Saves energy costs by means of frontal presence/absence key and rotary knob
- Inputs for c/o signal, change-over between presence and absence, dew-point monitor and setpoint shift
- Choice of P or PI control with 2-point, pulse-pause, 3-point or 0...10 V outputs
- LED indicator
- SERVice level with settable control parameters
- Frost protection function
- Electrical connection in baseplate
- Electronics unit in insertable housing







Sequence, dead zone normal



Sequence, dead zone extended

Technical data

Electrical supply		
	Power supply	24~, ±20%, 50...60 Hz
	Power consumption	approx. 2.5 VA
Specifications		
	Setting range X_s	10...30 °C
	P-band	2...20 K
	Integral action time	2...20 min or off (as a PI controller)
	Period or running time of actuator	0.5...20 min
	Control parameters	non-volatile
Dead zone Xt	Normal	0,4...5 K
	Extended	X_t 8 K
Sensor time constant for air	in room (0.1 m/s)	8 min
	in duct (0.5 m/s)	3 min
	in duct (3 m/s)	1 min
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
Inputs and outputs		
	Command variable w	0...10 V, R_i = 90 kΩ
	Influence of w	1.6 K/V
Function		
	Operating mode:	Sequence (heating/cooling)
	Change-over functions[1)]	X_t, c/o, DP
Structural design		
	Weight	0.1 kg
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	wall fitting/recessed junction box
	Cable feed	at rear
	Screw terminals	for electric cable of up to 1 mm²
Standards and directives		
	Type of protection	IP 30 (EN 60529)

1) *X_t = dead zone on/off; c/o = summer/winter (change-over); DP = dew-point monitor*

	Protection class	III (IEC 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

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

NRT300F061: suitable as a master controller for up to ten NRT300 (slope S = P-band X_p; shift starting point FF = setpoint X_s; operating mode = sequence)

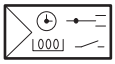
Accessories

Type	Description
EGH102F001	Dew-point monitor with sensor in housing
EGH102F101	Dew-point monitor with sensor on cable
0296724000	Sensor holder for wall mounting
0368139000	Rubber bung as sensor holder in ventilation duct
0303124000	Recessed junction box
0313214001	Fixing kit for all applications (holder, heat-conducting paste, retaining strap)
0313347001	Cover plate, pure white, for 76 × 76 mm
0313367001	Cable-type sensor (NTC) 1.5 m, for measurements in ventilation duct, max. 70 °C, R25 = 10 kΩ
0313367003	Cable-type sensor (NTC) 3.0 m, for measurements in ventilation duct, max. 70 °C, R25 = 10 kΩ
0313367010	Cable-type sensor (NTC) 10 m, for measurements in ventilation duct, max. 70 °C, R25 = 10 kΩ
0313367020	Cable-type sensor (NTC) 20 m, for measurements in ventilation duct, max. 70 °C, R25 = 10 kΩ
0313409001	Holder for sensor cartridge in ventilation duct
0313414001	Bracket for wall mounting
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP 30
0313501001	Housing with scale 10…30 °C

Other accessories

Type	Description	Price
AXT	Thermal valve actuator (see product data sheet)	—
AV***, AXM	Motorised valve actuator (see product data sheet)	—
EGH 102	Dew-point monitor (see product data sheet)	—
ZDR	See http://www.sauter-controls.com/en/zdr	—

NRT 114: Electronic heating controller, equiflex®



Features

- P/PI control with 3-point output signal
- Choice of three basis control models for various applications
- Measurement of room temperature by either integrated or external temperature sensor
- Inputs for outside, flow and room temperatures or for room operating unit
- Programmable input for e.g. presence/absence detector, window contacts and fault indication
- Outputs for control units, pump and pilot timer
- Easy to use thanks to frontal keys and large LCD
- Weekly and calendar switching programme with three temperature levels
- Automatic summertime/wintertime change-over
- Min./max. limitation for flow and return temperatures
- Frost protection, protection against overheating, anti-jamming function for pumps and valves
- Floor-drying function
- Electronics unit in insertable housing

Technical data

Electrical supply		
	Power supply	24 V~/110…230 V~
	Tolerance in power supply	±15%, 50/60 Hz
	Power consumption	< 1.5 VA
Specifications		
	Setting range for temperature level	8…40 °C
	Control characteristic	PI, P+PI
	Operating modes	Reduced/normal/comfort
	Factory setting	17 °C/20 °C/21 °C
	Frost-protection temperature	3 °C outside, 8 °C room
PI controller	P-band X_p	2…100 K
	Integral action time	t_n = 15…6000 s
P controller	P-band X_p	1…20 K
	Running time of valve	30…300 s
Temperature fixed-value control	Setting range	0…130 °C
	Factory setting	60 °C
Temperature sensor, internal	Time constant	22 min
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Permissible ambient humidity	5…95% rh, no condensation
	Storage and transport temperature	–25…65 °C
Inputs and outputs		
	Number of outputs	1 relay, 2 triacs
	Number of inputs	1 digital, 3 analogue
	Digital input	Switching current approx. 1 mA
	Analogue inputs[1)]	2 Ni1000, 1 Ni1000 or 0…10 V
Function		
Time-switch	Back-up power supply	> 6 h (super cap, 20°C, after 1 h of charging)
	Accuracy	±1 s/d at 20 °C
Weekly switching programme	Number of switching commands	Max. 42
	Min. switching interval	10 min

[1)] *0…10 V equates to a temperature range of –50 °C…50 °C*

Calendar switching programme	Number of switching commands	Max. 6
	Min. switching interval	1 d

Structural design

	Weight	0.28 kg
	Housing material	fire-retardant thermoplastic
	Housing	pure white (RAL 9010)
	Fitting	Wall fitting/recessed junction box
	Cable feed	at rear
	Screw terminals	for electric cable of up to 2.5 mm²

Standards and directives

	Type of protection	IP 30 (EN 60730-1)
	Protection class	II (EN 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Voltage	Load on triac	Min. load on triac	Relay load
NRT114F031	110...230 V~	230 V~, 0.3 (0.5) A	10 mA	230 V~, 5 (2) A
NRT114F041	24 V~	24 V~, 0.3 (0.5) A	40 mA	≤ 50 V=/~, 5 (2) A

Triac (0.5) A: if internal room-temperature sensor is not active

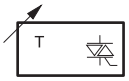
Accessories

Type	Description
0303124000	Recessed junction box
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP 30
7000986001	User manual, German
7000986002	User manual, French
7000986003	User manual, English

Other accessories

Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit with analogue user interface (see product data sheet)	—
EGT***	External temperature sensor Ni1000 (see product data sheet)	—

TRT 210...219: Electronic room thermostat



Features

- Electronic room thermostat for 24 V or 230 V
- Output switches silently
- Easy to wire up
- NTC sensor
- LED indicator when heat is demanded
- Modern design with ergonomic setpoint knob
- Electrical connection in baseplate via screw-type terminals
- With automatic frost-protection function 8 °C
- With remote sensor and 5 m of cable (depending on version)

Technical data

Electrical supply		
	Power supply	24 V~/230 V~, ±15%, 50 Hz
	Power consumption	< 1 VA
	Power consumption in stand-by mode	8 µA
	Switch rating	1.0 A
Specifications		
	Number of actuators	230 V, max. 6 pcs. parallel 24 V, max. 4 pcs. parallel
	Setting range	5...30 °C
	Switching difference	0.5 K
	Decrease	3 °C (TRT 217)
Permissible ambient conditions		
	Ambient temperature	0...60 °C
	Ambient humidity	5...80% rh, no condensation
Structural design		
	Weight	0.1 kg
	Housing	white (RAL 9016)
	Housing material	thermoplastic
	Dimensions W x H x D	77 x 96 x 23 mm
	Fitting	wall, recessed junction box
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

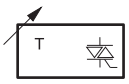
Overview of types

Type	Description	Voltage	Temperature measurement
TRT210F210	External setpoint adjuster	230 V~	NTC sensor (internal)
TRT210F212	External setpoint adjuster	24 V~	NTC sensor (internal)
TRT217F210	With input for reduction mode	230 V~	NTC sensor (internal)
TRT218F210	Internal setpoint adjuster	230 V~	NTC sensor (internal)
TRT218F212	Internal setpoint adjuster	24 V~	NTC sensor (internal)
TRT219F212	With remote sensor, 5 m	24 V~	NTC sensor (external)

Accessories

Type	Description	Price
AXT***	Thermal valve actuator (see product data sheet)	—

TRT 227, 228: Electronic room thermostat for heating and cooling



Features

- Output switches silently
- Easy to wire up
- LED indicator when heat is demanded
- With input for reduction mode
- With input for heating/cooling change-over
- Modern design with ergonomic setpoint knob
- Electrical connection in baseplate via screw-type terminals
- With automatic frost-protection function 8 °C

Technical data

Electrical supply		
	Power supply	24 V~/230 V~
	Tolerance in power supply	±10%, 50 Hz
	Power consumption	< 1 VA
	Switch rating	1.0 A
Specifications		
	Number of actuators	230 V, max. 6 pcs. parallel 24 V, max. 4 pcs. parallel
	Setting range	5...30 °C
	Switching difference	0.5 K
	Decrease	3 °C
	Temperature measurement	NTC sensor
Permissible ambient conditions		
	Permissible ambient temperature	0...60 °C
	Permissible ambient humidity	5...80% rh, no condensation
Structural design		
	Weight	0.1 kg
	Housing	white (RAL 9016)
	Housing material	thermoplastic
	Fitting	wall, recessed junction box
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class 24 V	III (EN 60730)
	Protection class 230 V	II (EN 60730)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

Overview of types

Type	Description	Voltage
TRT227F210	External setpoint adjuster	230 V~
TRT227F212	External setpoint adjuster	24 V~
TRT228F210	Internal setpoint adjuster	230 V~
TRT228F212	Internal setpoint adjuster	24 V~

Accessories

Type	Description	Price
AXT***	Thermal valve actuator (see product data sheet)	—

FXV

FXV 006: Electric distributor for control signals

Features

- For the easy wiring of up to 6 zones in a space heating system
- Forwarding switching pulses from single-room controllers
- Individual transmission of time commands or night set-back to appropriate actuators, max. 2 time channels
- Snap-on pump logic module for activating the circulation pump
- Integrated 4 A fuse, varistor as excess voltage protection for thermal actuators
- Easy and clear installation of all devices
- Connections for up to 12 thermal actuators

Technical data

Electrical supply		
	Power supply	24 V~/230 V~, ±15%, 50...60 Hz
	Distributor fuse	T 4.0 A
Specifications		
	Circuits/zones	6
	Time channels/reduction	2
Permissible ambient conditions		
	Permissible ambient temperature	–5...50 °C
	Permissible ambient humidity	< 95% rh
Inputs and outputs		
	Number of actuators	max. 12 pcs. (2 per zone)
	Pump connection	max. 2.2 A
Structural design		
	Weight	0.2 kg
	Housing material	fire-retardant plastic
	Housing	pure white (RAL 9010)
	Screw terminals	for wire of up to 1.5 mm²
Standards and directives		
	Type of protection	IP 43 (EN 60529)

Overview of types

Type
FXV006F001

Accessories

Type	Description
0374381001	Two clamping brackets, for fitting on top-hat rail EN 60715 35 × 7.5 mm or 35 × 15 mm
0374382001	Strain-relief caps, 9 pieces for cable Ø 6...13 mm and 6 pieces for Ø 3...7 mm
0374383001	Insertable pump logic module 24 V~; for demand-led pump operation
0374383002	Insertable pump logic module 230 V~; for demand-led pump operation

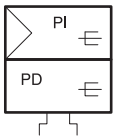
Laboratory controllers and clean-room equipment

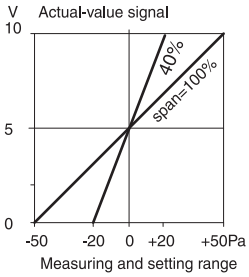
Complex control requirements in critical applications are no problem with SAUTER's laboratory and clean-room products. SAUTER's aims are not only to meet safety-related standards, but also to make the products easy to operate and to ensure that the systems use as little energy as possible.

Applications:
Control of positive and negative pressure in sealed rooms in laboratories or clean-room zones.
Monitoring and demand-led control of fume cupboards in accordance with EN 14175
Balancing of room air flows in laboratories.

Overview of laboratory controllers and clean-room equipment

Models			
Type codes	RLE 150	RLE 152	FCCP, FCIU
Further information	p. 110	p. 111	p. 113
Application			
Air volume control	–	•	•
Room pressure control	•	–	–
Fume-cupboard control	–	•	•





RLE 150: Room-pressure controller, equiflex®

Features

- Static measurement of differential pressure with capacitive data acquisition
- Accurate measurement of room pressure
- Measurement range is infinitely variable
- Available as a calibrated version for pharmaceutical applications
- Ideal combination with ASV115 air-volume controller

Technical data

Electrical supply		
	Power supply	24 V~, +15%/–20%, 50…60 Hz
	Power consumption	2 VA
Specifications		
	Permissible positive pressure	±5 kPa
	P-band	50…700%
	Measuring span	40…100% Δp
	Integral action time	0.5…8 min
	Control characteristic	PI variable
	Linearity error	2% of 10 V
	Measuring and setting ranges[1]	±20…±50 Pa
Permissible ambient conditions		
	Permissible ambient temperature	0…40 °C
	Permissible ambient humidity	< 90% rh
	Permissible operating pressure p_{stat}	±3 kPa
Inputs and outputs		
	Remote setpoint adjustment	0…10 V (0 Pa ≙ 5 V), R_i = 100 kΩ
Outputs[2]	Actual-value signal	0…10 V (0 Pa ≙ 5 V), load > 5 kΩ
	Command signal	0…10 V (0 Pa ≙ 5 V), load > 5 kΩ
Structural design		
	Weight	0.8 kg
Standards and directives		
	Type of protection	IP 44 (EN 60529)

Overview of types

Type
RLE150F100

Accessories

Type	Description
0297867001	Reference pressure container

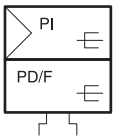
[1] *Set using 'span' knob*

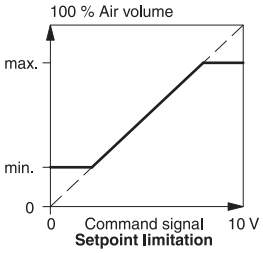
[2] *Protected against short circuiting and excess voltage up to 24 V~*

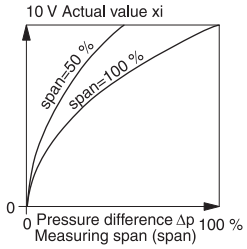
RLE 152: Air-volume controller, continuous, equiflex®

Features

- Static measurement of differential pressure with capacitive data acquisition
- Can be used in areas with dirty or contaminated return air
- Accurate measurement of differential pressure
- Measuring range is infinitely variable for matching to the needs of the application
- Available as a calibrated version for pharmaceutical applications
- Can be ideally combined with RLE150F100 or NRT300
- PI control algorithm
- Priority control via switching contacts
- Zero point can be calibrated







Technical data

Electrical supply		
	Power supply	24 V~, +15%/–20%, 50…60 Hz
	Power consumption	2 VA
Specifications		
	P-band	100…900%
	Measuring span	50…100% Δp (variable)
	Integral action time	2…20 s
	Setting range for setpoint	10…100% $\dot{v}$
	Control action	A and B
Permissible pressure	Area of use P_{stat}	0…3 kPa
	Low-pressure connections	5 kPa
Permissible ambient conditions		
	Permissible ambient temperature	0…40 °C
	Permissible ambient humidity	< 90% rh
Inputs and outputs		
Inputs	Command variable w_1	0…10 V, R_i = 100 kΩ ≙ 0…100% $\dot{v}$
	Room-pressure signal w_3	0…10 V; load ≥ 100 kΩ
	Ext. contacts: Damper 'Close'	24 V~, 5 mA
	Ext. contacts: Damper 'Open'[1]	24 V~, 5 mA
	Limitation $\dot{v}_{min}$	0…100% $\dot{v}$ (variable)
	Limitation $\dot{v}_{max}$	0…100% $\dot{v}$ (variable)
	Setpoint shift Δ $\dot{v}$[2]	–15…15%
	Input signal	0…10 V for remote setpoint adjustment
Outputs	Accuracy of root extraction	2% of 100% $\dot{v}$
	For actuator	0…10 V; load > 5 kΩ
	Actual value	0…10 V; load > 5 kΩ
Structural design		
	Weight	0.8 kg
Standards and directives		
	Type of protection	IP 44 (EN 60529)

[1] *Damper 'OPEN' until $\dot{v}_{max.}$ is attained*

[2] *Acts as minimum limitation for w_3*

Overview of types

i *Measuring range (span = 100%)*

Type	Measuring range
RLE152F001	1…100 Pa
RLE152F002	2…200 Pa
RLE152F003	4…400 Pa

FCCP, FCIU: Fume-cupboard indicator and monitor

Features

- Demand-led control of fume cupboards as per EN 14175-6 when used in combination with ASV115 air volume package actuator,
- Function indicator with optical and acoustic notification as per EN 14175-2
- Air volume control of fume cupboards as per EN 14175-6 when used in combination with ASV115
- The FCIU interface unit provides a wide range of functions, such as:
  - PI controller for regulating the air inlet speed via ASV115
  - Contacts input for indicating when the front sash is open > 500 mm
  - Light on fume cupboard can be switched on/off
  - External alarm extension via hardware contacts
  - Separate input for connecting a second SGU100 front sash sensor
  - Possible to connect one or two function indicators for hatch-type fume cupboards
  - Back-up battery for notification in the event of a power failure
  - Function for day/night change-over from external location
  - Combined operation of air-flow sensor (SVU100) and front sash sensor (SGU100) is possible
  - Acoustic alarm can be delayed (variable) or muted
  - Can be used as a simple fume cupboard monitor without an air-volume controller
- All the set parameters are stored and protected against power failure
- Can be put into service quickly and easily, without using a PC
- Parameter connection for easy access to the ASV115
- Mounting frame for surface or recessed mounting of the function indicator

Technical description (FCCP)

- Up to five keys for the following functions:
  - ON/OFF, lighting ON/OFF, V_{min}, V_{max}, mute
- LEDs for indicating:
  - operational, V_{min}, V_{max}, normal operation, > 500 mm, alarm
- Connectors for ASV115 parameterisation
- Front film of polyethylene (i.e. resistant to chemicals)
- Power cable (2.9 m) with D-sub (HD15) connector

Technical description (FCIU)

- Back-up battery 1600 mAh
- Outputs for:
  - Actual value, air volume in fume cupboard 0…10 V
  - 1x relay (change-over), alarm for external SELV circuits
  - 1x relay (NO), 230 V for lighting
  - 1x flow controller output 0…10 V
- Inputs for:
  - 1x external air-volume setpoint, 0…10 V
  - 1x external air-volume actual value, 0…10 V
  - 2x contacts input for front-sash opening height > 500 mm
  - 1x contacts input
  - 1x contacts input for day/night change-over
  - 1x contacts input for switching off the fume cupboard from external location
  - 1x contacts input for motion detector (reduced mode)
- External terminals for EIA485 wiring

Technical data

FCCP	
Electrical supply	
Power supply	24 V~, ±20%, via FCIU 18…38 V=
Power consumption	3 VA
Acoustic alarm	
Sound pressure level	80 dB (A)
Frequency	4 kHz
Alarm duration	60 s
Time delay	5 s
Optical alarm	
Brightness	EN 842, punctiform
Beamwidth	> 120°
Permissible ambient conditions	
Operating temperature	0…50 °C
Humidity	< 85% rh, no condensation
Fitted	
Dimensions W x H x D	160 x 21.8 x 16 mm
Standards and directives	
Protection class	III
Type of protection (when installed)	IP 30 with EIA-485 IP 40 without EIA-485

FCIU	
Electrical supply	
Power supply	24 V~, ±20%
Power consumption	3.5 VA incl. FCCP100
Inputs (R_i ≥ 100 kΩ	
Command signal $C_{q\text{-}ext}$	0…10 V
NO contacts, night	15 V=, 3 mA
NO contacts 'Close'	15 V=, 3 mA
Air-flow sensor	0…10 V
End switch 500 mm	max. 15V=, 3 mA
Front sash 1: end switch 'Close'	max. 15 V=, 3 mA
Front sash 2: end switch 500 mm	max. 15 V=, 3 mA
Front sash 1: change-over day/night	contacts
Outputs	
Contact: alarm	change-over (24 V~, 8 A)
Relay switching output: light	NO contacts (250 V~, 8 A)
Feedback x_i	0…10 V; load > 5 kΩ
Connections for	1 × ASV115 2 × SLC (EIA-485) 2 × FCCP (master and slave) 2 × SGU100 1 × SVU100
Permissible ambient conditions	
Operating temperature	0…50 °C
Humidity	< 85% rh, no condensation
Fitted	
Dimensions W x H x D	250 × 103 × 53 mm
Standards and directives	
Protection class	II
Type of protection	IP 00

Overview of types

Type	Features	Power supply
FCCP100F010	Alarm, mute	via FCIU
FCCP100F011	Alarm, mute, parameter access	via FCIU
FCCP100F020	Alarm, mute, ON/OFF, lighting	via FCIU
FCCP100F021	Alarm, mute, ON/OFF, lighting, parameters	via FCIU
FCCP100F030	Alarm, mute, lighting, ON/OFF, $\dot{v}_{min}$, $\dot{v}_{max}$	via FCIU
FCCP100F031	Alarm, mute, lighting, ON/OFF, $\dot{v}_{min}$, $\dot{v}_{max}$, parameter access	via FCIU
FCIU100F021	Interface unit for FCCP, ASV115 and fume cupboard sensors	24 V~
FCIU100F101	Interface unit for FCCP, ASV115 and fume cupboard sensors, max. selection or sum formation, external setpoint	24 V~

Accessories

Type	Description
0430240010	Mounting kit for surface mounting, includes frame and fitting parts
0430240020	Mounting kit for recessed mounting, includes frame and fitting parts

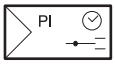
Heating controllers

SAUTER's heating controllers of the equitherm series are easy to operate, yet ensure that the installation meets the highest standards with regard to energy-efficient operation. They can be networked to each other in large installations by means of the integrated Modbus communication facility. Some typical applications for these heating controllers are: weather-compensating boiler and/or flow-temperature control; DHW control; heating control in local or district heating networks.

Overview of heating controllers

Models					
Type codes	EQJW 95	EQJW 125	EQJW 145	EQJW 245	EQJW 135
Further information	p. 117	p. 119	p. 121	p. 123	p. 125
Application					
Boiler control	–	–	–	–	•
Flow-temperatre control	•	•	•	•	•
DHW control	–	–	•	•	•
Local/district heating	–	–	•	•	–
Operation					
Analogue	•	–	–	–	–
Digital	–	•	•	•	•
Function					
Two control loops	–	–	–	•	–
Time-switch	•	–	–	–	–
Switching programmes	–	•	•	•	•
Communication					
Bus connection	–	•	•	•	•
Logbook	–	–	•	•	•

EQJW 95: Heating controller with analogue user interface, equitherm®



Features

- Weather-dependent flow-temperature control with PI controller
- Easy to operate thanks to analogue user interface
- LED indicators for outputs and malfunctions
- Connection of room temperature via room-temperature sensor or room operating unit
- Manual mode
- Variable summer/winter heating limit for switching off the system
- Digital input for switching the system on or off remotely
- Versions with weekly or daily time-switch available
- Relay outputs for activating control units and pumps
- Min./max. limitation of flow temperature
- Frost protection and anti-jamming facility
- Automatic cut-off facilities for saving energy
- Electrical connection in baseplate

Technical data

Electrical supply		
	Power supply	230 V~, +10%/-15%, 50...60 Hz
	Power consumption	≤ 5 VA
Specifications		
Control parameters	P-band[1]	10...90 K
	Integral action time	2 min
	Frost-protection temperature	3 °C
Setting parameters	Normal temperature	14...26 °C
	Max. limitation, flow	30...130 °C
	Temperature reduction for reduced operation	0...−16 K
	Slope	0.2...3.0
	Heating limit	5...25 °C
	Cycle time	< 10 s
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	−25...65 °C
Inputs and outputs		
	Number of inputs	3 analogue, 2 digital
	Digital inputs	Switching current approx. 1 mA
	Analogue inputs	1 Ni1000/room operating unit, 2 Ni200/Ni1000
	Number of outputs	3 relays
	Pump relay[2]	4 A, 250 V~, cos φ > 0.5
	Actuator relay[3]	0.5 A, 250 V~, cos φ > 0.5

[1] *Valid for actuators with a running time of 2 min. For faster actuators, enlarge the P-band accordingly*

[2] *Start-up current max. 7 A (1 s)*

[3] *Extra low voltage not permissible*

Function

Analogue quartz daily or weekly time-switch	Accuracy	–1.5...2.5 s/d
	Back-up power supply	> 72 h
Week	Min. switching interval	2 h
Day	Min. switching interval	15 min

Structural design

	Weight	0.7 kg
	Earth	144 x 96 mm
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	wall, panel, top-hat rail
	Screw terminals	for electric cable of up to 2.5 mm²

Standards and directives

	Protection class	II (IEC 60730-1)
	Degree of protection (when fitted in panels)	IP 40 (EN 60529)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Features
EQJW95DF001	PI flow-temperature control, daily time-switch
EQJW95WF001	PI flow-temperature control, weekly time-switch

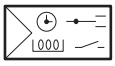
Accessories

Type	Description
0220074001	Adaptor for EQJW, type 41 C
0220074002	Adaptor for EQJW, type 41 D

Other accessories

Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—

EQJW 125: Heating controller with digital user interface, equitherm®



Features

- PI flow-temperature control
- Easy to operate thanks to modern operating concept (turn and press) and large LCD
- Communication via Modbus RTU or proprietary device bus
- Convenient weekly and calendar switching programmes with optimisation of switching times
- Automatic summertime/wintertime change-over
- Min./max. limitation of flow temperature
- Frost-protection facility and anti-jamming function for valve
- Floor-drying function
- Connection of room temperature via room-temperature sensor or room operating unit
- Ni1000 inputs for outside, flow and room temperatures or for room operating unit
- Multiplication of the outside temperature via device bus
- Relay outputs for activating control units and pumps
- Manual mode
- Notification by text message
- Electrical connection in baseplate

Technical data

Electrical supply		
	Power supply	230 V~, ±15 %, 50...60 Hz
	Power consumption	approx. 2 VA
Specifications		
Control parameters	P-band	2...100 K
	Integral action time	15...1000 s
	Frost-protection temperature	3 °C
Temperature range	Normal temperature	0...40 °C
	Reduced temperature	0...40 °C
	Flow temperature	0...130 °C
	Outside temperature	–50...50 °C
	Cycle time	Running time of the valve ÷ 15
	Running time of valve	30...300 s
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	5...95% rh, no condensation
	Storage and transport temperature	–25...65 °C
Inputs and outputs		
	Number of inputs	3 analogue
	Analogue inputs	2 Ni1000, 1 Ni1000/room operating unit
	Number of outputs	3 relays
	Pump relay[1]	3 × 2 A, 250 V~, cos φ > 0.5
	Actuator relay[2]	2 × 0.5 A, 250 V~, cos φ > 0.5
Function		
Digital time-switch for weekly/annual switching programme	Back-up power supply	Min. 24 h, typically 48 h
	Accuracy	< 1 s/d

[1] *Start-up current max. 7 A (1 s)*

[2] *Extra low voltage not permissible*

Weekly switching programme	Number of switching commands	48 per week
	Min. switching interval	10 min
Calendar switching programme	Number of switching commands	20
	Min. switching interval	1 d

Interfaces, communication

	Interface	RS-485, device interface (similar to RS-232)
	Protocol	Modbus, device bus (TAP)

Structural design

	Weight	0.4 kg
	Earth	144 × 96 mm
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	wall, panel, top-hat rail
	Screw terminals	for electric cable of up to 2.5 mm²

Standards and directives

	Degree of protection (when fitted in panels)	IP 40 (EN 60529)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EQJW125F001

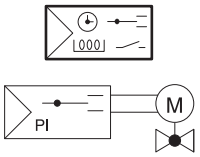
Accessories

Type	Description
0220074001	Adaptor for EQJW, type 41 C
0220074002	Adaptor for EQJW, type 41 D
7001029001	User manual, German
7001029002	User manual, French
7001029003	User manual, English

Other accessories

Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit with analogue user interface (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—
Modem	Modems tested with the EQJW 125 are available on request	—

EQJW 145: Heating controller for local or district heating, equitherm®



Features

- Weather-led flow-temperature control and drinking water heating
- Easy to operate thanks to modern operating concept (turn and press) and large LCD
- Communication via Modbus RTU or proprietary device bus
- Convenient weekly and calendar switching programmes with optimisation of switching times
- Automatic summertime/wintertime change-over
- Min./max. limitation of flow temperature and max. limitation of return temperature
- Frost-protection facility and anti-jamming function for valve
- Screed curing (floor-drying function)
- Function for protecting against legionellae
- Connection of room temperature via room-temperature sensor or room operating unit
- Ni1000 inputs for the outside, flow, domestic water, return flow and room temperatures and for the room operating unit
- Relay outputs for activating control elements, pumps, additional multifunctional relay output
- Pulse input for measuring and limiting flow or energy
- Manual mode
- Logbook
- Notification by text message

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50…60 Hz
	Power consumption	approx. 1 VA
Specifications		
Control characteristic	Flow temperature	PI control
	Temperature of drinking water	2-point
Control parameters	P-band	2…100 K
	Integral action time	15…1000 s
	Switching difference for drinking water	1…19 K
Temperature ranges	Normal temperature	0…40 °C
	Reduced temperature	0…40 °C
	Flow temperature	0…140 °C
	Return temperature	0…140 °C
	Outside temperature	–50…50 °C
	DHW temperature	20…90 °C
	Frost-protection temperature	3 °C
	Running time of valve	30…300 s
	Cycle time	Running time of the valve ÷ 15
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Storage and transport temperature	–25…65 °C
	Permissible ambient humidity	5…95% rh, no condensation
Inputs and outputs		
	Number of outputs	6 relays
Load	Pump relay[1]	3 × 2 A, 250 V~, cos φ > 0.5
	Actuator relay[2]	2 × 0.5 A, 250 V~, cos φ > 0.5

[1] *Start-up current max. 7 A (1 s)*

[2] *Extra low voltage not permissible*

	Configurable relay[3]	1 × 2 A, 250 V~, cos φ > 0.5
	Number of inputs	1 digital, 6 analogue
	Digital input	Switching current approx. 1 mA
	Analogue inputs	5 Ni1000, 1 Ni1000 or room operating unit
Function		
Time-switch	Back-up power supply	min. 24 h, typically 48 h
	Accuracy	< 1 s/d
Weekly switching programme	Number of programmes	3
	Number of switching commands	48 each
	Min. switching interval	10 min
Calendar switching programme	Number of programmes	1 (for heating circuits)
	Number of switching commands	20 each
	Min. switching interval	1 d
Interfaces and communication		
Communication	Interface	RS485, device interface (similar to RS232)
	Protocol	Modbus, device bus (TAP)
Structural design		
	Weight	0.4 kg
	Housing	144 × 96 mm, pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	on wall, switch panel and top-hat rail
	Screw terminals	for wires of up to 2.5 mm²
Standards and directives		
	Type of protection	IP 40 (EN 60529) (when fitted in panels)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

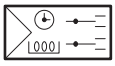
Type
EQJW145F001

Accessories

Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit with analogue user interface (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—
Modem	Modems tested with the EQJW 145 are available on request	—
7010015001	User manual, German	on request
7010015002	User manual, French	on request
7010015003	User manual, English	on request

[3] *Start-up current max. 7 A (1 s); extra low voltage not permissible, potential-free contact*

EQJW 245: Heating controller with two control circuits for local or district heating, equitherm®



Features

- Weather-led flow-temperature control and drinking water heating
- Easy to operate thanks to modern operating concept (turn and press) and large LCD
- Communication via Modbus RTU or proprietary device bus
- Convenient weekly and calendar switching programmes with optimisation of switching times
- Automatic summertime/wintertime change-over
- Two independent control loops
- Min./max. limitation for flow and return temperatures
- Frost-protection facility and anti-jamming function for valve
- Screed curing (floor-drying function)
- Function for protecting against legionellae
- Connection of room temperature via room-temperature sensor or room operating unit
- Ni1000 inputs for the outside, flow, domestic water, return flow and room temperatures and for the room operating unit
- Relay outputs for activating control elements, pumps, additional multifunctional relay output
- Pulse input for measuring and limiting flow or energy
- Manual mode
- Logbook
- Notification by text message

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50…60 Hz
	Power consumption	approx. 1 VA
Specifications		
Control characteristic	Flow temperature	PI control
	Temperature of drinking water	2-point
Control parameters	P-band	2…100 K
	Integral action time	15…1000 s
	Switching difference for drinking water	1…19 K
	Frost-protection temperature	3 °C
Temperature ranges	Normal temperature	0…40 °C
	Reduced temperature	0…40 °C
	Flow temperature	0…140 °C
	Return temperature	0…140 °C
	Outside temperature	–50…50 °C
	DHW temperature	20…90 °C
	Running time of valve	30…300 s
	Cycle time	Running time of the valve ÷ 15
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Storage and transport temperature	–25…65 °C
	Permissible ambient humidity	5…95% rh, no condensation
Inputs and outputs		
	Number of outputs	8 relays

Load	Pump relay[1]	3 × 2 A, 250 V~, cos φ > 0.5
	Actuator relay[2]	4 × 0.5 A, 250 V~, cos φ > 0.5
	Configurable relay[3]	1 × 2 A, 250 V~, cos φ > 0.5
	Number of inputs	1 digital or impulse, 8 analogue
	Digital inputs	Switching current approx. 1mA
	Analogue inputs	6 Ni1000, 2 Ni1000 or room operating unit
Function		
Time-switch	Back-up power supply	min. 24 h, typically 48 h
	Accuracy	1 s/d
Weekly switching programme	Number of programmes	4
	Number of switching commands	48 each
	Min. switching interval	10 min
Calendar switching programme	Number of programmes	1 (for heating circuits)
	Number of switching commands	20
	Min. switching interval	1 d
Interfaces and communication		
	Interface	RS485, device interface (similar to RS232)
	Protocol	Modbus, device bus (TAP)
Structural design		
	Weight	0.4 kg
	Housing	144 mm × 96 mm, pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	on wall, switch panel and top-hat rail
	Screw terminals	for wires of up to 2.5 mm²
Standards and directives		
	Degree of protection (when fitted in panels)	IP 40 (EN 60529)
	Protection class	II (IEC 60730-1)

Overview of types

Type
EQJW245F001

Accessories

Type	Description
7010042001	Operating manual

Other accessories

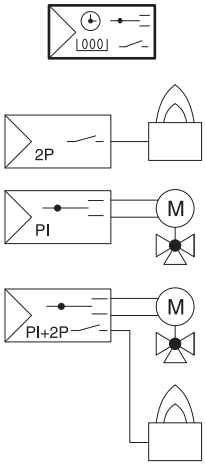
Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit with analogue user interface (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—
Modem	Modems tested with the EQJW 245 are available on request	—

[1] *Start-up current max. 6 A (1 s)*

[2] *Extra low voltage not permissible*

[3] *Start-up current max. 6 A (1 s); extra low voltage not permissible, potential-free contact*

EQJW 135: Heating controller for boiler control, equitherm®



Features

- Easy to operate thanks to modern operating concept (turn and press) and large LCD
- Communication via Modbus RTU or proprietary device bus
- Convenient weekly and calendar switching programmes with optimisation of switching times
- Automatic summertime/wintertime change-over
- Limitation of boiler temperature and function for boiler start-up relief
- Min./max. limitation of flow temperature and maintenance of return temperature
- Frost-protection facility and anti-jamming function for valve
- Screed curing (floor-drying functions)
- Function for protecting against legionellae
- Connection of room temperature via room-temperature sensor or room operating unit
- Ni1000 inputs for the outside, flow, boiler, DHW, return and room temperatures or the room operating unit
- Relay output for activating control units and pumps and for enabling burner levels, additional multi-functional relay output
- Manual mode
- Logbook
- Notification by text message
- Electrical connection in baseplate

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50...60 Hz
	Power consumption	approx. 1 VA
Load		
Specifications		
Control characteristic	Boiler temperature	2-point
	Flow temperature	PI control
	DHW temperature	2-point
Control parameters	P-band	2...100 K
	Integral action time	15...1000 s
	Switching difference, boiler	1...9 K
	Switching difference, DHW	1...19 K
	Frost-protection temperature	3 °C
Temperature ranges	Normal temperature	0...40 °C
	Reduced temperature	0...40 °C
	Flow temperature	0...130 °C
	Return temperature	0...130 °C
	Boiler temperature	0...130 °C
	Outside temperature	–50...50 °C
	DHW temperature	20...90 °C
	Running time of valve	30...300 s
	Cycle time	Running time of the valve ÷ 15
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Permissible humidity	5...95% rh, no condensation
	Storage and transport temperature	–25...65 °C
Inputs and outputs		
	Number of inputs	1 digital, 6 analogue
	Digital inputs	Switching current approx. 1 mA

	Analogue inputs	5 Ni1000, 1 Ni1000/room operating unit
	Number of outputs	6 relays
	Pump relay[1]	3 × 2 A, 250 V~, cos φ > 0.5
	Actuator relay[2]	2 × 0.5 A, 250 V~, cos φ > 0.5
	Relay for burner	0.5 A, 250 V~, cos φ > 0.5
	Configurable relay[3]	1 × 2 A, 250 V~, cos φ > 0.5
Function		
Digital time-switch for weekly/annual switching programme	Accuracy	< 1 s/d
	Back-up power supply	Min. 24 h, typically 48 h
Weekly switching programme	Number of programmes	3
	Number of switching commands	48 each
	Min. switching interval	10 min
Calendar switching programme	Number of programmes	1 (for heating circuits)
	Number of switching commands	20 each
	Min. switching interval	1 d
Interfaces, communication		
	Interface	RS485, device interface (similar to RS232)
	Protocol	Modbus, device bus (TAP)
Structural design		
	Weight	0.4 kg
	Earth	144 × 96 mm
	Housing	pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Fitting	wall, panel, top-hat rail
	Screw terminals	for electric cable of up to 2.5 mm²
Standards and directives		
	Degree of protection (when fitted in panels)	IP 40 (EN 60529)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EQJW135F001

Accessories

Type	Description
7001059001	User manual, German
7001059002	User manual, French
7001059003	User manual, English

Other accessories

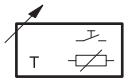
Type	Description	Price
AV***, AXM	Motorised valve actuator, 3-point (see product data sheet)	—
EGS 52/15	Room operating unit with analogue user interface (see product data sheet)	—

[1] *Start-up current max. 7 A (1 s)*

[2] *Extra low voltage not permissible*

[3] *Start-up current max. 7 A (1 s); extra low voltage not permissible*

Type	Description	Price
EGT***	Temperature sensor (see product data sheet)	—
Modem	Modems tested with the EQJW 135 are available on request	—



EGS: Remote control unit

Features

- For remote operation of the equitherm® and equiflex ®heating controllers
- Adjustment knob for remotely setting the room-temperature setpoint
- Possible to measure the room temperature via an integrated sensor
- Switch for changing the operating mode on the heating controller between automatic, normal and back-up modes

Technical data

Specifications		
	Operating modes	normal/off/automatic
	Type of signal	coded resistance values
	Temperature sensor	Ni1000 (DIN 43760)
	Setpoint correction	±2.5 K
Temperature sensor, internal	Dead time	approx. 60 s
	Time constant	approx. 600 s
Permissible ambient conditions		
	Permissible ambient temperature	5...40 °C
Structural design		
	Weight	0.1 kg
	Housing material	fire-retardant thermoplastic
	Housing	72 × 72 mm, pure white (RAL 9010)
	Fitting	recessed/surface-mounted (accessories)
	Cable feed	at rear
	Screw terminals	for wire of up to 1.5 mm²
Standards and directives		
	Type of protection	IP 40 EN (60529)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1/EN 61000-6-2 EN 61000-6-3/EN 61000-6-4

Overview of types

Type
EGS52/15F001

Accessories

Type	Description
0297441000	Cover plate, pure white, for various recessed junction boxes
0369573001	Surface junction box, pure white
0303124000	Recessed junction box

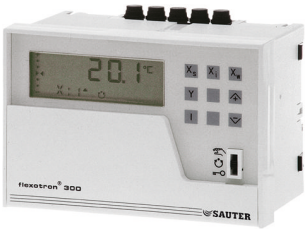
Controllers for ventilation and air-conditioning

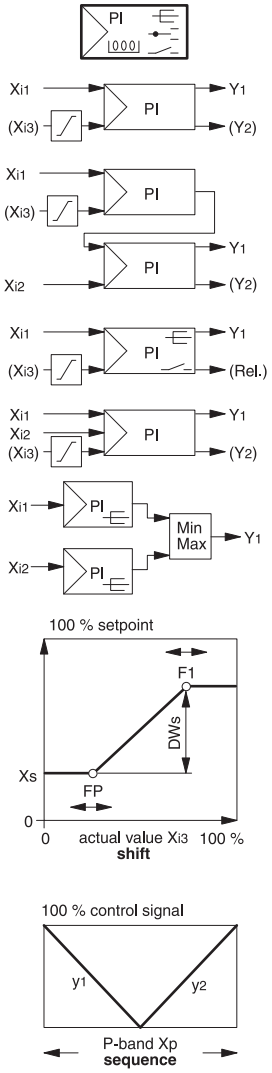
SAUTER's controllers for ventilation and air-conditioning cover all the possible applications for demand-led control of ventilation and air-conditioning systems. The large number of integrated standard applications meets the requirements concerning both modularity and energy-efficient operation. A wide 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

Models					
Type codes	RDT 100	RDT 300	RDT 708	RDT 711	RDT 724
Further information	p. 130	p. 132	p. 134	p. 136	p. 138
Control loops					
Cascade	•	–	–	–	–
P controller	•	•	–	–	–
PI controller	•	•	–	–	–
PID controller	–	–	•	•	•
Function					
Time programme	–	•	•	•	•
Communication					
Number of inputs	5	6	4	6	12
Number of outputs	5	9	4	5	12
Modbus	–	–	–	–	•1
Serial port for setting parameters and configuring	–	–	•	•	•
Application					
Flow-temperature control	–	•	–	–	•
Supply-air cascade control	•	–	•	•	•
Air-conditioning control	–	–	–	–	•

1 Only for certain types product; see 'Further information'





RDT 100: flexotron®electronic controller for ventilation and air-conditioning

Features

- P, PI, cascade and differential control of temperature, humidity, pressure and flow
- 35 control models
- Easy to operate thanks to large LCD and sizeable keypad
- Insertable memory for copying and documenting the installation's parameters
- Quick to put into service due to preset parameters
- Sealable slide switch for selecting the operating mode
- Command, sequence and limit functions

Technical data

Electrical supply		
	Power supply 230 V~	±20%, 50...60 Hz
	Power supply 24 V~	+10%/-15%, 50...60 Hz
	Power consumption	2.5 VA
	Current	0(4)...20 mA, R_i = 50 Ω
Specifications		
	P-band X_p	0.1...250 K
	Integral action time	0...9990 s
	Switching difference X_{sd}	0.1...180 K
	Control characteristic	P, PI, cascade, differential
	Cycle time	1 s
	Setting range	–30...150 °C
Permissible ambient conditions		
	Permissible ambient temperature	0...45 °C
	Permissible humidity without condensation	5...95% rh
Inputs and outputs		
	Number of inputs	4 universal, 1 digital
	Digital input[1)]	switching threshold –6V
4 universal inputs[2)]	Temperature	Ni1000 (DIN 43760)
	Power supply	0(2)...10 V, R_i = 100 kΩ 0...1 V, R_i = 500 kΩ
	Potentiometer	2 kΩ (min. 1 kΩ)
	Number of outputs	3 analogue, 2 relays
	Analogue outputs	two: 0(2)...10 V, load > 5 kΩ one: 0...10 V, load > 5 kΩ
	Relay outputs	2 pcs, 5(2) A, 250 V~ (2/3-point)
Assembly		
	Housing material	fire-retardant thermoplastic
	Housing	144 × 96 mm, pure white (RAL 9010)
	Fitting	wall, panel, top-hat rail
	Screw terminals	for wire of up to 2.5 mm²
Standards and directives		
	Type of protection	IP 40 (EN 60529)

1) *Protected against short circuits and excess voltage up to 24 V~; current input max. 70 mA*

2) *Protected against short circuits and excess voltage up to 24 V~; current input max. 70 mA*

Overview of types

Type	Voltage	Weight	Protection class
RDT100F001	230 V~	0.67 kg	II (IEC 60730)
RDT100F002	24 V~	0.54 kg	III (IEC 60730)

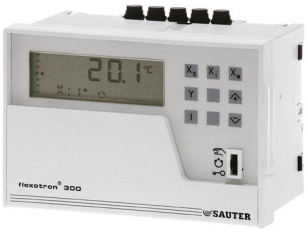
Overview of models

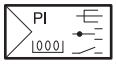
Controller structure	1 continuous output	Sequence: continuous/continuous	Sequence: continuous/2-point	1 output (2-pt.)	1 output PI (3-pt.)
1 fixed-value controller:	0	1	15	20	30
with command	2	3	16	22	31
2 fixed-value controllers:	12	–	–	21	–
with common actual value	13	–	–	27	–
with y=min./max. Selection	14	–	–	–	–
1 controller with command	–	–	–	23	–
with common command	–	–	–	24	–
common actual value; one with command	–	–	–	25	–
common actual value; common command	–	–	–	28	–
1 cascade controller:	4	5	17	–	32
with command	6	7	18	–	33
1 differential controller:	8	9	–	29	34
with command	10	11	–	26	35

Ranges (dependent on transmitter)	Temperature	Percentage	Rel. humidity	Abs. humidity	Enthalpy	Dimensionless
Setpoint X_s	–30...150 °C	0...100%	0...100% rh	0.0...20 g/kg	0...100 kJ/kg	-4999...4999
Prop. band	0.1...250 K	0.1...1000%	0.1...100% rh	0.1...100 g/kg	0.1...100 kJ/kg	10...4999

Accessories

Type	Description
0369739001	User manual, German
0369739002	User manual, French
0369739003	User manual, English
0369739004	User manual, Italian
0369739005	User manual, Spanish
0369746001	Cover plate for the complete front, made of transparent thermoplastic, sealable
0226187003	Memory, pluggable, for flexotron
0226187002	Memory, pluggable; dummy (empty; as cover)





RDT 300: flexotron® electronic controller for ventilation and air-conditioning

Features

- Weather-oriented flow-temperature control in 2- and 4-tube systems for heating/cooling
- Activation of single-room controllers
- Easy to operate thanks to large LCD and sizeable keypad
- Six control models
- Insertable memory for copying and documenting the installation's parameters
- Quick to put into service due to preset parameters
- Room operating unit with display available as accessory
- Weekly and calendar switching programme
- Automatic summertime/wintertime change-over
- Sealable slide switch for selecting the operating mode
- Guidance, sequence and limiting function, plus alarm and timer functions

Technical data

Electrical supply		
	Power supply	230 V~, +10%/-15%, 50...60 Hz
	Power consumption	5 VA
Specifications		
	Setting range	–30...150 °C
	Control characteristic	2 × P/PI
	P-band X_p	0.1...180 K
	Integral action time	0...9990 s
	Cycle time	1 s
Permissible ambient conditions		
	Permissible ambient temperature	0...45 °C
	Permissible ambient humidity	5...80% rh, no condensation
Inputs and outputs		
4 universal inputs[1]	Temperature	2 × Ni1000 (DIN 43760)
	Power supply	0(2)...10 V, R_i = 100 kΩ 0...1 V, R_i = 500 kΩ
	Current	0(4)...20 mA, R_i = 50 Ω
	Potentiometer	2 kΩ (min. 1 kΩ)
2 analogue inputs	Temperature[2]	Ni1000 (DIN 43760)
	Analogue outputs	3 × 0(2)...10 V load > 5 kΩ
	Relay outputs	4 × 5(2) A, 250 V~
	Relay outputs (potential-free)	2 × 5(2) A, 24/250 V~
Structural design		
	Weight	0.67 kg
	Housing	144 × 96 mm, pure white (RAL 9010)
	Housing material	fire-retardant thermoplastic
	Screw terminals	for wires of up to 2.5 mm²
	Fitting	wall, panel, top-hat rail
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	II (IEC 60730)

[1] *Protected against short circuit and excess voltage up to 24 V~; current input max. 70 mA loading capacity*

[2] *Can also be used as binary input (gold contacts); protected against short circuit and excess voltage up to 24 V~, current input max. 70 mA loading capacity*

Overview of types

Type
RDT300F001

Ranges (dependent on transmitter)	Temperature	Percentage	Rel. humidity	Abs. humidity	Enthalpy	Dimensionless
Setpoint X_s	–30...150 °C	0...100%	0...100% rh	0.0...20 g/kg	0...100 kJ/kg	–4999...4999
Prop. band	0.1...180 K	0.1...200%	0.1...100% rh	0.1...100 g/kg	0.1...100 kJ/kg	10...4999

Accessories

Type	Description
RDB300F001	Remote control unit
0313516001	User manual, German
0313516002	User manual, French
0313516003	User manual, English
0313516004	User manual, Italian
0369746001	Cover plate for the complete front, made of transparent thermoplastic, sealable
0226187002	Memory, pluggable; dummy (empty; as cover)
0226187003	Memory, pluggable, for flexotron

RDT 708: Controller for ventilation and air-conditioning for compact systems, flexotron®

Features

- Four different applications for constant supply air and cascade control
- Illuminated 2-line plain text display
- Simple user guidance with 4 buttons
- PC software for parameterisation
- Extension level with PLC functionality
- Weekly and calendar switching programme with automatic summertime/wintertime change-over
- Manual mode
- Connection facility for various setpoint adjusters
- Sequence, limiting and guidance functions
- Duplication of measured values
- PID control
- Protected SERVice level with variable control parameters
- Free exterior cooling

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	–10...30%
	Power consumption	approx. 5 VA
Specifications		
Primary controller parameters	P-band	0...100 K
	Integral action time	0...999 s
Auxiliary controller parameters	P-band	0...100 K
	Integral action time	0...999 s
	Derivative action time	0...99.9 s
Temperature ranges	Normal temperature	–50...300 °C
	Reduced temperature	–50...300 °C
	Auxiliary controller for setpoint/actual value	–50...300 °C
	Cycle time	1 s
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Storage and transport temperature	–20...60 °C
	Permissible ambient humidity	5...95% rh, no condensation
Inputs and outputs		
	Number of inputs	4 analogue
	Analogue inputs	4 Ni1000, 0...10 V, room operating unit or setpoint adjuster
	Input impedance	approx. 15 kΩ (for 0...10 V=)
	Number of outputs	1 relays, 3 analogue
	Relay output	4 A, 230 V~, cos φ > 0.6
	Analogue outputs	0...10 VDC, 5 mA, protected against short circuit
Function		
Time-switch	Back-up power supply	min. 24 h
	Accuracy	< 2.5 s/d @ 25 °C
Daily switching programme	Number of switching commands	6
	Min. switching interval	15 min

Weekly switching programme	Number of switching commands	6/d
	Min. switching interval	15 min
Calendar switching programme	Number of switching commands	12
	Min. switching interval	1/d

Structural design

	Weight	0.29 kg
	Housing material	fire-retardant thermoplastic, black
	Screw terminals	for wires of up to 1.5 mm²
	Fitting	top-hat rail as per EN 60715

Standards and directives

	Type of protection[1]	IP 20 (EN 60529)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
RDT708F002

Accessories

Type	Description
STU101F001	Multiplier/converter for temperature measured values
XPESF001	Setpoint potentiometer
EXG100F001	Active potentiometer
0313991001	USB adapter for access to RDT 7** via PC
7010047001	User manual, German
7010047002	User manual, French
7010047003	User manual, English

Other accessories

Type	Description	Price
AV*, AS*	Electrical actuators (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—

[1] *When fitted*

RDT 711: Controller for ventilation and air-conditioning with extended function, flexotron®

Features

- Four different applications for constant supply air and cascade controller
- Illuminated two-line plain-text display
- Simple user guidance with 4 buttons
- PC software for parameterising
- Extension level with PLC functionality
- Weekly and calendar switching programme with automatic summertime/wintertime change-over
- Manual mode
- Connection facility for various setpoint adjusters
- Sequence, limiting and guidance functions
- Duplication of measured values
- PID control
- Protected SERVice level with variable control parameters
- Free exterior cooling
- Frost protection function

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	–10...30%
	Power consumption	approx. 5 VA
Specifications		
Primary controller parameters	P-band	0...100 K
	Integral action time	0...999 s
Auxiliary controller parameters	P-band	0...100 K
	Integral action time	0...999 s
	Derivative action time	0...99.9 s
Temperature ranges	Normal temperature	–50...300 °C
	Reduced temperature	–50...300 °C
	Auxiliary controller for setpoint/actual value	–50...300 °C
	Cycle time	1 s
Permissible ambient conditions		
	Permissible ambient temperature	0...50 °C
	Storage and transport temperature	–20...60 °C
	Permissible humidity	5...95% rh, no condensation
Inputs and outputs		
	Number of inputs	2 digital, 4 analogue
	Digital inputs	Switching current approx. 5 mA
	Analogue inputs	4 Ni1000, 0...10 V, room control unit or setpoint adjuster
	Input impedance	approx. 15 kΩ (for 0...10 V=)
	Number of outputs	2 relays, 3 analogue
	Relay output	4 A, 230 V~, cos φ > 0.6
	Analogue outputs	0...10 V=, 5 mA, protected against short circuit
Function		
Time-switch	Back-up power supply	min. 24 h
	Accuracy	< 2.5 s/d @ 25 °C

Daily switching programme	Number of switching commands	6
	Min. switching interval	15 min
Weekly switching programme	Number of switching commands	6/d
Calendar switching programme	Number of switching commands	12
	Min. switching interval	1 d

Structural design

	Weight	0.3 kg
	Housing material	fire-retardant thermoplastic, black
	Screw terminals	for wires of up to 1.5 mm²
	Fitting	top-hat rail as per EN 60715

Standards and directives

	Type of protection[1]	IP 20 (EN 60529)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
RDT711F002

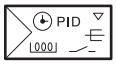
Accessories

Type	Description
STU101F001	Multiplier/converter for temperature measured values
XPESF001	Setpoint potentiometer
EXG100F001	Active potentiometer
0313991001	USB adapter for access to RDT 7** via PC
7010047001	User manual, German
7010047002	User manual, French
7010047003	User manual, English

Other accessories

Type	Description	Price
AV*, AS*	Electrical drives (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—

[1] *when installed*



RDT 724: Controller with communication capability for ventilation and air-conditioning for universal use, flexotron®

Features

- 18 different applications for constant supply air and cascade controller
- Communication via Modbus RTU, can be parameterised as master or slave
- Illuminated two-line plain-text display
- Simple user guidance with 4 buttons
- PC software for parameterising
- Extension level with PLC functionality
- Weekly and calendar switching programme with automatic summertime/wintertime change-over
- Manual mode
- Connection facility for various setpoint adjusters
- Sequence, limiting and guidance functions
- Duplication of measured values
- PID control
- Protected SERVice level with variable control parameters
- Free exterior cooling and energy recovery
- Frost-protection function and c/o input

Technical data

Electrical supply

	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=	–10…30%
	Power consumption	approx. 5 VA

Specifications

Primary controller parameters	P-band	0…100 K
	Integral action time	0…999 s
Auxiliary controller parameters	P-band	0…100 K
	Integral action time	0…999 s
	Derivative action time	0…99.9 s
Measuring ranges	Normal temperature	–50…300 °C
	Reduced temperature	–50…300 °C
	Auxiliary controller for setpoint/actual value	–50…300 °C
	Humidity	0…100% rh
	Other ranges	0…100%
	Cycle time	1 s

Permissible ambient conditions

	Permissible ambient temperature	0…50 °C
	Storage and transport temperature	–20…60 °C
	Permissible ambient humidity	5…95% rh, no condensation

Inputs and outputs

	Number of inputs	4 digital, 8 analogue
	Digital inputs	Switching current approx. 5 mA
	Analogue inputs	8 Ni1000, of which max. 4 0…10 V, room control unit / setpoint adjuster
	Input impedance	approx. 15 kΩ (for 0…10 V=)
	Number of outputs	6 relays, 6 analogue
	Relay outputs	4 A, 230 V~, cos φ > 0.6
	Analogue outputs	0…10 V=, 5 mA, protected against short circuit

Function

Time-switch	Back-up power supply	min. 24 h
	Accuracy	< 2.5 s/d @ 25 °C
Daily switching programme	Number of switching commands	6
	Min. switching interval	15 min
Weekly switching programme	Number of switching commands	6/d
	Min. switching interval	15 min
Calendar switching programme	Number of switching commands	12
	Min. switching interval	1 d

Interfaces and communication

	Interface	RS-485
	Protocol	Modbus RTU

Structural design

	Weight	0.42 kg
	Housing material	fire-retardant thermoplastic, black
	Fitting	top-hat rail as per EN 60715

Standards and directives

	Type of protection[1]	IP 20 (EN 60529)
	Protection class	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Features
RDT724F002	Controllers for ventilation and air-conditioning
RDT724F022	Controllers for ventilation and air-conditioning with communication

Accessories

Type	Description
STU101F001	Multiplier/converter for temperature measured values
XPESF001	Setpoint potentiometer
EXG100F001	Active potentiometer
0313991001	USB adapter for access to RDT 7** via PC
7010047001	User manual, German
7010047002	User manual, French
7010047003	User manual, English

Other accessories

Type	Description	Price
AV*, AS*	Electrical drives (see product data sheet)	—
EGT***	Temperature sensor (see product data sheet)	—

[1] *when installed*

EXG: Active potentiometer

Features

- Easy to operate using rotary knob
- Two variable stops for limiting/stopping
- Exchangeable scales with different ranges and for different physical values
- Electrical connection via plug-in unit (for wire of up to 2.5 mm²)

Technical data

Electrical supply		
	Power supply 24 V~	15%, -20%, 50...60 Hz
	Power consumption	0.5 VA
	Current load	max. 3 mA
Permissible ambient conditions		
	Permissible ambient temperature	0...40 °C
Inputs and outputs		
	Output	0...10 V
Assembly		
	Housing material	fire-retardant thermoplastic
	Housing	light grey (RAL 7035)
	Weight	0.25 kg
	Fitting	in panels
Standards and directives		
	Type of protection	IP 52 (EN 60529) at front
	Type of protection	IP 00 (inside panel)
Conforms to	EMC Directive 2004/108/EC	EN 61000-6-1/EN 61000-6-3 EN61000-6-4

Overview of types

Type
EXG100F001

Accessories

Type	Description
0312949000	9 scales: 0...40/100/130/250 °C; 100%; 100% rF; –35...35 °C; ±4 °C; ±8% rF

XPES: Setpoint potentiometer

Features

- Easy to operate using rotary knob
- Two variable stops for limiting/stopping
- Exchangeable scales with different ranges and for different physical values
- Neutral scales with fixed divisions or for self-inscribing

Technical data

Specifications

	Replaceable scales	0…40 °C, –20…40 °C 0…100 °C, 30…180 °C 0…100 %, 20…80 % 0…100 % rh, 35…85 % rh 0…20 g/kg, 2…22 g/kg 0…1 mA, –10…25 °C_{TP} 0…10 kJ/kg
	Loading capacity	2 W
	Resistance value	2000 Ω

Permissible ambient conditions

	Permissible ambient temperature	0…55 °C

Assembly

	Weight	0.05 kg
	Housing material	fire-retardant thermoplastic
	Housing	light grey (RAL 7035)
	Fitting	in panels

Standards and directives

	Type of protection	IP 00 IP 52 (at front)
Conforms to	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3 EN 61000-6-4

Overview of types

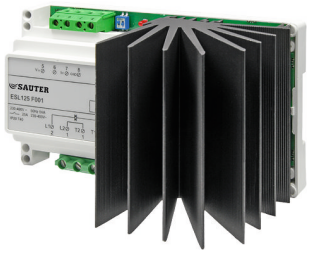
Type
XPESF001

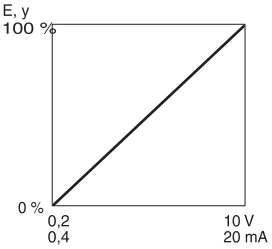
Accessories

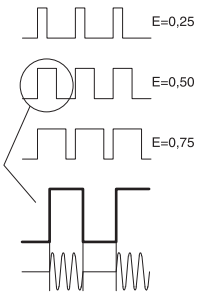
Type	Description
0368433000	4 neutral scales with 5/10, 6/12/60, 8/40 and 15/30 divisions; for self-inscribing

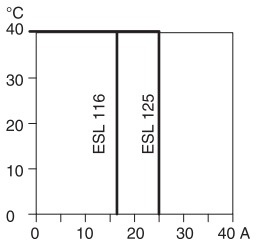
ESL116

ESL125









ESL: Electronic power control unit

Features

- Quasi-continuous control of resistive loads in electric auxiliary heating systems and heating elements
- Suitable for loads that are controlled via one, two or three phases
- Y and Δ circuits are possible
- Analogue inputs for active standard signals of 0/2...10 V or 0/4...20 mA
- LED indicator

Technical data

Electrical supply

	Tolerance in power supply	±20%, 50...60 Hz
	Power consumption	max. 5 VA
	Max. power loss	20 W (ESL116*) 40 W (ESL125*)
Inputs and outputs	Positioning signal y	0/2...10 V, R_i > 100 kΩ 0/4...20 mA, R_i < 170 kΩ
	Min. nominal current	2.0 A
	cos φ	> 0.95
	Period	approx. 45 s

Permissible ambient conditions

	Permissible ambient temperature	0...65 °C (0...40 °C for nominal current)
	Storage and transport temperature	–25...65 °C
	Humidity	5...95% rh, no condensation

Structural design

	Fitting	Panel on top-hat rail as per EN 60715

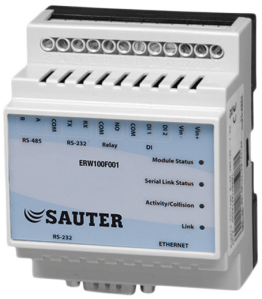
Standards and directives

	Type of protection	IP 20 (EN 60529)
	Protection class	I (IEC 60730-1)
	Over-voltage category	II (IEC 60730-1)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Voltage	Circuit	Switch rating	Nominal current	Number of ESLs	Weight
ESL116F001	230 V~ 400 V~ 3 × 400 V~ 3 × 400 V~	Single phase double phase Y, Δ circuit Δ circuit	3.7 kW 6.4 kW 11.0 kW 19.0 kW	16 A	1 1 2 3	0.5 kg
ESL125F001	230 V~ 400 V~ 3 × 400 V~ 3 × 400 V~	Single phase double phase Y, Δ circuit Δ circuit	5.8 kW 10.0 kW 17.3 kW 30.0 kW	25 A	1 1 2 3	0.8 kg

ERW100: Web server for single controllers



Features

- For connecting devices with Modbus RTU interface, e.g. equitherm® heating controller with digital user interface or flexotron700® RDT724F022 universal controller
- Different options for accessing the internet (e.g. analogue or GSM modem, DSL router, WAN/LAN connection)
- Display and control of up to 32 devices via Modbus
- Dynamic display of values and static display of pictures
- Alarm via e-mail or text message
- Data logging with integrated memory and display of historical trend curves
- Simple installation due to predefined templates
- Overall configuration via installed web pages, no Windows tools or HTML editors needed
- No licences or licence fees
- Multilingual (German, English, French, Swedish etc.)
- Software for detecting the programmed network parameters
- Serial interface RS-232 for Modbus RTU protocol or for connecting a modem
- Serial interface RS-232/RS-485 for Modbus RTU protocol or for ASCII Modbus
- Ethernet interface for HTTP (web), Modbus TCP (slave), SMTP (e-mail), FTP (file transfer protocol) and SNMP (Simple Network Management Protocol) protocols

Technical data

Electrical supply		
	Power supply	9…32 V~/=, 50…60 Hz
	Power consumption	approx. 1.2 VA
Permissible ambient conditions		
	Storage and transport temperature	–25…75 °C
	Permissible ambient temperature	5…40 °C
	Permissible ambient humidity	5…95% rh
Inputs and outputs		
	Digital inputs	2 (e.g. for fault signals)
Indicators, display, operation		
	Indicator	4 LEDs
Interfaces and communication		
	Ethernet	1 × RJ-45 (10/100 Mbit/s)
	Serial port	1 × RS-232 (for modems) 1 × RS-232 or RS-485 (Modbus)
Structural design		
	Housing	white
	Housing material	fire-retardant thermoplastic as per DIN 43880
	Fitting	on rail, as per EN 50022
	Dimensions W x H x D	90 × 70 × 58 mm
	Screw terminals	for cables of up to 2.5 mm²
	Weight	0.115 kg
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	II (IEC 60730)
	CE conformity	EN 50081-2: 1993 EN 61000-6-2: 1999

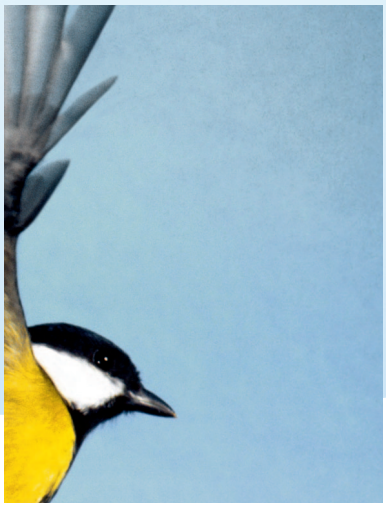
Overview of types

Type
ERW100F001

Valves, control valves, dampers, actuators

A high degree of flexibility provides optimum results.

With just a few basic types, SAUTER's valves and SUT actuators, with their in-built intelligence, cover all possible needs with regard to reliable and long-lasting control elements. The valve and the actuator, being perfectly matched to one another, form the basis for a high degree of control quality. The latest technology for energy-efficient control.



Valves, control valves, dampers, actuators

Unit valves and actuators for unit valves

Regulating valves and valve actuators

Combination valves

Control ball valves and actuators for ball valves

Control valves and rotary actuators

Damper and rotary actuators

Air-volume compact controllers

Unit valves

SAUTER's unit valves enable accurate control due to their linear mixing passage. Used with the relevant thermal actuators, unit valves are employed for regulating radiators, air secondary-treatment units and fan coils.

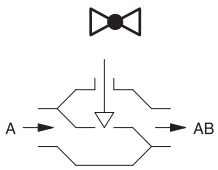
Overview of unit valves

Models				
Type codes	VUL	BUL	VXL	BXL
Further information	p. 150	p. 153	p. 157	p. 159
Application				
Intelligent unitary control	•	•	•	•
Chilled beams, underfloor heating	•	•	•	•
Radiators	–	–	•	•
Underfloor devices	•	•	–	–
Version				
Through	•	–	•	–
Three-way	–	•	–	•
Technical data				
Nominal diameter DN	10...20	10...20	10...32	25...40
Nominal pressure (bar)	16	16	16	16
Compatible with these actuators	AXT 211 AXS 215S AXM 117(S)	AXT 211 AXS 215S AXM 117(S)	AXT 211 AXS 215S AXM 117(S)	AXT 211 AXS 215S AXM 117(S)

Explanation of pressure differences

Δp_{max} (bar) : Maximum permissible pressure difference across the valve at which the actuator can still firmly open and close the valve taking Δp_v into account.

Δp_s (bar) : Maximum permissible pressure difference across the valve at which, in the event of a malfunction (e.g burst pipe after the valve), the actuator can firmly close the valve by means of a fast rotary movement.



VUL: Unit through valve (regulating), PN16

Features

- Flat sealing standard version or version with clamping-ring screw fitting for pipe ø15 mm with DN 10
- Valve with male thread according to DIN EN ISO 228-1, class B
- Stuffing box is replaced under system pressure
- When the spindle is pressed in, the valve is closed.
- Closes against the pressure
- Valve body made of nickel-plated cast brass for DN 10 and gun metal for DN 15 and DN 20
- Cone with EPDM soft seal
- Stainless-steel spindle
- Stuffing box with double O-ring seal

Technical data

Specifications

Nominal pressure	16 bar
Valve characteristic	equal-percentage
Valve stroke[1)]	4 mm
Leakage rate	0.02% of k_{VS} value

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{VS} value	Connection	Weight
VUL010F340	DN 10	0.16 m³/h	G½" B	0.19 kg
VUL010F330	DN 10	0.4 m³/h	G½" B	0.18 kg
VUL010F320	DN 10	0.63 m³/h	G½" B	0.18 kg
VUL010F310	DN 10	1 m³/h	G½" B	0.18 kg
VUL010F300	DN 10	1.6 m³/h	G½" B	0.18 kg
VUL015F310	DN 15	2.5 m³/h	G¾" B	0.28 kg
VUL015F300	DN 15	3.5 m³/h	G¾" B	0.28 kg
VUL020F300	DN 20	4.5 m³/h	G1" B	0.33 kg
VUL010F630	DN 10	0.4 m³/h	–	0.18 kg
VUL010F620	DN 10	0.63 m³/h	–	0.18 kg
VUL010F610	DN 10	1 m³/h	–	0.18 kg
VUL010F600	DN 10	1.6 m³/h	–	0.18 kg

*VUL010F6**: Version for clamping-ring screw fitting pipe Ø 15 mm*

Accessories

Type	Description
0378133010	1 threaded sleeve, R⅜", flat-sealing, DN 10, with cap nut and flat seal
0378133015	1 threaded sleeve, R½", flat-sealing, DN 15, with cap nut and flat seal
0378133020	1 threaded sleeve, R¾", flat-sealing, DN 20, with cap nut and flat seal
0378134010	1 solder nipple, Ø 12, flat-sealing, DN 10, with cap nut and flat seal
0378134015	1 solder nipple, Ø 15, flat-sealing, DN 15, with cap nut and flat seal
0378134020	1 solder nipple, Ø 22, flat-sealing, DN 20, with cap nut and flat seal
0378135010	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 10

1) *The valve stroke is limited by the valve actuator.*

Type	Description
0378145015	1 clamping-ring screw fitting for pipe Ø 15 mm, DN 15, flat-sealing, ¾" B
0378145020	1 clamping-ring screw fitting for pipe Ø 22 mm, DN 20, flat-sealing, 1" B
0378128001	Stuffing box for VUL valves, can be replaced under pressure

Combination of VUL with electrical actuators

i *Warranty: the technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

With 24 V actuator (closes against the pressure)

Actuator		AXM117F202	AXM117SF202, AXM117SF252, AXM117SF302	AXM117SF402
Page		167	169	169
Running time	(s)	60	100	100
Control signal		3-point	0...10 V	0...4.8 V 5.2...10 V 0...10 V
Valve	(bar)	Δp_{max}	Δp_{max}	Δp_{max}
VUL010F340, VUL010F330, VUL010F320	(bar)	4	4	4
VUL010F310, VUL010F300	(bar)	3.8	3.8	3.8
VUL015F310, VUL020F300, VUL015F300	(bar)	1.1	1.1	1.1
VUL010F630, VUL010F620	(bar)	4	4	4
VUL010F610, VUL010F600	(bar)	3.8	3.8	3.8

With 230 V actuator (closes against the pressure)

Actuator		AXM117F200
Page		167
Running time	(s)	100
Control signal		3-point
Valve	(bar)	Δp_{max}
VUL010F340, VUL010F330, VUL010F320, VUL010F310, VUL010F300	(bar)	4
VUL015F310, VUL015F300	(bar)	1.7
VUL020F300	(bar)	1.5

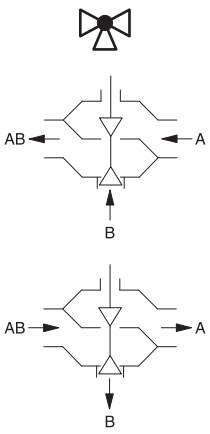
With thermal actuator (closes against the pressure)

Actuator		AXT211F110, AXT211F110B		AXT211F210		AXT211F112, AXT211F112B		AXT211F212		AXT211F110M		AXT211F112M		AXT211F190		AXT211F192		AXT211HF110		AXT211HF210		AXT211HF112		AXT211HF212	
Page		163		163		163		163		163		163		163		163		163		163		163		163	
Min. running time	(s)	187		187		240		240		187		240		187		240		187		187		240		240	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUL010F340, VUL010F330, VUL010F320	(bar)	4	6	4	-	4	6	4	-	4	6	4	6	4	6	4	6	4	6	4	-	4	6	4	-
VUL010F310, VUL010F300	(bar)	4	4	4	-	4	4	4	-	4	4	4	4	4	4	4	4	4	4	4	-	4	4	4	-
VUL015F310, VUL020F300, VUL015F300	(bar)	1.1	1.1	1.1	-	1.1	1.1	1.1	-	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	-	1.1	1.1	1.1	-
VUL010F630, VUL010F620	(bar)	4	6	4	-	4	6	4	-	4	6	4	6	4	6	4	6	4	6	4	-	4	6	4	-
VUL010F610, VUL010F600	(bar)	4	4	4	-	4	4	4	-	4	4	4	4	4	4	4	4	4	4	4	-	4	4	4	-

With continuous actuator (closes against the pressure)

Actuator		AXS215SF122, AXS215SF122B		AXS215SF222, AXS215SF222B	
Page		166		166	
Min. running time	(s)	120		120	
Control signal		0...10 V		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUL010F340, VUL010F330, VUL010F320	(bar)	4	6	4	-
VUL010F310, VUL010F300	(bar)	4	4	4	-
VUL015F310, VUL020F300, VUL015F300	(bar)	1.1	1.1	1.1	-
VUL010F630, VUL010F620	(bar)	4	6	4	-
VUL010F610, VUL010F600	(bar)	4	4	4	-

BUL: Unit 3-way valve (regulating), PN 16



Features

- Flat sealing standard version or version with clamping-ring screw fitting for pipe ø15 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 bypass T-piece
- When the spindle is pressed in, the control passage is closed.
- Use as control valve, distribution valve and, thanks to tight-sealing third passage, as distribution valve
- Nickel-plated cast brass valve body
- Stainless-steel spindle
- Cone with EPDM soft seal for control passage and mixing passage
- Stuffing box with double O-ring seal

Technical data

Specifications

Nominal pressure	16 bar
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, mixing passage B-AB	approx. 0.1% of k_{VS} value

Permissible ambient conditions

Operating temperature	2...120 °C
Operating pressure up to 120 °C	16 bar

Overview of types

The BUL regulating, unit 3-way valve may not be used as a through valve

k_{VS} value: The k_{VS} value of the mixing passage (B-AB) is reduced by approx. 30%. Therefore, the max. throughflow is practically the same as in the load-related control passage

Type	Nominal diameter	C_{VS} value	Connection	Weight
BUL010F330	DN 10	0.4 m³/h	G½" B	0.30 kg
BUL010F320	DN 10	0.63 m³/h	G½" B	0.30 kg
BUL010F310	DN 10	1 m³/h	G½" B	0.30 kg
BUL010F300	DN 10	1.6 m³/h	G½" B	0.30 kg
BUL015F310	DN 15	2.5 m³/h	G¾" B	0.33 kg
BUL015F300	DN 15	4 m³/h	G¾" B	0.33 kg
BUL020F300	DN 20	5 m³/h	G1" B	0.36 kg
BUL010F430	DN 10	0.4 m³/h	G½" B	0.38 kg
BUL010F420	DN 10	0.63 m³/h	G½" B	0.38 kg
BUL010F410	DN 10	1 m³/h	G½" B	0.38 kg
BUL010F400	DN 10	1.6 m³/h	G½" B	0.38 kg
BUL015F410	DN 15	2.5 m³/h	G¾" B	0.42 kg
BUL015F400	DN 15	4 m³/h	G¾" B	0.42 kg
BUL020F400	DN 20	5 m³/h	G1" B	0.50 kg
BUL010F630	DN 10	0.4 m³/h	–	0.38 kg
BUL010F620	DN 10	0.63 m³/h	–	0.38 kg
BUL010F610	DN 10	1 m³/h	–	0.38 kg
BUL010F600	DN 10	1.6 m³/h	–	0.38 kg

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

*BUL010F6**: Version with bypass T-piece for clamping-ring screw fitting pipe Ø 15 mm*

Accessories

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

Combination of BUL with electrical actuators

With 24 V actuator (use as control valve)

Actuator		AXM117F202		AXM117SF202, AXM117SF252, AXM117SF302		AXM117SF402	
Page		167		169		169	
Running time	(s)	60		100		100	
Control signal		3-point		0...10 V		0...4.8 V 5.2...10 V 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.7	-	1.7	-	1.7	-
BUL015F310	(bar)	1.4	-	1.4	-	1.4	-
BUL015F300	(bar)	1.2	-	1.2	-	1.2	-
BUL020F300	(bar)	1	-	1	-	1	-
BUL015F410	(bar)	1.4	-	1.4	-	1.4	-
BUL015F400	(bar)	1.2	-	1.2	-	1.2	-
BUL020F400	(bar)	1	-	1	-	1	-

With 24 V actuator (use as distribution valve)

Actuator		AXM117F202		AXM117SF202, AXM117SF252, AXM117SF302		AXM117SF402	
Page		167		169		169	
Running time	(s)	60		100		100	
Control signal		3-point		0...10 V		0...4.8 V 5.2...10 V 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.9	-	1.9	-	1.9	-
BUL015F310, BUL015F400, BUL020F400, BUL015F300, BUL020F300	(bar)	1.2	-	1.2	-	1.2	-
BUL015F410, BUL015F400, BUL020F400	(bar)	1.2	-	1.2	-	1.2	-

With 230 V actuator (use as control valve)

Actuator		AXM117F200	
Page		167	
Running time	(s)	100	
Control signal		3-point	
Valve	(bar)	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.7	-
BUL015F310	(bar)	1.4	-
BUL015F300	(bar)	1.2	-
BUL020F300	(bar)	1	-
BUL015F410	(bar)	1.4	-

Actuator		AXM117F200	
Page		167	
Running time	(s)	100	
Control signal		3-point	
Valve	(bar)	Δp_{max}	Δp_s
BUL015F400	(bar)	1.2	-
BUL020F400	(bar)	1	-

With 230 V actuator (use as distribution valve)

Actuator		AXM117F200	
Page		167	
Running time	(s)	100	
Control signal		3-point	
Valve	(bar)	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.9	-
BUL015F310	(bar)	1.6	-
BUL015F300	(bar)	1.4	-
BUL020F300	(bar)	1.2	-
BUL015F410	(bar)	1.6	-
BUL015F400	(bar)	1.4	-
BUL020F400	(bar)	1.2	-

With thermal actuator (use as control valve)

Actuator		AXT211F110, AXT211F110B		AXT211F210		AXT211F112, AXT211F112B		AXT211F212		AXT211F110M		AXT211F112M		AXT211F190		AXT211F192		AXT211HF110		AXT211HF210		AXT211HF112		AXT211HF212	
Page		163		163		163		163		163		163		163		163		163		163		163		163	
Min. running time	(s)	187		187		240		240		187		240		187		240		187		187		240		240	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.7	1.8	1.7	-	1.7	1.8	1.7	-	1.7	1.8	1.7	1.8	1.7	1.8	1.7	1.8	1.7	1.8	1.7	-	1.7	1.8	1.7	-
BUL015F310	(bar)	1.4	1.5	1.4	-	1.4	1.5	1.4	-	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.5	1.4	-	1.4	1.5	1.4	-
BUL015F300	(bar)	1.2	1.3	1.2	-	1.2	1.3	1.2	-	1.2	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.2	-	1.2	1.3	1.2	-
BUL020F300	(bar)	1	1.1	1	-	1	1.1	1	-	1	1.1	1	1.1	1	1.1	1	1.1	1	1.1	1	-	1	1.1	1	-
BUL015F410	(bar)	1.4	1.5	1.4	-	1.4	1.5	1.4	-	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.5	1.4	-	1.4	1.5	1.4	-
BUL015F400	(bar)	1.2	1.3	1.2	-	1.2	1.3	1.2	-	1.2	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.2	-	1.2	1.3	1.2	-
BUL020F400	(bar)	1	1.1	1	-	1	1.1	1	-	1	1.1	1	1.1	1	1.1	1	1.1	1	1.1	1	-	1	1.1	1	-

With continuous actuator (use as control valve)

Actuator		AXS215SF122, AXS215SF122B		AXS215SF222, AXS215SF222B	
Page		166		166	
Min. running time	(s)	120		120	
Control signal		0...10 V		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.7	1.8	1.7	-
BUL015F310	(bar)	1.4	1.5	1.4	-
BUL015F300	(bar)	1.2	1.3	1.2	-
BUL020F300	(bar)	1	1.1	1	-
BUL015F410	(bar)	1.4	1.5	1.4	-
BUL015F400	(bar)	1.2	1.3	1.2	-
BUL020F400	(bar)	1	1.1	1	-

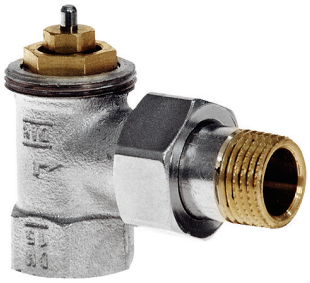
With thermal actuator (use as distribution valve)

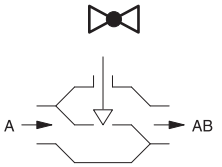
Actuator		AXT211F110, AXT211F110B		AXT211F210		AXT211F112, AXT211F112B		AXT211F212		AXT211F110M		AXT211F112M		AXT211F190		AXT211F192		AXT211HF110		AXT211HF210		AXT211HF112		AXT211HF212	
Page		163		163		163		163		163		163		163		163		163		163		163		163	
Min. running time	(s)	187		187		240		240		187		240		187		240		187		187		240		240	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.9	4	1.9	-	1.9	4	1.9	-	1.9	4	1.9	4	1.9	4	1.9	4	1.9	4	1.9	-	1.9	4	1.9	-
BUL015F310	(bar)	1.6	2.1	1.6	-	1.6	2.1	1.6	-	1.6	2.1	1.6	2.1	1.6	2.1	1.6	2.1	1.6	2.1	1.6	-	1.6	2.1	1.6	-
BUL015F300	(bar)	1.4	2.1	1.4	-	1.4	2.1	1.4	-	1.4	2.1	1.4	2.1	1.4	2.1	1.4	2.1	1.4	2.1	1.4	-	1.4	2.1	1.4	-
BUL020F300	(bar)	1.2	2	1.2	-	1.2	2	1.2	-	1.2	2	1.2	2	1.2	2	1.2	2	1.2	2	1.2	-	1.2	2	1.2	-
BUL015F410	(bar)	1.6	2.1	1.6	-	1.6	2.1	1.6	-	1.6	2.1	1.6	2.1	1.6	2.1	1.6	2.1	1.6	2.1	1.6	-	1.6	2.1	1.6	-
BUL015F400	(bar)	1.4	2.1	1.4	-	1.4	2.1	1.4	-	1.4	2.1	1.4	2.1	1.4	2.1	1.4	2.1	1.4	2.1	1.4	-	1.4	2.1	1.4	-
BUL020F400	(bar)	1.2	2	1.2	-	1.2	2	1.2	-	1.2	2	1.2	2	1.2	2	1.2	2	1.2	2	1.2	-	1.2	2	1.2	-

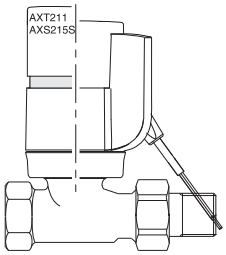
With continuous actuator (use as distribution valve)

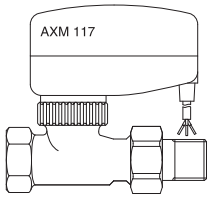
Actuator		AXS215SF122, AXS215SF122B		AXS215SF222, AXS215SF222B	
Page		166		166	
Min. running time	(s)	120		120	
Control signal		0...10 V		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUL010F330, BUL010F320, BUL010F310, BUL010F300	(bar)	1.9	4	1.9	-
BUL015F310	(bar)	1.6	2.1	1.6	-
BUL015F300	(bar)	1.4	2.1	1.4	-
BUL020F300	(bar)	1.2	2	1.2	-
BUL015F410	(bar)	1.6	2.1	1.6	-
BUL015F400	(bar)	1.4	2.1	1.4	-
BUL020F400	(bar)	1.2	2	1.2	-

VXL: Unit through valve









Features

- Standard valve and angle valve version
- Adjustable k_{vs} value in case of DN 10 to DN 15 standard version
- Nominal diameter DN 25 and DN 32, decompressed
- Inlet female thread and outlet with cap nut and connector, conical seal (Euroconus) as per DIN 3841
- When the spindle is pressed in, the control passage is closed.
- Closes against the pressure
- Valve body made of gun metal, DN 10 to DN 20 nickel-plated
- Stainless-steel spindle
- Cone with EPDM soft seal
- Stuffing box with double O-ring seal
- Valve fitting width as per DIN 3841-T1

Technical data

Specifications

Nominal pressure	16 bar or as per DIN 3841 10 bar
Valve stroke	2.5 mm
Leakage rate	0.0001% of k_{vs}
Characteristic	linear

Permissible ambient conditions

Operating temperature	2...130 °C
Maximum operating pressure	16 bar at 130 °C

Structural design

Construction	DIN 3841-D

Overview of types

Type	Nominal diameter	k_{vs} value	Nickel-plated body	Weight
VXL010F260	DN 10	0.04...0.72 m³/h	Yes	0.29 kg
VXL010F250	DN 10	0.25...1.70 m³/h	Yes	0.29 kg
VXL015F260	DN 15	0.04...0.72 m³/h	Yes	0.31 kg
VXL015F250	DN 15	0.25...1.85 m³/h	Yes	0.31 kg
VXL020F260	DN 20	0.04...0.72 m³/h	Yes	0.43 kg
VXL020F250	DN 20	0.25...1.95 m³/h	Yes	0.43 kg
VXL025F200	DN 25	5.5 m³/h	No	0.96 kg
VXL025F201	DN 25	5.5 m³/h	No	1 kg
VXL032F201	DN 32	10.0 m³/h	No	1.5 kg
VXL010F510	DN 10	0.36 m³/h	Yes	0.23 kg
VXL010F500	DN 10	0.8 m³/h	Yes	0.23 kg
VXL015F520	DN 15	0.8 m³/h	Yes	0.28 kg
VXL015F510	DN 15	2.2 m³/h	Yes	0.28 kg
VXL015F500	DN 15	5.0 m³/h	No	0.45 kg
VXL020F500	DN 20	7.0 m³/h	No	0.58 kg

VXL025F200: With stable k_{vs} value

*VXL010F2**, VXL015F2**, VXL020F2**: With variable k_{vs} value*

*VXL0**F201: Pressure-relieved through valves*

*VXL010F5**, VXL015F5**, VXL020F500: Angle valves*

*VXL025F200, VXL0**F201, VXL015F500; VXL020F500: Not suitable for assembling with AXS215S.*

Accessories

Type	Description
0378038001	k_{VS}-adjustment key for VXL***F260

Combination of VXL with electrical actuators

i *Warranty: the technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

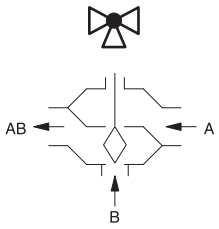
With motor drive (closes against the pressure)

Actuator		AXM117F200		AXM117F202		AXM117SF202, AXM117SF252, AXM117SF302		AXM117SF402	
Page		167		167		169		169	
Running time	(s)	100		60		100		100	
Control signal		3-point		3-point		0...10 V		0...4.8 V 5.2...10 V 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VXL010F260	(bar)	2	-	2	-	2	-	2	-
VXL010F250	(bar)	1	-	1	-	1	-	1	-
VXL015F260	(bar)	2	-	2	-	2	-	2	-
VXL015F250	(bar)	1	-	1	-	1	-	1	-
VXL020F260	(bar)	2	-	2	-	2	-	2	-
VXL020F250, VXL025F200	(bar)	1	-	1	-	1	-	1	-
VXL025F201	(bar)	4	-	4	-	4	-	4	-
VXL032F201	(bar)	3.5	-	3.5	-	3.5	-	3.5	-
VXL010F510, VXL015F520, VXL010F500	(bar)	2.2	-	2.2	-	2.2	-	2.2	-
VXL015F510	(bar)	4	-	4	-	4	-	4	-
VXL015F500	(bar)	0.9	-	0.9	-	0.9	-	0.9	-
VXL020F500	(bar)	0.8	-	0.8	-	0.8	-	0.8	-

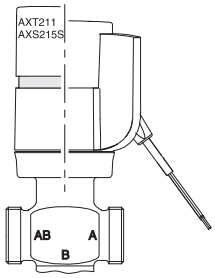
With thermal and continuous actuator (closes against the pressure)

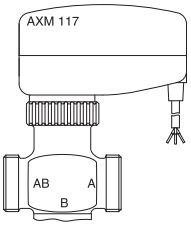
Actuator		AXT211F110, AXT211F110B, AXT211F210		AXT211F112, AXT211F112B, AXT211F212		AXT211F110M		AXT211F112M		AXT211F190		AXT211F192		AXT211HF110, AXT211HF210		AXT211HF112, AXT211HF212		AXS215SF122, AXS215SF122B, AXS215SF222, AXS215SF222B	
Page		163		163		163		163		163		163		163		163		166	
Min. running time	(s)	187		240		187		240		187		240		187		240		120	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VXL010F260	(bar)	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-
VXL010F250	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
VXL015F260	(bar)	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-
VXL015F250	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
VXL020F260	(bar)	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-
VXL020F250	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
VXL025F200	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-
VXL025F201	(bar)	4	-	4	-	4	-	4	-	4	-	4	-	4	-	4	-	-	-
VXL032F201	(bar)	3.5	-	3.5	-	3.5	-	3.5	-	3.5	-	3.5	-	3.5	-	3.5	-	-	-
VXL010F510, VXL010F500, VXL015F520	(bar)	2.2	-	2.2	-	2.2	-	2.2	-	2.2	-	2.2	-	2.2	-	2.2	-	2.2	-
VXL015F510	(bar)	4	-	4	-	4	-	4	-	4	-	4	-	4	-	4	-	4	-
VXL015F500	(bar)	0.9	-	0.9	-	0.9	-	0.9	-	0.9	-	0.9	-	0.9	-	0.9	-	-	-
VXL020F500	(bar)	0.8	-	0.8	-	0.8	-	0.8	-	0.8	-	0.8	-	0.8	-	0.8	-	-	-

BXL: Unit 3-way valve



Control valve





Features

- Valve with male thread as per DIN EN ISO 228-1, class B
- When the spindle is depressed, the control passage is open and the mixing passage closed.
- Use as control valve
- Valve body made of gun metal
- Cone with EPDM soft seal
- Stuffing box with double O-ring seal
- Stainless-steel spindle
- Version with cap nut and flat seal

Technical data

Specifications

	Nominal pressure	16 bar
	Valve characteristic, control passage	linear
	Valve characteristic, mixing passage	complementary, reduced
	Valve stroke	2.9 mm
	Leakage rate of control passage	approx. 0.05% of k_{vs} value
	Leakage rate, mixing passage	approx. 0.2% of k_{vs} value

Permissible ambient conditions

	Operating temperature	2...130 °C
	Operating pressure	max. 16 bar at 130 °C

Structural design

	Nickel-plated body	No

Overview of types

i *Do not use type as through valve*

Type	Nominal diameter	C_{vs} value	Weight
BXL025F200	DN 25	6.5 m³/h	1.2 kg
BXL040F200	DN 40	9.5 m³/h	2.34 kg

Accessories

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

Combination of BXL with 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 non-Sauter valve actuators are used.*

With motor drive (use as control valve)

Actuator		AXM117F200		AXM117F202		AXM117SF202, AXM117SF252, AXM117SF302		AXM117SF402	
Page		167		167		169		169	
Running time	(s)	100		60		100		100	
Control signal		3-point		3-point		0...10 V		0...4.8 V 5.2...10 V 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BXL025F200	(bar)	0.5	-	0.5	-	0.5	-	0.5	-
BXL040F200	(bar)	0.2	-	0.2	-	0.2	-	0.2	-

With thermal and continuous actuator (use as control valve)

Actuator		AXT211F110, AXT211F110B, AXT211F210		AXT211F112, AXT211F112B, AXT211F212		AXT211F110M		AXT211F112M		AXT211F190		AXT211F192		AXT211HF110, AXT211HF210		AXT211HF112, AXT211HF212		AXS215SF122, AXS215SF122B, AXS215SF222, AXS215SF222B	
Page		163		163		163		163		163		163		163		163		166	
Min. running time	(s)	187		240		187		240		187		240		187		240		120	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BXL025F200	(bar)	0.5	-	0.5	-	0.5	-	0.5	-	0.5	-	0.5	-	0.5	-	0.5	-	0.5	-
BXL040F200	(bar)	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-

Actuators for unit valves

SAUTER's actuators for unit valves enable reliable and accurate control. Pulse-pause control (with pulse widths of a few seconds) or continuous control guarantee accurate control characteristic.

Overview of actuators for unit valves

Models				
Type codes	AXT 201, 211	AXS 215S	AXM 117	AXM 117S
Further information	p. 162	p. 165	p. 167	p. 169
Technical data				
Max. nominal stroke (mm)	4.5	4.5	4	4
Max. pushing force (N)	125	125	120/140	120
Running time	3.5...4.5 min	30 s	60/100 s	60 s
Power supply (V)	24/230	24	24/230	24
Mode of operation				
Stroke indicator	•	•	–	–
Thermal	•	•	–	–
Motor	–	–	•	•
Control				
Two-point	•	–	–	–
Three-point	–	–	•	–
Positioner	–	•	–	•
Compatible with these valves	VUL, BUL, VXL, BXL	VUL, BUL, VXL, BXL	VUL, BUL, VXL, BXL	VUL, BUL, VXL, BXL

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

Features

- Can be mounted on the valve without force, using the Low-Force-Locking® (LFL) connector
- Built onto valve with M30 x 1.5 thread, with automatic adjustment of closing dimension
- Pushing force up to 125 N
- With 230 V or 24 V thermal expansion element
- Large visible position indicator
- NC (normally closed) and NO (normally open) versions (with and without auxiliary contacts)
- Version with manual adjustment
- Silent and maintenance-free
- Modular electrical plug connection (various functions, cable lengths and types)
- Connected to valve with plastic bayonet connection
- Bayonet nuts for connection to popular valves with threads M30 x 1.5 (black) M28 x 1.5 (grey) or M30 x 1.0 (white)
- Warm-up running time for 4.5 mm stroke at 21 °C: min. 3.5 min (230 V), min. 4.5 min (24 V)
- Fitting in any position, as well as upside-down

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=	±20%
	Power supply 230 V~	±15%, 50…60 Hz
	Power consumption during operation	2 W
	Starting power 24 V~/=	5 W/5 VA
	Starting power 230 V	40 W/40 VA
	Start-up current	250 mA
Specifications		
	Stroke	Max. 4.5 mm
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Operating temperature at valve	100 °C
	Storage and transport temperature	-25…70 °C
	Humidity, no condensation	< 85% rh
Structural design		
	Housing	Pure white (RAL 9010) or jet black (RAL 9005), high-gloss surface (FV-0 as per EN 60707 and V-0 as per UL94)
	Housing material	Fire-retardant plastic
	Power cable	Standard length 1 m, H03…, PVC/halogen-free, Ø 0.5 mm², white/black
Standards and directives		
	Type of protection	IP 54 (EN 60529)
	Protection class 24 V	III (EN 60730-1)
	Protection class 230 V	II (EN 60730-1)
CE conformity as per	Low-voltage directive 2006/95/EC	EN60730-1, EN60730-2, EN60730-14 EN 60335-1

Overview of types

i *Closing force in combination with SAUTER valves*

Type	Voltage	Closing force	NC/NO	Running time	Weight	Closing force in range of accumulated variation
AXT201F110	230 V	90 N	NC	3.5 s	0.18 kg	84...102 N ±5 N
AXT201F112	24 V	90 N	NC	4.5 s	0.18 kg	84...102 N ±5 N
AXT211F110	230 V	115 N	NC	3.5 s	0.18 kg	108...122 N ±5 N
AXT211F210	230 V	110 N	NO	3.5 s	0.18 kg	110 N ±5 N
AXT211F112	24 V	115 N	NC	4.5 s	0.18 kg	108...122 N ±5 N
AXT211F212	24 V	110 N	NO	4.5 s	0.18 kg	110 N ±5 N
AXT211F110B	230 V	115 N	NC	3.5 s	0.18 kg	108...122 N ±5 N
AXT211F112B	24 V	115 N	NC	4.5 s	0.18 kg	108...122 N ±5 N
AXT211HF110	230 V	115 N	NC	3.5 s	0.21 kg	108...122 N ±5 N
AXT211HF210	230 V	110 N	NO	3.5 s	0.21 kg	110 N ±5 N
AXT211HF112	24 V	115 N	NC	4.5 s	0.21 kg	108...122 N ±5 N
AXT211HF212	24 V	110 N	NO	4.5 s	0.21 kg	110 N ±5 N
AXT211F110M	230 V	115 N	NC	3.5 s	0.18 kg	108...122 N ±5 N
AXT211F112M	24 V	115 N	NC	4.5 s	0.18 kg	108...122 N ±5 N
AXT211F190	230 V	115 N	NC	3.5 s	0.1 kg	108...122 N ±5 N
AXT211F192	24 V	115 N	NC	4.5 s	0.1 kg	108...122 N ±5 N

- *AXT201F***: White version, neutral, including bayonet nut M30 x 1.5, cable 1 m, pack of one*
- *AXT211F***: White version, including bayonet nut M30 x 1.5, cable 1 m, pack of one*
- *AXT211F***B: Black version, including bayonet nut M30 x 1.5, cable 1 m, pack of one*
- *AXT211HF***: White version, with auxiliary contact, including bayonet nut M30 x 1.5, cable 1 m, pack of one*
- *AXT211F***M: White version, with manual adjustment, including bayonet nut M30 x 1.5, cable 1 m, pack of one*
- *AXT211F19*: White version, packing unit of 50 pieces, including bayonet nuts M30 x 1.5, without cable*

Accessories

Connectors with different cable lengths for thermal actuator

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

Connectors with auxiliary contacts

Type	Description
0550484121	Plug, white, with integrated auxiliary contacts for NC actuator, 2 m cable, PVC H03VV, Ø 0.5 x 4 mm
0550484221	Plug, white, with integrated auxiliary contacts for NO actuator, 2 m cable, PVC H03VV, Ø 0.5 x 4 mm

Miscellaneous

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

Adaptors & adaptor sets

Type	Description
0550390001	Raised bayonet nut M30 x 1.5 (black), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 x 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm
0550390101	Raised bayonet nut M28 x 1.5 (grey), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M28 x 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Pettinaroli
0550390201	Raised bayonet nut M30 x 1.0 (white), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 x 1.0 threads and angle valves or valves from different manufacturers, dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Oventrop (prior to 1997), Beulco (prior to 2004)
0550393001	Adaptor for fitting to Danfoss valves, type RA 2000, 22 mm
0550393002	Adaptor for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adaptor for fitting to Danfoss valves, type RAV, 34 mm
0550394001	Adaptor for fitting to Giacomini valves, type R450, R452, R456 and range 60
0550399001	Adaptor set comprising of: raised bayonet nut, black M30 x 1.5 (all manufacturers, M30 x 1.5), raised bayonet nut, grey M28 x 1.5 (all manufacturers, M28 x 1.5), raised bayonet nut, white M30 x 1.0 (e.g. Oventrop, Beulco), 2 x N-inserts (black) and 2 x S-inserts (white), Danfoss adaptor RA 2000 (Ø 22 mm), Giacomini adaptors

Connectors with continuous actuation (for 24 V version only)

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

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

Features

- Easy fitting on the valve using the Low-Force-Locking® (LFL) connector
- Built onto valve with M30 × 1.5 thread, with automatic adjustment of closing dimension
- With 24 V expansion element and accurate continuous input
- Choice of control action, 0(2)…10 V or 10…(2)0 V and split-range function, 0…4.5 V or 5.5…10 V
- Position monitoring with inductive, non-wearing sensor, does not require periodic readjustment.
- Large visible position indicator
- NC (normally closed) and NO (normally open) versions
- Silent and maintenance-free
- Modular electrical plug connection (various cable lengths and types)
- Connected to valve with plastic bayonet connection
- Suitable for retrofitting existing installations without an adaptor
- Fitting in any position, as well as upside-down

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50…60 Hz
	Power consumption during operation	approx. 2 W
	Starting power	Max. 5 W
	Start-up current	approx. 250 mA
	Stand-by current	Max. 6 mA
	Operating current	Max. 90 mA
Specifications		
	Stroke	4.5/3 (can be selected)
	Min. running time[1]	approx. 30 s
	Max. operating temperature at valve	100 °C
	Control signal 0…10 V	R_i = 100 kΩ
Permissible ambient conditions		
	Permissible ambient temperature	0…50 °C
	Storage and transport temperature	-25…70 °C
	Humidity, no condensation	< 85% rh
Structural design		
	Weight	0.21 kg
	Housing	High-gloss surface (FV-0 as per EN 60707 and V-0 as per UL94), pure white (RAL 9010) or jet black (RAL 9005)
	Housing material	Fire-retardant plastic
	Power cable	Standard length 2m, H03VV, PVC or halogen-free, Ø 0.22 mm², white or black
Standards and directives		
	Type of protection	IP 54 (EN 60529)
	Protection class 24 V	III (EN 60730-1, EN 60730-2, EN 60730-14)

[1] *The total time for 100% stroke is approx. 3.5…4.5 min (warm-up time) from cold or approx. 150 s in control mode excluding dead time, i.e. in stand-by mode, add a dead time of approx. 110 s*

Overview of types

Closing force in combination with SAUTER valves

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

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

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

Accessories

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

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

Miscellaneous

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

Adaptors & adaptor sets

Type	Description
0550390001	Raised bayonet nut M30 x 1.5 (black), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 x 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm
0550390101	Raised bayonet nut M28 x 1.5 (grey), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M28 x 1.5 threads and angle valves or valves with measurement sockets; dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Pettinaroli
0550390201	Raised bayonet nut M30 x 1.0 (white), with N-insert (normal, black) and S-insert (reduced, white), for all valves with M30 x 1.0 threads and angle valves or valves from different manufacturers, dimension of actuator 5 mm, closing dimension depending on type of use: NC 4.5 mm to 18.5 mm and NO 8.5 mm to 22.5 mm, e.g. Oventrop (prior to 1997), Beulco (prior to 2004)
0550393001	Adaptor for fitting to Danfoss valves, type RA 2000, 22 mm
0550393002	Adaptor for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adaptor for fitting to Danfoss valves, type RAV, 34 mm
0550394001	Adaptor for fitting to Giacomini valves, type R450, R452, R456 and range 60
0550399001	Adaptor set comprising of: raised bayonet nut, black M30 x 1.5 (all manufacturers, M30 x 1.5), raised bayonet nut, grey M28 x 1.5 (all manufacturers, M28 x 1.5), raised bayonet nut, white M30 x 1.0 (e.g. Oventrop, Beulco), 2 x N-inserts (black) and 2 x S-inserts (white), Danfoss adaptor RA 2000 (Ø 22 mm), Giacomini adaptors

AXM 117: Motorised actuator for unit valves

Features

- For unit valves with threaded actuator connections M30 × 1.5
- Stepping motor with electronic activation and cut-out on AXM117F202
- Synchronous motor with magnetic clutch on AXM117 F200
- Maintenance-free gear unit
- Suitable for retrofitting existing installations using an appropriate adaptor
- Operating status control using integrated LED display on AXM117F202
- Fitting position vertically upright to horizontal, not upside down

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50...60 Hz 24 V~, ±15%, 50...60 Hz, 24 V=, ±15%
Specifications		
	Stroke	4 mm
Permissible ambient conditions		
	Operating temperature	max. 100 °C at the valve
	Permissible ambient temperature	0...50 °C
	Permissible ambient humidity	< 75% rh
Structural design		
	Housing	two-piece, pure white RAL 9010 (AXM117F200), light grey RAL 7035 (AXM117F202)
	Housing material	plastic
Standards and directives		
	Type of protection	IP 40 (EN 60529)
	Protection class	II as per IEC 60730 (AXM117F200), III as per IEC 60730 (AXM117F202)

Overview of types

Type	AXM117F200	AXM117F202
Power cable	light grey, 1.5 m, 3 × 0.5 mm²	light grey, 1.5 m, 3 × 0.25 mm²
Power consumption on starting	7 VA	5 VA
Power consumption during operation	7 VA	5 VA
Voltage	230 V~	24V ~/=
Running time	100 s	60 s
Pushing force	140 N	120 N
Weight	0.3 kg	0.15 kg

AXM117F200: Pushing force min. 120 N, max. 180 N

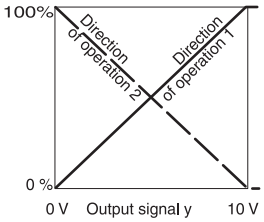
AXM117F202: Pushing force min. 100 N, max. 150 N

Accessories

Type	Description
0371356001	Adaptor for fitting to Beulco or Tobler underfloor-heating distribution stations (M30 × 1)
0371235001	Adaptor for fitting to Oventrop valves (M30 × 1)
0550393001	Adaptor for fitting to Danfoss valves, type RA 2000, 22 mm
0550393002	Adaptor for fitting to Danfoss valves, type RAVL, 26 mm

Type	Description
0550393003	Adaptor for fitting to Danfoss valves, type RAV, 34 mm
0371361001	Adaptor for fitting to Herz valves, type Herz-TS'90 (M28 × 1.5)
0371363001	Adaptor for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)

AXM 117S: Motorised actuator (with positioner) for unit valves



Features

- For unit valves with threaded actuator connections M30 × 1.5
- Stepping motor with electronic activation and cut-out
- Version with direction of operation A or B or variable
- Maintenance-free gear unit
- Operating status control using integrated LED display
- Suitable for retrofitting existing installations using an appropriate adaptor
- Brass nut (AXM117F200), nickel-plated brass nut (AXM117F202)
- Fitting position vertically upright to horizontal, not upside down

Technical data

Electrical supply

Power supply	24 V~/=, ±15%, 50...60 Hz
Power consumption during operation	5 VA
Power consumption on starting	5 VA

Specifications

Pushing force[1]	120 N
Stroke	4 mm
Running time	60 s
Power cable	light grey (RAL 7035), 1.5 m, 3 × 0.25 mm², 5 m, 3 × 0.25 mm² (AXM117SF252)

Permissible ambient conditions

Permissible ambient temperature	0...50 °C
Permissible humidity	< 75% rh
Operating temperature at valve	max. 100 °C

Structural design

Housing	two-piece, light grey (RAL 7035)
Housing material	plastic
Weight	0.15 kg

Standards and directives

Type of protection	IP 40 (EN 60529)
Protection class	III (IEC 60730)

Overview of types

Direction of operation 1: 0...10 V rising = actuator retracts (VXL, VUL, BUL opens, BXL control passage closes)

Direction of operation 2: 0...10 V rising = actuator extends (VXL, VUL, BUL closes, BXL control passage opens)

Type	Direction of action	Control signal
AXM117SF202	1	0...10 V, R_i = 20 kΩ, max. 0.5 mA
AXM117SF252	1	0...10 V, R_i = 20 kΩ, max. 0.5 mA
AXM117SF302	2	0...10 V, R_i = 20 kΩ, max. 0.5 mA
AXM117SF402	1 or 2	0...10 V, 5,2...10 V, 0...4.8 V, max. 0.5 mA

AXM117SF402: The direction of operation and the control voltage can be set using jumpers

[1] *Pushing force min. 100 N, max. 150 N*

Accessories

Type	Description
0371235001	Adaptor for fitting to Oventrop valves (M30 × 1)
0550393001	Adaptor for fitting to Danfoss valves, type RA 2000, 22 mm
0371356001	Adaptor for fitting to Beulco or Tobler underfloor-heating distribution stations (M30 × 1)
0550393002	Adaptor for fitting to Danfoss valves, type RAVL, 26 mm
0550393003	Adaptor for fitting to Danfoss valves, type RAV, 34 mm
0371361001	Adaptor for fitting to Herz valves, type Herz-TS'90 (M28 × 1.5)
0371363001	Adaptor for fitting to Tour & Andersson valves, type TA/RVT (M28 × 1.5)

Regulating valves

SAUTER's regulating valves provide flexible combinations for all requirements. This wide product range comprises threaded valves made of DZR brass and flanged valves made of grey cast iron, ductile cast iron or cast steel. These valves can be used for the continuous control of hot or cold water or of air in closed circuits.

Overview of regulating valves

Models						
Type codes	VUN	BUN	V6R	B6R	VUD	BUD
Further information	p. 173	p. 176	p. 179	p. 182	p. 185	p. 189
Application						
Preheater for ventilation & air-conditioning	•	•	•	•	•	•
Preheater, cooler for ventilation & air-conditioning	•	–	•	–	•	–
Steam humidifier for ventilation & air-conditioning	–	–	–	–	–	–
Reheater for ventilation & air-conditioning	•	•	•	•	•	•
Chilled beams, underfloor heating	•	–	–	–	–	–
Static heating	•	•	•	•	•	•
Cooling tower	•	•	•	•	–	–
Multi-boiler system	•	–	•	–	•	–
Local heating	•	•	•	•	•	•
District heating	–	–	–	–	–	–
Version						
Through	•	–	•	–	•	–
3-way	–	•	–	•	–	•
Female thread	–	–	•	•	–	–
Male thread	•	•	–	–	–	–
Flange	–	–	–	–	•	•
Compatible with these actuators	AVM 105(S) AVM 115(S) AVM 124 AVM 125S AVF 124 AVF 125S	AVM 105(S) AVM 115(S) AVM 124 AVM 125S AVF 124 AVF 125S	AVM 234S AVF 234S	AVM 234S AVF 234S	AVM 105 AVM 115 AVM 124/125 AVF 124/125 AVM 234S AVF 234S AVN 224S	AVM 105 AVM 115 AVM 124/125 AVF 124/125 AVM 234S AVF 234S AVN 224S

Overview of regulating valves

Models							
Type codes	VUE	BUE	VUG	BUG	VUP	VUS	BUS
Further information	p. 193	p. 197	p. 202	p. 206	p. 210	p. 212	p. 215
Application							
Preheater for ventilation & air-conditioning	•	•	•	•	–	–	–
Preheater, cooler for ventilation & air-conditioning	•	–	•	–	–	–	–
Steam humidifier for ventilation & air-conditioning	–	–	–	–	–	•	•
Reheater for ventilation & air-conditioning	•	•	•	•	–	–	–
Chilled beams, underfloor heating	–	–	–	–	–	–	–
Static heating	•	•	–	•	•	–	–
Cooling tower	–	–	–	•	–	–	–
Multi-boiler system	•	–	•	–	•	–	–
Local heating	•	•	•	•	•	–	–
District heating	–	–	•	–	•	•	•
Version							
Through	•	–	•	–	•	•	–
3-way	–	•	–	•	–	–	•
Female thread	–	–	–	–	–	–	–
Male thread	–	–	–	–	–	–	–
Flange	•	•	•	•	•	•	•
Compatible with these actuators	AVM 105 AVM 115 AVM 124/125 AVF 124/125 AVM 234S AVF 234S	AVM 105 AVM 115 AVM 124/125 AVF 124/125 AVM 234S AVF 234S	AVM 234S AVF 234S AVN 224S	AVM 234S AVF 234S AVN 224S	AVM 234S AVF 234S AVN 224S	AVM 234S AVF 234S	AVM 234S AVF 234S

Explanation of pressure differences

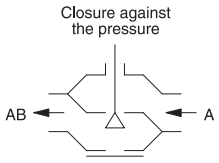
Δp_{max} (bar) : Maximum permissible pressure difference across the valve at which the actuator can still firmly open and close the valve taking Δp_v into account.

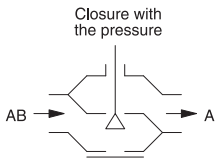
Δp_s (bar) : Maximum permissible pressure difference across the valve at which, in the event of a malfunction (e.g burst pipe after the valve), the actuator can firmly close the valve by means of a fast rotary movement.

VUN: Through valve with male thread, PN 16

Features

- Regulating valve, free of silicone grease, with male thread as per DIN EN ISO 228-1
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- When the spindle is extended, the valve is closed.
- Closes against or with the pressure
- Stainless-steel spindle
- Valve body and seat in dezincification-resistant (DZR) cast brass
- Cone made of DZR brass with glass-fibre reinforced PTFE sealing ring
- Stuffing box made of DZR brass with wiper ring and double O-ring seal in EPDM





Technical data

Specifications

Nominal pressure	16 bar
Control ratio	> 50:1 (typical)
Nominal stroke	8 mm
Leakage rate	≤ 0.02% of k_{VS} value

Permissible ambient conditions

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

Overview of types

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

Accessories

Type	Description
0361951015	1 screw fitting for male thread with flat seal, DN 15
0361951020	1 screw fitting for male thread with flat seal, DN 20
0361951025	1 screw fitting for male thread with flat seal, DN 25
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50
0372240001	Manual adjustment for valves with 8 mm stroke

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

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

Combination of VUN with electrical actuators

Warranty: the technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 250 N (closes against the pressure)

Actuator		AVM105F100		AVM105F120, AVM105F122		AVM105SF132	
Page		220		220		222	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300, VUN020F300, VUN025F300	(bar)	4	-	4	-	4	-
VUN032F300	(bar)	3	-	3	-	3	-
VUN040F300	(bar)	1.9	-	1.9	-	1.9	-
VUN050F300, VUN050F200	(bar)	1	-	1	-	1	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (closes against the pressure)

Actuator		AVM115F120, AVM115F122		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300	(bar)	6	-	6	-
VUN020F300	(bar)	5	-	5	-
VUN025F300	(bar)	4	-	4	-
VUN032F300	(bar)	3.5	-	3.5	-
VUN040F300	(bar)	3	-	3	-
VUN050F300, VUN050F200	(bar)	2.4	-	2.4	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closes against the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300, VUN020F300, VUN025F300	(bar)	8	-	8	-
VUN032F300	(bar)	6	-	6	-
VUN040F300	(bar)	5	-	5	-
VUN050F300, VUN050F200	(bar)	3	-	3	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closes with the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300, VUN020F300	(bar)	6	-	6	-
VUN025F300	(bar)	5	-	5	-
VUN032F300	(bar)	4	-	4	-
VUN040F300	(bar)	2.5	-	2.5	-
VUN050F300, VUN050F200	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closes against the pressure)

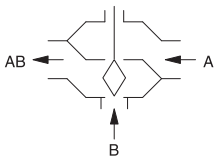
Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300	(bar)	6	16	6	16
VUN020F300	(bar)	5	12	5	12
VUN025F300	(bar)	4	8	4	8
VUN032F300	(bar)	3.5	6	3.5	6
VUN040F300	(bar)	3	3.5	3	3.5
VUN050F300, VUN050F200	(bar)	2.4	2.4	2.4	2.4

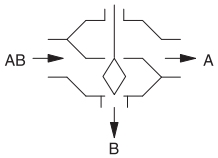
At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closes with the pressure)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUN015F350, VUN015F340, VUN015F330, VUN015F320, VUN015F310, VUN015F300	(bar)	4	16	4	16
VUN020F300, VUN025F300	(bar)	2.8	16	2.8	16
VUN032F300	(bar)	2	16	2	16
VUN040F300	(bar)	1.5	16	1.5	16
VUN050F300, VUN050F200	(bar)	0.8	16	0.8	16

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 as per DIN EN ISO 228-1
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- When the spindle is retracted, the valve is closed.
- Use as control valve or as distribution valve
- Valve body with seat in dezincification-resistant (DZR) cast brass
- Cone made of DZR brass with glass-fibre reinforced PTFE sealing ring
- Stainless-steel spindle
- Stuffing box made of DZR brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

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

Permissible ambient conditions

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

Overview of types

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

Accessories

Type	Description
0361951015	1 screw fitting for male thread with flat seal, DN 15
0361951020	1 screw fitting for male thread with flat seal, DN 20
0361951025	1 screw fitting for male thread with flat seal, DN 25
0361951032	1 screw fitting for male thread with flat seal, DN 32
0361951040	1 screw fitting for male thread with flat seal, DN 40
0361951050	1 screw fitting for male thread with flat seal, DN 50

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

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

Combination of BUN 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 non-Sauter valve actuators are used.*

Pushing force 250 N (use as control valve)

Actuator		AVM105F100		AVM105F120, AVM105F122		AVM105SF132	
Page		220		220		222	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300, BUN020F300	(bar)	4	-	4	-	4	-
BUN025F300	(bar)	3	-	3	-	3	-
BUN032F300	(bar)	2	-	2	-	2	-
BUN040F300	(bar)	1.2	-	1.2	-	1.2	-
BUN050F300, BUN050F200	(bar)	0.8	-	0.8	-	0.8	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (use as control valve)

Actuator		AVM115F120, AVM115F122		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300	(bar)	6	-	6	-
BUN020F300	(bar)	5	-	5	-
BUN025F300	(bar)	4	-	4	-
BUN032F300	(bar)	3.7	-	3.7	-
BUN040F300	(bar)	2.7	-	2.7	-
BUN050F300, BUN050F200	(bar)	1.8	-	1.8	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as control valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300, BUN020F300, BUN025F300	(bar)	8	-	8	-
BUN032F300	(bar)	6	-	6	-
BUN040F300	(bar)	4.4	-	4.4	-
BUN050F300, BUN050F200	(bar)	3	-	3	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as distribution valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300, BUN020F300	(bar)	6	-	6	-
BUN025F300	(bar)	5	-	5	-
BUN032F300	(bar)	4	-	4	-
BUN040F300	(bar)	2.5	-	2.5	-
BUN050F300, BUN050F200	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as control valve)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300	(bar)	6	16	6	16
BUN020F300	(bar)	5	9.4	5	9.4
BUN025F300	(bar)	4	6.5	4	6.5
BUN032F300	(bar)	3.7	4.3	3.7	4.3
BUN040F300	(bar)	2.7	2.7	2.7	2.7
BUN050F300, BUN050F200	(bar)	1.8	1.8	1.8	1.8

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as distribution valve)

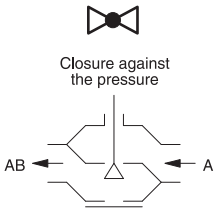
Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUN015F330, BUN015F320, BUN015F310, BUN015F300	(bar)	4	16	4	16
BUN020F300, BUN025F300	(bar)	2.8	16	2.8	16
BUN032F300	(bar)	2	16	2	16
BUN040F300	(bar)	1.5	16	1.5	16
BUN050F300, BUN050F200	(bar)	0.8	16	0.8	16

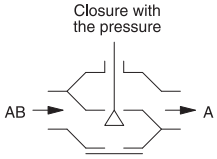
At temperatures above 100°C, accessories are required

V6R: Through valve with female thread, PN 16

Features

- Regulating valve, free of silicone grease, with female thread DIN EN ISO 228-1 G
- Equal-percentage characteristic or linear, can be set with SUT valve actuators to linear, equal percentage or quadratic
- If the spindle is retracted, the valve passage A-AB is closed
- Closing procedure against or with the pressure
- Valve body and seat made of gun metal
- Stainless steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM





Technical data

Specifications

Control ratio	50 (typical)
Leakage rate	≤ 0.05% of k_{vs} value
Valve stroke	14 mm
Nominal pressure	16 bar

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic	Materials for valve plug	Weight
V6R15F350	DN 15	0.4 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F340	DN 15	0.63 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F330	DN 15	1 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F320	DN 15	1.6 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	1.2 kg
V6R15F300	DN 15	4 m³/h	equal-percentage	brass	1.2 kg
V6R15F200	DN 15	4 m³/h	linear	brass	1.2 kg
V6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	1.6 kg
V6R25F300	DN 25	10 m³/h	equal-percentage	brass	1.6 kg
V6R25F210	DN 25	6.3 m³/h	linear	brass	1.6 kg
V6R25F200	DN 25	10 m³/h	linear	brass	1.6 kg
V6R40F310	DN 40	16 m³/h	equal-percentage	brass	3.4 kg
V6R40F300	DN 40	25 m³/h	equal-percentage	brass	3.4 kg
V6R40F210	DN 40	16 m³/h	linear	brass	3.4 kg
V6R40F200	DN 40	25 m³/h	linear	brass	3.4 kg
V6R50F300	DN 50	35 m³/h	equal-percentage	brass	4.6 kg
V6R50F200	DN 50	35 m³/h	linear	brass	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. asbestos-free seal, 2 pcs required
0360391025	Screw fitting, DN 25, incl. asbestos-free seal, 2 pcs required
0360391040	Screw fitting, DN 40, incl. asbestos-free seal, 2 pcs required

[1] *At temperatures under 0 °C, use stuffing-box heating (accessory)*

Type	Description
0360391050	Screw fitting, DN 50, incl. asbestos-free seal, 2 pcs required
0360421000	Adhesive label for flow change "Closing procedure with the pressure"
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C

Combination of V6R with electrical actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 2500 N (closing procedure against the pressure)

Actuator		AVM234SF132	
Page		229	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200, V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	4	-
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	3	-
V6R50F300, V6R50F200	(bar)	2	-

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

Pushing force 2500 N (closing procedure with the pressure)

Actuator		AVM234SF132	
Page		229	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200	(bar)	3	-
V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	2	-
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	1.5	-
V6R50F300, V6R50F200	(bar)	1	-

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, pushing force 2000 N (closing procedure against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200, V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	4	16
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	3	11.5
V6R50F300, V6R50F200	(bar)	2	8.6

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, pushing force 2000 N (closing procedure with the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200	(bar)	3	16
V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	2	16
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	1.5	16
V6R50F300, V6R50F200	(bar)	1	16

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, without crank handle, pushing force 1100 N (closing procedure against the pressure)

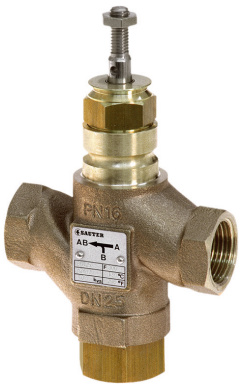
Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200, V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	4	16
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	3	6.3
V6R50F300, V6R50F200	(bar)	2	4.7

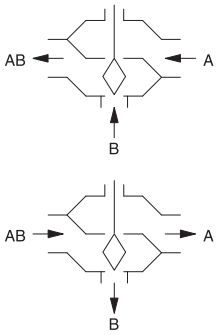
Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, without crank handle, pushing force 1100 N (closing procedure with the pressure)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200	(bar)	3	16
V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	2	16
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	1.5	16
V6R50F300, V6R50F200	(bar)	1	16

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)





B6R: 3-way valve with female thread, PN 16

Features

- Regulating valve, free of silicone grease, with female thread DIN EN ISO 228-1-G
- Equal-percentage characteristic or linear, can be set with SUT valve actuators to linear, equal percentage or quadratic (quadratic only with equal-percentage characteristic)
- When the spindle is extended, the valve passage A-AB is closed
- Use as control or distribution valve
- Valve body and seat made of gun metal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM
- Stainless-steel spindle

Technical data

Specifications

Control ratio	50 (typical)
Valve stroke	14 mm
Valve characteristic, mixing passage	linear
Leakage rate of control passage A-AB	≤ 0.05% of k_{vs} value
Leakage rate, mixing passage B-AB	≤ 1% of k_{vs} value

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic	Materials for valve plug	Weight
B6R15F330	DN 15	1 m³/h	equal-percentage	stainless steel	1.2 kg
B6R15F320	DN 15	1.6 m³/h	equal-percentage	stainless steel	1.2 kg
B6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	1.2 kg
B6R15F300	DN 15	4 m³/h	equal-percentage	brass	1.2 kg
B6R15F200	DN 15	4 m³/h	linear	brass	1.2 kg
B6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	1.6 kg
B6R25F300	DN 25	10 m³/h	equal-percentage	brass	1.6 kg
B6R25F210	DN 25	6.3 m³/h	linear	brass	1.6 kg
B6R25F200	DN 25	10 m³/h	linear	brass	1.6 kg
B6R40F310	DN 40	16 m³/h	equal-percentage	brass	3.4 kg
B6R40F300	DN 40	25 m³/h	equal-percentage	brass	3.4 kg
B6R40F210	DN 40	16 m³/h	linear	brass	3.4 kg
B6R40F200	DN 40	25 m³/h	linear	brass	3.4 kg
B6R50F300	DN 50	35 m³/h	equal-percentage	brass	4.6 kg
B6R50F200	DN 50	35 m³/h	linear	brass	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. asbestos-free seal, 3 pcs required
0360391025	Screw fitting, DN 25, incl. asbestos-free seal, 3 pcs required
0360391040	Screw fitting, DN 40, incl. asbestos-free seal, 3 pcs required
0360391050	Screw fitting, DN 50, incl. asbestos-free seal, 3 pcs required

1) *At temperatures under 0 °C, use stuffing-box heating (accessory)*

Type	Description
0360429000	Adhesive label for distribution valve
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C

Combination of B6R with electrical actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 2500 N (use as control valve)

Actuator		AVM234SF132	
Page		229	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200, B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	4	-
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	3	-
B6R50F300, B6R50F200	(bar)	2	-

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

Pushing force 2500 N (use as distribution valve)

Actuator		AVM234SF132	
Page		229	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200	(bar)	3	-
B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	2	-
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	1.5	-
B6R50F300, B6R50F200	(bar)	1	-

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, pushing force 2000 N (use as control valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200, B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	4	16
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	3	11.5
B6R50F300, B6R50F200	(bar)	2	8.6

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, pushing force 2000 N (use as distribution valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200	(bar)	3	16
B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	2	16
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	1.5	16
B6R50F300, B6R50F200	(bar)	1	16

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

With spring return, without crank handle, pushing force 1100 N (use as control valve)

Actuator		AVN224SF232, AVN224SF132	
Page		238	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200, B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	4	16
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	3	6.3
B6R50F300, B6R50F200	(bar)	2	4.7

Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

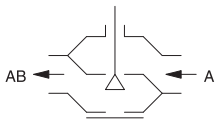
With spring return, without crank handle, pushing force 1100 N (use as distribution valve)

Actuator		AVN224SF232, AVN224SF132	
Page		238	
Running time		28/56/84 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200	(bar)	3	16
B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	2	16
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	1.5	16
B6R50F300, B6R50F200	(bar)	1	16

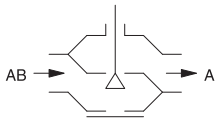
Assembly kit 0372338001 required (included in the combined price in Switzerland and Germany, other countries on request)

VUD: Flanged through valve, PN 6

Closure against the pressure



Closure with the pressure



Features

- 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 valve actuators to linear, equal percentage or quadratic
- When the spindle is retracted, the valve is closed.
- Closing procedure: against the pressure DN 15...100 or with the pressure DN 15...50
- Valve body and seat made of grey cast iron
- Stainless steel spindle
- Nominal diameter DN 15...50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65...100 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Nominal pressure	6 bar
Connection	PN 6
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value
Control ratio of valve	> 50:1

Permissible ambient conditions[1)]

Operating temperature[2)]	–10...150°C

Overview of types

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUD015F320	DN 15	1.6 m³/h	3.2 kg	8 mm	Equal percentage
VUD015F310	DN 15	2.5 m³/h	3.2 kg	8 mm	Equal percentage
VUD015F300	DN 15	4 m³/h	3.2 kg	8 mm	Equal percentage
VUD020F300	DN 20	6.3 m³/h	4.1 kg	8 mm	Equal percentage
VUD025F300	DN 25	10 m³/h	4.7 kg	8 mm	Equal percentage
VUD032F300	DN 32	16 m³/h	7.3 kg	8 mm	Equal percentage
VUD040F300	DN 40	22 m³/h	8.6 kg	8 mm	Equal percentage
VUD050F300	DN 50	28 m³/h	11.2 kg	8 mm	Equal percentage
VUD050F200	DN 50	40 m³/h	11.2 kg	8 mm	Linear
VUD065F300	DN 65	49 m³/h	11.9 kg	20 mm	Equal percentage
VUD065F200	DN 65	63 m³/h	11.9 kg	20 mm	Linear
VUD080F300	DN 80	78 m³/h	17.7 kg	20 mm	Equal percentage
VUD080F200	DN 80	100 m³/h	17.7 kg	20 mm	Linear
VUD100F300	DN 100	124 m³/h	26 kg	40 mm	Equal percentage
VUD100F200	DN 100	160 m³/h	26 kg	40 mm	Linear

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50

1) *Air humidity must not exceed 75%*

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

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50
0378369001	Complete replacement stuffing box for DN 65...100

Combination of VUD with electrical actuators

i *Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

Pushing force 250 N (closing procedure against the pressure)

Actuator		AVM105F100		AVM105F120, AVM105F122		AVM105SF132	
Page		220		220		222	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300	(bar)	4	-	4	-	4	-
VUD025F300	(bar)	2.8	-	2.8	-	2.8	-
VUD032F300	(bar)	2.1	-	2.1	-	2.1	-
VUD040F300	(bar)	1.2	-	1.2	-	1.2	-
VUD050F300, VUD050F200	(bar)	0.9	-	0.9	-	0.9	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (closing procedure against the pressure)

Actuator		AVM115F120, AVM115F122		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300, VUD025F300	(bar)	6	-	6	-
VUD032F300	(bar)	5.2	-	5.2	-
VUD040F300	(bar)	3.3	-	3.3	-
VUD050F300, VUD050F200	(bar)	2	-	2	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closing procedure against the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300, VUD025F300, VUD032F300	(bar)	6	-	6	-
VUD040F300	(bar)	5.7	-	5.7	-
VUD050F300, VUD050F200	(bar)	3.4	-	3.4	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closing procedure with the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300	(bar)	6	-	6	-
VUD025F300	(bar)	5	-	5	-
VUD032F300	(bar)	4	-	4	-
VUD040F300	(bar)	2.5	-	2.5	-
VUD050F300, VUD050F200	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closing procedure against the pressure)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300, VUD025F300	(bar)	6	6	6	6
VUD032F300	(bar)	5.2	5.2	5.2	5.2
VUD040F300	(bar)	3.3	3.3	3.3	3.3
VUD050F300, VUD050F200	(bar)	2	2	2	2

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closing procedure with the pressure)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300	(bar)	6	6	6	6
VUD025F300	(bar)	5	6	5	6
VUD032F300	(bar)	4	6	4	6
VUD040F300	(bar)	2.5	6	2.5	6
VUD050F300, VUD050F200	(bar)	1.5	6	1.5	6

At temperatures above 100°C, accessories are required

Pushing force 2500 N (closing procedure against the pressure)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUD065F300, VUD065F200, VUD080F300, VUD080F200	(bar)	3	-
VUD100F300, VUD100F200	(bar)	2	-

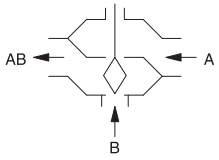
At temperatures above 130 °C, accessories are required

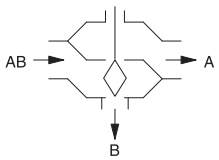
With spring return, pushing force 2000 N (closing procedure against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUD065F300, VUD065F200	(bar)	3	5.1
VUD080F300, VUD080F200	(bar)	3	3.4
VUD100F300, VUD100F200	(bar)	2	2.2

At temperatures above 130 °C, accessories are required

BUD: Flanged 3-way valve, PN 6





Features

- Regulating valve, free of silicone grease, with flange connection as per EN 1092-2, seal form B
- Equal-percentage characteristic or linear, can be set with SUT valve actuators to linear, equal percentage or quadratic
- The valve is closed when the spindle is extended
- Use as control or distribution valve
- Valve body with seat made of grey cast iron
- Stainless-steel spindle
- Nominal diameter DN 15...50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65...100 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Nominal pressure	6 bar
Connection	PN 6
Control ratio of valve	> 50:1
Valve characteristic, mixing passage	linear
Leakage rate of control passage	≤ 0.05% of k_{VS} value
Leakage rate, mixing passage	≤ 1% of k_{VS} value

Permissible ambient conditions

Operating temperature[1)]	–10...150 °C
Operating pressure	6 bar

Overview of types

Type	Nominal diameter	C_{VS} value	Valve stroke	Valve characteristic of control passage	Weight
BUD015F300	DN 15	4 m³/h	8 mm	equal-percentage	3.2 kg
BUD015F310	DN 15	2.5 m³/h	8 mm	equal-percentage	3.2 kg
BUD015F320	DN 15	1.6 m³/h	8 mm	equal-percentage	3.2 kg
BUD020F300	DN 20	6.3 m³/h	8 mm	equal-percentage	4.1 kg
BUD025F300	DN 25	10 m³/h	8 mm	equal-percentage	4.7 kg
BUD032F300	DN 32	16 m³/h	8 mm	equal-percentage	7.1 kg
BUD040F300	DN 40	22 m³/h	8 mm	equal-percentage	8.4 kg
BUD050F200	DN 50	40 m³/h	8 mm	linear	11.2 kg
BUD050F300	DN 50	28 m³/h	8 mm	equal-percentage	10.9 kg
BUD065F200	DN 65	63 m³/h	20 mm	linear	11.9 kg
BUD065F300	DN 65	49 m³/h	20 mm	equal-percentage	11.9 kg
BUD080F200	DN 80	100 m³/h	20 mm	linear	17.7 kg
BUD080F300	DN 80	78 m³/h	20 mm	equal-percentage	17.7 kg
BUD100F200	DN 100	160 m³/h	40 mm	linear	26 kg
BUD100F300	DN 100	124 m³/h	40 mm	equal-percentage	26 kg

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

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100…130 °C (recommended for temperatures < 10 °C) DN 15…50
0372249002	Adaptor required when temperature of the medium is 130…150 °C, DN 15…50
0372336180	Adaptor (required when temperature of the medium is 130…150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15…50
0378369001	Complete replacement stuffing box for DN 65…100

Combination of BUD with electrical actuators

Warranty: the technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 250 N (use as control valve)

Actuator		AVM105F100		AVM105F120, AVM105F122		AVM105SF132	
Page		220		220		222	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300	(bar)	4	-	4	-	4	-
BUD025F300	(bar)	2.8	-	2.8	-	2.8	-
BUD032F300	(bar)	2.1	-	2.1	-	2.1	-
BUD040F300	(bar)	1.2	-	1.2	-	1.2	-
BUD050F200, BUD050F300	(bar)	0.9	-	0.9	-	0.9	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (use as control valve)

Actuator		AVM115F120, AVM115F122		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300, BUD025F300	(bar)	6	-	6	-
BUD032F300	(bar)	5.2	-	5.2	-
BUD040F300	(bar)	3.3	-	3.3	-
BUD050F200, BUD050F300	(bar)	2	-	2	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as control valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300, BUD025F300, BUD032F300	(bar)	6	-	6	-
BUD040F300	(bar)	5.7	-	5.7	-
BUD050F200, BUD050F300	(bar)	3.4	-	3.4	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as distribution valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300	(bar)	6	-	6	-
BUD025F300	(bar)	5	-	5	-
BUD032F300	(bar)	4	-	4	-
BUD040F300	(bar)	2.5	-	2.5	-
BUD050F200, BUD050F300	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as control valve)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300, BUD025F300	(bar)	6	6	6	6
BUD032F300	(bar)	5.2	5.2	5.2	5.2
BUD040F300	(bar)	3.3	3.3	3.3	3.3
BUD050F200, BUD050F300	(bar)	2	2	2	2

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as distribution valve)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300	(bar)	6	6	6	6
BUD025F300	(bar)	5	6	5	6
BUD032F300	(bar)	4	6	4	6
BUD040F300	(bar)	2.5	6	2.5	6
BUD050F200, BUD050F300	(bar)	1.5	6	1.5	6

At temperatures above 100°C, accessories are required

Pushing force 2500 N (use as control valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUD065F200, BUD065F300, BUD080F200, BUD080F300	(bar)	3	-
BUD100F200, BUD100F300	(bar)	2	-

At temperatures above 130 °C, accessories are required

Pushing force 2500 N (use as distribution valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUD065F200, BUD065F300	(bar)	1	-
BUD080F200, BUD080F300	(bar)	0.75	-
BUD100F200, BUD100F300	(bar)	0.5	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as control valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUD065F200, BUD065F300	(bar)	3	5.1
BUD080F200, BUD080F300	(bar)	3	3.4
BUD100F200, BUD100F300	(bar)	2	2.2

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as distribution valve)

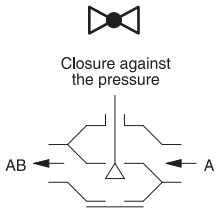
Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUD065F200, BUD065F300	(bar)	1	6
BUD080F200, BUD080F300	(bar)	0.75	6
BUD100F200, BUD100F300	(bar)	0.5	6

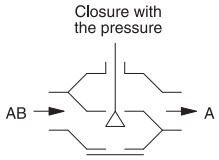
At temperatures above 130 °C, accessories are required

VUE: Flanged through valve, PN 16/10

Features

- 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 actuator to linear, equal percentage or quadratic
- When the spindle is retracted, the valve is closed
- Closing procedure against the pressure DN 15...150 or with the pressure DN 15...50
- Valve body and seat made of grey cast iron
- Stainless steel spindle
- Nominal diameter DN 15...50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65...150 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM





Technical data

Specifications

Nominal pressure	16 bar
Connection	PN 16/10
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions[1)]

Operating temperature[2)]	–10...150 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar
Operating pressure up to 150 °C	10 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUE015F350	DN 15	0.4 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F340	DN 15	0.63 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F330	DN 15	1 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F320	DN 15	1.6 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F310	DN 15	2.5 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F300	DN 15	4 m³/h	3.2 kg	8 mm	Equal percentage
VUE020F300	DN 20	6.3 m³/h	4.1 kg	8 mm	Equal percentage
VUE025F300	DN 25	10 m³/h	4.7 kg	8 mm	Equal percentage
VUE032F300	DN 32	16 m³/h	7.3 kg	8 mm	Equal percentage
VUE040F300	DN 40	22 m³/h	8.6 kg	8 mm	Equal percentage
VUE050F300	DN 50	28 m³/h	11.2 kg	8 mm	Equal percentage
VUE050F200	DN 50	40 m³/h	11.2 kg	8 mm	Linear
VUE065F300	DN 65	49 m³/h	17.3 kg	20 mm	Equal percentage
VUE065F200	DN 65	63 m³/h	17.3 kg	20 mm	Linear
VUE080F300	DN 80	78 m³/h	22.9 kg	20 mm	Equal percentage
VUE080F200	DN 80	100 m³/h	22.9 kg	20 mm	Linear
VUE100F300	DN 100	124 m³/h	33 kg	40 mm	Equal percentage
VUE100F200	DN 100	160 m³/h	33 kg	40 mm	Linear
VUE125F300	DN 125	200 m³/h	48 kg	40 mm	Equal percentage
VUE125F200	DN 125	240 m³/h	48 kg	40 mm	Linear

1) Air humidity must not exceed 75%

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

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUE150F300	DN 150	300 m³/h	68 kg	40 mm	Equal percentage
VUE150F200	DN 150	320 m³/h	68 kg	40 mm	Linear

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100…130 °C (recommended for temperatures < 10 °C) DN 15…50
0372249002	Adaptor required when temperature of the medium is 130…150 °C, DN 15…50
0372336180	Adaptor (required when temperature of the medium is 130…150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15…50
0378369001	Complete replacement stuffing box for DN 65…100

Combination of VUE with electrical actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 250 N (closing procedure against the pressure)

Actuator		AVM105F100		AVM105F120, AVM105F122		AVM105SF132	
Page		220		220		222	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300	(bar)	4	-	4	-	4	-
VUE025F300	(bar)	2.8	-	2.8	-	2.8	-
VUE032F300	(bar)	2.1	-	2.1	-	2.1	-
VUE040F300	(bar)	1.4	-	1.4	-	1.4	-
VUE050F300, VUE050F200	(bar)	0.9	-	0.9	-	0.9	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (closing procedure against the pressure)

Actuator		AVM115F122, AVM115F120		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300, VUE025F300	(bar)	6	-	6	-
VUE032F300	(bar)	5.2	-	5.2	-
VUE040F300	(bar)	3.3	-	3.3	-
VUE050F300, VUE050F200	(bar)	2	-	2	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closing procedure against the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300, VUE025F300	(bar)	10	-	10	-
VUE032F300	(bar)	9	-	9	-

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE040F300	(bar)	5.7	-	5.7	-
VUE050F300, VUE050F200	(bar)	3.4	-	3.4	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (closing procedure with the pressure)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300	(bar)	6	-	6	-
VUE025F300	(bar)	5	-	5	-
VUE032F300	(bar)	4	-	4	-
VUE040F300	(bar)	2.5	-	2.5	-
VUE050F300, VUE050F200	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closing procedure against the pressure)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300	(bar)	6	16	6	16
VUE020F300	(bar)	6	11	6	11
VUE025F300	(bar)	6	6.8	6	6.8
VUE032F300	(bar)	5.2	5.2	5.2	5.2
VUE040F300	(bar)	3.3	3.3	3.3	3.3
VUE050F300, VUE050F200	(bar)	2	2	2	2

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (closing procedure with the pressure)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300	(bar)	6	16	6	16
VUE025F300	(bar)	5	16	5	16
VUE032F300	(bar)	4	16	4	16
VUE040F300	(bar)	2.5	16	2.5	16
VUE050F300, VUE050F200	(bar)	1.5	16	1.5	16

At temperatures above 100°C, accessories are required

Pushing force 2500 N (closing procedure against the pressure)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUE065F300, VUE065F200, VUE080F300, VUE080F200	(bar)	3	-
VUE100F300, VUE100F200	(bar)	2	-
VUE125F300, VUE125F200	(bar)	1.5	-
VUE150F300, VUE150F200	(bar)	1	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (closing procedure against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUE065F300, VUE065F200	(bar)	3	5.1
VUE080F300, VUE080F200	(bar)	3	3.4
VUE100F300, VUE100F200	(bar)	2	2.2
VUE125F300, VUE125F200	(bar)	1.4	1.4
VUE150F300, VUE150F200	(bar)	1	1.1

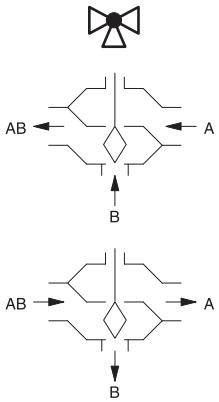
At temperatures above 130 °C, accessories are required

With spring return, without crank handle, pushing force 1100 N (closing procedure against the pressure)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUE065F300, VUE065F200	(bar)	2.6	2.6
VUE080F300, VUE080F200	(bar)	1.8	1.8
VUE100F300, VUE100F200	(bar)	1.1	1.1
VUE125F300, VUE125F200	(bar)	0.7	0.7
VUE150F300, VUE150F200	(bar)	0.6	0.6

At temperatures above 130 °C, accessories are required

BUE: Flanged 3-way valve, PN 16/10



Features

- 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 to linear or quadratic
- Linear characteristic with F200 from DN 50 with increased k_{vs} value, can be set with SUT valve actuators to equal percentage
- If the spindle is retracted, the valve passage A-AB is closed
- Use as control valve or as distribution valve
- Valve body and seat made of grey cast iron
- Nominal diameter DN 15...50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65...150 cones in brass, with metal-to-metal seal
- Stainless steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Connection	PN 16/10
Nominal pressure	16 bar
Control ratio	> 50:1
Stuffing box	2 EPDM O-rings
Leakage rate, mixing passage	≤ 1% of k_{vs} value
Leakage rate of control passage	≤ 0.05% of k_{vs} value
Valve characteristic, mixing passage	linear

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{vs} value	Valve stroke	Weight	Valve characteristic, control passage
BUE015F300	DN 15	4 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F310	DN 15	2.5 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F320	DN 15	1.6 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F330	DN 15	1 m³/h	8 mm	3.2 kg	equal-percentage
BUE020F300	DN 20	6.3 m³/h	8 mm	4.1 kg	equal-percentage
BUE025F300	DN 25	10 m³/h	8 mm	4.7 kg	equal-percentage
BUE032F300	DN 32	16 m³/h	8 mm	7.1 kg	equal-percentage
BUE040F300	DN 40	22 m³/h	8 mm	8.4 kg	equal-percentage
BUE050F200	DN 50	40 m³/h	8 mm	11.2 kg	linear
BUE050F300	DN 50	28 m³/h	8 mm	11.2 kg	equal-percentage
BUE065F200	DN 65	63 m³/h	20 mm	17.3 kg	linear
BUE065F300	DN 65	49 m³/h	20 mm	17.3 kg	equal-percentage
BUE080F200	DN 80	100 m³/h	20 mm	22.9 kg	linear
BUE080F300	DN 80	78 m³/h	20 mm	22.9 kg	equal-percentage
BUE100F200	DN 100	160 m³/h	40 mm	33 kg	linear
BUE100F300	DN 100	124 m³/h	40 mm	33 kg	equal-percentage

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

Type	Nominal diameter	C_{vs} value	Valve stroke	Weight	Valve characteristic, control passage
BUE125F200	DN 125	240 m³/h	40 mm	48 kg	linear
BUE125F300	DN 125	200 m³/h	40 mm	48 kg	equal-percentage
BUE150F200	DN 150	320 m³/h	40 mm	68 kg	linear
BUE150F300	DN 150	300 m³/h	40 mm	68 kg	equal-percentage

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100…130 °C (recommended for temperatures < 10 °C) DN 15…50
0372249002	Adaptor required when temperature of the medium is 130…150 °C, DN 15…50
0372336180	Adaptor (required when temperature of the medium is 130…150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15…50
0378369001	Complete replacement stuffing box for DN 65…100

Combination of BUE with electrical actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 250 N (use as control valve)

Actuator		AVM105F120, AVM105F122		AVM105F100		AVM105SF132	
Page		220		220		222	
Running time		120 s		30 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300	(bar)	4	-	4	-	4	-
BUE025F300	(bar)	2.8	-	2.8	-	2.8	-
BUE032F300	(bar)	2.1	-	2.1	-	2.1	-
BUE040F300	(bar)	1.4	-	1.4	-	1.4	-
BUE050F200, BUE050F300	(bar)	0.9	-	0.9	-	0.9	-

At temperatures above 100°C, accessories are required

Pushing force 500 N (use as control valve)

Actuator		AVM115F120, AVM115F122		AVM115SF132	
Page		220		222	
Running time		120 s		60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300, BUE025F300	(bar)	6	-	6	-
BUE032F300	(bar)	5.2	-	5.2	-
BUE040F300	(bar)	3.3	-	3.3	-
BUE050F200, BUE050F300	(bar)	2	-	2	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as control valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300, BUE025F300	(bar)	10	-	10	-
BUE032F300	(bar)	9	-	9	-
BUE040F300	(bar)	5.7	-	5.7	-
BUE050F200, BUE050F300	(bar)	3.4	-	3.4	-

At temperatures above 100°C, accessories are required

Pushing force 800 N (use as distribution valve)

Actuator		AVM124F130		AVM125SF132	
Page		224		227	
Running time		-		30/60/120 s	
Control signal		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300	(bar)	6	-	6	-
BUE025F300	(bar)	5	-	5	-
BUE032F300	(bar)	4	-	4	-
BUE040F300	(bar)	2.5	-	2.5	-
BUE050F200, BUE050F300	(bar)	1.5	-	1.5	-

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as control valve)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330	(bar)	6	16	6	16
BUE020F300	(bar)	6	11	6	11
BUE025F300	(bar)	6	6.8	6	6.8
BUE032F300	(bar)	5.2	5.2	5.2	5.2
BUE040F300	(bar)	3.3	3.3	3.3	3.3
BUE050F200, BUE050F300	(bar)	2	2	2	2

At temperatures above 100°C, accessories are required

With spring return, pushing force 500 N (use as distribution valve)

Actuator		AVF124F130, AVF124F230		AVF125SF132, AVF125SF232	
Page		230		233	
Running time		60/120 s		60/120 s	
Control signal		3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300	(bar)	6	16	6	16
BUE025F300	(bar)	5	16	5	16
BUE032F300	(bar)	4	16	4	16
BUE040F300	(bar)	2.5	16	2.5	16
BUE050F200, BUE050F300	(bar)	1.5	16	1.5	16

At temperatures above 100°C, accessories are required

Pushing force 2500 N (use as control valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300, BUE080F200, BUE080F300	(bar)	3	-
BUE100F200, BUE100F300	(bar)	2	-
BUE125F200, BUE125F300	(bar)	1.5	-
BUE150F200, BUE150F300	(bar)	1	-

At temperatures above 130 °C, accessories are required

Pushing force 2500 N (use as distribution valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	1	-
BUE080F200, BUE080F300	(bar)	0.75	-
BUE100F200, BUE125F200, BUE125F300, BUE150F200, BUE150F300, BUE100F300	(bar)	0.5	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as control valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	3	5.1
BUE080F200, BUE080F300	(bar)	3	3.4
BUE100F200, BUE100F300	(bar)	2	2.2
BUE125F200, BUE125F300	(bar)	1.4	1.4
BUE150F200, BUE150F300	(bar)	1	1.1

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as distribution valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	1	16
BUE080F200, BUE080F300	(bar)	0.75	16
BUE100F200, BUE125F200, BUE125F300, BUE150F200, BUE150F300, BUE100F300	(bar)	0.5	16

At temperatures above 130 °C, accessories are required

With spring return, without crank handle, pushing force 1100 N (use as control valve)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	2.6	2.6
BUE080F200, BUE080F300	(bar)	1.8	1.8
BUE100F200, BUE100F300	(bar)	1.1	1.1
BUE125F200, BUE125F300	(bar)	0.7	0.7
BUE150F200, BUE150F300	(bar)	0.6	0.6

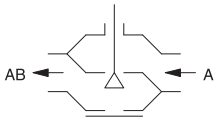
At temperatures above 130 °C, accessories are required

With spring return, without crank handle, pushing force 1100 N (use as distribution valve)

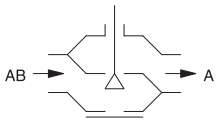
Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 65, DN 80		40/80/120 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	1	16
BUE080F200, BUE080F300	(bar)	0.75	16
BUE100F200, BUE125F200, BUE125F300, BUE150F200, BUE150F300, BUE100F300	(bar)	0.5	16

At temperatures above 130 °C, accessories are required

Closure against the pressure



Closure with the pressure



VUG: Flanged through valve, PN 25/16

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar; deviating: BUG065F316, nominal pressure 16 bar
- Complies with standard for regulating units as per DIN 32730[1)]
- Regulating valve, free of silicone grease, painted black
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- When the spindle is extended, the valve is closed.
- Closes against or with the pressure
- Ductile cast iron valve body, stainless-steel seat and spindle
- Nominal diameter DN 15…50 cones in stainless steel with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…150 cones in stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Specifications

Valve characteristic	equal-percentage
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[2)]	30…240 °C
Operating pressure	up to 120 °C, 25 bar up to 240 °C, 20 bar (VUG065F316 up to 240 °C, 16 bar)

Overview of types

Type	Nominal diameter	PN connection	C_{vs} value	Valve stroke	Weight
VUG015F374	DN 15	PN 25/16	0.16 m³/h	20 mm	4 kg
VUG015F364	DN 15	PN 25/16	0.25 m³/h	20 mm	4 kg
VUG015F354	DN 15	PN 25/16	0.4 m³/h	20 mm	4 kg
VUG015F344	DN 15	PN 25/16	0.63 m³/h	20 mm	4 kg
VUG015F334	DN 15	PN 25/16	1 m³/h	20 mm	4 kg
VUG015F324	DN 15	PN 25/16	1.6 m³/h	20 mm	4 kg
VUG015F314	DN 15	PN 25/16	2.5 m³/h	20 mm	4 kg
VUG015F304	DN 15	PN 25/16	4 m³/h	20 mm	4 kg
VUG020F304	DN 20	PN 25/16	6.3 m³/h	20 mm	5 kg
VUG025F304	DN 25	PN 25/16	10 m³/h	20 mm	5.6 kg
VUG032F304	DN 32	PN 25/16	16 m³/h	20 mm	9.1 kg
VUG040F304	DN 40	PN 25/16	25 m³/h	20 mm	11.2 kg
VUG050F304	DN 50	PN 25/16	40 m³/h	20 mm	13.8 kg

1) *The VUG065F316 valves do not have TÜV approval. They do not bear the test institute's code and are classified under category I of the Directive on pressure equipment. These valves can be used with the AVN224SF*** actuator, but not as a safety unit. Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution. For use in accordance with DIN 32730, valve combined with AVN224S, the permissible temperature of the medium is > 0 °C. DIN 32730 has been superseded by DIN EN 14597*

2) *For cold water applications from –20…30 °C, the versions VUG***F3**S with a stuffing box containing silicone (e.g.: VUG015F304S) must be used. The valves VUG***F3**S do not comply with the standard for regulating units as per DIN 32730*

Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution

Type	Nominal diameter	PN connection	C_{vs} value	Valve stroke	Weight
VUG065F316	DN 65	PN 16	63 m³/h	40 mm	25 kg
VUG065F304	DN 65	PN 25	63 m³/h	40 mm	25 kg
VUG080F304	DN 80	PN 25/16	100 m³/h	40 mm	37 kg
VUG100F304	DN 100	PN 25	160 m³/h	40 mm	50 kg
VUG125F304	DN 125	PN 25	250 m³/h	40 mm	75 kg
VUG150F304	DN 150	PN 25	340 m³/h	40 mm	100 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Anti-torsion device DN 65...150

Combination of VUG 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 non-Sauter valve actuators are used.*

Pushing force 2500 N (closes against the pressure)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304, VUG025F304, VUG032F304, VUG040F304	(bar)	16	-
VUG050F304	(bar)	11	-
VUG065F316, VUG065F304	(bar)	7.1	-
VUG080F304	(bar)	4.7	-
VUG100F304	(bar)	3	-
VUG125F304	(bar)	2	-
VUG150F304	(bar)	1.5	-

At temperatures above 130 °C, accessories are required

Pushing force 2500 N (closes with the pressure)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304, VUG025F304, VUG032F304, VUG040F304, VUG050F304	(bar)	6	-
VUG065F316, VUG065F304	(bar)	4.5	-
VUG080F304	(bar)	3.5	-
VUG100F304	(bar)	3	-
VUG125F304	(bar)	2	-
VUG150F304	(bar)	1	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (closes against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304, VUG025F304	(bar)	16	25
VUG032F304	(bar)	16	21
VUG040F304	(bar)	13.5	13.5
VUG050F304	(bar)	8.5	8.5
VUG065F316, VUG065F304	(bar)	5.6	5.6
VUG080F304	(bar)	3.4	3.4
VUG100F304	(bar)	2.2	2.2
VUG125F304	(bar)	1.6	1.6
VUG150F304	(bar)	1.2	1.2

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (closes with the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304, VUG025F304, VUG032F304, VUG040F304, VUG050F304	(bar)	6	25
VUG065F316, VUG065F304	(bar)	4.5	25
VUG080F304	(bar)	3.4	25
VUG100F304	(bar)	2.2	25
VUG125F304	(bar)	1.6	25
VUG150F304	(bar)	1	25

At temperatures above 130 °C, accessories are required

With safety function as per DIN 32730 & DIN EN 14597, pushing force 1100 N (closes against the pressure)

Actuator		AVN224SF232, AVN224SF132	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304	(bar)	16	25
VUG025F304	(bar)	16	17
VUG032F304	(bar)	10.5	10.5
VUG040F304	(bar)	6.5	6.5
VUG050F304	(bar)	4	4
VUG065F304	(bar)	3	3
VUG080F304	(bar)	2	2
VUG100F304	(bar)	1.1	1.1

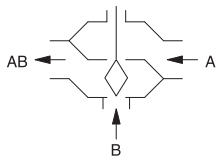
Actuator		AVN224SF232, AVN224SF132	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG125F304	(bar)	0.8	0.8
VUG150F304	(bar)	0.6	0.6

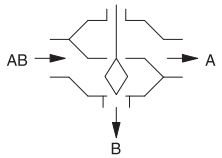
At temperatures above 130 °C, accessories are required

With safety function as per DIN 32730 & DIN EN 14597, pushing force 1100 N (closes with the pressure)

Actuator		AVN224SF232, AVN224SF132	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304, VUG020F304, VUG025F304, VUG032F304, VUG040F304	(bar)	6	25
VUG050F304	(bar)	4	25
VUG065F304	(bar)	2.6	25
VUG080F304	(bar)	1.7	25
VUG100F304	(bar)	1.1	25
VUG125F304	(bar)	0.8	25
VUG150F304	(bar)	0.6	25

At temperatures above 130 °C, accessories are required





BUG: Flanged 3-way valve, PN 25/16

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar; deviating: BUG065F316, nominal pressure 16 bar
- Complies with standard for regulating units as per DIN 32730[1)]
- Regulating valve, free of silicone grease, painted black
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- The valve is closed when the spindle is extended
- Use as control valve or as distribution valve
- Ductile cast iron valve body
- Stainless-steel seat and spindle
- Nominal diameter DN 15…50 cones in stainless steel with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…150 cones in stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Specifications

	Control ratio	> 50: 1
	Valve characteristic, control passage	equal-percentage
	Valve characteristic, mixing passage	linear
Leakage rate at max. Δps	Leakage rate of control passage	≤ 0.05% of k_{vs} value
	Leakage rate, mixing passage	≤ 1.0% of k_{vs} value

Permissible ambient conditions

	Operating temperature[2)]	30…240 °C
	Operating pressure up to 120 °C	25 bar
	Operating pressure up to 240 °C	20 bar (BUG065F316 to 240 °C, 16 bar)

Overview of types

Type	Nominal diameter	PN connection	C_{vs} value	Weight	Valve stroke
BUG015F304	DN 15	PN 25/16	4 m³/h	3.1 kg	20 mm
BUG015F314	DN 15	PN 25/16	2.5 m³/h	3.1 kg	20 mm
BUG015F324	DN 15	PN 25/16	1.6 m³/h	3.1 kg	20 mm
BUG015F334	DN 15	PN 25/16	1 m³/h	3.1 kg	20 mm
BUG020F304	DN 20	PN 25/16	6.3 m³/h	4 kg	20 mm
BUG025F304	DN 25	PN 25/16	10 m³/h	4.7 kg	20 mm
BUG032F304	DN 32	PN 25/16	16 m³/h	7.2 kg	20 mm
BUG040F304	DN 40	PN 25/16	25 m³/h	9.2 kg	20 mm
BUG050F304	DN 50	PN 25/16	40 m³/h	11.9 kg	20 mm
BUG065F304	DN 65	PN 25	63 m³/h	27.1 kg	40 mm

1) *The BUG065F316 valves do not have TÜV approval. They do not bear the test institute's code and are classified under category I of the Directive on pressure equipment. These valves can be used with the AVN224SF*** actuator, but not as a safety unit. Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution. For use in accordance with DIN 32730, valve combined with AVN224S, the permissible temperature of the medium is > 0 °C. DIN 32730 has been superseded by DIN EN 14597*

2) *For cold water applications below 30 °C, the versions BUG***F3**S with a stuffing box containing silicone (e.g.: BUG015F304S) should be used. The valves BUG***F3**S do not comply with the standard for regulating units as per DIN 32730.*

Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution.

Type	Nominal diameter	PN connection	C_{vs} value	Weight	Valve stroke
BUG065F316	DN 65	PN 16	63 m³/h	26.8 kg	40 mm
BUG080F304	DN 80	PN 25/16	100 m³/h	36.3 kg	40 mm
BUG100F304	DN 100	PN 25	160 m³/h	53 kg	40 mm
BUG125F304	DN 125	PN 25	250 m³/h	79.1 kg	40 mm
BUG150F304	DN 150	PN 25	340 m³/h	108.7 kg	40 mm

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Anti-torsion device DN 65...150

Combination of BUG 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 non-Sauter valve actuators are used.

Pushing force 2500 N (use as control valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304, BUG025F304, BUG032F304, BUG040F304	(bar)	16	-
BUG050F304	(bar)	11	-
BUG065F304, BUG065F316	(bar)	7.1	-
BUG080F304	(bar)	4.7	-
BUG100F304	(bar)	3	-
BUG125F304	(bar)	2	-
BUG150F304	(bar)	1.5	-

At temperatures above 130 °C, accessories are required

Pushing force 2500 N (use as distribution valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304, BUG025F304, BUG032F304, BUG040F304, BUG050F304	(bar)	6	-
BUG065F304, BUG065F316	(bar)	4.5	-
BUG080F304	(bar)	3.5	-
BUG100F304	(bar)	3	-
BUG125F304	(bar)	2	-
BUG150F304	(bar)	1	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as control valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304, BUG025F304	(bar)	16	25
BUG032F304	(bar)	16	21
BUG040F304	(bar)	13.5	13.5
BUG050F304	(bar)	8.5	8.5
BUG065F304, BUG065F316	(bar)	5.6	5.6
BUG080F304	(bar)	3.4	3.4
BUG100F304	(bar)	2.2	2.2
BUG125F304	(bar)	1.6	1.6
BUG150F304	(bar)	1.2	1.2

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as distribution valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304, BUG025F304, BUG032F304, BUG040F304, BUG050F304	(bar)	6	25
BUG065F304, BUG065F316	(bar)	4.5	25
BUG080F304	(bar)	3.4	25
BUG100F304	(bar)	2.2	25
BUG125F304	(bar)	1.6	25
BUG150F304	(bar)	1	25

At temperatures above 130 °C, accessories are required

With safety function as per DIN 32730 & DIN EN 14597, pushing force 1100 N (use as control valve)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304	(bar)	16	25
BUG025F304	(bar)	16	17
BUG032F304	(bar)	10.5	10.5
BUG040F304	(bar)	6.5	6.5
BUG050F304	(bar)	4	4
BUG065F304	(bar)	3	3
BUG080F304	(bar)	2	2
BUG100F304	(bar)	1.1	1.1

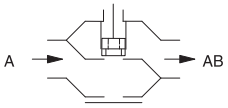
Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG125F304	(bar)	0.8	0.8
BUG150F304	(bar)	0.6	0.6

At temperatures above 130 °C, accessories are required

With safety function as per DIN 32730 & DIN EN 14597, pushing force 1100 N (use as distribution valve)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334, BUG020F304, BUG025F304, BUG032F304, BUG040F304	(bar)	6	25
BUG050F304	(bar)	4	25
BUG065F304	(bar)	2.6	25
BUG080F304	(bar)	1.7	25
BUG100F304	(bar)	1.1	25
BUG125F304	(bar)	0.8	25
BUG150F304	(bar)	0.6	25

At temperatures above 130 °C, accessories are required



VUP: Pressure-relieved through valve, flanged, PN 25

Features

- 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
- Complies with standard for regulating units as per DIN 32730
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- When the spindle is pressed in, the valve is closed.
- Closes only against pressure
- Valve body of ductile cast iron
- Valve seat, cone and spindle made of stainless steel
- Maintenance-free, brass stuffing box with spring-loaded PTFE/FKM/PTFE washer

Technical data

Specifications

Nominal pressure	25 bar
Connection	PN 25
Valve characteristic	equal-percentage
Control ratio	> 100:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[1)]	–20…200 °C
Operating pressure	up to 120 °C, 25 bar up to 200 °C, 20 bar –20…–10 °C, 18 bar

Overview of types

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

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130…180 °C)
0372336240	Adaptor (required when temperature of the medium is 180…200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378356001	Replacement pack for stuffing box DN 40-80
0378357001	Replacement pack for stuffing box DN 100-150

1) *At temperatures below 0 °C, use the stuffing box heater; at temperatures above 130 °C or 180 °C, use the appropriate adaptor (accessory); For use in accordance with DIN 32730, valve combined with AVN224S, the permissible temperature of the medium is > 0 °C*

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 non-Sauter valve actuators are used.*

Pushing force 2500 N (closes against the pressure)

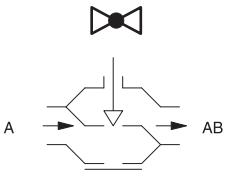
Actuator		AVM234SF132	
Page		229	
Running time DN 40		28/56/84 s	
Running time DN 50...80		50/100/150 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUP040F304, VUP050F304, VUP065F304, VUP080F304, VUP100F304	(bar)	25	-
VUP125F304	(bar)	19	-
VUP150F304	(bar)	15	-

With spring return, pushing force 2000 N (closes against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 40		28/56/84 s	
Running time DN 50...80		50/100/150 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUP040F304, VUP050F304, VUP065F304, VUP080F304	(bar)	25	25
VUP100F304	(bar)	20	22
VUP125F304	(bar)	14	20
VUP150F304	(bar)	10	15

With safety function as per DIN 32730, pushing force 1100 N (closes against the pressure)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 40		28/56/84 s	
Running time DN 50...80		50/100/150 s	
Running time DN 100...150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUP040F304	(bar)	25	25
VUP050F304	(bar)	20	25
VUP065F304	(bar)	16	17
VUP080F304	(bar)	12	15
VUP100F304	(bar)	9	12
VUP125F304	(bar)	6	6
VUP150F304	(bar)	4	4



VUS: Flanged through valve, PN 40

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Silicone-free regulating valve, matt black
- Equal-percentage characteristic, can be set with SUT valve actuators to linear or quadratic
- The valve is closed when the spindle is retracted
- Closing procedure only against pressure
- Version with graphite seal up to 260 °C, available as accessory
- Valve body made of cast steel
- Stainless-steel seat and cone
- Stainless steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer

Technical data

Specifications

Nominal pressure	40 bar
Connection	PN 40
Valve characteristic	Equal percentage
Control ratio	> 50: 1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[1)]	-10...220 °C
Operating pressure	40 bar at –10...50 °C
Operating pressure up to 120 °C	36 bar
Operating pressure up to 220 °C	29 bar

Overview of types

Type	Nominal diameter	Valve stroke	C_{vs} value	Weight
VUS015F305	DN 15	20 mm	4 m³/h	5.1 kg
VUS015F315	DN 15	20 mm	2.5 m³/h	5.1 kg
VUS015F325	DN 15	20 mm	1.6 m³/h	5.1 kg
VUS015F335	DN 15	20 mm	1 m³/h	5.1 kg
VUS015F345	DN 15	20 mm	0.63 m³/h	5.1 kg
VUS015F355	DN 15	20 mm	0.4 m³/h	5.1 kg
VUS015F365	DN 15	20 mm	0.25 m³/h	5.1 kg
VUS015F375	DN 15	20 mm	0.16 m³/h	5.1 kg
VUS020F305	DN 20	20 mm	6.3 m³/h	5.9 kg
VUS025F305	DN 25	20 mm	10 m³/h	6.8 kg
VUS032F305	DN 32	20 mm	16 m³/h	8.4 kg
VUS040F305	DN 40	20 mm	25 m³/h	10.6 kg
VUS050F305	DN 50	20 mm	40 m³/h	13.2 kg
VUS065F305	DN 65	30 mm	63 m³/h	18.6 kg
VUS080F305	DN 80	30 mm	100 m³/h	25.1 kg
VUS100F305	DN 100	30 mm	160 m³/h	36.4 kg
VUS125F305	DN 125	40 mm	220 m³/h	56.4 kg
VUS150F305	DN 150	40 mm	320 m³/h	77.9 kg

[1)] *No stuffing box heater required up to –10 °C. At temperatures below –10 °C and up to –60 °C use special version with bellows-type mechanical seal (available on request, only to DN 100). Application: water with anti-freeze (glycol to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adaptor (accessory). Above 200 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Accessories

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

Combination of VUS with electrical actuators

i *Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

Pushing force 2500 N (closing procedure against the pressure)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUS015F305, VUS015F315, VUS015F325, VUS015F335, VUS015F345, VUS015F355, VUS015F365, VUS015F375, VUS020F305	(bar)	40	-
VUS025F305	(bar)	37.8	-
VUS032F305	(bar)	28.7	-
VUS040F305	(bar)	16.4	-
VUS050F305	(bar)	10.5	-
VUS065F305	(bar)	6.1	-
VUS080F305	(bar)	3.9	-
VUS100F305	(bar)	1.5	-
VUS125F305	(bar)	1	-
VUS150F305	(bar)	0.7	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (closing procedure against the pressure)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUS015F305, VUS015F315, VUS015F325, VUS015F335, VUS015F345, VUS015F355, VUS015F365, VUS015F375, VUS020F305	(bar)	40	25
VUS025F305	(bar)	29.6	25
VUS032F305	(bar)	22.5	21
VUS040F305	(bar)	12.8	13.5
VUS050F305	(bar)	8.2	8.5
VUS065F305	(bar)	4.7	5.6
VUS080F305	(bar)	3	3.4
VUS100F305	(bar)	1.5	2.2
VUS125F305	(bar)	1	1.6
VUS150F305	(bar)	0.7	1.2

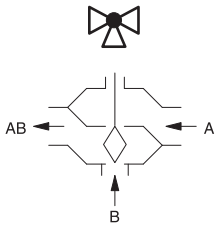
At temperatures above 130 °C, accessories are required

With spring return, without crank handle, pushing force 1100 N (closing procedure against the pressure)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
VUS015F305, VUS015F315, VUS015F325, VUS015F335, VUS015F345, VUS015F355, VUS015F365, VUS015F375, VUS020F305	(bar)	24.5	25
VUS025F305	(bar)	14.7	17
VUS032F305	(bar)	11.1	10.5
VUS040F305	(bar)	6.2	6.5
VUS050F305	(bar)	3.9	4
VUS065F305	(bar)	2.1	3
VUS080F305	(bar)	1.3	2
VUS100F305	(bar)	0.8	1.1
VUS125F305	(bar)	0.4	0.8
VUS150F305	(bar)	0.2	0.6

At temperatures above 130 °C, accessories are required

BUS: Flanged 3-way valve, PN 40



Features

- 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 actuators to equal percentage
- Control passage, equal-percentage characteristic, DN 125...150, adjustable with SUT actuators to linear or quadratic
- The valve is closed when the spindle is retracted
- Use only as control valve
- Version with graphite seal up to 260 °C, available as accessory
- Valve body made of cast steel
- Stainless-steel seat and cone
- Stainless-steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer

Technical data

Specifications

	Nominal pressure	40 bar
	Connection	PN 40
	Control ratio	> 30: 1
	Valve characteristic, mixing passage	linear
Leakage rate at max. Δps	Leakage rate of control passage	≤ 0.05% of k_{vs} value
	Leakage rate, mixing passage	≤ 1.0% of k_{vs} value

Permissible ambient conditions

	Operating temperature[1)]	–10...220 °C
	Operating pressure	40 bar at –10...50 °C
	Operating pressure up to 120 °C	36 bar
	Operating pressure up to 220 °C	29 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS015F205	DN 15	4 m³/h	linear	20 mm	7.2 kg
BUS015F215	DN 15	2.5 m³/h	linear	20 mm	7.2 kg
BUS015F225	DN 15	1.6 m³/h	linear	20 mm	7.2 kg
BUS020F205	DN 20	6.3 m³/h	linear	20 mm	8.4 kg
BUS025F205	DN 25	10 m³/h	linear	20 mm	9.4 kg
BUS032F205	DN 32	16 m³/h	linear	20 mm	12.4 kg
BUS040F205	DN 40	25 m³/h	linear	20 mm	15.5 kg
BUS050F205	DN 50	40 m³/h	linear	20 mm	19.2 kg
BUS065F205	DN 65	63 m³/h	linear	30 mm	27.6 kg
BUS080F205	DN 80	100 m³/h	linear	30 mm	36.5 kg
BUS100F205	DN 100	160 m³/h	linear	30 mm	61.2 kg
BUS125F305	DN 125	220 m³/h	equal-percentage	40 mm	82.5 kg
BUS150F305	DN 150	320 m³/h	equal-percentage	40 mm	113.5 kg

[1)] *No stuffing box heater required up to –10 °C. At temperatures below –10 °C and up to –60 °C use special version with bellows-type mechanical seal (available on request, only to DN 100). Application: water with anti-freeze (glycol to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adaptor (accessory). Above 220 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Accessories

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

Combination of BUS with electrical actuators

Warranty: the technical data and pressure differences indicated here are applicable only in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

Pushing force 2500 N (use as control valve)

Actuator		AVM234SF132	
Page		229	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUS015F205, BUS015F215, BUS015F225, BUS020F205	(bar)	40	-
BUS025F205	(bar)	37.8	-
BUS032F205	(bar)	27	-
BUS040F205	(bar)	16.4	-
BUS050F205	(bar)	10.5	-
BUS065F205	(bar)	6.1	-
BUS080F205	(bar)	3.9	-
BUS100F205	(bar)	2.5	-
BUS125F305	(bar)	1.7	-
BUS150F305	(bar)	1.2	-

At temperatures above 130 °C, accessories are required

With spring return, pushing force 2000 N (use as control valve)

Actuator		AVF234SF132, AVF234SF232	
Page		235	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUS015F205, BUS015F215, BUS015F225	(bar)	40	40
BUS020F205	(bar)	34.7	40
BUS025F205	(bar)	29.6	37
BUS032F205	(bar)	21.1	27
BUS040F205	(bar)	12.8	16
BUS050F205	(bar)	8.2	10
BUS065F205	(bar)	4.7	6.1
BUS080F205	(bar)	3	3.9
BUS100F205	(bar)	1.9	2.5
BUS125F305	(bar)	1.3	1.7
BUS150F305	(bar)	0.9	1.2

At temperatures above 130 °C, accessories are required

With spring return, without crank handle, pushing force 1100 N (use as control valve)

Actuator		AVN224SF132, AVN224SF232	
Page		238	
Running time DN 15, DN 50		40/80/120 s	
Running time DN 65...100		60/120/180 s	
Running time DN 125, DN 150		80/160/240 s	
Control signal		2-/3-point 0...10 V 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s
BUS015F205, BUS015F215, BUS015F225	(bar)	24.5	24.5
BUS020F205	(bar)	17.5	17.5
BUS025F205	(bar)	14.7	14.7
BUS032F205	(bar)	10.4	10.4
BUS040F205	(bar)	6.2	6.2
BUS050F205	(bar)	3.9	3.9
BUS065F205	(bar)	2.1	2.1
BUS080F205	(bar)	1.3	1.3
BUS100F205	(bar)	0.8	0.8
BUS125F305	(bar)	0.5	0.5
BUS150F305	(bar)	0.3	0.3

At temperatures above 130 °C, accessories are required

Valve actuators

SAUTER's 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's valve actuators can be used for controllers with either a switching or a continuous output.

Overview of valve actuators

Models					
Type codes	AVM 105, 115	AVM 105S, 115S	AVM 124	AVM 125S	AVM 234S
Further information	p. 220	p. 222	p. 224	p. 226	p. 228
Technical data					
Max. nominal stroke (mm)	8	8	8	8	40
Max. pushing force (N)	250, 500	250, 500	800	800	2500
Running time (s)	30, 120	35, 60, 120	30, 60, 120	30, 60, 120	2, 4, 6
Power supply (V)	24/230	24	230	24	24
Control					
2-point	•	•	–	•	•
3-point	•	•	•	•	•
Positioner	–	•	–	•	•
Spring return	–	–	–	–	–
Compatible with these valves	VUN/BUN VUD/BUD VUE/BUE	VUN/BUN VUD/BUD VUE/BUE	VUN/BUN VUD/BUD VUE/BUE	VUN/BUN VUD/BUD VUE/BUE	VUD/BUD VUE/BUE VUG/BUG VUS/BUS VUP V6R/B6R

Overview of valve actuators

Models				
Type codes	AVF 124	AVF 125S	AVF 234S	AVN 224S
Further information	p. 230	p. 232	p. 234	p. 237
Technical data				
Max. nominal stroke (mm)	8	8	40	40
Max. pushing force (N)	500	500	2000	1100
Running time	60, 120 s	60, 120 s	2, 4, 6 s/mm	2, 4, 6 s/mm
Power supply (V)	230	24	24	230
Control				
2-point	–	•	•	•
3-point	•	•	•	•
Positioner	–	•	•	•
Spring return	•	•	•	•
Compatible with these valves	VUN/BUN VUD/BUD VUE/BUE	VUN/BUN VUD/BUD VUE/BUE	VUD/BUD VUE/BUE VUG/BUG VUS/BUS VUP V6R/B6R	VUE/BUE VUG/BUG VUS/BUS VUP V6R/B6R

AVM 105, 115: Actuator

Features

- Synchronous motor with electronic control unit and time-dependent cut-off
- Maintenance-free gear unit
- Gear unit can be disengaged to position the valve by hand (hexagon key provided)
- Connection with valve spindle created automatically
- Cap nut for valve fitting made of brass
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply

Power supply 24 V~	±20%, 50...60 Hz
Power supply 230 V~	±15%, 50...60 Hz

Specifications

Actuator stroke[1]	0...8 mm
Response time	200 ms

Permissible ambient conditions

Permissible ambient temperature	–10...55 °C
Temperature of medium	max. 100 °C
Permissible ambient humidity	5...95% rh, no condensation

Function

Control	2/3-point

Structural design

Weight	0.7 kg
Housing	lower section black, upper section yellow
Housing material	fire-retardant plastic
Power cable	1.2 m long, 3 × 0.5 mm²

Standards and directives

Type of protection	IP 54 (EN 60529)
Protection class 24 V	III (IEC 60730)
Protection class 230 V	II (EN 60730)

Overview of types

Type	Running time	Pushing force	Voltage	Power consumption
AVM105F100	30 s	250 N	230 V~	2.4 W, 4.5 VA
AVM105F120	120 s	250 N	230 V~	2.0 W, 4.0 VA
AVM105F122	120 s	250 N	24 V~	1.6 W, 1.7 VA
AVM115F120	120 s	500 N	230 V~	2.0 W, 4.0 VA
AVM115F122	120 s	500 N	24 V~	1.6 W, 1.7 VA
AVM115F901	160 s	500 N	230 V~	2.0 W, 4.0 VA

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

Accessories

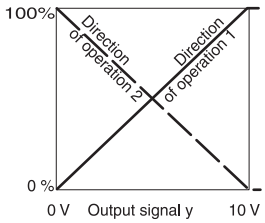
Type	Description
0372145001	Auxiliary contacts, single
0372145002	Auxiliary contacts, double

[1] *Stroke 10 mm for AVM115F901*

Type	Description
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372273001	Adapter for Siemens valve VWG/VXG 44, 48
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372320001	Hexagon key as visualisation for position indicator
0372459100	External switching, 230 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box

Auxiliary contacts: infinitely variable 0...100°, permissible load 5(2) A, 24...230 V

Potentiometer: only one potentiometer or one auxiliary contact can be fitted for each drive



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

Features

- Stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Automatic recognition of applied control signal (constant or switched)
- Coding switch for selecting characteristic and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at drive
- Automatic adaptation to valve stroke
- Direction of operation can be selected 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 created automatically after control voltage is applied.
- Cap nut for the valve fitting made of brass
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=	−10%…20%
Specifications		
	Actuator stroke[1]	0…8 mm
	Response time	200 ms
Positioner[2]	Control signal	0…10 V, R_i > 100 kΩ
	Positional feedback signal	0…10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Permissible ambient conditions		
	Permissible ambient temperature	−10…55 °C
	Temperature of medium	max. 100 °C
	Permissible ambient humidity	5…95% rh, no condensation
Structural design		
	Weight	0.7 kg
	Housing	lower section black, upper section yellow
	Housing material	fire-retardant plastic
	Power cable	1.2 m, 5 × 0.5 mm²
Standards and directives		
	Type of protection	IP 54 (EN 60529) horizontal
	Protection class	III (IEC 60730)

Overview of types

Type	Running time	Pushing force	Voltage	Power consumption
AVM105SF132	35/60/120 s	250 N	24 V~/=	4.8 W, 8.5 VA
AVM115SF132	60/120 s	500 N	24 V~/=	4.9 W, 8.7 VA
AVM115SF901	80/160 s	500 N	24 V~	4.9 W, 8.7 VA

[1] *Stroke 10 mm for AVM115SF901*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

- *AVM105SF132, AVM115SF132: equal-percentage characteristic, can be converted to linear*
- *AVM115SF901: For SAUTER Valveco VCL040 and VCL050, inverse scale, inverse connection*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372145001	Auxiliary contacts, single
0372145002	Auxiliary contacts, double
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372273001	Adapter for Siemens valve VVG/VXG 44, 48
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372462001	CASE Drives PC tool for configuring the drives by computer

- *Auxiliary contacts: infinitely variable 0...100°, permissible load 5(2) A, 24...230 V*
- *Potentiometer: only one potentiometer or one auxiliary contact can be fitted for each drive*

AVM 124: Actuator

Features

- Stepping motor with electronic control unit and electronic, force-dependent cut-off
- Maintenance-free gear unit
- Manual positioning with external crank handle
- LED display
- Coding switch for switching running time
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50…60 Hz
	Power consumption	3.2 W, 4.0 VA
Specifications		
	Running time	30/60/120 s
	Actuator stroke	0…8 mm
	Pushing force	800 N
	Response time	200 ms
Permissible ambient conditions		
	Permissible ambient temperature	5…60 °C
	Temperature of medium	max. 100 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	2.1 kg
	Housing	lower section black, hood transparent
	Housing material	fire-retardant plastic
	Materials for gearbox and fitting bracket	pressure-cast zinc
Standards and directives		
	Type of protection[1)]	IP 54 (EN 60529)
	Protection class	I (EN 60730)

Overview of types

i *For valve series: VUN, BUN, VUD, BUD, VUE, BUE*

Type
AVM124F130

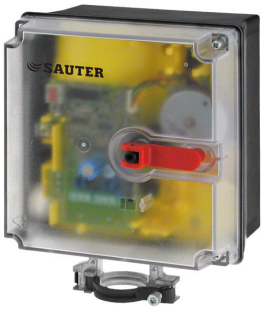
Accessories

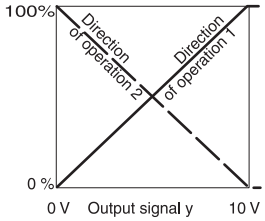
Type	Description
0370880001	Mechanical stroke indicator
0370881001	Auxiliary contacts, single
0370882001	Auxiliary contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary contacts, single, combined with pot. 1000 Ω auxiliary contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V

[1)] *Degree of protection IP 54 only with cable screw fitting*

Type	Description
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

Auxiliary contacts: infinitely variable, permissible load 2(1) A, 12...250 mA, 12 V~





AVM 125S: Actuator with SAUTER Universal Technology (SUT)

Features

- Stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Automatic recognition of applied control signal (constant or switched)
- Coding switch for selecting characteristic curve and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at actuator
- Automatic adaptation to valve stroke
- Direction of operation can be selected with screw terminal on electrical connection
- Maintenance-free gear unit
- Manual positioning with external crank handle with motor cut-off
- LED display
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	5.0 W, 8.4 VA
Specifications		
	Running time	30/60/120 s
	Pushing force	800 N
	Actuator stroke	0...8 mm
Positioner[1]	Control signal 1	0...10 V, R_i > 100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Permissible ambient conditions		
	Permissible ambient temperature	–10...55 °C
	Temperature of medium	max. 100 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	2.1 kg
	Housing	lower section black, hood transparent
	Housing material	fire-retardant plastic
	Materials for gearbox and fitting bracket	pressure-cast zinc
Standards and directives		
	Type of protection[2]	IP 54 (EN 60529)
	Protection class	III (IEC 60730)

[1] *Also for 2-point or 3-point, depending on connection with 24 V~*

[2] *Degree of protection IP 54 only with cable screw fitting M20*

Overview of types

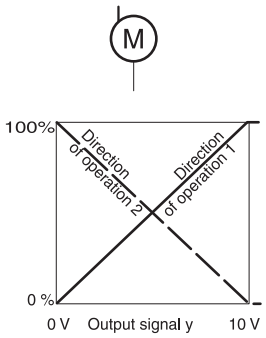
Actuator for valve series: VUN, BUN, VUD, BUD, VUE, BUE

Type
AVM125SF132

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0370880001	Mechanical stroke indicator
0370881001	Auxiliary contacts, single
0370882001	Auxiliary contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary contacts, single, combined with pot. 1000 Ω auxiliary contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

Auxiliary contacts: infinitely variable, permissible load 2(1) A, 12…250 mA, 12 V~



AVM 234S: Actuator with SUT positioner

Features

- Stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Simple assembly with valve, spindle is automatically connected after control voltage is applied (patented system)
- Automatic recognition of applied control signal (constant or switched), display of 2 LEDs
- Coding switch for selecting characteristic curve and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at actuator
- Automatic adaptation at stroke of valve (min. valve stroke 8 mm, max. valve stroke 49 mm); the measured stroke is stored and is not lost if voltage is interrupted
- Direction of operation can be selected with screw terminals on electrical connection
- Crank handle for external manual adjustment with motor cut-off and as trigger for re-initialisation
- Numerous adaptors permit fitting to non-SAUTER valves
- Supply voltage 230 V with module or direct connection for 24 V~ or 24 V=, continuous activation also permissible at 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 valve assembly
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three pre-scored cable inlets for M20 × 1.5 (2x) and M16 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15% (with accessories)
	Power consumption	10 W/18 VA
Specifications		
	Running time	2/4/6 s/mm
	Pushing force	2500 N
	Actuator stroke[1]	0...49 mm
	Response time for 3-pt.	200 ms
Positioner[2]	Control signal 1	0...10 V, R_i >100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV
Permissible ambient conditions		
	Permissible ambient temperature	–10...55 °C
	Temperature of medium[3]	max. 130 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	4.1 kg
	Housing	two-part, yellow
	Housing material	fire-retardant plastic

[1] *Transformers configured for this value; malfunctions could otherwise occur*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

[3] *Adaptor needed for higher temperatures of the medium (180 °C or 240 °C) (see accessories)*

Standards and directives

Type of protection	IP 66 (EN60529)
Protection class	III (IEC 60730)

Overview of types

Actuator for valves: VUD, BUD, VUE, BUE, VUG, BUG, VUS, BUS, VUP

Actuator with assembly kit (see accessories) for valves: V6R, B6R

Type
AVM234SF132

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules pluggable for 2-point/3-point and continuous activation, additional power 2 VA

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

Auxiliary contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)

Assembly kit for AVM234SF132 on SAUTER valves (no intermediate piece needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm
0372338003	Conversion kit from AV*2*4SF132-5 to standard drive AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard drive AV*2*4SF132

Adaptor set for non-SAUTER valves

Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Siemens spindle with 40 mm stroke or Ø 14 mm spindle
0372377001	Johnson Controls DN 15...150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 15...32
0372389002	ITT-Dräger, DN 40...50
0378263001	End stop (needed for V/BXD, V/BXE DN 15...50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1.5
0386263002	Cable screw fitting M20 × 1.5

*Adaptor: not needed for version AV*2*4SF132-6*

AVF 124: Actuator with spring return

Features

- Spring return moves to end position in case of failure/interruption of supply voltage or when limit controller responds
- Stepping motor with electronic control unit and electronic, force-dependent cut-off
- Maintenance-free gear unit
- LED display
- Coding switch for switching running time
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply	230 V~, ±15%, 50...60 Hz
	Power consumption	4 W, 7.6 VA
Specifications		
	Running time of motor	60/120 s
	Running time of spring	18 s ±10
	Pushing force	500 N
	Actuator stroke	0...8 mm
	Response time	200 ms
Permissible ambient conditions		
	Permissible ambient temperature	5...60 °C
	Temperature of medium	max. 100 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	2.4 kg
	Housing	lower section black, hood transparent
	Housing material	fire-retardant plastic
	Materials for gearbox and fitting bracket	pressure-cast zinc
Standards and directives		
	Type of protection[1)]	IP 54 (EN 60529)
	Protection class	II (IEC 60730)

Overview of types

Type	Reset function
AVF124F130	Closed (NC)
AVF124F230	Open (NO)

AVF124F130: Actuator spindle retracted without current; valve closed without current (NC) with: VUD, BUD, VUE, BUE, VUN, BUN

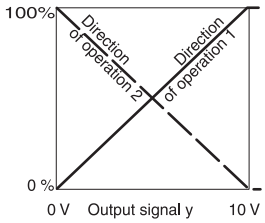
AVF124F230: Actuator spindle extended without current; valve open without current (NO) with: VUD, BUD, VUE, BUE, VUN, BUN

[1)] *Degree of protection IP 54 only with cable screw fitting*

Accessories

Type	Description
0370880001	Mechanical stroke indicator
0370881001	Auxiliary contacts, single
0370882001	Auxiliary contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary contacts, single, combined with pot. 1000 Ω auxiliary contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

Auxiliary contacts: infinitely variable, permissible load 2(1) A, 12…250 V~, min. load 250 mA, 12 V~



AVF 125S: SUT actuator with spring return

Features

- Spring return moves to end position in case of failure/interruption of supply voltage or when limit controller responds
- Stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Automatic recognition of applied control signal (constant or switched)
- Coding switch for selecting characteristic curve and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at actuator
- Automatic adaptation to valve stroke
- Direction of operation can be selected with screw terminals on electrical connection
- Maintenance-free gear unit
- LED display
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable inlet M20 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply [1]	24 V~, ±20%, 50…60 Hz
	Power consumption	5 W, 8.4 VA
	Power consumption on starting[2]	30 VA (max. 1 s)
Specifications		
	Running time of motor	60/120 s
	Running time of spring	18 s ±10
	Pushing force	500 N
	Actuator stroke	0…8 mm
Positioner	Control signal 1	0…10 V, R_i = 100 kΩ
	Control signal 2	4…20 mA, R_i = 50 Ω
	Positional feedback signal	0…10 V; load > 2.5 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Permissible ambient conditions		
	Permissible ambient temperature	–10…55 °C
	Temperature of medium	max. 100 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	2.4 kg
	Housing	lower section black, hood transparent
	Housing material	fire-retardant plastic
	Materials for gearbox and fitting bracket	pressure-cast zinc
Standards and directives		
	Type of protection[3]	IP 54 (EN 60529)
	Protection class	III (IEC 60730)

[1] *24 V= not possible*

[2] *Only for restart or spring return*

[3] *Degree of protection IP 54 only with cable screw fitting M20*

Overview of types

i *For valves with equal-percentage characteristic, can be converted to linear*

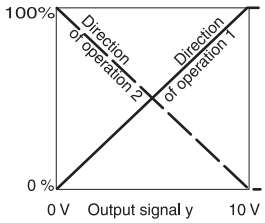
Type	Reset function
AVF125SF132	Closed (NC)
AVF125SF232	Open (NO)

- *AVF125SF132: Actuator spindle retracted without current; valve closed without current (NC) with: VUD, BUD, VUE, BUE, VUN, BUN*
- *AVF125SF232: Actuator spindle extended without current; valve open without current (NO) with: VUD, BUD, VUE, BUE*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0370880001	Mechanical stroke indicator
0370881001	Auxiliary contacts, single
0370882001	Auxiliary contacts, single, combined with pot. 2000 Ω, 1 W; 24 V
0370882006	Auxiliary contacts, single, combined with pot. 1000 Ω auxiliary contacts, 1 W; 24 V
0370883001	Potentiometer, 2000 Ω, 1 W; 24 V
0370883006	Potentiometer, 1000 Ω, 1 W; 24 V
0372249001	Adaptor required when temperature of the medium is 100 °C (recommended for temperatures < 10 °C)
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

- *Auxiliary contacts: infinitely variable, permissible load 2(1) A, 12…250 V~, min. load 250 mA, 12 V~*



AVF 234S: SUT actuator with spring return

Features

- Spring return moves to end position in case of failure/interruption of supply voltage or when limit controller responds
- Fixed increment stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Simple assembly with valve, spindle is automatically connected after control voltage is applied (patented system)
- Automatic recognition of applied control signal (constant or switched), display of 2 LEDs
- Coding switch for selecting characteristic curve and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at actuator
- Automatic adaptation at stroke of valve (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 with screw terminals on electrical connection
- Crank handle for external manual adjustment with motor cut-off and as trigger for re-initialisation
- Numerous adaptors permit fitting to non-SAUTER valves
- Supply voltage 230 V with module or direct connection for 24 V~ or 24 V=, continuous activation also permissible at 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 assembly
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three pre-scored cable inlets for M20 × 1.5 (2x) and M16 × 1.5
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15% (with accessories)
	Power consumption[1]	7.5 W, 20 VA
Specifications		
	Running time of motor	2/4/6 s/mm
	Running time of spring[2]	15…30 s
	Pushing force	2000 N
	Actuator stroke	0…49 mm
	Response time for 3-pt.	200 ms
	Number of spring returns	> 40,000
Positioner[3]	Control signal 1	0…10 V, R_i = 100 kΩ
	Control signal 2	4…20 mA, R_i = 50 Ω
	Positional feedback 0…10 V	0…10 V; load > 2.5 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV
Permissible ambient conditions		
	Permissible ambient temperature	–10…55 °C

[1] *Transformers configured for value; malfunctions could otherwise occur*

[2] *Return time equates to stroke of 14…40 mm and does not depend on set running time*

[3] *Also for 2-point or 3-point, depending on connection with 24 V~*

Temperature of medium[4]	max. 130 °C
Permissible ambient humidity	< 95% rh, no condensation

Structural design

Weight	5.6 kg
Housing	two-part, yellow
Housing material	fire-retardant plastic

Standards and directives

Type of protection	IP 66 (EN 60529)
Protection class	III (IEC 60730)

Overview of types

Type
AVF234SF132
AVF234SF232

- *AVF234SF132: Actuator spindle retracted without current; valve closed without current (NC) with: VUD, BUD, VUE, BUE, VUG, BUG, BUS; valve open without current (NO) with: VUS, VUP*
- *AVF234SF232: Actuator spindle extended without current; valve open without current (NO) with: VUD, BUD, VUE, BUE, VUG, BUG, BUS; valve closed without current (NC) with: VUS, VUP*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules pluggable for 2-point/3-point and continuous activation, additional power 2 VA

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

Auxiliary contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)

Assembly kit for AVF234SF*32 on SAUTER valves (no intermediate piece needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm
0372338003	Conversion kit from AV*2*4SF132-5 to standard drive AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard drive AV*2*4SF132

Adaptor set for non-SAUTER valves

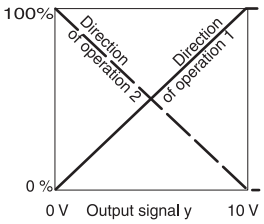
Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Siemens spindle with 40 mm stroke or Ø 14 mm spindle

[4] *Adaptor needed for higher temperatures (180 °C or 240 °C) (see accessories)*

Type	Description
0372377001	Johnson Controls DN 15…150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M
0372389001	ITT-Dräger, DN 15…32
0372389002	ITT-Dräger, DN 40…50
0378263001	End stop (needed for V/BXD, V/BXE DN 15…50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1.5
0386263002	Cable screw fitting M20 × 1.5
0372387001	SAUTER-Satchwell VZF1727 fitting kit

*Adaptor: not needed for version AV*2*4SF132-6*

AVN 224S: SUT actuator with safety function



Features

- Actuator with safety function (as per DIN 32730, DIN EN 14597) and pushing force of 1100 N, in normally closed or normally open version
- Fixed increment stepping motor with SUT (SAUTER Universal Technology) electronic control unit and electronic, power-dependent cut-off
- Simple assembly with valve, spindle is automatically connected after control voltage is applied (patented system)
- Automatic recognition of applied control signal (constant or switched), display of two LEDs
- Coding switch for selecting characteristic curve and running time
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at actuator
- Automatic adaptation at stroke of valve (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 with screw terminals on electrical connection or remotely
- Push-buttons on outside of housing for manual adjustment with motor cut-off and as trigger for re-initialisation
- Numerous adaptors permit fitting to non-SAUTER valves
- Maintenance-free gear unit made of sintered steel, gearbox base-plate made of steel
- Spring pack and mounting column made of stainless steel, mounting bracket made of cast light alloy for valve assembly
- Electrical connections (max. 2.5 mm²) with screw terminals
- Three pre-scored cable inlets for M20 × 1.5 (2×) and M16 × 1.5
- Fitting position vertically upright to horizontal, not upside down

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	±15%
	Power supply 230 V~	±15% (with accessories)
	Power consumption	7 W, 18 VA
Specifications		
	Running time of motor	2/4/6 s/mm
	Running time of spring[1]	15...30 s
	Pushing force	1100 N
	Actuator stroke	0...49 mm
	Number of spring returns	> 40,000
	Response time for 3-pt.	200 ms
Positioner[2]	Control signal 1	0...10 V, R_i = 100 kΩ
	Control signal 2	4...20 mA, R_i = 50 Ω
	Positional feedback signal	0...10 V; load > 2.5 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	300 mV
Permissible ambient conditions		
	Permissible ambient temperature	–10...55 °C
	Temperature of medium	max. 130°C
	Permissible ambient humidity	< 95% rh, no condensation

[1] *Return time equates to stroke of 14...40 mm and does not depend on set running time*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

Structural design

Weight	5.6 kg
Housing	two-part, yellow
Housing material	fire-retardant plastic

Standards and directives

Type of protection	IP 66 (EN 60529)
Protection class	III (IEC 60730)

Overview of types

Type
AVN224SF132
AVN224SF232

AVN224SF132: Actuator spindle retracted without current; valve closed without current (NC) with: VUG, BUG (as per DIN 32730, DIN EN 14597); valve open without current (NO) with: VUP

AVN224SF232: Actuator spindle extended without current; valve open without current (NO) with: VUG, BUG; valve closed without current (NC) with: VUP (as per DIN 32730)

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box

Modules pluggable for 2-point/3-point and continuous activation, additional power 2 VA

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

Auxiliary contacts (2 each) 12...250 V~

Type	Description
0372333001	Infinitely variable, min. 100 mA and 12 V permissible load 6(2) A
0372333002	Gold-plated contacts, from 1 mA, to max. 30 V, wider range 3(1) A
0372334001	Potentiometer, 2000 Ω, 1 W; 24 V
0372334002	Potentiometer, 130 Ω, 1 W; 24 V
0372334006	Potentiometer, 1000 Ω, 1 W; 24 V
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)

Assembly kit for AVN224SF*32 on SAUTER valves (no intermediate piece needed for 0372338 002)

Type	Description
0372338001	V/B6 to DN 50, V/BXD, V/BXE, to DN 50, stroke 14 mm
0372338002	V/B6 DN 65...150, V/BXD, V/BXE from DN 65, stroke 40 mm
0372338003	Conversion kit from AV*2*4SF132-5 to standard drive AV*2*4SF132
0372338004	Conversion kit from AV*2*4SF132-6 to standard drive AV*2*4SF132

Adaptor set for non-SAUTER valves

Type	Description
0372376010	Siemens with 20 mm stroke or Ø 10 mm spindle
0372376014	Siemens with 40 mm stroke or Siemens spindle with 40 mm stroke or Ø 14 mm spindle
0372377001	Johnson Controls DN 15...150, 14, 25, 40 mm stroke, Ø 10, 12, 14 mm spindle
0372378001	Honeywell with 20 mm stroke
0372378002	Honeywell with 38 mm stroke
0372386001	LDM type RY113 R/M

Type	Description
0372389001	ITT-Dräger, DN 15…32
0372389002	ITT-Dräger, DN 40…50
0378263001	End stop (needed for V/BXD, V/BXE DN 15…50, V/B6 DN 15 with kvs ≤ 1 m3/h)
0386263001	Cable screw fitting M16 × 1.5
0386263002	Cable screw fitting M20 × 1.5
0372387001	SAUTER-Satchwell VZF1727 fitting kit

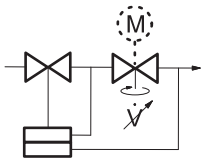
*Adaptor: not needed for version AV*2*4SF132-6*

Dynamic regulating valves

The automatic and hydraulic calibration of water distribution networks using dynamic SAUTER valves provides correct supply to the loads, a reduction of temperature fluctuations in the room, and, at the same time, more accurate and more efficient energy usage. The torque-dependent cut-off facility promotes efficient usage of energy. These dynamic valves are used to control the flow in air-conditioning, ventilation and heating equipment. These include fan-coil units, chilled beams, central underfloor heating systems, air recirculation systems and segments of installations using thermal and continuous actuators for unit valves.

Models	
Type codes	Valveco 010...032
Further information	p. 241

Valveco 010...032: 2-way regulating valve for dynamic hydraulic calibration



Features

- Regulating valve with three functions: control, presetting maximum volume, automatic flow regulation
- Extensive volume flow range, 30…3600 l/h
- Simple presetting of maximum volume flow required without dismantling the actuator
- Control range 15/20…400 kPa = max. Δp across the valve
- Easy to fit the pressure measurement nipples
- When the spindle is pressed in, the valve is closed.
- Closes against the pressure
- Stuffing box is replaced under system pressure
- Slight adaptation of the tried-and-tested SAUTER actuator technology
- Regulating valve with external thread as per DIN EN ISO 228-1
- Flat-sealing regulating valve (with conical sealing surface for DN 20, without socket fitting)
- Differential pressure over the regulating unit is kept constant; valve authority 1
- Valve body in dezincification-resistant (DZR) brass
- Stainless-steel spindle
- Cone of PTFE

Technical data

Specifications

Nominal pressure	16 bar
Valve characteristic	linear
Leakage rate	0.01% of k_{VS} value

Permissible ambient conditions

Operating temperature	–10…120 °C
Maximum operating pressure	16 bar

Overview of types

Type	Nominal diameter	Volume flow setting range	Control range Δp (kPa)	Valve stroke	Connection	Weight
VCL010F210	DN 10	30...210 l/h	20...400 kPa	2.8 mm	G½" B	0.38 kg
VCL010F200	DN 10	90...450 l/h	20...400 kPa	2.8 mm	G½" B	0.38 kg
VCL015F220	DN 15	30...210 l/h	20...400 kPa	2.8 mm	G¾" B	0.45 kg
VCL015F210	DN 15	90...450 l/h	20...400 kPa	2.8 mm	G¾" B	0.45 kg
VCL015F200	DN 15	150...1050 l/h	20...400 kPa	2.8 mm	G¾" B	0.45 kg
VCL020F210	DN 20	150...1050 l/h	20...400 kPa	2.8 mm	G1" B	0.52 kg
VCL020F200	DN 20	180...1300 l/h	15...400 kPa	3.5 mm	G1" B	0.73 kg
VCL025F200	DN 25	300...2000 l/h	15...400 kPa	4 mm	G1¼" B	1.8 kg
VCL032F200	DN 32	600...3600 l/h	15...400 kPa	4 mm	G1¾" B	1.9 kg

Accessories

Type	Description
0378133010	1 threaded sleeve, R¾", flat-sealing, DN 10, with cap nut and flat seal
0378133015	1 threaded sleeve, R½", flat-sealing, DN 15, with cap nut and flat seal
0378133020	1 threaded sleeve, R¾", flat-sealing, DN 20, with cap nut and flat seal
0378133025	1 threaded sleeve, R1", flat-sealing, DN 25, with cap nut and flat seal
0378133032	1 threaded sleeve, R1¼", flat-sealing, DN 32, with cap nut and flat seal
0378134010	1 solder nipple, Ø 12, flat-sealing, DN 10, with cap nut and flat seal

Type	Description
0378134015	1 solder nipple, Ø 15, flat-sealing, DN 15, with cap nut and flat seal
0378134020	1 solder nipple, Ø 22, flat-sealing, DN 20, with cap nut and flat seal
0570260001	Stuffing box, can be replaced under pressure
0570360001	Pressure measurement nipple, set of 2
0560332015	Strainer in gun metal, –10…150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 50

Combination of VCL with electrical actuators

i *Warranty: the technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

With 24 V actuator (closes against the pressure)

Actuator		**AXM117F202**		**AXM117SF202, AXM117SF302, AXM117SF252**		**AXM117SF402**	
Page		167		169		169	
Control signal		3-point		0...10 V		0...4.8 V 5.2...10 V 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VCL010F210, VCL010F200, VCL015F220, VCL015F210, VCL015F200, VCL020F210, VCL020F200, VCL025F200, VCL032F200	(bar)	4	-	4	-	4	-

With 230 V actuator (closes against the pressure)

Actuator		**AXM117F200**	
Page		167	
Control signal		3-point	
Valve	(bar)	Δp_{max}	Δp_s
VCL010F210, VCL010F200, VCL015F220, VCL015F210, VCL015F200, VCL020F210, VCL020F200, VCL025F200, VCL032F200	(bar)	4	-

With thermal and continuous actuator (closes against the pressure)

Actuator		**AXT211F110, AXT211F110B**		**AXT211F210**		**AXT211F112, AXT211F112B**		**AXT211F212**		**AXT211F110M, AXT211F112M, AXT211F190, AXT211F192, AXT211HF110**		**AXT211HF210**		**AXT211HF112**		**AXT211HF212**		**AXS215SF122, AXS215SF122B, AXS215SF222, AXS215SF222B**	
Page		163		163		163		163		163		163		163		163		166	
Control signal		2-point		2-point		2-point		2-point		2-point		2-point		2-point		2-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VCL010F210, VCL010F200, VCL015F220, VCL015F210, VCL015F200, VCL020F210, VCL020F200, VCL025F200, VCL032F200	(bar)	4	4	4	-	4	4	4	-	4	4	4	-	4	4	4	-	4	4

Control ball valves

The body of these tight-sealing control ball valves from SAUTER is made of top-quality DZR brass. This enables them to be used in a wide range of applications, even in DHW applications. Due to the outstanding physical properties of the dezincification-resistant, chrome-plated brass ball with its polished surface, these valves provide excellent control accuracy and permit very flexible usage. They are used for the continuous regulation of cold or hot water or of air in closed circuits.

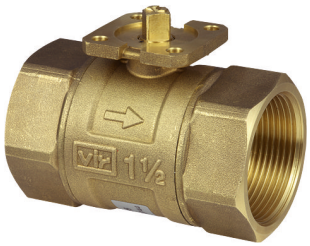
Overview of control ball valves

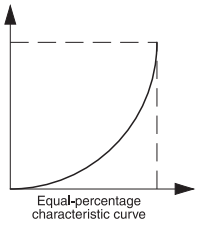
Models		
Type codes	VKR	BKR
Further information	p. 244	p. 246
Application		
Single-room control	•	–
Preheater for ventilation & air-conditioning	•	•
Preheater, cooler for ventilation & air-conditioning	•	•
Reheater for ventilation & air-conditioning	•	•
Chilled beams, underfloor heating	•	•
Static heating	•	•
Multi-boiler system	•	•
Local heating	•	•
Version		
2-way	•	–
3-way	–	•
Compatible with these actuators	AKM 115(S) AKF 112 AKF 113(S)	AKM 115(S) AKF 112 AKF 113(S)

i Explanation of pressure differences

Δp_{max} **(bar)** : Maximum permissible pressure difference across the valve at which the actuator can still firmly open and close the valve taking Δp_v into account.

Δp_s **(bar)** : Maximum permissible pressure difference across the valve at which, in the event of a malfunction (e.g burst pipe after the valve), the actuator can firmly close the valve by means of a fast rotary movement.





VKR: Through ball valve with female thread, PN 40

Features

- Equal-percentage ball valve characteristic, regulation contour integrated directly into ball
- Characteristic can be set to linear or quadratic with SUT rotary actuator
- Spindle with large sliding surface and PTFE glide ring
- Low torque due to O-ring mounted collar
- 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
- Axle seal with double O-ring made of EPDM
- Strainer and screw fitting available as accessories

Technical data

Specifications

Nominal pressure[1]	40 bar
Valve characteristic	equal-percentage
Control ratio of ball valve	500:1 (typical)
Control ratio with actuator	> 50:1 (typical)
Leakage rate	0.001% of k_{vs} value
Angle of rotation	90°

Permissible ambient conditions

Operating temperature[2]	–10...130 °C no condensation
Operating pressure	–10...50 °C, 40 bar 130 °C, 35 bar

Overview of types

Type	Nominal diameter	Connection ISO 7/1 Rp	C_{vs} value	Weight
VKR015F350-FF	DN 15	Rp ½"	1 m³/h	0.29 kg
VKR015F340-FF	DN 15	Rp ½"	1.6 m³/h	0.29 kg
VKR015F330-FF	DN 15	Rp ½"	2.5 m³/h	0.29 kg
VKR015F320-FF	DN 15	Rp ½"	4 m³/h	0.29 kg
VKR015F310-FF	DN 15	Rp ½"	6.3 m³/h	0.29 kg
VKR015F300-FF	DN 15	Rp ½"	10 m³/h	0.29 kg
VKR020F320-FF	DN 20	Rp ¾"	4 m³/h	0.32 kg
VKR020F310-FF	DN 20	Rp ¾"	6.3 m³/h	0.32 kg
VKR020F300-FF	DN 20	Rp ¾"	10 m³/h	0.32 kg
VKR025F320-FF	DN 25	Rp 1"	6.3 m³/h	0.49 kg
VKR025F310-FF	DN 25	Rp 1"	10 m³/h	0.49 kg
VKR025F300-FF	DN 25	Rp 1"	16 m³/h	0.49 kg
VKR032F320-FF	DN 32	Rp 1¼"	10 m³/h	0.73 kg
VKR032F310-FF	DN 32	Rp 1¼"	16 m³/h	0.73 kg
VKR032F300-FF	DN 32	Rp 1¼"	25 m³/h	0.73 kg
VKR040F320-FF	DN 40	Rp 1½"	16 m³/h	1.1 kg
VKR040F310-FF	DN 40	Rp 1½"	25 m³/h	1.1 kg
VKR040F300-FF	DN 40	Rp 1½"	40 m³/h	1.1 kg
VKR050F320-FF	DN 50	Rp 2"	25 m³/h	1.76 kg

[1] *For air and low-pressure steam: DN 40 = PN 25, DN 50 = PN 20*

[2] *No stuffing box heater required at temperatures below 0 °C, use temperature adaptor (accessory) at temperatures above 100 °C*

Type	Nominal diameter	Connection ISO 7/1 Rp	C_{vs} value	Weight
VKR050F310-FF	DN 50	Rp 2"	40 m³/h	1.76 kg
VKR050F300-FF	DN 50	Rp 2"	63 m³/h	1.76 kg

Ball valves with NPT thread on request

Accessories

Type	Description
0510420001	Adaptor required when temperature of the medium is >100 °C (recommended for temperatures <10 °C)
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10…150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 50
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B

Combination of VKR with electrical actuators

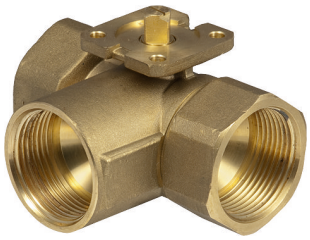
Warranty: the technical data and pressure differences indicated here are applicable only in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

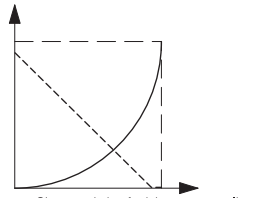
With electric rotary actuator (closes against the pressure)

Actuator		AKM105F100		AKM115F120, AKM115F122		AKM115SF132	
Page		249		249		252	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VKR015F350-FF, VKR015F340-FF, VKR015F330-FF, VKR015F320-FF, VKR015F310-FF, VKR015F300-FF, VKR020F320-FF, VKR020F310-FF, VKR020F300-FF, VKR025F320-FF, VKR025F310-FF, VKR025F300-FF	(bar)	1.8	-	3.5	-	3.5	-
VKR032F320-FF, VKR032F310-FF, VKR032F300-FF, VKR040F320-FF, VKR040F310-FF, VKR040F300-FF, VKR050F320-FF, VKR050F310-FF, VKR050F300-FF	(bar)	1.2	-	2.4	-	2.4	-

With electric rotary actuator with spring return (closes against the pressure)

Actuator		AKF112F120, AKF112F122, AKF113F122		AKF113SF122	
Page		255		256	
Running time		90 s		90 s	
Control signal		2-/3-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VKR015F350-FF, VKR015F340-FF, VKR015F330-FF, VKR015F320-FF, VKR015F310-FF, VKR015F300-FF, VKR020F320-FF, VKR020F310-FF, VKR020F300-FF, VKR025F320-FF, VKR025F310-FF, VKR025F300-FF	(bar)	3.5	5.4	3.5	5.4
VKR032F320-FF, VKR032F310-FF, VKR032F300-FF, VKR040F320-FF, VKR040F310-FF, VKR040F300-FF, VKR050F320-FF, VKR050F310-FF, VKR050F300-FF	(bar)	2.4	3.5	2.4	3.5





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

Features

- Regulation contour integrated directly into ball
- Control passage characteristic can be set to linear or quadratic with SUT rotary actuator
- Low torque due to O-ring mounted collar
- Spindle with large sliding surface and PTFE ring
- Ball valve with female thread as per ISO 7/1 Rp or NPT
- Body, axle and the ball made of DZR (dezincification-resistant) cast brass (ball: chrome-plated and polished)
- Axle seal with double O-ring made of EPDM
- Strainer and screw fitting (as accessories)

Technical data

Specifications

Nominal pressure[1]	40 bar
C_{vs} value for mixing passage	–10…–30% through the control passage
Valve characteristic, control passage	equal-percentage
Valve characteristic, mixing passage	linear
Control ratio of ball valve	500:1 (typical)
Control ratio with actuator	approx. 50:1 (typical)
Leakage rate of control passage	0.001% of k_{vs} value
Leakage rate, mixing passage	< 1%
Angle of rotation	90°

Permissible ambient conditions

Operating temperature[2]	–10…130 °C, no condensation
Operating pressure	40 bar (–10…50 °C) 35 bar (130 °C)

Overview of types

Type	Nominal diameter	Connection ISO 7/1 Rp	C_{vs} value, control passage	Weight
BKR015F340-FF	DN 15	Rp ½"	1.6 m³/h	0.31 kg
BKR015F330-FF	DN 15	Rp ½"	2.5 m³/h	0.31 kg
BKR015F320-FF	DN 15	Rp ½"	4 m³/h	0.31 kg
BKR015F310-FF	DN 15	Rp ½"	6.3 m³/h	0.33 kg
BKR020F320-FF	DN 20	Rp ¾"	4 m³/h	0.4 kg
BKR020F310-FF	DN 20	Rp ¾"	6.3 m³/h	0.4 kg
BKR025F310-FF	DN 20	Rp 1"	10 m³/h	0.63 kg
BKR032F310-FF	DN 32	Rp 1¼"	16 m³/h	0.97 kg
BKR040F310-FF	DN 40	Rp 1½"	25 m³/h	1.4 kg
BKR050F310-FF	DN 50	Rp 2"	40 m³/h	2.67 kg

Ball valves with NPT thread on request

[1] *For air and low-pressure steam: DN 40 = PN 25, DN 50 = PN 20*

[2] *No stuffing box heater required at temperatures below 0 °C, use temperature adapter (accessory) at temperatures above 100 °C*

Accessories

Type	Description
0510420001	Adaptor required when temperature of the medium is >100 °C (recommended for temperatures <10 °C)
0560283015	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 15
0560283020	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 20
0560283025	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 25
0560283032	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 32
0560283040	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 40
0560283050	1 screw fitting of brass, flat-sealing, female thread/male thread for DN 50
0560332015	Strainer in gun metal, –10…150 °C, mesh aperture 0.5 mm, DN 15
0560332020	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 20
0560332025	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 25
0560332032	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 32
0560332040	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 40
0560332050	Strainer in gun metal, –10…150 °C, mesh aperture 0.8 mm, DN 50
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B

Combination of BKR 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 non-Sauter valve actuators are used.*

With electrical rotary actuator (use as control valve)

Actuator		AKM105F100		AKM115F120, AKM115F122		AKM115SF132	
Page		249		249		252	
Running time		30 s		120 s		35/60/120 s	
Control signal		2-/3-point		2-/3-point		2-/3-point, 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BKR015F340-FF, BKR015F330-FF, BKR015F320-FF, BKR015F310-FF, BKR020F320-FF, BKR020F310-FF, BKR025F310-FF	(bar)	1.8	-	2	-	2	-
BKR032F310-FF, BKR040F310-FF, BKR050F310-FF	(bar)	1.2	-	2	-	2	-

With electrical rotary actuator with spring return (use as control valve)

Actuator		AKF112F120, AKF112F122, AKF113F122		AKF113SF122	
Page		255		256	
Running time		90 s		90 s	
Control signal		2-/3-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BKR015F340-FF, BKR015F330-FF, BKR015F320-FF, BKR015F310-FF, BKR020F320-FF, BKR020F310-FF, BKR025F310-FF	(bar)	2	5.4	2	5.4
BKR032F310-FF, BKR040F310-FF, BKR050F310-FF	(bar)	2	3.5	2	3.5

Actuators for ball valves

SAUTER's 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. Using SAUTER's actuators for ball valves, two- and three-way ball valves can be activated. Furthermore, they can be used for controllers with switching or continuous outputs.

Overview of actuators for ball valves

Models					
Type codes	AKM 105, 115	AKM 115S F132	AKM 115S F152	AKF 112, 113	AKF 113S
Further information	p. 249	p. 251	p. 253	p. 255	p. 256
Technical data					
Characteristic	equal-percentage	equal-percentage, linear, quadratic	equal-percentage, linear, quadratic	equal-percentage	equal-percentage
Running time (s)	30, 120	35, 60, 120	6	90	90
Return time (s)	–	–	–	15	15
Power supply (V)	24, 230	24	24	24, 230	24, 230
Control					
Two-point	•	•	•	•	•
Three-point	•	•	•	•	•
High-speed	–	–	•	–	–
Positioner	–	•	•	–	•
Spring return	–	–	–	•	•
Compatible with these ball valves	VKR, BKR	VKR, BKR	VKR, BKR	VKR, BKR	VKR, BKR

AKM 105, 115: Rotary actuator for ball valve

Features

- For ball valves up to DN 50
- Assembly with ball valve without tools
- Synchronous motor with electronic activation and cut-out
- Maintenance-free gear unit
- Gear unit can be disengaged, to position the ball valve manually (with hand lever)
- Console and bayonet ring made of glass-fibre reinforced plastic for fitting on ball valve
- Fitting position vertically upright to horizontal, not hanging

Technical data

Electrical supply

Power supply 230 V~	±15%, 50...60 Hz
Power supply 24 V~	±20%, 50...60 Hz

Specifications

Power cable	1.2 m, 3 x 0.75 mm²
Response time	min. 200 ms
Angle of rotation	90°

Permissible ambient conditions

Permissible ambient temperature	-10...55 °C
Permissible ambient humidity	5...95% rh, no condensation
Temperature of medium[1)]	Max. 100 °C

Function

Control	2-/3-point

Structural design

Housing	Lower section black, upper section yellow
Housing material	Fire-retardant plastic
Weight	0.7 kg

Standards and directives

Type of protection	IP 54 as per EN 60529 (horizontal)
Protection class 24 V	III as per IEC 60730
Protection class 230 V	II as per IEC 60730

Overview of types

Type	Power consumption	Running time	Voltage
AKM105F100	2.4 W, 4.5 VA	30 s	230 V~
AKM115F120	2.0 W, 4.0 VA	120 s	230 V~
AKM115F122	1.6 W, 1.7 VA	120 s	24 V~

Accessories

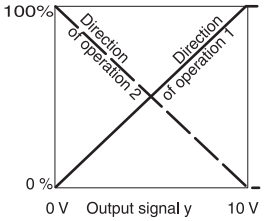
Type	Description
0372459100	External switching, 230 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0510420001	Adaptor required when temperature of the medium is >100 °C (recommended for temperatures <10 °C)

[1)] *Use the appropriate accessory, when temperature of the medium is > 100 °C*

Type	Description
0510480001	Auxiliary contacts, single
0510480002	Auxiliary contacts, double

Auxiliary contacts: Infinitely variable 0...100%, permissible load 5(2) A, 24...230 V

AKM 115S F132: Rotary actuator with SAUTER Universal Technology for ball valve



Features

- For ball valves up to DN 50
- Assembly with ball valve without tools
- Stepping motor with SUT (Sauter Universal Technology) electronic control unit
- Electronic force-dependent motor cut-off
- Automatic recognition of applied control signal (constant or switched)
- Coding switch for selection of characteristic and running time (35, 60 or 120 sec)
- Type of characteristic curve (linear/square/equal percentage) can be adjusted at drive
- Direction of operation can be selected on the cable
- Maintenance-free gear unit
- Gear unit can be disengaged, to position the ball valve manually (with hand lever)
- Console and bayonet ring made of glass-fibre reinforced plastic for fitting on ball valve

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=[1]	−10%...+20%
	Power consumption	4.9 W, 8.7 VA
Specifications		
	Angle of rotation	90°
	Response time	200 ms
	Power cable	1.2 m, 5 × 0.5 mm²
Positioner[2]	Positioning signal y	0...10 V, R_i > 100 kΩ
	Positional feedback signal	0...10 V; load > 10 kΩ
	Starting point U_0	0 V or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Permissible ambient conditions		
	Temperature of medium[3]	Max. 100 °C
	Permissible ambient temperature	-10...55 °C
	Permissible ambient humidity	5...95% rh, no condensation
Structural design		
	Housing material	Fire-retardant plastic
	Housing	Lower section black, upper section yellow
	Fitting	Vertically upright to horizontal, not hanging
	Weight	0.7 kg
Standards and directives		
	Type of protection	IP 54 as per EN 60529
	Protection class	III as per IEC 60730

[1] *24 V= for all functions*

[2] *Also for 2-point or 3-point, depending on type of connection*

[3] *Use the appropriate accessory, when temperature of the medium is > 100 °C*

Overview of types

Type
AKM115SF132

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372462001	CASE Drives PC tool for configuring the drives by computer
0510420001	Adaptor required when temperature of the medium is >100 °C (recommended for temperatures <10 °C)
0510480001	Auxiliary contacts, single
0510480002	Auxiliary contacts, double

Auxiliary contacts: Infinitely variable 0...100%, permissible load 5(2) A, 24...230 V

AKM 115S F152: High-speed rotary actuator with SAUTER Universal Technology (SUT) for ball valve

Features

- For ball valves up to DN 50
- Assembly with ball valve without tools
- Brushless motor with electronic activation and cut-out
- Intelligent adaptation of angle of rotation, incl. feedback adjustment
- Electronic force-dependent cut-off
- Signal input 0…10 V or 4…20 mA
- 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, to position the ball valve manually (with hand lever)
- Maintenance-free
- Free configuration via CASE Drive PC tool
- Console and bayonet ring made of glass-fibre reinforced plastic for fitting on ball valve

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=[1]	−10%…20%
	Power consumption	6.5 W, 9 VA (at nominal voltage)
Specifications		
	Noise during operation (unloaded)	< 49 dB(A)
	Response time[2]	10 ms
	Angle of rotation	90°
	Running time	6 s
	Characteristic	Linear
Positioner	Positioning signal y	0…10 V/2…10 V, R_i = 100 kΩ, 0…20 mA/4…20 mA, R_i = 500 kΩ
	Positional feedback signal y0	0…10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V or 2 or 10 V
	Starting point I_0	0 or 20 mA/ 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
Permissible ambient conditions		
	Operating temperature	-20…55 °C
	Temperature of medium[3]	Max. 100 °C
	Storage and transport temperature	-30…65 °C
	Humidity	5…85% rh, no condensation
Structural design		
	Housing	Lower section black, upper section yellow
	Housing material	Fire-retardant plastic
	Power cable	1.2 m, 6 × 0.5 mm²
	Fitting	Vertically upright to horizontal

[1] *24 V= for all functions*

[2] *Also for 2-point or 3-point, depending on type of connection*

[3] *Use the appropriate accessory, when temperature of the medium is > 100 °C*

Dimensions W x H x D	70 x 138 x 127 mm
Weight	0.7 kg

Standards and directives

Type of protection	IP 54 (EN 60529), horizontal
Protection class	III (EN 60730)

Overview of types

Type
AKM115SF152

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0372462001	CASE Drives PC tool for configuring the drives by computer
0510420001	Adaptor required when temperature of the medium is >100 °C (recommended for temperatures <10 °C)

AKF 112, 113: Rotary actuator with spring return for control ball valves

Features

- Return to original position in the event of power failure or activation of a safety device
- Electronic torque-dependent cut-off
- Direction of rotation can be selected during fitting
- Installation kit for the easy fitting to ball valves of the type VKR and BKR

Technical data

Electrical supply

Power supply 230 V~	±10%, 50...60 Hz
Power supply 24 V~	±20%, 50...60 Hz
Power supply 24...48 V=	±20%

Specifications

Torque and holding torque	7 Nm
Angle of rotation	max. 95°
Power cable	0.9 m, 0.75 mm² (fixed to housing)
Running time for 90° motor	90 s
Running time for 90° spring	15 s

Permissible ambient conditions

Permissible ambient temperature	–32...55 °C
Permissible ambient humidity	5...95% rh

Structural design

Housing	two-piece
Housing material	cast aluminium
Weight	1.2 kg

Standards and directives

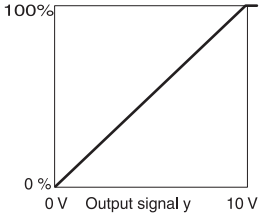
Type of protection	IP 54 as per EN 60529
Protection class 230 V	II as per IEC 60730
Protection class 24 V	III as per IEC 60730

Overview of types

Type	Power consumption	Control function	Voltage
AKF112F120	4.5 W, 7.5 VA	2-point	230 V~
AKF112F122	3.5 W, 5.0 VA	2-point	24 V~/24...48 V~
AKF113F122	3.5 W, 5.0 VA	3-point	24 V~/24...48 V~

Accessories

Type	Description
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B



AKF 113S: Rotary actuator with spring return and positioner

Features

- Return to original position in the event of power failure or activation of a safety device
- Electronic torque-dependent cut-off
- Direction of rotation can be selected during fitting
- Installation kit for the easy fitting to ball valves of the type VKR and BKR

Technical data

Electrical supply

	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
	Power consumption during operation	3.5 W, 5 VA
	Power consumption at standstill	2.5 W, 2.5 VA

Specifications

Positioner	Positioning signal y	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Permissible load	> 10 kΩ
	Starting point U_0	0 V
	Control span ΔU	10 V
	Switching range X_{sh}	0.2 V
	Torque and holding torque	7 Nm
	Angle of rotation	max. 95°
	Power cable	0.9 m, 4 × 0.75 mm² (fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s

Permissible ambient conditions

	Permissible ambient temperature	–32...55 °C
	Permissible ambient humidity	< 95% rh

Structural design

	Housing	two-piece
	Housing material	cast aluminium
	Weight	1.3 kg

Standards and directives

	Type of protection	IP 54 as per EN 60529
	Protection class	III as per IEC 60730

Overview of types

Type
AKF113SF122

Accessories

Type	Description
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B

Control valves and butterfly valves

SAUTER's control valves are used to control heating and cooling systems in buildings. The 3-way version is suitable for controlling and change-over functions, while the 4-way version is employed for high temperatures in the return circuit. SAUTER's 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

Models			
Type codes	M3R, M4R	MH32F, MH42F	DEF
Further information	p. 258	p. 260	p. 262
Application			
Preheater for ventilation & air-conditioning	•	•	–
Static heating	•	•	–
Cooling tower	–	–	•
Multi-boiler system	–	–	•
Version			
Control valve	•	•	–
Butterfly valve	–	–	•
Technical data			
Nominal diameter DN	15...50	20...150	25...200
Nominal pressure (bar)	10	6	16
Compatible with these actuators	AR30 W ASM 105, 115, 124	AR30 W ASM 105, 115, 124	AR30 W A44 W ASF 122, 123

i Explanation of pressure differences

Δp_{max} **(bar) :** Maximum permissible pressure difference across the valve at which the actuator can still firmly open and close the valve taking Δp_v into account.

Δp_s **(bar) :** Maximum permissible pressure difference across the valve at which, in the event of a malfunction (e.g burst pipe after the valve), the actuator can firmly close the valve by means of a fast rotary movement.

M3R

M4R

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
- Combination with the motor drives AR30 and ASM 105, 115, 124
- Manual adjustment by means of lever and end stops
- Body and front slider of brass
- Lever of ABS
- Double O-ring of EPDM ensures the tightness of the seal at the spindle

Technical data

Specifications

Nominal pressure	10 bar
Angle of rotation	90°
Valve characteristic	linear

Permissible ambient conditions

Operating temperature	2...110 °C
Operating pressure	max. 10 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Leakage rate in % of K_{vs}	Weight
M3R015F200	DN 15	2.5 m³/h	1 %	0.8 kg
M3R020F200	DN 20	6 m³/h	1 %	0.7 kg
M3R025F200	DN 25	12 m³/h	1 %	1.2 kg
M3R032F200	DN 32	18 m³/h	1 %	1.2 kg
M3R040F200	DN 40	26 m³/h	1 %	2.2 kg
M3R050F200	DN 50	40 m³/h	1 %	2.3 kg
M4R020F200	DN 20	6 m³/h	1.5 %	0.8 kg
M4R025F200	DN 25	12 m³/h	1.5 %	1.2 kg
M4R032F200	DN 32	18 m³/h	1.5 %	1.3 kg
M4R040F200	DN 40	26 m³/h	1.5 %	2.3 kg
M4R050F200	DN 50	40 m³/h	1.5 %	2.5 kg

*M3R0**F200: 3-way control valve body, cover, front slider and spindle made of brass*

*M4R0**F200: 4-way control valve body, cover, front slider and spindle made of brass*

Accessories

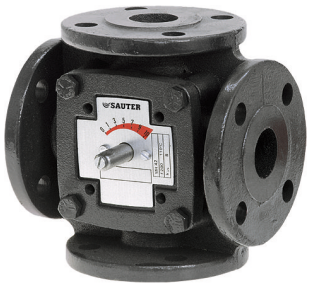
Type	Description
0361775000	Assembly materials for M3R/M4R, MH32F/MH42F with AR30
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM124
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM105, 115

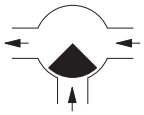
M3R/M4R combination with AR30 motorised drive and ASM actuator

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 non-Sauter valve actuators are used.*

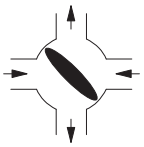
Actuator		AR30W23F001, AR30W23F020		AR30W23SF020		ASM105F100		ASM105F120, ASM105F122		ASM105SF132		ASM115F120, ASM115F122		ASM115SF132		ASM124F120, ASM124F122		ASM124SF132	
Page		266		268		276		276		280		276		280		282		286	
Running time		120 s		120 s		30 s		120 s		35/60/120 s		120 s		60/120 s		120 s		60/120 s	
Control signal		3-point		0...10 V		2-/3-point		2-/3-point		2-/3-point 0...10 V		2-/3-point		2-/3-point 0...10 V		2-/3-point		2-/3-point 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
M3R015F200	(bar)	2	-	2	-	2	-	2	-	2	-	-	-	-	-	-	-	-	-
M3R020F200	(bar)	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-
M3R025F200	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-
M3R032F200, M3R040F200, M3R050F200, M3R050F200, M4R032F200, M4R040F200, M4R050F200	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
M4R020F200	(bar)	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-
M4R025F200	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-

- *With AR30, assembly kit 0361775000 required (included in the combined price in Switzerland and Germany, other countries on request)*
- *With ASM105 and ASM115, assembly kit 0361977002 required (included in the combined price in Switzerland and Germany, other countries on request)*
- *With ASM124, assembly kit 0361977001 required (included in the combined price in Switzerland and Germany, other countries on request). With ASM124, it is not possible to fit auxiliary contacts or a potentiometer*





3-way control valve



4-way control valve

MH32F, MH42F: Flanged control valves, 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 the motor drives AR30 and ASM 105, 115, 124
- Manual adjustment with lever
- Body made of grey cast iron; front slider of brass
- Spindle made of brass up to DN 25 or stainless steel from DN 32
- Stuffing box with double O-ring guarantees the tightness of the seal at the spindle

Technical data

Specifications

Nominal pressure	6 bar
Angle of rotation	90°
Valve characteristic	linear

Permissible ambient conditions

Operating temperature	2...110 °C
Operating pressure	max. 6 bar

Overview of types

Type	Nominal diameter	C_{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 control valve: zinc cover, brass spindle

MH32F32...150: 3-way control valve: grey cast iron cover, stainless steel spindle

MH42F32...50: 4-way control valve: grey cast iron cover, stainless steel spindle

Accessories

Type	Description
0360392020	Welding flange, DN 20, smooth, PN 6, incl. asbestos-free seal
0360392025	Welding flange, DN 25, smooth, PN 6, incl. asbestos-free seal
0360392032	Welding flange, DN 32, smooth, PN 6, incl. asbestos-free seal
0360392040	Welding flange, DN 40, smooth, PN 6, incl. asbestos-free seal
0360392050	Welding flange, DN 50, smooth, PN 6, incl. asbestos-free seal
0360392065	Welding flange, DN 65, smooth, PN 6, incl. asbestos-free seal
0360392080	Welding flange, DN 80, smooth, PN 6, incl. asbestos-free seal
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

Type	Description
0361775000	Assembly materials for M3R/M4R, MH32F/MH42F with AR30
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM124
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM105, 115

MH32F/MH42F combination with AR30 motorised drive and ASM actuator

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 non-Sauter valve actuators are used.*

Actuator		**AR30W23F001, AR30W23F020**		**AR30W23SF020**		**ASM105F100**		**ASM105F120, ASM105F122**		**ASM115F120, ASM115F122**		**ASM105SF132**		**ASM115SF132**		**ASM124F120, ASM124F122**		**ASM124SF132**	
Page		266		268		276		276		276		280		280		282		286	
Running time		120 s		120 s		30 s		120 s		120 s		35/60/120 s		60/120 s		120 s		60/120 s	
Control signal		3-point		0...10 V		2-/3-point		2-/3-point		2-/3-point		2-/3-point 0...10 V		2-/3-point 0...10 V		2-/3-point		2-/3-point 0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
MH32F20F200, MH32F25F200, MH32F32F200, MH32F40F200	(bar)	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
MH32F50F200, MH32F65F200, MH32F80F200	(bar)	0.5	-	0.5	-	-	-	-	-	0.5	-	-	-	0.5	-	0.5	-	0.5	-
MH32F100F200, MH32F125F200, MH42F50F200, MH32F150F200, MH42F50F200	(bar)	0.5	-	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5	-	0.5	-
MH42F32F200, MH42F40F200	(bar)	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-

With AR30, assembly kit 0361775000 required (included in the combined price in Switzerland and Germany, other countries on request)

With ASM105 and ASM115, assembly kit 0361977002 required (included in the combined price in Switzerland and Germany, other countries on request)

With ASM124, assembly kit 0361977001 required (included in the combined price in Switzerland and Germany, other countries on request). With ASM124, it is not possible to fit auxiliary contacts or a potentiometer

DEF: Tight-sealing butterfly valve, PN 16

Features

- Butterfly valve with 3-way brass bearing bush as spindle bearing
- Fits PN 6, PN 10 and PN 16 flanges
- Can be combined with the motor drives of the AR30W and A44W type or ASF 122 and 123 damper drives with spring return
- Damper body of grey cast iron
- Collar made of ethylene-propylene rubber
- Butterfly wafer made of stainless steel
- Spindle in stainless steel sealed with two O-rings

Technical data

Specifications

Nominal pressure	16 bar
Valve characteristic	linear
Angle of rotation	90°
Leakage rate[1)]	< 0,0001% of the k_{vs} value

Permissible ambient conditions

Operating temperature	–10…130 °C
Maximum operating pressure	16 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Weight
DEF025F200	DN 25	36 m³/h	1 kg
DEF032F200	DN 32	40 m³/h	1.15 kg
DEF040F200	DN 40	50 m³/h	2.75 kg
DEF050F200	DN 50	85 m³/h	3.05 kg
DEF065F200	DN 65	215 m³/h	4.05 kg
DEF080F200	DN 80	420 m³/h	4.3 kg
DEF100F200	DN 100	800 m³/h	4.85 kg
DEF125F200	DN 125	1010 m³/h	7.2 kg
DEF150F200	DN 150	2100 m³/h	9.5 kg
DEF200F200	DN 200	4000 m³/h	12 kg

Accessories

Type	Description
0361634200	Two welding flanges, complete PN 10 (DN 200) as per EN 1092-1
0378108001	Assembly parts; DEF DN 25…65 for AR30
0378109001	Assembly parts; DEF DN 80…100 for AR30
0378110001	Assembly parts; DEF DN 25…65 for A44
0378111001	Assembly parts; DEF DN 80…125 for A44
0378112001	Assembly parts; DEF DN 150…200 for A44
0378113001	Assembly parts; DEF DN 25…100 for ASF122/123

1) *At Δp 1.5 bar*

Other accessories

Type	Description	Price
0361632***	2 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***	2 welding flanges, complete PN 10 (DN 25…100) as per EN 1092-1 and PN 16 (DN 25…200) as per EN 1092-1 DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150, DN 200	—

Ordering information: DN 25 = /025, DN 100 = /100

Combination of DEF 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 non-Sauter valve actuators are used.*

Combination with AR30W23x electrical actuator

Actuator		AR30W23F001, AR30W23F020		AR30W23SF020	
Page		266		268	
Running time		120 s		120 s	
Control signal		3-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
DEF025F200, DEF032F200, DEF040F200, DEF050F200	(bar)	10	-	10	-
DEF065F200	(bar)	7	-	7	-
DEF080F200	(bar)	4	-	4	-
DEF100F200	(bar)	2	-	2	-

For DN 25…65: Assembly kit 0378108001 (weight 0.4 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

For DN 80 and 100: Assembly kit 0378109001 (weight 0.4 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

Combination with A44W2x electrical actuator

Actuator		A44W2F001, A44W2F020		A44W2SF001	
Page		270		272	
Running time		120 s		120 s	
Control signal		3-point		0...10 V; 4...20 mA	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
DEF025F200, DEF032F200	(bar)	10	-	10	-
DEF040F200, DEF065F200, DEF050F200	(bar)	16	-	16	-
DEF080F200, DEF100F200	(bar)	10	-	10	-
DEF125F200	(bar)	6	-	6	-
DEF150F200	(bar)	5	-	5	-
DEF200F200	(bar)	3	-	3	-

For DN 25…65: Assembly kit 0378110001 (weight 0.2 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

For DN 80…125: Assembly kit 0378111001 (weight 0.2 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

For DN 150 and 200: Assembly kit 0378112001 (weight 0.2 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

Combination with actuator with spring return

Actuator		ASF122F120, ASF122F122, ASF122F220, ASF122F222		ASF123F122		ASF123SF122	
Page		290		290		291	
Running time		90 s		90 s		90 s	
Control signal		2-point		3-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
DEF025F200, DEF032F200, DEF040F200, DEF050F200	(bar)	10	10	10	10	10	10
DEF065F200	(bar)	7	7	7	7	7	7

Actuator		ASF122F120, ASF122F122, ASF122F220, ASF122F222		ASF123F122		ASF123SF122	
Page		290		290		291	
Running time		90 s		90 s		90 s	
Control signal		2-point		3-point		0...10 V	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
DEF080F200	(bar)	4	4	4	4	4	4
DEF100F200	(bar)	2	2	2	2	2	2

Assembly kit 0378113001 (weight 0.5 kg) required (included in the combined price in Switzerland and Germany, other countries on request)

Rotary actuators

Rotary actuators from SAUTER save energy by switching off the power when in the end positions. They are used to control regulating units, such as air dampers, control valves and butterfly valves. They are suitable for controllers with either a switching or a continuous output.

Overview of rotary actuators

Models				
Type codes	AR30 W21…23	AR30 W22S, W23S	A44 W0…W2	A44 W0S…W2S
Further information	p. 266	p. 268	p. 270	p. 272
Technical data				
Torque (Nm)	15	15	25, 30	25, 30
Running time for 90° (s)	30, 60, 120	60, 120	30, 60, 120	30, 60, 120
Power (V~)	24, 230	24	24, 230	24
Control				
Three-point	•	–	•	–
Positioner	–	•	–	•

AR30 W21...23: Motor drive

Features

- For controllers with a switching output (3-point)
- Synchronous motor with end switch
- Maintenance-free gear unit
- Controlling the regulating unit to be actuated in any intermediate position
- Cable screw fitting M20 × 1.5

Technical data

Electrical supply		
	Power supply 230 V~	±15%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
	Power consumption 230 V~	3.7 VA
	Power consumption 24 V~	4.8 VA
Specifications		
	Angle of rotation[1]	90°
	Torque and holding torque	15 Nm
	Permissible damper surface area[2]	5 m²
Permissible ambient conditions		
	Permissible ambient temperature	-20...60 °C
	Permissible ambient humidity	< 95% rh
Structural design		
	Weight	1.1 kg
	Housing material	Light-metal alloy, hood made of transparent, fire-retardant thermoplastic
Standards and directives		
	Type of protection[3]	IP 55 (EN 60529), in pendent position IP 54

Overview of types

Type	Running time for 90°	Voltage
AR30W21F001	30 s	230 V~
AR30W21F020	30 s	24 V~
AR30W22F001	60 s	230 V~
AR30W22F020	60 s	24 V~
AR30W23F001	120 s	230 V~
AR30W23F020	120 s	24 V~

Accessories

Type	Description
0188813000	Ball joint for clamping lever
0294148000	Fixing bracket for wall mounting
0294967000	Pivot pin for clamping lever
0370059000	Clamping lever for shaft, Ø 8...18 mm
0370772001	2 auxiliary contacts, permissible load 10 (2) A, 250 V~

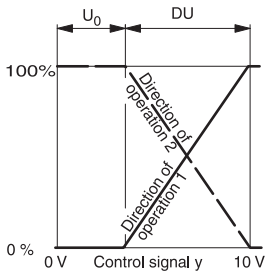
[1] *Angle of rotation of end shaft is adjustable from 30° min. to 320° max. by means of a switching cam (starting point is freely selectable). If a potentiometer is fitted: observe potentiometer rotation angle*

[2] *Recommended value for equal-sided, smooth-running air dampers, for AR30W21 damper area = 4 m²*

[3] *Degree of protection IP 55 with cable screw fitting M20 × 1.5*

Type	Description
0370774001	Crank handle for manual adjustment
0370785001	Position indicator
0370819000	Flat-sided hub
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal
0370780001	Potentiometer, 2000 Ω, 1 W
0370781001	Dual potentiometer 130/2000 Ω, 1 W
0370644001	Rotation-angle cog set 90° or 180°, with coupling
0370644002	Rotation-angle cog set 120° or 150°, with coupling,

Auxiliary contacts: switching cam 180° ON or 180° OFF can be positioned at any point over the entire angle of rotation (360°)



AR30 W22S, W23S: Motor drive with positioner

Features

- For controllers with a continuous output (0...10 V)
- Synchronous motor with limit switch and integrated positioner
- Maintenance-free gear unit
- Controlling the regulating unit to be actuated in any intermediate position
- Angle of rotation min. 30° to max. 320°
- Direction of operation can be selected with switch.
- Electrical connections (max. 1.5mm²) with screw terminals
- Cable screw fitting M20 × 1.5

Technical data

Electrical supply

	Power supply	24 V~, ± 20%, 50 Hz
	Power consumption during operation	approx. 5.1 W
	Power consumption at standstill	approx. 0.7 VA

Specifications

Positioner	Control signal 0...10 V	R_i = 30 kΩ
	Control signal 0...20 mA	R_i = 50 kΩ
	Positional feedback 0...10 V	Permissible load ≥ 2.5 kΩ
	Positional feedback 0...620 mV	Permissible load ≥ 100 kΩ
	Starting point U_0	0.4...9.1 V
	Control span ΔU	1...10 V
	Switching range X_{sh}	4% of ΔU
	Permissible damper surface area[1]	5 m²
	Angle of rotation[2]	90°
	Torque and holding torque	15 Nm

Permissible ambient conditions

	Permissible ambient temperature	-5...60 °C
	Permissible ambient humidity	< 95% rh

Structural design

	Weight	1.1 kg
	Housing material	Light-metal alloy, hood made of transparent, fire-retardant thermoplastic

Standards and directives

	Type of protection[3]	IP 55 (EN 60529), in pendent position IP 54 (EN 60529)

Overview of types

Type	Running time for 90°
AR30W22SF020	60 s
AR30W23SF020	120 s

[1] *Recommended value for equal-sided, smooth-running air dampers*

[2] *Angle of rotation of end shaft is 90 °C (factory set). Changing the arrangement to 180° is possible by reversing the cogs and readjusting the limit switches*

[3] *Degree of protection IP 55 with cable screw fitting M20 × 1.5*

Accessories

Type	Description
0188813000	Ball joint for clamping lever
0294148000	Fixing bracket for wall mounting
0294967000	Pivot pin for clamping lever
0370059000	Clamping lever for shaft, ∅ 8...18 mm
0370774001	Crank handle for manual adjustment
0370785001	Position indicator
0370819000	Flat-sided hub
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

A44 W0...W2: Motor drive

Features

- For controllers with a switching output (3-point)
- Synchronous motor with end switch
- Maintenance-free gear unit
- Control of regulating unit to be activated in any intermediate position
- Cable screw fitting M20 × 1.5
- Crank handle for manual adjustment

Technical data

Electrical supply		
	Power supply 230 V~	±15%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
Specifications		
	Angle of rotation[1]	90°
Permissible ambient conditions		
	Permissible ambient temperature[2]	-20...60 °C
	Permissible ambient humidity	< 95% rh
Structural design		
	Screw terminals	For electric cables of up to 1.5 mm²
	Housing material	Light-metal alloy, hood made of fire-retardant plastic
Standards and directives		
	Type of protection[3]	IP 43 (EN 60529)

Overview of types

i *Permissible damper surface area: The recommended permissible damper area applies to equal-sided, smooth-running air dampers*

Type	Torque	Holding torque	Running time for 90°	Voltage	Weight	Power consumption	Permissible damper surface area
A44W0F001	25 Nm	22 Nm	30 s	230 V~	2.5 kg	9.2 W	8 m²
A44W0F020	25 Nm	22 Nm	30 s	24 V~	2.5 kg	9.2 W	8 m²
A44W1F001	30 Nm	30 Nm	60 s	230 V~	2.5 kg	9.2 W	10 m²
A44W1F020	30 Nm	30 Nm	60 s	24 V~	2.5 kg	9.2 W	10 m²
A44W2F001	30 Nm	30 Nm	120 s	230 V~	2.2 kg	3.8 W	10 m²
A44W2F020	30 Nm	30 Nm	120 s	24 V~	2.2 kg	3.8 W	10 m²

Accessories

Type	Description
0188614000	Fixing bracket for wall mounting
0274605000	Angled ball joint for clamping lever with nut (M10)
0294967000	Pivot pin for clamping lever
0370205002	Heating resistor 5 W, 24 V~

[1] *Angle of rotation of end shaft is adjustable from 30° min. to 320° max. by means of a switching cam (starting point is freely selectable). If a potentiometer is fitted: observe potentiometer rotation angle*

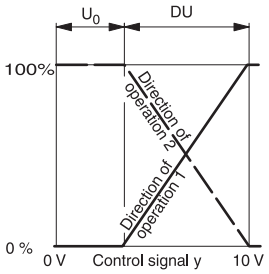
[2] *At temperatures under 0 °C, use heating resistor (accessory)*

[3] *Degree of protection IP 43 is only attained in conjunction with cable screw fitting M20 × 1.5. Degree of protection IP 55 is attained with steel or aluminium cover (accessory) and cable screw fitting M20 × 1.5*

Type	Description
0370396000	3 insertable auxiliary contacts, 10(2) A 250 V~
0370479000	Bright-galvanised steel hood with crank for external manual adjustment, with rubber seal, degree of protection: IP 55, olive green
0370486000	Clamping lever, complete (including square hub)
0370493000	2 insertable auxiliary contacts, 10(2) A 250 V~
0370628000	Adaptor plate including 4 M6 countersunk screws for replacing A33 W. with A44 W.
0370638000	Straight ball joint for clamping lever with nut (M10)
0370715001	Cover made of die-cast aluminium with rubber seal, degree of protection: IP 55
0371290001	Cover, black, made of die-cast aluminium with display window, rubber seal, position indicator and scale, degree of protection: IP 55
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal
0370640001	Potentiometer 2000 Ω, 1.0 W with friction coupling
0370640002	Potentiometer 130 Ω, 1.0 W with friction coupling
0370640006	Potentiometer 1000 Ω, 1.0 W with friction coupling
0370641001	Dual potentiometer 130/2000 Ω, 1.0 W with friction coupling
0370641002	Dual potentiometer 2000/2000 Ω, 1.0 W with friction coupling
0370641006	Dual potentiometer 130/140 Ω, 1.0 W with friction coupling
0370644001	Rotation-angle cog set 90° or 180°, with coupling
0370644002	Rotation-angle cog set 120° or 150°, with coupling,
0370645006	Potentiometer 1000 Ω, 1.0 W with rigid coupling
0370645007	Potentiometer 5000 Ω, 1.0 W with rigid coupling
0370646001	Rotation-angle cog set 90°, without coupling
0370646002	Rotation-angle cog set 120°, without coupling

Insertable auxiliary contacts: Switching cam 180° ON or 180° OFF can be positioned at any point over the entire angle of rotation (360°)

Potentiometer with rigid coupling: obligatory for certain TÜV-approved burner control systems



A44 W0S...W2S: Motor drive with positioner

Features

- For controllers with a continuous output (0...10 V or 0/4...20 mA)
- Synchronous motor with limit switch and integrated positioner
- Maintenance-free gear unit
- Controlling the regulating unit to be actuated in any intermediate position
- Direction of operation can be selected with switch
- Cable screw fitting M20 × 1.5
- Crank handle for manual adjustment

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption during operation	12.2 W (A44W0S, A44W1S), 6.8 W (A44W2S)
	Power consumption at standstill	3 VA
Specifications		
Positioner	Control signal 0...10 V	R_i = 30 kΩ
	Control signal 0...20 mA	R_i = 50 kΩ
	Positional feedback 0...10 V	Permissible load ≥ 2.5 kΩ
	Positional feedback 0...620 mV	Permissible load ≥ 100 kΩ
	Starting point U_0	0.4...9.1 V
	Control span ΔU	1...10 V
	Switching range X_{sh}	4% of ΔU
	Angle of rotation[1]	30°...320° (90° nominal)
Permissible ambient conditions		
	Permissible ambient temperature	-5...50 °C
	Permissible ambient humidity	< 95% rh
Structural design		
	Housing material	Light-metal alloy, hood made of fire-retardant plastic
	Screw terminals	For electric cables of up to 1.5 mm²
Standards and directives		
	Type of protection[2]	IP 43 (EN 60529)

Overview of types

i *Permissible damper surface area: The recommended permissible damper area applies to equal-sided, smooth-running air dampers*

Type	Torque	Holding torque	Running time for 90°	Permissible damper surface area	Weight
A44W0SF001	25 Nm	22 Nm	30 s	8 m²	2.7 kg
A44W1SF001	30 Nm	30 Nm	60 s	10 m²	2.7 kg
A44W2SF001	30 Nm	30 Nm	120 s	10 m²	2.4 kg

[1] *Angle of rotation of end shaft is 90° (factory set). Changing the arrangement to 180° is possible by reversing the cogs and readjusting the limit switches. Refer to fitting instruction MV 505228*

[2] *Degree of protection IP 43 is only attained in conjunction with cable screw fitting M20 × 1.5. Degree of protection IP 55 is attained with steel or aluminium cover (accessory) and cable screw fitting M20 × 1.5.*

Accessories

Type	Description
0188614000	Fixing bracket for wall mounting
0274605000	Angled ball joint for clamping lever with nut (M10)
0294967000	Pivot pin for clamping lever
0370479000	Bright-galvanised steel hood with crank for external manual adjustment, with rubber seal, degree of protection: IP 55, olive green
0370486000	Clamping lever, complete (including square hub)
0370493000	2 insertable auxiliary contacts, 10(2) A 250 V~
0370628000	Adaptor plate including 4 M6 countersunk screws for replacing A33 W. with A44 W.
0370638000	Straight ball joint for clamping lever with nut (M10)
0371290001	Cover, black, made of die-cast aluminium with display window, rubber seal, position indicator and scale, degree of protection: IP 55
0372460001	Cable screw fitting (plastic M20 × 1.5) incl. locking nut and seal

Damper and rotary actuators

SAUTER's damper and rotary actuators provide a torque- and time-dependent cut-off facility for the efficient usage of energy. Another useful contribution to energy saving is the overload protection and the end position detector in the rotary actuators. SAUTER's rotary actuators can be used for controllers with a continuous or switched output, therefore, for operating air dampers, shut-off dampers, butterfly valves and multi-leaf dampers.

Overview of damper and rotary actuators

Models					
Type codes	ASM 105, 115	ASM 105S, 115S F132	ASM 105S, 115S F152	ASM 124	ASM 134
Further information	p. 276	p. 280	p. 278	p. 282	p. 284
Technical data					
Torque (Nm)	5, 10	5, 10	5, 10	18	30
Running time (s)	30, 120	35, 60, 120	3, 6	120	120, 240
Power supply (V)	24, 230	24	24	24, 230	230
Control					
Two-point	•	•	•	•	–
Three-point	•	•	•	•	•
High-speed	–	–	•	–	–
Positioner	–	•	•	–	–
Spring return	–	–	–	–	–

Overview of damper and rotary actuators

Models					
Type codes	ASM 124S, 134S	ASF 112, 113	ASF 113S	ASF 122, 123	ASF 123S
Further information	p. 286	p. 288	p. 289	p. 290	p. 291
Technical data					
Torque (Nm)	15, 30	7	7	18	18
Running time (s)	60, 120, 240	90	90	90	90
Control					
Two-point	•	•	–	•	–
Three-point	•	•	–	•	–
High-speed	–	–	–	–	–
Positioner	•	–	•	–	•
Spring return	–	•	•	•	•

ASM 105, 115: Damper drive

Features

- Self-centring spindle adaptor
- Gear unit can be disengaged to position the damper and for manual adjustment
- Synchronous motor with electronic activation and cut-out
- Maintenance-free
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Version with halogen-free cable on demand

Technical data

Specifications

Angle of rotation	max. 95°
Permissible damper shaft	Ø 8...16 mm, □ 6.5...12.5 mm
Permissible damper shaft (hardness)	max. 300 HV
Operating noise	< 30 dB(A)
Response time	200 ms

Permissible ambient conditions

Permissible ambient temperature[1)]	–20...65 °C
Permissible ambient humidity	5...85% rh, no condensation

Function

Control	2/3-point

Structural design

Weight	0.7 kg
Housing	lower section black, upper section yellow
Housing material	fire-retardant plastic
Power cable	1.2 m long, 3 × 0.75 mm²

Standards and directives

Type of protection	IP 54 (EN 60529)
Protection class 24 V	III (IEC 60730)
Protection class 230 V	II (IEC 60730)

Overview of types

Type	Torque	Holding torque	Running time for 90°	Power supply	Power consumption
ASM105F100	5 Nm	5 Nm	30 s	230 V~, ±15%, 50 Hz	2.4 W, 4.5 VA
ASM105F120	5 Nm	5 Nm	120 s	230 V~, ±15%, 50...60 Hz	2.0 W, 4.0 VA
ASM105F122	5 Nm	5 Nm	120 s	24 V~, ±20%, 50...60 Hz	1.6 W, 1.7 VA
ASM115F120	10 Nm	10 Nm	120 s	230 V~, ±15%, 50...60 Hz	2.0 W, 4.0 VA
ASM115F122	10 Nm	10 Nm	120 s	24 V~, ±20%, 50...60 Hz	1.6 W, 1.7 VA

1) *Operating time approx. 80% up to 65 °C, 100% up to 55 °C*

Accessories

Type	Description
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM105, 115
0372145001	Auxiliary contacts, single
0372145002	Auxiliary contacts, double
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for square (x 15 mm) hollow profile (pack of 10 pieces)
0372320001	Hexagon key as visualisation for position indicator
0372459100	External switching, 230 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box

Auxiliary contacts: infinitely variable 0...90°, permissible load 5(2) A, 24...230 V

Potentiometer: only one potentiometer or one auxiliary contact can be fitted for each drive

ASM 105S, 115S F152: High-speed damper drive with SAUTER Universal Technology (SUT)

- Brushless motor with electronic activation and cut-out
- Intelligent adaptation of angle of rotation, incl. feedback adjustment
- Electronic force-dependent cut-off
- Direction of rotation selected with DIP switches ↻ and ↺
- Pulse length correction in 3-point operation, i.e. internal adjustment of start-up time
- Self-centring spindle adaptor
- Gear unit can be disengaged to position the damper and for manual adjustment
- Free configuration via CASE Drive PC tool
- Maintenance-free
- Fitting: vertically upright to horizontal; not upside down

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24 V=	+20%, −10%
Specifications		
	Angle of rotation	max. 95°
	Permissible damper shaft	Ø 8...16 mm, □ 6.5...12.5 mm
	Permissible damper shaft (hardness)	max. 300 HV
	Noise during operation (unloaded)	< 49 dB(A)
	Response time[1]	10 ms (electrically compensated)
Positioner[2]	Control signal y	0...10 V/2...10 V, R_i = 100 kΩ
	Control signal y	0...20 mA/4...20 mA, R_i = 500 kΩ
	Positional feedback signal y0	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V/2 or 10 V
	Starting point I_0	0 or 20 mA/4 or 20 mA
	Control span ΔU	10 V
	Switching range X_{sh}	100 mV
	Control span ΔI	20 mA
	Switching range X_{sh}	0.1 mA
Permissible ambient conditions		
	Operating temperature	−20...55 °C
	Storage and transport temperature	−30...65 °C
	Humidity	5...85% rh, no condensation
Structural design		
	Weight	0.7 kg
	Dimensions W x H x D	70 x 63 x 133 mm
	Housing	lower section black, upper section yellow
	Housing material	fire-retardant plastic
	Power cable	1.2 m long, 6 x 0.5 mm²
Standards and directives		
	Type of protection	IP 54 (EN 60529)
	Protection class	III (EN 60730)

[1] *Also for 2-point or 3-point, depending on connection with 24 V~*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

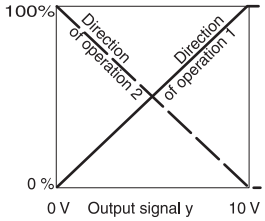
Overview of types

i *Torque and holding torque: Holding torque is typically 1.5 Nm when the drive is without current*

Type	Torque and holding torque	Running time for 90°	Power consumption
ASM105SF152	5 Nm	3 s	6.0 W, 8.5 VA
ASM115SF152	10 Nm	6 s	6.5 W, 9.0 VA

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1** or drives with end switch, incl. junction box
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM105, 115
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for square (x 15 mm) hollow profile (pack of 10 pieces)
0372462001	CASE Drives PC tool for configuring the drives by computer



ASM 105S, 115S F132: Damper drive with SAUTER Universal Technology (SUT)

Features

- Self-centring spindle adaptor
- 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 angle of rotation, incl. feedback adjustment
- Free configuration via CASE Drive PC tool
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Version with halogen-free cable on demand

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 51...60 Hz
	Power supply 24 V=	±20%
Specifications		
	Angle of rotation	max. 95°
	Permissible damper shaft	Ø 8...16 mm, □ 6.5...12.5 mm
	Permissible damper shaft (hardness)	max. 300 HV
	Operating noise	< 30 dB(A)
	Response time[1]	200 ms
Positioner[2]	Control signal y	0...10 V, R_i > 100 kΩ
	Positional feedback signal y0	0...10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200mV
Permissible ambient conditions		
	Permissible ambient temperature	–20...55 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	0.7 kg
	Housing	lower section black, upper section yellow
	Housing material	fire-retardant plastic
	Power cable	1.2 m long, 5 × 0.5 mm²
Standards and directives		
	Type of protection	IP 54 (EN 60529)
	Protection class	III (IEC 60730)

Overview of types

Type	Torque	Holding torque	Power consumption	Running time for 90°
ASM105SF132	5 Nm	5 Nm	5.0 W, 9.0 VA	35/60/120 s
ASM115SF132	10 Nm	10 Nm	4.8 W, 8.7 VA	60/120 s

[1] *Also for 2-point or 3-point, depending on connection with 24 V~*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0361977002	Assembly materials for M3R/M4R, MH32F/MH42F with ASM105, 115
0372145001	Auxiliary contacts, single
0372145002	Auxiliary contacts, double
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for square (x 15 mm) hollow profile (pack of 10 pieces)
0372320001	Hexagon key as visualisation for position indicator
0372462001	CASE Drives PC tool for configuring the drives by computer

Auxiliary contacts: infinitely variable 0...90°, permissible load 5(2) A, 24...230 V

Potentiometer: only one potentiometer or one auxiliary contact can be fitted for each drive

ASM 124: Damper drive

Features

- Synchronous motor with electronic activation and cut-out
- Maintenance-free gear unit
- Electronic end position detector and motor cut-off
- Self-centring spindle adaptor for fitting on damper shaft
- Gear unit can be disengaged to position the damper and for manual adjustment
- Suitable for all fitting positions
- Threaded holes, M5 for fitting to fitting bracket
- Version with halogen-free cable on demand

Technical data

Electrical supply

Power supply 230 V~	±15%, 50…60 Hz
Power supply 24 V~	±20%, 50…60 Hz

Specifications

Torque and holding torque	18 Nm
Running time for 90°	120 s
Angle of rotation	max. 95°
Permissible damper shaft	Ø 10…20 mm, □ 10…16 mm
Permissible damper shaft (hardness)	max. 300 HV
Operating noise	< 30 dB(A)
Response time	200 ms

Permissible ambient conditions

Permissible ambient temperature	–20…55 °C
Permissible ambient humidity	< 95% rh, no condensation

Structural design

Weight	1.2 kg
Housing	lower section black, upper section yellow
Housing material	fire-retardant plastic
Power cable	1.2 m long, 3 × 0.75 mm²

Standards and directives

Type of protection	IP 54 (EN 60529)
Protection class 230 V	II (IEC 60730)
Protection class 24 V	III (IEC 60730)

Overview of types

Type	Voltage	Power consumption
ASM124F120	230 V~	2.9 W, 5.6 VA
ASM124F122	24 V~	2.3 W, 2.4 VA

Accessories

Type	Description
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM124
0370059000	Clamping lever for shaft, Ø 8…18 mm
0370990001	Auxiliary contacts, single
0370990002	Auxiliary contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W

Type	Description
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, assembly tape
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059

Auxiliary contacts: infinitely variable 0...90°, permissible load 5(2) A, 24...230 V

ASM 134: Damper drive

Features

- Self-centring spindle adaptor
- Gear unit can be disengaged to position the damper and for manual adjustment
- Stepping motor with electronic activation and cut-out
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Maintenance-free
- Version with halogen-free cable on demand

Technical data

Electrical supply

Power supply	230 V~, ±15%, 50...60 Hz
Power consumption	3.7 W, 4.7 VA

Specifications

Torque and holding torque	30 Nm
Running time for 90°	120/240 s
Angle of rotation	max. 95°
Permissible damper shaft	Ø 12...20 mm, □ 10...16 mm
Permissible damper shaft (hardness)	max. 300 HV
Operating noise	< 30 dB(A)
Response time	200 ms

Permissible ambient conditions

Permissible ambient temperature	–20...55 °C
Permissible ambient humidity	< 95% rh, no condensation

Structural design

Weight	1.8 kg
Housing	lower section black, upper section yellow
Housing material	fire-retardant plastic
Power cable	1.2 m long, 3 × 0.75 mm²

Standards and directives

Type of protection	IP 54 (EN 60529)
Protection class	II (IEC 60730)

Overview of types

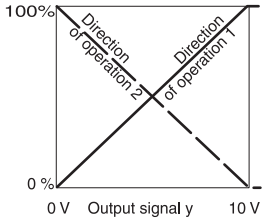
Type
ASM134F130

Accessories

Type	Description
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM124
0370990001	Auxiliary contacts, single
0370990002	Auxiliary contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, assembly tape

Type	Description
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059

Auxiliary contacts: infinitely variable 0...90°, permissible load 5(2) A, 24...230 V



ASM 124S, 134S: Damper drive with SAUTER Universal Technology (SUT)

Features

- Self-centring spindle adaptor
- 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 angle of rotation, incl. feedback adjustment
- Direction of rotation changed by transposing the connections
- Suitable for all fitting positions
- Version with halogen-free cable on demand

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50…60 Hz
	Power supply 24 V=[1]	±20%
Specifications		
	Angle of rotation	max. 95°
	Permissible damper shaft (hardness)	max. 300 HV
	Operating noise	< 30dB(A)
	Response time	200 ms
Positioner[2]	Control signal	0…10 V, R_i > 100 kΩ
	Positional feedback signal	0…10 V; load > 10 kΩ
	Starting point U_0	0 or 10 V
	Control span ΔU	10 V
	Switching range X_{sh}	200 mV
Permissible ambient conditions		
	Permissible ambient temperature	–20…55 °C
	Permissible ambient humidity	< 95% rh, no condensation
Structural design		
	Weight	1.6 kg
	Housing	lower section black, upper section yellow
	Housing material	fire-retardant plastic
	Power cable	1.2 m long, 2 × 0.75 mm²
Standards and directives		
	Type of protection	IP 54 (EN60529)
	Protection class	III (IEC 60730)

Overview of types

Type	Torque	Holding torque	Running time for 90°	Power consumption	Permissible damper shaft
ASM124SF132	15 Nm	15 Nm	60, 120 s	2.4 W, 4.4 VA	Ø 10…20 mm, □ 10…16 mm
ASM134SF132	30 Nm	30 Nm	120, 240 s	2.4 W, 4.3 VA	Ø 12…20 mm, □ 10…16 mm

[1] *24 V= only for control signals 0…10 V*

[2] *Also for 2-point or 3-point, depending on connection with 24 V~*

Accessories

Type	Description
0313529001	Split-range unit for adjusting sequences, fitted in separate junction box
0361977001	Assembly materials for M3R/M4R, MH32F/MH42F with ASM124
0370059000	Clamping lever for shaft, Ø 8...18 mm
0370990001	Auxiliary contacts, single
0370990002	Auxiliary contacts, double
0370992001	Potentiometer, 2000 Ω, 1 W
0370992002	Potentiometer, 130 Ω, 1 W
0372200001	Fitting bracket
0372201001	Spindle extension with coupling
0372202001	Lever, assembly tape
0372203001	Driver axle for auxiliary contacts
0372204001	Spindle for clamping lever 0370059

Auxiliary contacts: infinitely variable 0...90°, permissible load 5(2) A, 24...230 V

ASF 112, 113: Damper drive with spring return

Features

- Self-centring spindle adaptor
- Manual adjustment using hexagon socket, including gear unit locks
- Wear-free brushless motor
- Maintenance-free
- Change the direction of rotation by simply turning the drive
- Suitable for all fitting positions

Technical data

Electrical supply

Power supply 230 V~	±10%, 50…60 Hz
Power supply 24 V~	±20%, 50…60 Hz
Power supply 24…48 V=	±20%

Specifications

Torque and holding torque	7 Nm
Angle of rotation	max. 95°
Permissible damper surface area[1)]	approx. 1.5 m²
Running time for 90° motor	90 s
Running time for 90° spring	15 s

Permissible ambient conditions

Permissible ambient temperature	–32…55 °C
Permissible ambient humidity	5…95% rh, no condensation

Structural design

Housing	cast aluminium
Power cable	0.9 m, 0.75 mm²

Standards and directives

Type of protection	IP 42 (EN 60529)
Protection class 24 V	III (IEC 60730)
Protection class 230 V	II (IEC 60730)

Overview of types

Type	Control function	Voltage	Power consumption	Weight
ASF112F120	2-point	230 V~	4.5 W, 7.0 VA	1.2 kg
ASF112F122	2-point	24 V~/24…48 V=	3.5 W, 5.0 VA	1.2 kg
ASF112F220	2-point	230 V~	4.5 W, 7.0 VA	1.3 kg
ASF112F222	2-point	24 V~/24…48 V=	3.5 W, 5.0 VA	1.3 kg
ASF113F122	3-point	24 V~/24…48 V=	3.5 W, 5.0 VA	1.2 kg

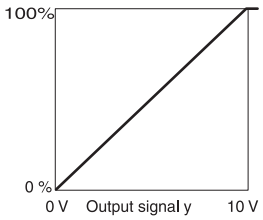
ASF112F220, ASF112F222: Double auxiliary contact 6(2) A; 24…250 V~ with cable 0.9 m; 6 x 0.75 mm²

Accessories

Type	Description
0372245001	Lever adaptor for converting rotation into lift movement
0372245002	Lever adaptor for converting rotation into lift movement, with carrier plate for mounting on wall or plinth
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B

1) *Recommended value for smooth-running air dampers*

ASF 113S: Damper drive with spring return and positioner



Features

- Self-centring spindle adaptor
- Manual adjustment using hexagon socket, including gear unit locks
- Wear-free brushless motor
- Maintenance-free
- Change the direction of rotation by simply turning the drive
- Suitable for all fitting positions

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
	Power consumption	3.5 W, 5.0 VA
Specifications		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Torque	7 Nm
	Holding torque	7 Nm
	Angle of rotation	max. 95°
Positioner	Control signal	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Permissible load	> 10 kΩ
	Switching range X_{sh}	0.2 V
Setting range	Starting point U_0	0 V
	Control span ΔU	10 V
Permissible ambient conditions		
	Permissible ambient temperature	–32...55 °C
	Permissible ambient humidity	< 95% rh
Structural design		
	Weight	1.3 kg
	Housing	cast aluminium
	Power cable	0.9 m, 4 × 0.75 mm²
Standards and directives		
	Type of protection	IP 42 (EN 60529)
	Protection class	III (IEC 60730)

Overview of types

Type
ASF113SF122

Accessories

Type	Description
0372245001	Lever adaptor for converting rotation into lift movement
0372245002	Lever adaptor for converting rotation into lift movement, with carrier plate for mounting on wall or plinth
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF112, 113 from index B

ASF 122, 123: Damper drive with spring return

Features

- Self-centring spindle adaptor
- Manual adjustment using hexagon socket, including gear unit locks
- Wear-free brushless motor
- Maintenance-free
- Change the direction of rotation by simply turning the drive
- Suitable for all fitting positions

Technical data

Electrical supply

Power supply 24 V~	±20%, 50…60 Hz
Power supply 230 V~	±10%, 50…60 Hz
Power supply 24…48 V=	±20%

Specifications

Running time for 90° motor	90 s
Running time for 90° spring	15 s
Torque and holding torque	18 Nm
Angle of rotation	max. 90°
Permissible damper surface area[1)]	approx. 3 m²

Permissible ambient conditions

Permissible ambient temperature	–32…55 °C
Permissible ambient humidity	5…95% rh

Structural design

Housing	cast aluminium
Power cable	0.9 m, 0.75 mm²

Standards and directives

Type of protection	IP 42 (EN 60529)
Protection class 24 V	III (IEC 60730)
Protection class 230 V	II (IEC 60730)

Overview of types

Type	Control function	Voltage	Power consumption	Weight
ASF122F120	2-point	230 V~	6 W, 8 VA	2 kg
ASF122F122	2-point	24 V~/24…48 V=	5 W, 7 VA	2 kg
ASF122F220	2-point	230 V~	6 W, 8 VA	2.1 kg
ASF122F222	2-point	24 V~/24…48 V=	5 W, 7 VA	2.1 kg
ASF123F122	3-point	24 V~/24…48 V=	5 W, 7 VA	2 kg

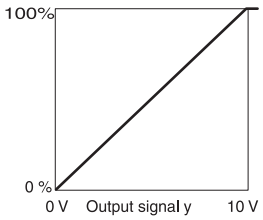
ASF122F220, ASF122F222: with double auxiliary contact 6(2) A; 24…250 V~; with cable 0.9 m; 6 x 0.75 mm²

Accessories

Type	Description
0370997001	Lever adaptor for converting rotation into lift movement
0370998001	Lever adaptor for converting rotation into lift movement, with carrier plate for mounting on wall or plinth

1) *Recommended value for smooth-running air dampers*

ASF 123S: Damper drive with spring return and positioner



Features

- Self-centring spindle adaptor
- Manual adjustment using hexagon socket, including gear unit locks
- Wear-free brushless motor
- Maintenance-free
- Change the direction of rotation by simply turning the drive
- Suitable for all fitting positions

Technical data

Electrical supply		
	Power supply 24 V~	±20%, 50...60 Hz
	Power supply 24...48 V=	±20%
	Power consumption	5.4 W, 7.5 VA
Specifications		
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s
	Torque and holding torque	18 Nm
	Angle of rotation	max. 95°
Positioner	Control signal	0...10 V, R_i = 100 kΩ
	Positional feedback signal	0...10 V (0...100%)
	Permissible load	> 10 kΩ
	Switching range X_{sh}	0.2 V
Setting range	Starting point U_0	0 V
	Control span ΔU	10 V
Permissible ambient conditions		
	Permissible ambient temperature	–32...55 °C
	Permissible ambient humidity	< 95% rh
Structural design		
	Weight	2 kg
	Housing	cast aluminium
	Power cable	0.9 m, 4 × 0.75 mm²
Standards and directives		
	Type of protection[1)]	IP 54 (EN 60529)
	Protection class	III (IEC 60730)

Overview of types

Type
ASF123SF122

Accessories

Type	Description
0370997001	Lever adaptor for converting rotation into lift movement
0370998001	Lever adaptor for converting rotation into lift movement, with carrier plate for mounting on wall or plinth

[1)] *Depending on fitting position, ensure IP 54*

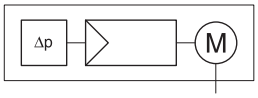
VAV compact controllers for laboratory and pharmaceutical applications

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

Overview of VAV compact controllers

Models		
Type codes	ASV 115C F132	ASV 115C F152
Further information	p. 293	p. 296
Technical data		
Dimensions of damper spindle (mm)	Ø 8...16	Ø 8...16
Noise in dB(A)	< 30	< 49
Running time (s)	30, 120	3...15
Power supply (V)	24	24

ASV 115C F132: Standard VAV compact controllers



Features

- Static differential pressure measurement based on the capacitive measurement principle
- Can be used in areas with dirty or contaminated return air
- High-precision measurement of differential pressures with measuring ranges of up to 300 Pa
- Variable running times 30...120 s
- Brushless DC motor provides the lowest possible energy consumption and a long service life
- Electronic torque cut-off for safe operation
- Transmission can be disengaged for manual adjustment and positioning of the damper
- Can be ideally combined with RLE150F100 or NRT300
- Fail-safe control for critical applications
- RS-485 bus interface for up to 31 subscribers in a segment with SLC (SAUTER Local Communication) protocol and visualisation
- Extremely easy programming using the SAUTER CASE VAV software
- Constant air volume regulation via configurable inputs
- Adjustable end values of the differential pressure measurement
  - 50...150 Pa
  - 100...300 Pa
- Efficient control algorithm
- Output signal 0...10 V for:
  - Volume flow, actual value r_q
  - Volume flow, control deviation $-e_q$/damper position rα
- Input signal 0...10 V for:
  - Command variable c_q
  - Setpoint shift $c_{q\ ad}$ (Δ)
- Priority control via switching contacts
- Zero point can be calibrated

Technical data

Electrical supply		
	Power supply [1]	24 V~, ±20%, 50...60 Hz 24 V=, ±20%
Power consumption at nominal voltage 50/60 Hz after 30 s running time (AC/DC)	Power consumption during operation	5.7 VA/3.3 W (10 Nm)
	Power consumption at standstill[2]	4.2 VA/2.1 W
Power consumption at nominal voltage 50/60 Hz after 120 s running time (AC/DC)	Power consumption during operation	4.8 VA/3 W (10 Nm)
	Power consumption when idle[3]	4.2 VA/2.1 W
Specifications		
	Torque[4]	10 Nm

[1] *24 V=: Analogue inputs that are not connected are rated with 0 V; the nominal torque is achieved within the specified tolerances; AI/AO only used as input*

[2] *Holding torque > 10 Nm*

[3] *Holding torque > 10 Nm*

[4] *Currentless holding torque by means of interlocking in transmission 1 Nm*

Integrated damper drive	Angle of rotation[5]	90°
	Running time for 90°[6]	30…120 s
	Permissible dimensions of damper shaft	Ø 8…16 mm, □ 6.5…12.7 mm
	Permissible damper shaft (hardness)	max. 300 HV
	Resistance to voltage surges	500 V (EN 60730)
	Operating noise	< 30 dB(A)
Δp sensor	Measuring range Δp (gain = 1) Pressure range types D & i/E & K	0…150/300 Pa
	Time constant	0.05 s
	Influence of position	±1 Pa
	Reproducibility	0.2% FS
	Zero point stability	0.2% FS (20 °C)
	Permissible positive pressure	±10 kPa
	Permissible operating pressure p_{stat}[7]	±3 kPa
	Low-pressure connections[8]	Ø i = 3.5…6 mm
Permissible ambient conditions		
	Operating temperature	0…55 °C
	Storage and transport temperature	–20…55 °C
	Permissible humidity without condensation	< 85% rh
Inputs and outputs		
	Analogue input AI01	0…10 V (R_i = 100 kΩ)
	Analogue input AI02[9]	0…10 V (R_i = 70 kΩ)
	Digital input DI04[10]	Closed < 0.5 V, 1.3 mA, open > 2 V
	Digital input DI05[11]	Closed < 0.5 V, 1 mA, open > 3 V
	Analogue outputs[12]	2 × 0…10 V, load > 10 kΩ
Interfaces and communication		
	RS-485 not electrically isolated	115 kBaud
	Protocol	SAUTER Local Communication (SLC)
	Access method	Master/slave
	Topology	Line
	Number of subscribers[13]	31 (32)
	Length of cable without bus termination	≤ 200 m, Ø 0.5 mm
	Length of cable with bus termination	≤ 500 m, Ø 0.5 mm
	Bus termination	> 200 m, 120 Ω both sides
	Cable type[14]	Twisted pair
Structural design		
	Weight	0.8 kg
	Fitting	Self-centring spindle adaptor
	Power cable	0.5 m long, 10 × 0.32 mm² (fixed to housing)
Standards and directives		
	Type of protection	IP 54 (EN 60529)
	Protection class	III (EN 60730)

5) *Maximum rotation angle 95° (without end stop)*

6) *Run-time can be set via software*

7) *Short-term overload, sensor recalibration recommended*

8) *Recommended hose hardness < 40 Sha (i.e. silicone)*

9) *Input jack 02 is configurable as an analogue input or output with SAUTER CASE VAV software*

10) *Digital inputs for external potential-free contact (gold-plated recommended)*

11) *Digital inputs for external potential-free contact (gold-plated recommended)*

12) *Input jack 02 is configurable as an analogue input or output with SAUTER CASE VAV software*

13) *One subscriber is always the parameterising tool, hence the maximum number of 31 connectable devices*

14) *Recommendation: Belden 3106A*

Overview of types

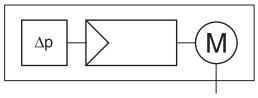
Type	Measuring range Δp (Pa)
ASV115CF132D	0...150 Pa
ASV115CF132E	0...300 Pa
ASV115CF132I	0...150 Pa
ASV115CF132K	0...300 Pa

ASV115CF132D, ASV115CF132E: version with standard cable

ASV115CF132I, ASV115CF132K: version with halogen-free cable

Accessories

Type	Description
0520450010	USB connection set for PC, incl. CASE Tools software
CERTIFICAT001	Manufacturer's test certificate type M
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for square (x 15 mm) hollow profile (pack of 10 pieces)
XAFP100F001	Flow sensor to measure the air volume in ventilation ducts



ASV 115C F152: VAV compact controllers for laboratory and pharmaceutical applications

Features

- Static differential pressure measurement based on the capacitive measurement principle
- Can be used in areas with dirty or contaminated return air
- Available as a calibrated version for pharmaceutical applications
- Brushless DC motor provides the lowest possible energy consumption and a long service life
- Electromechanical torque cut-off for safe operation
- Extremely simple installation due to self-centring shaft adaptor
- Transmission can be disengaged for manual adjustment and positioning of the damper
- Power cable 0.5 m long, 10 × 0.32 mm^2, fixed to housing
- Can be ideally combined with RLE150F100 or NRT300
- Fail-safe control for critical applications
- RS-485 bus interface for up to 31 subscribers in a segment and SLC (SAUTER Local Communication) protocol
- Extremely easy programming using the SAUTER CASE VAV software
- Adjustable end values of the differential pressure measurement
  - 50…150 Pa
  - 100…300 Pa
- Efficient control algorithm for fast control loops
- Output signal 0…10 V for:
  - Volume flow, actual value r_q
  - Volume flow, control deviation $-e_q$ for signalling at fume cupboard
- Input signal 0…10 V for:
  - Command variable c_q
  - Setpoint shift $c_{q\ ad}$ ($\Delta\dot{v}$)
- Priority control via switching contacts
- Zero point can be calibrated

Technical data

Electrical supply

	Power supply [1]	24 V~, ±20%, 50…60 Hz 24 V=, ±20%
	Power consumption during operation	approx. 15 VA (10 Nm)
	Power consumption at standstill[2]	approx. 4.5 VA

Specifications

	Torque	10 Nm
	Holding torque[3]	2 Nm
Integrated damper drive	Angle of rotation[4]	90°
	Running time for 90°[5]	3…15 s
	Permissible dimensions of damper shaft	Ø 8…16 mm, □ 6.5…12.7 mm
	Permissible damper shaft (hardness)	max. 300 HV
	Resistance to voltage surges	500 V (EN 60730)

[1] *24 V=: Analogue inputs that are not connected are rated with 0V. The nominal torque is achieved within the specified tolerances. AI/AO only used as input.*

[2] *Holding torque approx. 5 Nm*

[3] *Currentless holding torque by means of interlocking in transmission*

[4] *Maximum rotation angle 95° (without end stop)*

[5] *Run-time adjustable via software*

	Operating noise	< 49 dB(A) at 3 s
Δp sensor	Measuring range Δp (gain = 1) Pressure range types D & i/E & K	0...150/300 Pa
	Linearity error	2% FS
	Time constant	0.05 s
	Influence of position	±1 Pa
	Reproducibility	0.2% FS
	Zero point stability	0.2% FS (at 20°C)
	Permissible positive pressure	±10 kPa
	Permissible operating pressure p_{stat} [6]	±3 kPa
	Low-pressure connections [7]	Ø i = 3.5...6 mm

Permissible ambient conditions

	Operating temperature	0...55 °C
	Storage and transport temperature	–20...55 °C
	Permissible humidity without condensation	< 85% rh

Inputs and outputs

	Analogue inputs [8]	2 × 0...10 V (R_i = 100 kΩ)
	Digital inputs [9]	2 × closed 0.5 V~, 1 mA, open > 2 V~
	Analogue outputs [10]	2 × 0...10 V load > 10 kΩ

Interfaces and communication

	RS-485 not electrically isolated	115 kBaud
	Protocol	SAUTER Local Communication (SLC)
	Access method	Master/slave
	Topology	Line
	Number of subscribers [11]	31 (32)
	Length of cable without bus termination	≤ 200 m, Ø 0.5 mm
	Length of cable with bus termination	≤ 500 m, Ø 0.5 mm
	Bus termination	> 200 m, 120 Ω both sides
	Cable type [12]	Twisted pair

Structural design

	Weight	0.8 kg
	Fitting	Self-centring spindle adaptor
	Power cable	0.5 m, 10 × 0.32 mm² (fixed to housing)

Standards and directives

	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730)

Overview of types

Type	Measuring range Δp (Pa)
ASV115CF152D	0...150 Pa
ASV115CF152I	0...150 Pa
ASV115CF152E	0...300 Pa
ASV115CF152K	0...300 Pa

ASV115CF152D, ASV115CF152E: version with standard cable

[6] *Short-term overload, sensor recalibration recommended*

[7] *Recommended hose hardness < 40 Sha (i.e. silicone)*

[8] *Input jack 02 is configurable as an analogue input or output with SAUTER CASE VAV software*

[9] *Digital inputs for external potential-free contacts (gold-plated recommended)*

[10] *Input jack 02 is configurable as an analogue input or output with SAUTER CASE VAV software*

[11] *One subscriber is always the parametering tool, hence the maximum number of 31 connectable devices*

[12] *Recommendation: Belden 3106A*

ASV115CF152I, ASV115CF152K: version with halogen-free cable

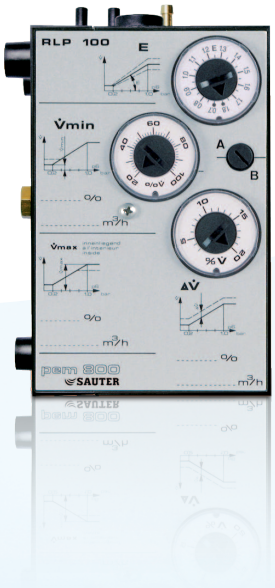
Accessories

Type	Description
0520450010	USB connection set for PC, incl. CASE Tools software
CERTIFICAT001	Manufacturer's test certificate type M
0372300001	Torsion protection, long (230 mm)
0372301001	Spindle adaptor for square (x 15 mm) hollow profile (pack of 10 pieces)
XAFP100F001	Flow sensor to measure the air volume in ventilation ducts

Pneumatic control and regulating equipment

The best possible control quality for clean rooms and high-security laboratories.

Reliable, flexible and robust systems are essential in order to obtain accurate air-conditioning and contamination control in clean rooms and high-security laboratories. Pneumatic control systems from SAUTER provide reliability in every situation, because they are the market leaders in terms of control quality and stability of room pressure.



Pneumatic control and regulating equipment

Relays and magnetic valves

Single-room control

centair® controller system

Accessories

RUEP: Electropneumatic relay

Features

- Electromagnetic change-over valve
- Valve body made of brass, valve disc with soft seal made of FKM
- Cable screw fitting for cables Ø 6...7 mm and connecting cables up to 1.5 mm^2
- Compressed air connection on upper part of valve G 1/8" A, male thread

Technical data

Electrical supply

Permissible operating time	100 %
Power consumption	5 W (5.5 VA)

Specifications

Nominal flow rate[1)]	6.3 m^3_n/h
Leakage rate	0.6 l/h (Δp = 1 bar)
Differential pressure	1.7 bar

Permissible ambient conditions

Permissible ambient temperature	0...55 °C
Permissible ambient humidity	< 90% rh

Structural design

Connection thread	RP ⅛
Weight	0.34 kg

Standards and directives

Type of protection	IP 65 (EN 60529)
Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type	Control signal
RUEP5F001	230 V~, ±15%, 50...60 Hz
RUEP5F002	24 V~, ±20%, 50...60 Hz

RUEP5F002: Also suitable for 24 V=, ±20%

Accessories

Type	Description
0274469000	Polyamide screw-in elbow with R⅛" male thread
0277717000	Polyamide screw fitting with R⅛" male thread
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail C EN 60715-C 20
0296938000	Fixing bracket for wall mounting
0381140001	Polyamide screw fitting with R⅛" female thread

[1)] *Flow of air at 1 bar in relation to atmosphere*

Single-room controllers

Pneumatic single-room controllers from SAUTER enable the room temperature to be controlled accurately. The preferred room temperature can be set using the setpoint adjuster. These controllers are used for continuous temperature control in air-conditioning systems or for activating flow controllers and unit valves.

Overview of single-room controllers

Models				
Type codes	TSP, TSFP, TSSP	TKP, TKFP, TKSP	RLP 10	RLP 100
Further information	p. 305	p. 307	p. 309	p. 311
Temperature measurement				
Room	•	–	–	–
Duct	–	•	–	–
Air volume control				
1-channel	–	–	•	•
2-channel	–	–	–	•
Room pressure control	–	–	–	–
Control characteristic				
P controller	•	•	–	–
PI controller	–	–	–	•
Certification	–	–	–	–
Explosion protection as per ATEX directive	–	–	•	•1

1 Not all product types

Overview of single-room controllers

Models			
Type codes	RLP 100 F910, F916, F918	RLP 100 F903, F908	RLP 100 F901, F915, F924
Further information	p. 313	p. 315	p. 319
Temperature measurement			
Room	–	–	–
Duct	–	–	–
Air volume control			
1-channel	–	•	–
2-channel	•	–	–
Room pressure control	–	–	•
Control characteristic			
P controller	–	–	–
PI controller	•	–	•
Certification			
Explosion protection as per ATEX directive	•	•	•

TSP, TSFP, TSSP: Pneumatic room-temperature controller

Features

- Sturdy bimetal sensor
- P control characteristic
- Setpoint adjuster with ± scale and settable stops for limiting the setpoint

Technical data

Specifications

Supply pressure[1]	1.3 bar ±0.1
Setting range	17…27 °C
Output pressure	0.2…1.0 bar
P-band X_p	approx. 2 K
Linearity error	2%
Time constant in moving air (0.2 m/s)	approx. 7 min

Permissible ambient conditions

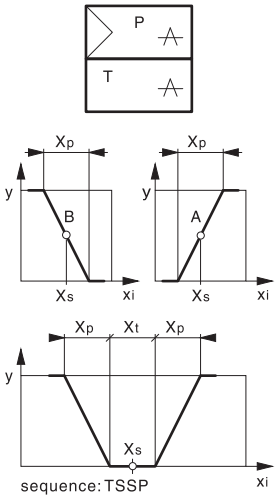
Permissible ambient temperature	0…55 °C

Structural design

Housing	72 × 72 mm
Housing material	thermoplastic, pure white
Weight	0.1 kg

Standards and directives

Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment



Overview of types

Control function: fixed-schedule control requires an external command signal of 0…1.2 bar (e.g. RXP 81). Setpoint shift ±6 K. Setpoint increase: 0.6…1.2 bar = 0…6 K. Setpoint decrease: 0.6…0 bar = 0…–6 K

Air recovery: to prevent excessive blow-off noise, this value should not be exceeded

Type	Control function	Control action	Air capacity l_n/h	Air consumption l_n/h	Air recovery l_n/h	External restrictor required	Dead zone X_t (sequence)
TSP80AF117	Fixed value	A	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSP80BF117	Fixed value	B	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSP81AF117	Fixed value	A	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSP81BF117	Fixed value	B	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSFP80AF117	Fixed value/schedule	A	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSFP80BF117	Fixed value/schedule	B	33 l_n/h	33 l_n/h	50 l_n/h	1 piece	–
TSFP81AF117	Fixed value/schedule	A	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSFP81BF117	Fixed value/schedule	B	200 l_n/h	20 l_n/h	34 l_n/h	0 piece	–
TSSP80F117	Fixed value	A and B	2 × 33 l_n/h	66 l_n/h	50 l_n/h	2 piece	2 K

TSSP80F117: heating/cooling sequence

Accessories

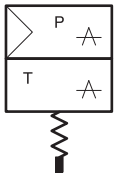
Type	Description
0228234001	Setpoint knob (pure white) with raised bridge
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation

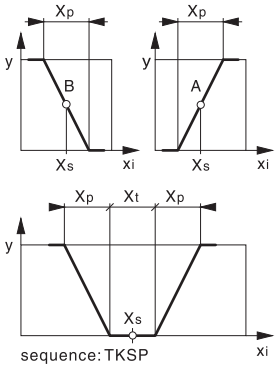
[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Type	Description
0297441000	Cover plate, pure white, for various recessed junction boxes
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0303124000	Recessed junction box
0297416001	Housing lid (pure white), screw-type, without setpoint knob
0297418032	Housing lid (pure white), screw-type, with setpoint knob, scale 17…27 °C
0297419001	Housing lid (pure white), of light metal, screw-type, without setpoint knob, without air vents
0297546001	Housing lid (pure white), of light metal, without knob, with air vents
0297555001	Cover plate (pure white), for large recessed junction boxes (e.g. USA)
0297560001	Cover plate (pure white), for panels, for covering large apertures
0297557000	Wall insulation, prevents false readings due to draughts from the wall
0297760001	Different temperature to 22 °C for middle of scale (span ±5 K)
0297760002	Different setpoint shift to ±6 K or 1 K per 0.1 bar. (Fixed value/schedule types only)
0369573001	Surface junction box, pure white
0369573002	Surface junction box, black

Housing cover: when ordered together with a controller, the housing is already changed in the factory

TKP, TKFP, TKSP: Pneumatic duct temperature controllers





Features

- Oil-filled external measuring sensor for recording the duct temperature
- Measuring sensor can be located up to 1.5 m away
- P control characteristic
- Setpoint adjuster with ± scale and settable stops for limiting the setpoint

Technical data

Specifications

Supply pressure	1.3 bar ±0.1
Setting range[1)]	17...27 °C
Output pressure	0.2...1.0 bar
P-band X_p	approx. 2 K
Linearity error	2%
Time constant in moving air (0.5 m/s)	approx. 2.5 min

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Structural design

Housing material	thermoplastic
Housing	72 × 72 mm, pure white
Weight	0.17 kg

Standards and directives

Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

i *Control function: Fixed-schedule control requires an external command signal of 0...1.2 bar (e.g. RXP 81). Setpoint shift ±6K. Setpoint increase: 0.6...1.2 bar = 0...6 K. Setpoint decrease: 0.6...0 bar = 0...–6 K*

i *Air recovery l_n/h: To prevent excessive blow-off noise, this value should not be exceeded*

Type	TKP80AF117	TKP80BF117	TKP81AF117	TKP81BF117	TKFP81AF117	TKFP81BF117	TKSP80F117
Control function	Fixed value	Fixed value	Fixed value	Fixed value	Fixed value/schedule	Fixed value/schedule	Sequence
Control action	A	B	A	B	A	B	A and B
Air capacity l_n/h	33 l_n/h	33 l_n/h	200 l_n/h	200 l_n/h	200 l_n/h	200 l_n/h	2 × 33 l_n/h
Air consumption l_n/h	33 l_n/h	33 l_n/h	20 l_n/h	20 l_n/h	20 l_n/h	20 l_n/h	66 l_n/h
Air recovery l_n/h	50 l_n/h	50 l_n/h	34 l_n/h	34 l_n/h	34 l_n/h	34 l_n/h	50 l_n/h
External restrictor required	1 piece	1 piece	0 piece	0 piece	0 piece	0 piece	2 piece
Dead zone X_t (sequence)	–	–	–	–	–	–	2 K

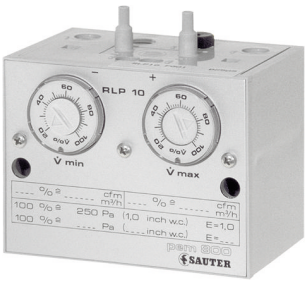
[1)] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Accessories

Type	Description
0296724000	Sensor holder for wall mounting
0303212000	Rubber grommet for holding the capillary tube when passing through into ventilation ducts; T < 50 °C
0297302000	Fixing bracket for controller
0228234001	Setpoint knob (pure white) with raised bridge
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297416001	Housing lid (pure white), screw-type, without setpoint knob
0297418032	Housing lid (pure white), screw-type, with setpoint knob, scale 17…27 °C
0297419001	Housing lid (pure white), of light metal, screw-type, without setpoint knob, without air vents
0297760001	Different temperature to 22 °C for middle of scale (span ±5 K)
0297760002	Different setpoint shift to ±6 K or 1 K per 0.1 bar. (Fixed value/schedule types only)

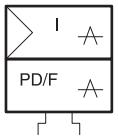
Housing cover: when ordered together with a controller, the housing is already changed in the factory

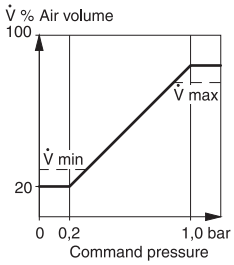
RLP 10: Pneumatic volume flow controllers

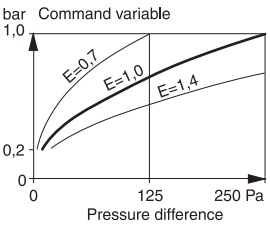


Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Controls constant, switchable or variable air volumes
- Static differential pressure sensor with large measuring range (10...250 Pa)
- Front plate is printed with circuit diagrams for easy identification of the controller's functions.
- Compressed-air connection with Rp ⅛" female thread
- Low-pressure connections with 2-step connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 1 input for command variables
- 2 outputs
  - Actual value
  - Damper actuator activation
- 2 setpoint adjusters for maximum and minimum limitation of the air volume







Technical data

Specifications

Supply pressure	1.3 bar ±0.1
Setting range, air volume	20...100% V̇
Setting range for pressure difference Pa[1]	10...250 Pa
Air capacity l_n/h	330
Output pressure	0.2...1.0 bar
Response sensitivity[2]	0.5 Pa
Air consumption l_n/h	44
Input, setpoint shift w[3]	20...100% V̇ ≙ 0.2...1.0 bar
Area of use P_{stat}	0...3 kPa
Low-pressure connections	10 kPa (permissible pressure)
Linearity error and accuracy of root extraction[4]	2%

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Structural design

Housing material	thermoplastic
Fitting	on wall and top-hat rail (rail as per EN 60715)
Weight	0.2 kg

Standards and directives

Type of protection	IP 20
Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

[1] *Factory setting 10...250 Pa; the range can be changed from 5...125 Pa (E = 0.7) to 20...500 Pa (E = 1.4) with the test unit XYP 3*

[2] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[3] *For port 6, it is advisable to use temperature controllers without amplifier (TS*P 80, TK*P 80) as these controllers are fed directly by the internal restrictor of the RLP*

[4] *The percentages given are based on 100% volume flow*

Overview of types

Type	Control action
RLP10F001	B
RLP10F905	A
RLP10F904	B
RLP10F916	A

- *RLP10F001, RLP10F905: Integrated volume flow controller for supply air and return air*
- *RLP10F904, RLP10F916: Integrated volume flow controller for aggressive gases in the return air*

Accessories

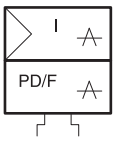
Type	Description
0226551015	Scale 10…250 Pa when using as duct pressure controller
0226551017	Scale 20…500 Pa when using as duct pressure controller
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0297354000	Short screw-in connector R⅛", for soft plastic tubing ∅ 4 mm (internal)
0297680001	Specification $\dot{v}$ min., $\dot{v}$ max. set and labelled
0297680002	Influence E set and labelled

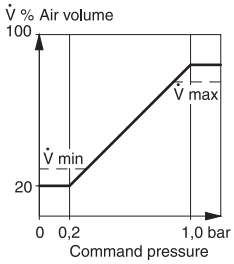
- *0226551017: Factory setting 10…250 Pa; the range can be changed from 5…125 Pa (E = 0.7) to 20…500 Pa (E = 1.4) with the test unit XYP 3*
- *0297354000: 3 pieces required*

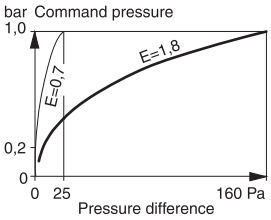
RLP 100: Pneumatic volume flow controller

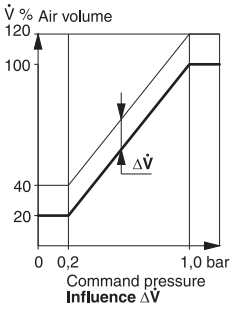
Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Controls constant, switchable or variable air volumes
- Accurate, static differential pressure sensor with large measuring range (1...160 Pa)
- Front plate is printed with circuit diagrams for easy identification of the controller's functions.
- Compressed-air connection with Rp ⅛" female thread
- Special measuring connection for detecting the air volume
- Low-pressure connections with 2-step connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 2 inputs
  - Command variable
  - Setpoint shift $\Delta\dot{V}$
- 2 outputs
  - Actual value
  - Damper actuator activation
- 1 adjuster for calibrating the sensor's measuring range
- 3 setpoint adjusters for maximum and minimum limitation of volume flow and for limiting the setpoint shift $\Delta\dot{V}$ to max. ±20%









Technical data

Specifications

Output pressure	0.2...1.0 bar
Setting range, air volume	20...100% $\dot{V}$
Measuring range Δp (Pa)	6.4...160 Pa (factory setting), can be reduced to 1...25 Pa
Response sensitivity	0.1 Pa
Supply pressure[1]	1.3 bar ±0.1
Integral action time	1 s (F123)
Input, setpoint shift w	20...100% $\dot{V}$ ≙ 0.2...1.0 bar
Area of use P_{stat}	0...3000 Pa
Low-pressure connections	3000 Pa
Air consumption	44 l_n/h (F123 = 90 l_n/h)
Air consumption l_n/h with setpoint shift $\Delta\dot{V}$	60

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Inputs and outputs

Linearity and accuracy of root extraction[2]	2%

Structural design

Housing material	glass-fibre-reinforced thermoplastic
Fitting	wall/top-hat rail (as per EN 60715)
Weight	0.6 kg

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *The percentages given are based on 100% volume flow*

Standards and directives

Type of protection	IP 30
Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

i *Air capacity: the integration time can be extended for dynamically unfavourable control loops (accessory 0297653)*

Type	Direction of action	Setpoint shift Δ v̇	Air capacity l_n/h
RLP100F003	B/A	3...20% v̇	330 l_n/h
RLP100F123	A	–	900 l_n/h
RLP100F914	A	3...20% v̇	330 l_n/h
RLP100F919	A	–	330 l_n/h

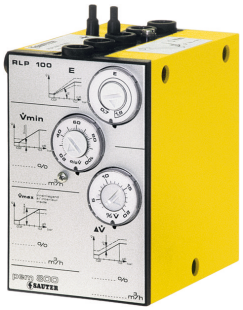
- *RLP100F003: for supply air and return air (integral indoor-air control)*
- *RLP100F123: for return air with aggressive gases (PI fume-cupboard control)*
- *RLP100F914: for return air with aggressive gases, with interface relay (integral indoor-air control)*
- *RLP100F919: for supply air and return air, with interface relay (integral indoor-air control)*

Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297653000	Resistance 10 Ωf, for air capacity 180 ln/h (not for F123)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297800001	Manual switch open/close (min. volume flow), panel mounting; A07667, MV 505784
0297772001	Screw-in connector M4 with seal for soft hose, internal Ø 4 mm
0297838001	Manometer bracket for 2 XMP manometers
0297091000	Cover for unused manometer apertures
0297680001	Specification v̇ min., v̇ max. set and labelled
0297680002	Influence E set and labelled
0297870001	Bracket for fixing to ceilings, floors or in panels

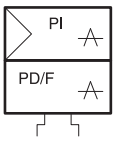
- *0297354000: F003, F919: 4 pcs. each needed; F123, F914: 5 pcs. each needed*
- *0297680001: not for F123*

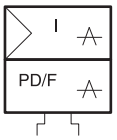
RLP 100 F910, F916, F918: Dual-channel air-volume controller

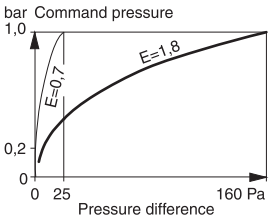


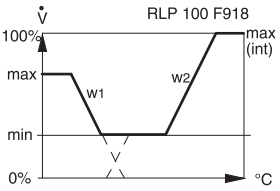
Features

- Optimum use of energy thanks to RLP100 dual-channel air-volume controller in combination with room operating unit of the TSP, TSFP and TSSP series
- Compatible with practically all currently-available mixing boxes
- ATEX-certified for use in areas (Zone 1) where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Controls constant, switchable or variable air volumes
- Accurate, static differential pressure sensor with large measuring range
- Front plate is printed with circuit diagrams for easy identification of the controller's functions.
- Compressed air connections with Rp 1/8" female thread
- Special measuring connection for detecting the air volume
- Low-pressure connections with two-step connectior for soft plastic tubing (internal Ø 4 and 6 mm)
- 2 inputs:
  - Command variable
  - Day/night change-over or heating/cooling signal
- 3 outputs:
  - Actual value, air volume
  - Activates two damper actuators, heating and cooling
- 1 adjuster for calibrating the sensor's measuring range
- 2 setpoint adjusters for maximum and minimum limitation of the air volume









Technical data

Specifications

Permissible pressure	Low-pressure connections	3000 Pa
	Supply pressure	1.3 bar ±0.1
	Area of use P_{stat}	0…3000 Pa
	Response sensitivity	0.1 Pa
	Input for setpoint shift w1, w2; 20…100% v̇	0.2…1.0 bar
	Measuring range Δp (factory setting)	6.4…160 Pa, can be reduced to 1…25 Pa

Permissible ambient conditions

	Permissible ambient temperature	0…55 °C

Inputs and outputs

	Setting range for setpoint	20…100% v̇
	Output pressures	0.2…1.0 bar
	Linearity and accuracy of root extraction	2% of 100% v̇

Structural design

	Housing material	glass-fibre-reinforced thermoplastic
	Fitting	to walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg

Standards and directives

	Type of protection	IP 30
	Conformity	Pressure Equipment Directive 97/23/EG Art. 3.3

Overview of types

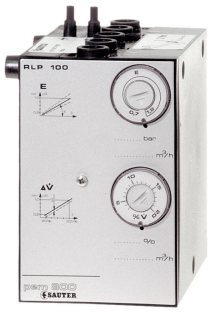
Type	RLP100F910	RLP100F916	RLP100F918
Features	Constant-air-volume controller (PI) for full-range actuators	Constant-air-volume controller (PI) for sequential actuators	VAV controller (I) for full-range actuators
Air capacity, connection 2, cooling	400 l_n/h	100 l_n/h	120 l_n/h
Air capacity, connection 7, heating	400 l_n/h	18 l_n/h	80 l_n/h
Air consumption	53 l_n/h	60 l_n/h	80 l_n/h
P-band (fixed)	100%	400%	–

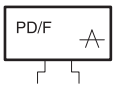
Accessories

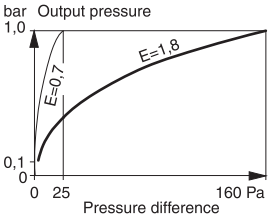
Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297870001	Bracket for fixing to ceilings, floors or in panels

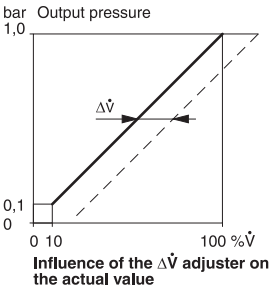
0297354000: 5 pieces required

RLP 100 F903, F908: Pneumatic air-volume transducer









Influence of the ΔV̇ adjuster on the actual value

Features

- Root-extracted output signal as command variable for extended control loops
- Special version available for measuring aggressive gases
- ATEX-certified for use in areas (Zone 1) where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Accurate, static differential pressure sensor with large measuring range
- Front plate is printed with circuit diagrams for easy identification of the controller's functions.
- Compressed air connections with Rp 1/8" female thread
- Special measuring connection for detecting the air volume
- Low-pressure connections with two-step connector for soft plastic tubing (internal Ø 4 and 6 mm)
- 1 input:
  - Setpoint shift Δv̇
- 1 output:
  - Actual value, air volume
- 1 adjuster for calibrating the sensor's measuring range
- 1 setpoint adjuster for limiting the setpoint shift Δv̇ to max. ±20%

Technical data

Specifications

Supply pressure[1]	1.3 bar ±0.1
Measuring range Δp (Pa)[2]	1.6...160 Pa
Response sensitivity	0.1 Pa
Measuring range, volume flow	10...100% v̇
Air capacity l_n/h	320 l_n/h
Air consumption l_n/h	38 l_n/h
Area of use P_{stat}	0...3000 Pa
Output pressure	0.1...1.0 bar
Low-pressure connections	3000 Pa

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Inputs and outputs

Input for setpoint shift Δv̇	3...20% v̇
Linearity and accuracy of root extraction 20...100%v̇	2% of $\dot{v}_{100}$
Linearity and accuracy of root extraction 10...20%v̇	4% of $\dot{v}_{100}$

Structural design

Housing material	glass-fibre-reinforced thermoplastic
Fitting	to walls or top-hat rails (EN 60715 rail)
Weight	0.6 kg

Standards and directives

Type of protection	IP 30
Conformity	Pressure Equipment Directive 97/23/EG Art. 3.3

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Factory setting (E = 1,8), can be reduced to 1...25 Pa (E = 0.7) using adjuster E*

Overview of types

Type	Features
RLP100F903	–
RLP100F908	for aggressive gases

Accessories

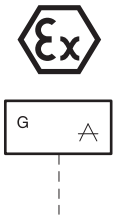
Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297762001	Restrictor Ø 0.8 mm for damping turbulent low-pressure signals
0274571000	Restrictor Ø 0.5 mm for damping turbulent low-pressure signals
0297870001	Bracket for fixing to ceilings, floors or in panels

0297354000: 3 pieces required

Solutions for laboratories and clean rooms

SAUTER solutions for fume cupboards provide reliable, demand-led control of air flows in laboratories. Because of their ATEX certification, these systems can also be used in areas in which there is a risk of explosions.

Models	
Type codes	TUP 224 F901
Further information	p. 318



TUP 224 F901: Pneumatic sash transmitter

Features

- Continuous output signal as a command variable for the air volume controller
- Should ideally be fitted to the counterweight on the fume cupboard's front sash
- ATEX-certified for use in areas (Zone 1) where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Compressed-air connection with Rp ⅛" female thread
- Stainless-steel spring (with long-term stability)
- Possible measuring range up to 2 m for walk-in fume cupboards

Technical data

Specifications		
	Supply pressure via ext. restrictor[1]	1.3 bar ±0.1 (Ø 0.2 mm)
	Air capacity and air consumption	33 l_n/h
	Control action	B
	Measuring span[2]	0.45...0.75 m
	Output pressure	0.2...1.0 bar
	Linearity error	2%
Permissible ambient conditions		
	Permissible ambient temperature	0...55 °C
Structural design		
	Weight	0.14 kg

Overview of types

Type
TUP224F901

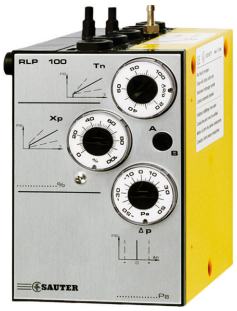
Accessories

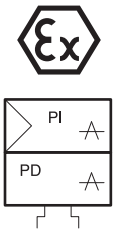
Type	Description
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0364264000	Welding sleeve of stainless steel, with female thread G½", flat seal of copper and PTFE (for aggressive media)
0297631000	Flange of thermoplastic for direct fitting to the ventilation duct

[1] *In the RLP controllers, the restrictor Ø 0.14 mm is fitted at input 6. For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Factory setting 0.5 m, can be modified using spring-mounted insert (6 holes); measuring range 0.9...1.5 m, with accessory 0297832001*

RLP 100 F901, F915, F924: Pneumatic room-pressure controllers





Features

- Control of the room pressure in tightly-sealed rooms, e.g. clean rooms or laboratories (up to BSL-4)
- Fast and accurate control system in conjunction with the RLP 100 pneumatic air volume controllers
- Accurate static sensor; can also be used in areas with contaminated air
- ATEX-certified for use in areas (Zone 1) where there is a risk of explosions
- Conformity test as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Front plate is printed with diagrams for easy identification of the controller's functions.
- Compressed air connections with Rp 1/8" female thread
- Special measuring connection for detecting the room pressure
- Low-pressure connections with two-step connectior for soft plastic tubing (internal ∅ 4 and 6 mm)
- 1 input:
  - Remote setpoint adjustment
- 2 outputs:
  - Actual value for room pressure
  - Command signal for air-volume controller (air volume shift)
- Setpoint adjuster for room pressure (minimal limitation for room pressure for setpoint remote adjustment) and adjuster for T_n and X_p

Technical data

Specifications		
Permissible pressure	Low-pressure connections	±3000 Pa
	Supply pressure[1)]	1.3 bar ±0.1
	Output pressure	0.2...1.0 bar
	Integral action time	0...15 s (0...100%)
	Remote setpoint adjustment	0.2...1.0 bar
	Air capacity l_n/h	400 l_n/h
	Air consumption l_n/h	50 l_n/h
	Linearity error	1%
Permissible ambient conditions		
	Permissible ambient temperature	0...55 °C
	Permissible operating pressure p_{stat}	±3000 Pa
Structural design		
	Housing material	glass-fibre-reinforced thermoplastic
	Fitting	to walls or top-hat rails (EN 60715 rail)
	Weight	0.6 kg
Standards and directives		
	Type of protection	IP 30
	Conformity	Pressure Equipment Directive 97/23/EG Art. 3.3

1) *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Overview of types

Type	Setting range	P-band 0…100% ≙	Response sensitivity
RLP100F901	–20…20 Pa	0…40 Pa	0.1 Pa
RLP100F915	–50…50 Pa	0…100 Pa	0.25 Pa
RLP100F924	–180…–35/35…180 Pa	0…145 Pa	0.36 Pa

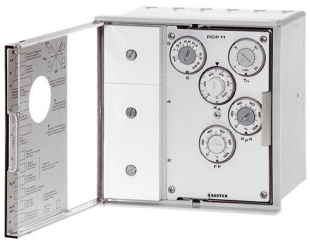
RLP100F924: Can be changed from the measurement of positive to negative pressure by transposing the Δp lines

Accessories

Type	Description
XMP50/50PF001	Manometer, scale –50…50 Pa/–20…20 Pa
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0297838001	Manometer bracket for 2 XMP manometers
0297091000	Cover for unused manometer apertures
0297867001	Reference pressure container
0297870001	Bracket for fixing to ceilings, floors or in panels

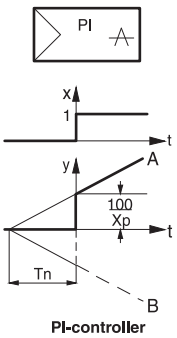
0297354000: 3 pieces required

RCP 10, 11: PI controller, centair®

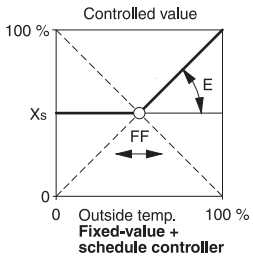


Features

- Fixed-value PI controller
- Fixed-value schedule PI controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed air connections, Rp 1/8" female thread
- Inputs for
  - Remote setpoint adjustment
  - Controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive



PI-controller



Fixed-value + schedule controller

Technical data

Specifications

	Supply pressure[1]	1.3 bar ±0.1
	Setting range X_s	0…100%
	Remote setpoint adjustment	0…100%
	P-band X_p	0…100% (X_{P3})
	Integral action time	1…15 min (T_n)
	Air consumption[2]	30 l_n/h
	Air capacity	400 l_n/h

Permissible ambient conditions

	Permissible ambient temperature	0…55 °C

Inputs and outputs

	Output pressures	0.2…1.0 bar
	Input pressures	0.2…1.0 bar

Structural design

	Materials	Housing, insert and front door made of thermoplastic
	Fitting	On wall or switch panel
	Weight	0.7 kg

Standards and directives

	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type	Features	Influence E	Shift starting point FF
RCP10F001	PI fixed-value controller	–	–
RCP11F001	PI fixed-value slave controller	0.25…3	0…100%

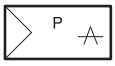
[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

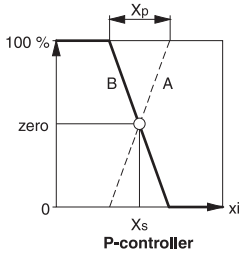
[2] *Without a transducer (air consumption for transducer connection 4, an additional 33 l_n/h)*

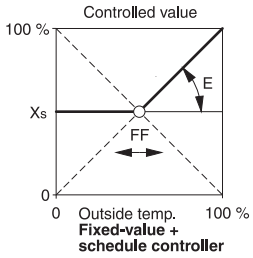
Accessories

Type	Description
0297133000	Universal scales for setpoint transmitter X_s division 120, 80/160, 50/100, 30/60

RCP 20, 21: P controller, centair®







Features

- Fixed-value P-controller
- Fixed-value schedule P controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter $X_s$can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed-air connection Rp ⅛" female thread
- Inputs for
  - Remote setpoint adjustment
  - Controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive

Technical data

Specifications		
	Supply pressure[1]	1.3 bar ±0.1
	Setting range X_s	0…100%
	Remote setpoint adjustment	0…100%
	P-band X_p	0…100% (X_{P3})
	Zero point	0…100%
	Air capacity[2]	400 l_n/h
Permissible ambient conditions		
	Permissible ambient temperature	0…55 °C
Inputs and outputs		
	Output pressures	0.2…1.0 bar
	Input pressures	0.2…1.0 bar
Structural design		
	Materials	Housing, insert and front door made of thermoplastic
	Fitting	Wall/switch panel
	Weight	0.7 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *On RCP20 with limiter B, only 200 l_n/h*

Overview of types

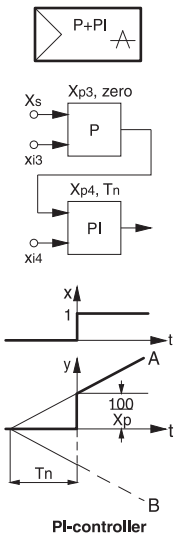
i *Air consumption: without a transducer (air consumption for transducer connection 3, an additional 33 l_n/h)*

Type	Features	Air consumption	Limiter B	Influence E	Shift starting point FF
RCP20F001	PI fixed-value controller, min. limiter	40 l_n/h	0...100%	–	–
RCP21F001	PI fixed-value slave controller	60 l_n/h	–	0.25...3	0...100%

Accessories

Type	Description
0297133000	Universal scales for setpoint transmitter X_s division 120, 80/160, 50/100, 30/60

RCP 30, 31: P+PI cascade controller, centair®



PI-controller

Features

- P+PI cascade controller
- P+PI cascade schedule controller
- Description of operation and commissioning help inserted into the front door
- Front panel with adjusters and 3 covered recesses for plug-in manometers (XMP) for easy commissioning
- Setpoint transmitter X_S can be manually set with scales for all centair® measuring ranges
- All adjustments are easily made using a coin and % scale
- M4 measuring connections, the direction of operation is adjustable (delivered with direction of operation B)
- Compressed-air connection Rp ⅛" female thread
- Inputs for
  - Remote setpoint adjustment
  - Main controlled variable
  - Auxiliary controlled variable
  - Command variable
- Outputs for
  - Output pressure for damper drive or valve drive

Technical data

Specifications

Supply pressure[1]	1.3 bar ±0.1
Air capacity	400 l_n/h
Setting range X_s	0...100%
Remote setpoint adjustment	0...100%
P-band X_p	0...100% (X_{P3}, X_{P4})
Integral action time	1...15 min (T_n)
Zero point	0...100%
Limiter B	0...100%

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Inputs and outputs

Input pressures	0.2...1.0 bar
Output pressures	0.2...1.0 bar

Structural design

Materials	Housing, insert and front door made of thermoplastic
Fitting	Wall/switch panel
Weight	0.7 kg

Standards and directives

Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Overview of types

i *Air consumption: without a transducer (air consumption for transducer connection 3 and 4, an additional 33 l_n/h each)*

Type	Features	Air consumption	Influence E	Shift starting point FF
RCP30F001	P+PI cascade fixed-value controller	70 l_n/h	–	–
RCP31F001	P+PI cascade fixed-value slave controller	90 l_n/h	0.25...3	0...100%

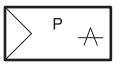
Accessories

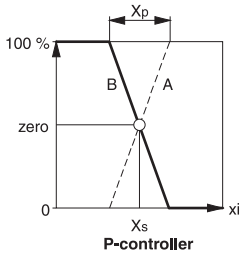
Type	Description
0297133000	Universal scales for setpoint transmitter X_s division 120, 80/160, 50/100, 30/60

RPP: P controller, centair®

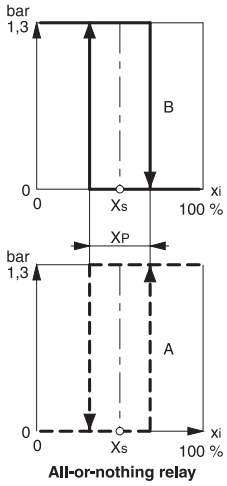
Features

- Fixed-value P-controller for universal use
- Can be used as a switching relay (on/off controller)
- Front plate is printed with circuit diagrams for easy identification of the controller's functions.
- Compressed-air connection with Rp ⅛" female thread
- Inputs for:
  - Actual value
  - Setpoint adjustment
- Outputs
  - Output pressure for damper drive





P-controller



All-or-nothing relay

Technical data

Specifications

	Supply pressure[1]	1.3 bar ±0.1
	Output pressures	0.2...1.0 bar
	Input pressures	0.2...1.0 bar
	Air consumption[2]	40 l_n/h
	Air capacity	400 l_n/h
	Setting range X_s	0...100%
	Remote setpoint adjustment	0...100%
	P-band X_p	0...100%
	Zero point	0...100%

Permissible ambient conditions

	Permissible ambient temperature	0...55 °C

Structural design

	Housing material	thermoplastic
	Fitting	wall/top-hat rail
	Weight	0.2 kg

Standards and directives

	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type	Features
RPP20F001	Fixed-value P-controller

RPP20F001: can used as a switching relay (on/off controller) by changing 2 pipes

Accessories

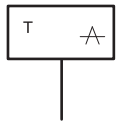
Type	Description
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0297091000	Cover for unused manometer apertures
0297113000	Manometer bracket to mount 2 XMP manometers, incl. fixing material
0297133000	Universal scales for setpoint transmitter X_s division 120, 80/160, 50/100, 30/60

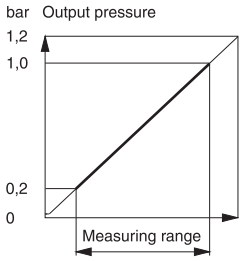
[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Without transducer; air consumption for transducer connection 3, an additional 33 l_n/h*

0297091000: at 0297113000

TUP 214...262F001: Stem-type temperature transducer, centair®





Features

- Pneumatic temperature measurement and/or regulation of liquid or gaseous media in tanks, boilers or piping in conjunction with pneumatic control facilities (centair®)
- Immersion stem made of nickel filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air connections with Rp 1/8" female thread
- Nozzle-ball system

Technical data

Specifications

	Supply pressure via ext. restrictor[1]	1.3 ±0.1 bar (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity and air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.5 m/s)	3.2 min
	In moving air (3 m/s)	1.6 min
	In water without protective tube	12 s
	In water with protective tube	70 s
	Protective tube, heat-conducting paste	25 s

Permissible ambient conditions

	Permissible ambient temperature	0...70 °C

Overview of types

Type	TUP214F001	TUP224F001	TUP242F001	TUP262F001
Measuring range °C	–20...40 °C	5...35 °C	0...120 °C	80...200 °C
Total length of stem	304 mm	304 mm	214 mm	214 mm
Active length of immersion stem	201 mm	201 mm	112 mm	112 mm
Permissible sensor temperature °C	–25...70 °C	–25...70 °C	–25...150 °C	–25...210 °C
Weight	0.16 kg	0.16 kg	0.15 kg	0.15 kg
Effect of temperature at instrument head	0.07 K/K	0.07 K/K	0.12 K/K	0.12 K/K

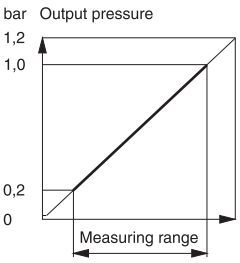
Accessories

Type	Description
0364439300	Protective tube, inner diameter 7, of brass, 300 mm for TUP 214, 224, thread R½, 16 bar
0364439225	Protective tube, inner diameter 7, of brass, 225 mm for TUP 242, 262, thread R½, 16 bar
0226811300	Protective tube, inner diameter 7, of stainless steel, 300 mm for TUP 214, 224, thread G½ male, 25 bar
0226811225	Protective tube, inner diameter 7, of stainless steel, 225 mm for TUP 242, 262, thread G½ male, 25 bar
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0364264000	Welding sleeve of stainless steel, with female thread G½", flat seal of copper and PTFE (for aggressive media)
0297631000	Flange of thermoplastic for direct fitting to the ventilation duct

Protective tubes: see product data sheet on protective tubes

[1] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers.*

For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants



TSUP: Room temperature transducer, centair®

Features

- Converts the measured room temperature into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air is connected via a push-on nipple for soft plastic tubing Ø 4 mm (internal)
- Nozzle-ball system

Technical data

Specifications

	Supply pressure via ext. restrictor[1]	1.3 ±0.1 bar (Ø 0.2 mm)
	Measuring range	5...35 °C
	Output pressure	0.2...1.0 bar
	Air capacity and air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.2 m/s)	5 min

Permissible ambient conditions

	Permissible ambient temperature	0...70 °C

Structural design

	Materials	Thermoplastic
	Housing cover	Front plate pure white (RAL 9010), frame grey-white (RAL 9002)
	Weight	0.17 kg

Standards and directives

	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

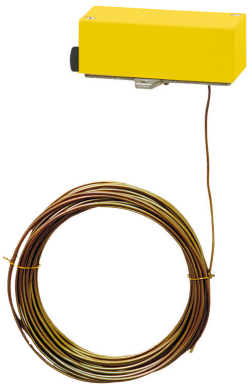
Type
TSUP1F001

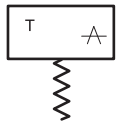
Accessories

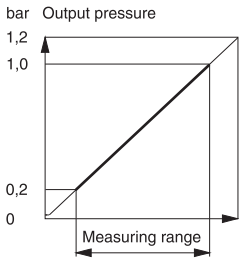
Type	Description
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation
0303124000	Recessed junction box
0310315000	Surface junction box

[1] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 on the RCP and RPP 20 standard controllers; for regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/de/pneumatic_plants*

TMUP: Mean temperature transducer, centair®







Features

- Mean temperature measurement and/or regulation in ventilation ducts in conjunction with pneumatic control facilities (centair®)
- Capillary tube (10 m long) filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Nozzle-ball system
- Compressed-air connection with Rp ⅛" female thread

Technical data

Specifications		
	Supply pressure via ext. restrictor[1)]	1.3 ±0.1 bar (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity and air consumption	33 l_n/h
	Linearity error	< 2%
	Effect of temperature at instrument head	0.08 K/K
	Permissible sensor temperature	–25...70 °C
Time constant	In moving air (0.5 m/s)	1.0 min
	In moving air (3 m/s)	0.5 min
Permissible ambient conditions		
	Permissible ambient temperature	0...70 °C
Structural design		
	Capillary tube	10 m
	Weight	0.36 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

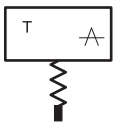
Overview of types

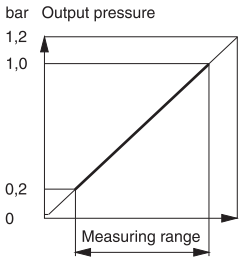
Type	Measuring range °C
TMUP210F001	–20...40 °C
TMUP220F001	5...35 °C

Accessories

Type	Description
0303167000	Five holders for fitting the capillary tube

[1)] *Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers;*
For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants





TWUP: Outside-temperature transducer

Features

- Part of the centair® family of systems
- Capillary tube and sensor cartridge are filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- Nozzle-ball system

Technical data

Specifications

	Supply pressure via ext. restrictor[1]	1.3 bar ±0.1 (Ø 0.2 mm)
	Output pressure	0.2...1.0 bar
	Air capacity and air consumption	33 l_n/h
	Linearity error	< 2%
Time constant	In moving air (0.5 m/s)	3.2 min
	In moving air (3 m/s)	1.6 min
	In water without protective tube	12 s
	In water with protective tube	70 s
	Protective tube, heat-conducting paste	25 s
	Effect of temperature at instrument head	0.1 K/K

Permissible ambient conditions

	Permissible ambient temperature	0...70 °C
	Permissible sensor temperature	–25...70 °C

Structural design

	Capillary tube	1.5 m
	Weight	0.24 kg
	Cartridge Ø mm	Ø 9 mm

Overview of types

Type	Measuring range °C
TWUP210F001	–20...40 °C
TWUP220F001	5...35 °C

Accessories

Type	Description
0364440120	Protective tube LW 15 of brass, 120 mm long, with R½" thread, max. pressure 16 bar; additional bushing for tension-relief piece 0364140 is required
0364258120	Protective tube LW 15 of stainless steel, 120 mm long, with G½" thread, max. pressure 25 bar; additional bushing for tension-relief piece 0364140 is required
0364140000	Tension-relief piece for use when fitted in protective tubes
0303212000	Rubber grommet for holding the capillary tube when passing through into ventilation ducts; T < 50 °C

Protective tubes: see product data sheet on protective tubes

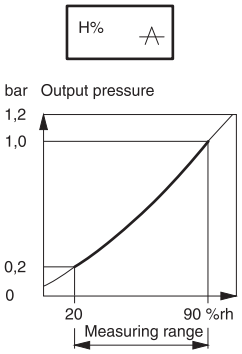
[1] *The restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers*

For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants

HSUP: Room transducer for relative humidity, centair®

Features

- Converts the measured relative humidity into a pneumatic standard signal of 0.2...1.0 bar
- Compressed air is connected via a push-on nipple for soft plastic tubing Ø 4 mm (internal)
- Nozzle-ball system



Technical data

Specifications

Supply pressure via ext. restrictor[1)]	1.3 bar ±0.1 (Ø 0.2 mm)
Measuring range	20...90% rh
Output pressure	0.2...1.0 bar
Air capacity and air consumption	33 l_n/h
Linearity error	< 2%
Time constant in moving air (0.2 m/s)	approx. 10 min
Temperature influence	–0.5% rh/K
Hysteresis	5% rh

Permissible ambient conditions

Permissible ambient temperature	10...40 °C

Structural design

Materials	thermoplastic
Housing cover	Front plate pure white (RAL 9010), frame grey-white (RAL 9002)
Weight	0.17 kg

Standards and directives

Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

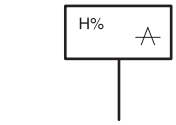
Type
HSUP1F001

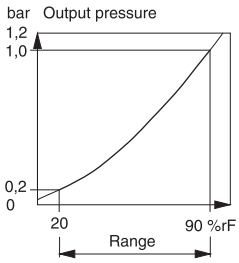
Accessories

Type	Description
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation
0303124000	Recessed junction box
0310315000	Surface junction box

[1)] *The restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers*

For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants





HTP: Duct transducer for relative humidity, centair®

Features

- Converts the measured relative humidity into a pneumatic standard signal of 0.2...1.0 bar
- Measuring element consists of a temperature-compensated humidity sensor with a stabilised synthetic textile strip
- Compressed air connection Rp ⅛"
- Nozzle-ball system

Technical data

Specifications

Supply pressure via ext. restrictor[1)]	1.3 bar ±0.1 (Ø 0.2 mm)
Measuring range	20...90% rh
Output pressure	0.2...1.0 bar
Air capacity and air consumption	33 l_n/h
Hysteresis	4% rh
Linearity error	See characteristic
Time constant in moving air (0.2 m/s)	approx. 3 min
Temperature influence	compensated
Max. air speed	10 m/s

Permissible ambient conditions

Permissible ambient temperature	0...70 °C

Structural design

Materials	Sensor tube of glass-fibre-reinforced thermoplastic
Fitting	Flange with seal for duct and wall
Weight	0.3 kg

Standards and directives

Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

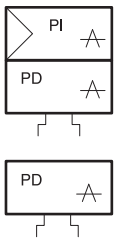
Type
HTP151F001

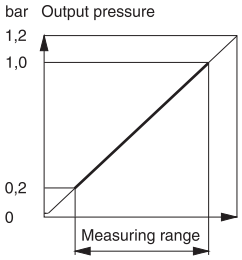
1) *The restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers. For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

RUP: Differential pressure controller/transducer, centair®

Features

- Conversion of measured differential pressures to pneumatic standard signal 0.2...1.0 bar by a pressure sensor
- PI controller
- Simple usage as PI controller is inoperational if used only as transducer.
- Differential pressure measuring range up to 500 Pa and 4000 Pa
- Front plate of controller is printed with circuit diagrams for easy identification of the function.
- Compressed-air connection with Rp ⅛" female thread
- Nozzle-ball system





Technical data

Specifications

Controllers	Supply pressure	1.3 bar ±0.1
	Air capacity	100 l_n/h
	Air consumption	50 l_n/h
Transducers	Supply pressure[1]	1.3 bar ±0.1 (via ext. restrictor Ø 0.2 mm)
	Air consumption	33 l_n/h
	Air capacity	33 l_n/h
	Output pressure	0.2...1.0 bar
	P-band (fixed)	400%
	Setpoint	0...100%
	Integral action time	0.5...3 s
	Remote setpoint adjustment	0.2...1.0 bar
	Linearity error	2%
	Hysteresis	0.5%
	Low-pressure connections	100 mbar (permissible pressure)

Permissible ambient conditions

	Permissible ambient temperature	0...55 °C

Structural design

	Housing material	thermoplastic
	Fitting	wall/top-hat rail
	Weight	0.15 kg

Overview of types

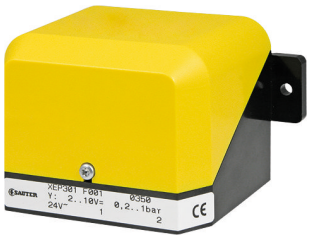
Type	Measuring range Pa
RUP105F001	0...500 Pa
RUP140F001	0...4000 Pa

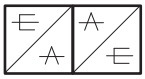
Accessories

Type	Description
0297354000	Short screw-in connector R⅛", for soft plastic tubing Ø 4 mm (internal)
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm

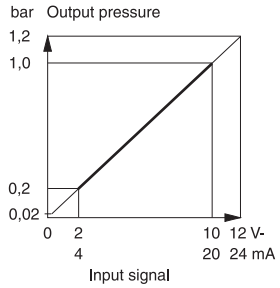
0297354000: 3 pieces required

[1] *Restrictors with Ø 0.2 mm are fitted at inputs 3 and 4 on the controllers RCP, RPP 20 and RPJP 80; for regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

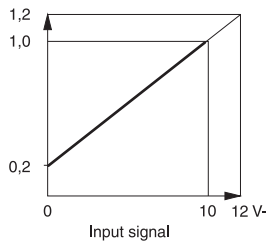




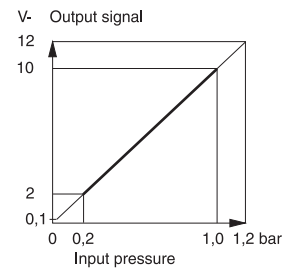
E-P curve F001, F002



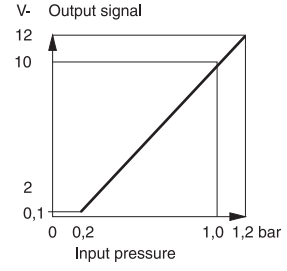
E-P curve F011



P-E curve XEP 301 F001



P-E curve XEP 301 F011



XEP: e/p and p/e converter

Features

- For converting electrical signals into pneumatic ones and vice versa
- Available with or without electric amplifier for use in combination with equipment with low air capacities
- XEP 301 has an electric amplifier and a p/e converter for bidirectional conversion of signals
- Easy to integrate pneumatic standard signals on the automation level
- Compressed air connections with Rp 1/8" female thread
- Thermoplastic housing suitable for fitting to walls or top-hat rail (EN 60715)
- Conforms to directive 97/23/EC Art 3.3 for pressure equipment

Technical data

Electrical supply

Power supply 24 V~	See list of types
Power supply 24 V=	See list of types

Specifications

Supply pressure[1]	1.3 bar ±0.1
Control action	A (acts directly)

Permissible ambient conditions

Permissible humidity	< 90% rh

Standards and directives

Conformity	Directive 97/23/EG Art 3.3 for pressure equipment
Type of protection	IP 54 (EN 60529)

Overview of types

Type	Input signal	Output signal	Air capacity l_n/h	Voltage	Weight
XEP1F001	2...10 V	0.2...1.0 bar	19 l_n/h	–	0.24 kg
XEP1F002	4...20 mA	0.2...1.0 bar	19 l_n/h	–	0.24 kg
XEP10F001	2...10 V	0.2...1.0 bar	400 l_n/h	–	0.26 kg
XEP10F002	4...20 mA	0.2...1.0 bar	400 l_n/h	–	0.26 kg
XEP110F001	2...10 V	0.2...1.0 bar	400 l_n/h	24 V~/=	0.27 kg
XEP110F011	0...10 V	0.2...1.0 bar	400 l_n/h	24 V~/=	0.27 kg
XEP301F001	2...10 V 0.2...1.0 bar	0.2...1.0 bar 2...10 V	16 l_n/h	24 V~/=	0.26 kg
XEP301F011	0...10 V, 0.2...1.0 bar	0.2...1.0 bar = 0...10 V	16 l_n/h	24 V~/=	0.26 kg

Air capacity, XEP1: Supply is normally provided via an in-built restrictor in connection 1. If air is constantly extracted from RCP, RLP (connection 6), connection 1 should be closed off.

Air capacity, XEP301: Supply is normally provided via another bleed-off SAUTER device with a restrictor Ø 0.14 mm (e.g. RLP). For autonomous operation with a line restrictor (e.g. XP 4) or for circuits supplied by a TSFP 80 (restrictor Ø 0.2 mm), the following applies: air capacity = air consumption = 33 ln/h, linearity error 2%, zero-point shift approx. +3%, adjustable (see Fitting Instructions at www.sauter-controls.com.

XEP1...10: e/p converter without electr. pre-amplifier

XEP110: e/p converter with electr. pre-amplifier

XEP301: e/p converter with electr. pre-amplifier and additional p/e converter

	XEP 1, XEP 10	XEP 110	XEP 301
Power supply 24 V~	–	±20%, 50...60 Hz	±20%, 50...60 Hz
Power supply 24 V=	–	±20%	+20%/–10%
Power consumption	–	2 VA	2 VA

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

	XEP 1, XEP 10	XEP 110	XEP 301
Input resistance	F001 590 Ω F002 120 Ω	100 kΩ	100 kΩ
Temperature influence	±0.04%/K	±0.02%/K	±0.05%/K
Permissible ambient temperature	0...55 °C	0...50 °C	0...55 °C
Linearity error e/p	< 2%	1%	1%[2)]
Air consumption	20 l_n	20 l_n	16 l_n[3)]
Linearity error p/e	–	–	0.3%
Permissible load p/e	–	–	> 5 kΩ

Accessories

Type	Description
0274700000	Fixing bracket for AVP 142, AV 43, AV 44 P (includes connection kit to the actuator)
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0370560011	Cable screw fitting - PG 11, made of plastic, for cable of Ø 9...11 mm

2) *See note on air capacity for XEP301*

3) *See note on air capacity for XEP301*

XP: Pneumatic line restrictor

Features

- To provide an air supply when no other air supply is available

Technical data

Specifications

	Supply pressure[1]	1.3 ±0.1 bar
	Nominal flow rate	33 l_n/h
	Restrictor ∅ mm[2]	0.2

Permissible ambient conditions

	Permissible ambient temperature	0...70 °C

Overview of types

Type	Type of connection	Weight
XP22F001	Copper tubes, hard plastic pipes ∅ 6 mm (external)	0.09 kg
XP41F001	Hard plastic tubing ∅ 4 mm (internal)	0.01 kg
XP4F002	Soft plastic tubing ∅ 4 mm (internal)	0.005 kg

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *The restrictors (∅ 0.2 mm) are fitted at inputs 3 and 4 in the RCP and RPP 20 standard controllers*

XHP: Manual pneumatic switch

Features

- 4 positions
- For fitting in panels, onto walls or onto top-hat rails

Technical data

Specifications

	C_v value, water Δp = 1 bar	0.11 m^3/h
	Nominal flow rate Q_N (1.0 bar with respect to atm. 0)	3.0 $m^3{}_n/h$
	Permissible pressure difference	2.5 bar
	Leakage rate	1.2 l_n/h (2.5 bar →0)

Permissible ambient conditions

	Permissible ambient temperature	0...70 °C

Assembly

	Weight	0.03 kg

Overview of types

Type
XHP3F001

Scale

Universal scale (included)	'OPEN/CLOSED' scale (fitted)	'MANUAL/CLOSED' scale (at rear)	Function
1	Closed	Closed	Open passage from 1 to 0
2	Aut.	Aut.	Open passage from 2 to 0
3	Open	–	Open passage from 3 to 0
4	Stop	Stop	No open passage to 0

Accessories

Type	Description
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail C EN 60715-C 20
0296990000	Adaptor, buckle-proof, for screw-type installation
0296218000	Adaptor, buckle-proof, for plug-in installation

XGP2: Pneumatic control-pressure transmitter with low capacity

Features

- Adjustment knob with exchangeable scales and two stops for limiting the range or locking the setting

Technical data

Specifications

	Supply pressure[1]	1.3 ±0.1 bar
	Output pressure	0...1.2 bar
	Air capacity, air consumption with restrictor Ø 0.14 mm	16 l_n/h
	Air capacity, air consumption with restrictor Ø 0.2 mm	33 l_n/h

Permissible ambient conditions

	Permissible ambient temperature	0...55 °C

Assembly

	Weight	0.029 kg
	Fitting	in panels or recessed

Standards and directives

	Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

Type	Setting range	Scale range
XGP2F001	0...1.2 bar	5...35 C°
XGP2F002	±0.1 bar	±3.75 °C

- *XGP2F001. Setting range: zero point variable from 0.2...1.0 bar; factory setting 0.6 bar*
- *XGP2F001. Scale range: rear 0...120 °C; 20...90% rh included; % scale; division 5; division 6*
- *XGP2F002. Scale range: rear ±8.75% rh; inscribable tapered scale included*

Accessories

Type	Description
0303124000	Recessed junction box
0297212000	Intermediate plate for use when fitted in recessed junction box
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

XGP 2L: Pneumatic control-pressure transmitter

Features

- Integrated minimum or maximum limitation of control pressure
- Adjustment knob with exchangeable scales and two stops for limiting the range or locking the setting

Technical data

Specifications

	Supply pressure[1]	1.3 ±0.1 bar
	Output pressure	0...1.2 bar
	Setting range[2]	0...1.2 bar
	Air capacity	400 l_n/h
	Air consumption[3]	7 l_n/h

Permissible ambient conditions

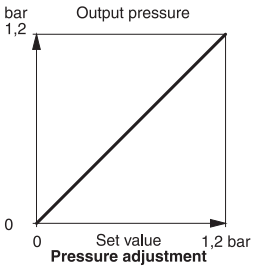
	Permissible ambient temperature	0...55 °C

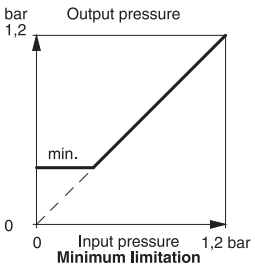
Assembly

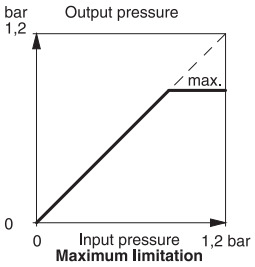
	Weight	0.09 kg
	Fitting	in panels or recessed

Standards and directives

	Conformity	Directive 97/23/EG Art 3.3 for pressure equipment







Overview of types

Type
XGP2LF001

Accessories

Type	Description
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail C EN 60715-C 20
0296218000	Adaptor, buckle-proof, for plug-in installation
0296990000	Adaptor, buckle-proof, for screw-type installation

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *Scale: 0...1.2 bar, arc increases in thickness. Rear scale: 0...1.2 bar, arc decreases in thickness. There is an additional inscribable scale (0...100%) underneath the standard scale.*

[3] *40 l_n/h with open measuring connection (improves responsiveness)*

XFRP 5: Pressure-reducing unit

Features

- Separates dust, water and oil from compressed air
- Optical indicator for the level of contamination of the sub-micron filter
- Accurate pressure controller for maintaining the supply pressure
- Integrated safety valve protects pneumatic controllers against overload
- Fine filter with separation rate of 99.999% for particles down to 0.01 µm
- Residual oil content: 1 mg/m³

Technical data

Specifications

Setting range	0.2...1.7 bar
Air capacity	20 m^3_n/h (max.)
Air consumption	75 l_n/h
Max. admission pressure[1]	8 bar
Min. admission pressure	2 bar
Pressure gauge display	0...2.5 bar

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Assembly

Weight	2.2 kg

Standards and directives

Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

Type	Condition ex works
XFRP5F001	Fitted
XFRP5F002	Not fitted

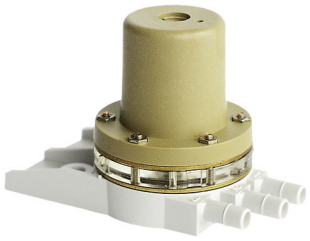
Accessories

Type	Description
0277938000	Ball shut-off valve made of brass
0381003001	Fine filter with contamination indicator and double connector for fitting to sub-micron filter
0297651000	Pressure control valve with flat seal, bleed-off at 1.7 bar
0297652000	Assembly kit
0381002001	Sub-micron filter with contamination indicator
0381007001	Pressure controller with 2 manometer connections
0381008001	Manometer 0...2.5 bar, accuracy class 1.6

[1] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*
See Chapter 4: Regulations for supply-pressure distributors

XRP: Pneumatic relays, pluggable

1:1



Features

- Auxiliary relay with low air capacity for converting/decoupling pneumatic pressure signals
- Bleed-off nozzle/deflector system

Technical data

Specifications

Supply pressure[1]	1.3 ±0.1 bar
Air recovery	50 l_n/h (max.)
Permissible input pressure	0...1.4 bar
Permissible output pressure	0...1.4 bar

Permissible ambient conditions

Permissible ambient temperature	0...55 °C

Standards and directives

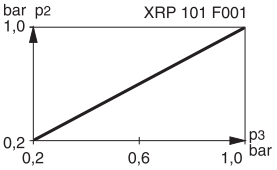
Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

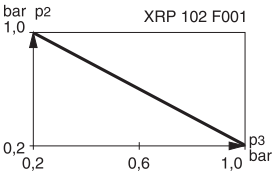
Overview of types

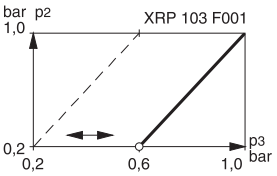
Type	Features	Air capacity and air consumption	Input pressure bar	Output pressure bar	Weight
XRP101F001	Interface relay	33 l_n/h	0.2...1.0 bar	0.2...1.0 bar	22 g
XRP102F001	Reversing relay	19 l_n/h	0.2...1.0 bar	1.0...0.2 bar	50 g
XRP103F001	Sequence relay	33 l_n/h	0.6...1.0 bar	0.2...1.0 bar	10 g
XRP104F001	Seq.-reversing relay	33 l_n/h	0.2...0.6 bar	1.0...0.2 bar	50 g

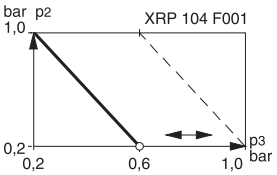
XRP103F001: Starting point can be set between 0.2 and 0.6 bar; factory setting is 0.6 bar

XRP104F001: Starting point can be set between 0.6 and 1.0 bar; factory setting is 0.6 bar









Accessories

Type	Description
0296936000	Bracket for rail: top-hat rail EN 60715, 35 × 7.5 mm and 35 × 15 mm
0296937000	Fixing clip for rail C EN 60715-C 20

Accessories do not apply to XRP 103

[1] *Supply via external restrictor Ø 0.2 mm (XRP102F001 reversing relay: internal restrictor Ø 0.15 mm)*
When used with RLP air-volume controllers, the restrictor and the air consumption do not apply
Up to three RLP units can be connected to a relay.
For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants

XMP: Manometer for indicating measured values, centair®

Features

- Several versions for indicating various variables and measuring ranges
- Manometers are suitable for fitting into the standard controllers of the RCP series
- The accessories enable the manometers to be fitted into various controllers or panels
- Removable plexiglass cover for adjusting the indicator
- Connected via G 1/8" male thread or push-on nipple Ø 2.3 mm

Technical data

Specifications		
	Measuring accuracy	Class 1, 6
Permissible ambient conditions		
	Permissible ambient temperature	0...55 °C
	Operating pressure	max. 1.4 bar (XMP 0/16 max. 1.6 bar)
Structural design		
	Weight	0.05 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

Type	Scale range	Auxiliary scale	Feature
XMP020/40F001	–20...40 °C	0.2...1.0 bar	Temperature
XMP5/35TF001	5...35 °C	0.2...1.0 bar	Temperature
XMP0/120TF001	0...120 °C	0.2...1.0 bar	Temperature
XMP80/200F001	80...200 °C	0.2...1.0 bar	Temperature
XMP20/90FF001	20...90% rh	0.2...1.0 bar	Rel. humidity
XMP0/20AFF002	0...20 g/Kg	0.2...1.0 bar	Abs. humidity
XMP0/5NDF001	0...5.0 mbar	0.2...1.0 bar	Low pressure
XMP5/10NDF001	5...10 mbar	0.2...1.0 bar	Low pressure
XMP0/100EF001	0...100%	0.2...1.0 bar	Standard signal
XMP0/16BF001	0...1.6 bar	–	Output pressure
XMP50/50PF001	–50...50 Pa	–	Low pressure

XMP50/50PF001: Manometer for the RLP100F901/F915 room-pressure controllers; indicates the room pressure; double scale –20...20 Pa/–50...50 Pa = 0.2...10 bar. The preferred range is selected by marking a field on the scale.

Accessories

Type	Description
0226561000	Scale for indicating the valve position, full range, block of 25 sheets
0226562000	Scale for indicating the valve position, two partial ranges, 1/2 - 1/2, 1/2, block of 25 sheets
0226564000	Scale for indicating the valve position, four partial ranges, 1/3, 1/2, 2/3, block of 25 sheets
0226565000	Scale for indicating the valve position, three partial ranges, 1/4 - 1/4 - 1/2, block of 25 sheets
0226569000	Universal scales, division 120, 50/100, 30/60, 80/160, $\dot{v} = \Delta p$, block of 25 sheets
0226584000	Volume-flow scales, block of 25 sheets
0297044000	Fitting kit for mounting in panels

Pneumatic actuators and valves

A formidable combination: pneumatic actuators and valves benefiting from SAUTER's years of experience.

The pneumatic combinations from SAUTER are always the first choice whenever fast or high pushing forces are required. Thanks to decades of experience of pneumatics and its proven practical solutions, SAUTER has managed to achieve further improvements.

Pneumatic actuators and valves

Pneumatic actuators

Regulating valves (combined with actuator)

Accessories

Pneumatic actuators

Pneumatic actuators from SAUTER achieve high pushing forces, enabling fast control. They accurately control dampers or valves, yet require only a minimum of air. The actuators' automatic coupling makes assembly simple, keeping labour time to a minimum.

Overview of pneumatic actuators

Models				
Type codes	AK31 P	AK41...43 P	AVP 142	AVP 242...244
Further information	p. 349	p. 350	p. 352	p. 354
Technical data				
Control pressure (bar)	0...1.2	0...1.2	0...1.2	0...1.2
Effective area (cm2)	30	40...160	180	180...500
Maximum pressure (bar)	1.5	1.5	1.5	1.5
Certification				
Explosion protection as per ATEX directive	•	•	–	–

AK31 P: Pneumatic actuator

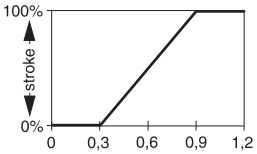
Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Roller membranes made of silicone, drive spindles in stainless steel with M8 male thread
- Plug nipple for connecting plastic hoses with an internal diameter of 4 mm

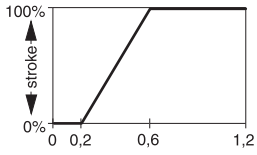
Technical data

Specifications		
	Control pressure[1]	0...1.2 bar
	Maximum pressure	1.5 bar
	Effective area	30 cm²
	Stroke	50 mm
	Lever length for 90°	35 mm
	Running time for 100% stroke[2]	5 s
Permissible ambient conditions		
	Permissible ambient temperature	–5...60 °C
Structural design		
	Housing material	fire-retardant plastic
Standards and directives		
	Type of protection	IP 20
	Conformity	EN 13463-1, EN 1127-1 (Ex II 2 G T6)

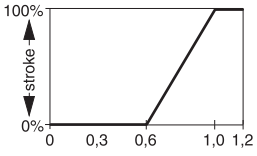
AK 31 P1



AK 31 P2



AK 31 P3



Overview of types

i *Permissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased pushing force required to overcome the slat seals must be taken into account for air dampers that are tight-sealed in accordance with DIN 1946*

Type	AK31P1F001	AK31P2F001	AK31P3F001
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.3...0.9 bar
Pushing force at 0 bar	70 N	40 N	160 N
Pushing force at 1.2 bar (N)	70 N	160 N	40 N
Torque 0 bar	1.8 Nm	1 Nm	4 Nm
Torque 1.2 bar	1.8 Nm	4 Nm	1 Nm
Permissible damper surface area	0.6 m²	0.3 m²	0.3 m²
Air consumption for 100% stroke	0.3 l_n	0.2 l_n	0.2 l_n
Weight	0.3	0.32	0.32

Accessories

Type	Description
0274587000	Fixing bracket
0274589000	Straight ball joint with 2 nuts (M8)
0274593000	Angled ball joint with 2 nuts (M8)
0370039000	Coupling nut (M8), 2 lock nuts (M8)
0370040000	Threaded rod (M8), length 500 mm
0370059000	Clamping lever for shaft, Ø 8...18 mm

[1] *To achieve the required actuating power or for the regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

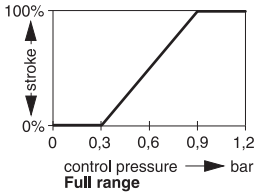
[2] *In respect of the centair air capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm*

AK41...43 P: Pneumatic actuators

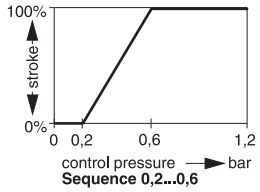
Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Complies with EN 13463-1 and EN 1127-1 (Ex II 2 G T6) with actuators in the AK41 P and AK42 P product ranges
- Roller membranes made of silicone, drive spindles in stainless steel with M8 male thread
- Plug nipple for connecting plastic hoses with an internal diameter of 4 mm (AK41)
- Compressed-air connection with Rp ⅛" female thread (AK42, 43)

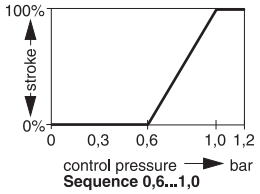
AK 41...43 P



AK 41 P2



AK 41 P3



Technical data

Specifications

	Control pressure[1]	0...1.2 bar
	Maximum pressure	1.5 bar

Permissible ambient conditions

	Permissible ambient temperature[2]	–10...70 °C

Structural design

	Housing material	fire-retardant thermoplastic (AK41, 42), light metal (AK43)

Standards and directives

	Type of protection	IP 20
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

i *Permissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased pushing force required to overcome the slat seals must be taken into account for air dampers that are tight-sealed in accordance with DIN 1946*

i *Running time for 100% stroke: In respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm*

Type	AK41P1F003	AK41P2F003	AK41P3F003	AK42PF003	AK43PF002
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.6...1.0 bar	0.3...0.9 bar	0.3...0.9 bar
Pushing force at 0 bar	100 N	60 N	200 N	200 N	400 N
Pushing force at 1.2 bar (N)	100 N	200 N	60 N	200 N	400 N
Torque 0 bar	3 Nm	2 Nm	6 Nm	10 Nm	20 Nm
Torque 1.2 bar	3 Nm	6 Nm	2 Nm	10 Nm	20 Nm
Permissible damper surface area	1 m^2	0.6 m^2	0.6 m^2	3 m^2	6 m^2
Stroke	63 mm	63 mm	63 mm	100 mm	100 mm
Effective area	40 cm^2	40 cm^2	40 cm^2	80 cm^2	160 cm^2
Air consumption for 100% stroke	0.5 l_n	0.4 l_n	0.5 l_n	1.7 l_n	3.5 l_n
Running time for 100% stroke	7 s	6 s	7 s	20 s	35 s
Explosion-protected zone	Yes	Yes	Yes	Yes	No
Lever length for 90°	40 mm	40 mm	40 mm	70 mm	70 mm
Weight	0.55 kg	0.55 kg	0.6 kg	1.4 kg	4.8 kg

[1] *To achieve the required actuating power or for the regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

[2] *When used in fresh air ducts, temporarily –20 °C*

Accessories

For AK 41, AK 42

Type	Description
0226518003	Assembly kit for XAP with AK41, separate delivery
0226519003	Assembly kit for XAP with AK42, separate delivery
0226521002	Assembly kit for XSP 31 with AK41, separate delivery
0226522002	Assembly kit for XSP 31 with AK42, separate delivery
0274586000	Straight ball joint with 2 nuts (M8) for XSP 31 with AK41
0274587000	Fixing bracket
0274589000	Straight ball joint with 2 nuts (M8)
0274593000	Angled ball joint with 2 nuts (M8)
0274595000	Fixing bracket with screw (M8 × 30)
0274597000	Adaptor with nut (M8)
0370039000	Coupling nut (M8), 2 lock nuts (M8)
0370040000	Threaded rod (M8), length 500 mm

For AK 43

Type	Description
0226520003	Assembly kit for XAP, separate delivery
0226523002	Assembly kit for XSP 31, separate delivery
0274596000	Fixing bracket with screw (M10 × 40)
0274598000	Adapter with nut (M10)
0274605000	Angled ball joint for clamping lever with nut (M10)

General

Type	Description
0274354000	Rod 600 mm long, ∅ 10 mm, with ball joint

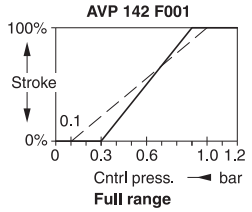
Other accessories

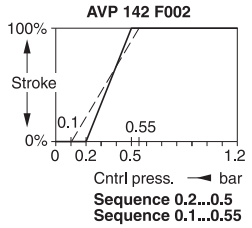
Type	Description	Price
XSP 31	Positioner (see product data sheet) fitted to the actuator in the factory	—
XAP 1	Auxiliary contacts (see product data sheet) fitted to the actuator in the factory	—
XAP 2	Potentiometer unit (see product data sheet) fitted to the actuator in the factory	—

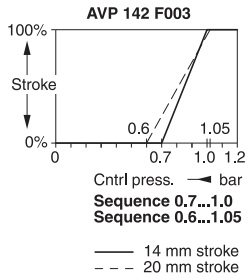
AVP 142: Pneumatic valve actuator

Features

- Activation of though and three-way valves of the V6R/B6R series for continuous control facilities or for open/close control
- Contains no silicone, so can be used in many applications
- Rubber diaphragms with long-term stability
- The direction of operation can be reversed by fitting the head of the actuator to the fixing bracket the opposite way round
- Stroke indicator enables the position of the actuator to be determined quickly
- Compressed-air connection with Rp ⅛" female thread







Technical data

Specifications

Control pressure[1]	0...1.2 bar
Maximum pressure	1.5 bar
Effective area	180 cm²
Valve with 14 mm stroke Span (bar)	0.6
Valve with 14 mm stroke: Air consumption (l_n/stroke)	0.8
Valve with 20 mm stroke: Span (bar)	0.9
Valve with 20 mm stroke: Air consumption (l_n/stroke)	1.1

Permissible ambient temperature

Permissible ambient temperature	–15...50 °C
Temperature at the diaphragm	max. 70 °C

Structural design

Weight	2 kg
Housing material	Housing of glass-fibre-reinforced plastic; fixing bracket of light metal

Standards and directives

Conformity	Directive 97/23/EG Art 3.3 for pressure equipment

Overview of types

Type
AVP142F001

Assembly materials for the V6R and B6R valve series

Type of actuator	XSP31	XAP	XEP
AVP142	0226504002	0226512003	0274700

Accessories

Type	Description
0274730001	Manual adjuster for AVP 142 and 242; weight 0.6 kg

[1] *Required in order to attain the pushing forces. For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

Other accessories

Type	Description	Price
XSP 31	Positioner (see product data sheet)	—
XAP 1	Auxiliary contacts (see product data sheet)	—
XAP 2	Potentiometer unit (see product data sheet)	—
XEP	Electro-pneumatic converter for continuous signals (see product data sheet)	—

- *Electro-pneumatic converter: of the accessories, only a positioner (XSP 31), a feedback unit (XAP) and an electro-pneumatic converter (XEP) can be fitted; when fitting XSP 31 and XAP, the XEP should be screwed on the side of the fixing bracket*
- *Positioner, auxiliary contacts, potentiometer unit, manual adjuster: can be used for minimum or maximum limitation of the stroke; hand wheel can be removed*
- *XSP 31, XAP 1, XAP 2: fitted at the factory to the valve/actuator combination*

AVP242

AVP243

AVP 242...244: Pneumatic valve actuators

Features

- Activation of though and three-way valves of the VUD/BUD, VUE/BUE, VUG/BUG, VUS/BUS and VUP series for continuous control facilities or for open/close control.
- Contains no silicone, so can be used in many applications
- Rubber diaphragms with long-term stability
- The direction of operation can be reversed by fitting to the fixing bracket the opposite way round
- Stroke indicator enables the position of the actuator to be determined quickly
- Compressed-air connection with Rp ⅛" female thread
- Patented actuator-valve coupling enables the two units to be connected quickly and easily

Technical data

Specifications

Control pressure[1]	0...1.2 bar
Maximum pressure	1.5 bar
Control span[2]	0.6 bar

Permissible ambient temperature

Permissible ambient temperature	–15...50 °C
Temperature at the diaphragm	max. 70 °C

Standards and directives

Conformity	Directive 97/23/EWG for pressure equipment

Overview of types

Type	for valve with stroke mm	Air consumption for 100% stroke	Effective area	Weight
AVP242F001	8 mm	0.30 l_n	180 cm²	3 kg
AVP242F021	14/20/25 mm	0.65 l_n	180 cm²	3 kg
AVP243F021	20 mm	1.10 l_n	250 cm²	6 kg
AVP243F031	30/40 mm	2.00 l_n	250 cm²	6 kg
AVP244F021	20 mm	1.90 l_n	500 cm²	12 kg
AVP244F031	30/40 mm	3.30 l_n	500 cm²	12 kg

Assembly materials for the VUD/BUD, VUE/BUE, VUG/BUG, VUS/BUS and VUP valve series

Type of actuator	XSP31	XAP	XEP
AVP24**	297933001	297934001	297935001

Accessories

Type	Description
0274521000	Manual adjuster for AVP 243 and 244; weight 1.7 kg
0274730001	Manual adjuster for AVP 142 and 242; weight 0.6 kg

Other accessories

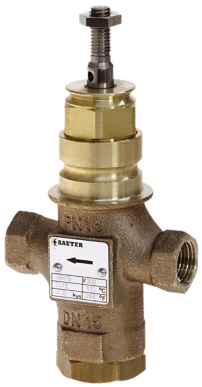
Type	Description	Price
XSP 31	Positioner (see product data sheet)	—
XAP 1	Auxiliary contacts (see product data sheet)	—

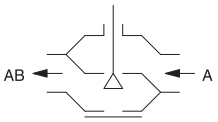
[1] *Required in order to attain the pushing forces. For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

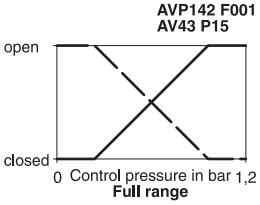
[2] *For pressure-stroke characteristics, see product data sheet*

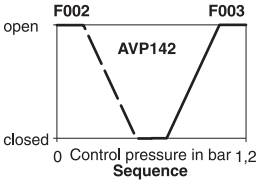
Type	Description	Price
XAP 2	Potentiometer unit (see product data sheet)	—
XEP	Electro-pneumatic converter for continuous signals (see product data sheet)	—

- *Electro-pneumatic converter: of the accessories, only a positioner (XSP 31), a feedback unit (XAP) and an electro-pneumatic converter (XEP) can be fitted; when fitting XSP 31 and XAP, the XEP should be screwed on the side of the fixing bracket*
- *Positioner, auxiliary contacts, potentiometer unit, manual adjuster: can be used for minimum or maximum limitation of the stroke; hand wheel can be removed*
- *XSP 31, XAP 1, XAP 2: fitted at the factory to the valve/actuator combination*









V6R: Through valve with female thread, PN 16

Features

- Regulating valve, free of silicone grease, with female thread DIN EN ISO 228-1 G
- Equal-percentage characteristic (F3**) or linear (F2**)
- If the spindle is extended, the valve passage A-AB is closed
- Closes against the pressure
- Valve body and seat made of gun metal
- Stainless-steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Control ratio	50 (typical)
Leakage rate	≤ 0.05% of k_{vs} value
Valve stroke	14 mm
Nominal pressure	16 bar

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic	Materials for valve plug	Weight
V6R15F350	DN 15	0.4 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F340	DN 15	0.63 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F330	DN 15	1 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F320	DN 15	1.6 m³/h	equal-percentage	stainless steel	1.2 kg
V6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	1.2 kg
V6R15F300	DN 15	4 m³/h	equal-percentage	brass	1.2 kg
V6R15F200	DN 15	4 m³/h	linear	brass	1.2 kg
V6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	1.6 kg
V6R25F300	DN 25	10 m³/h	equal-percentage	brass	1.6 kg
V6R25F210	DN 25	6.3 m³/h	linear	brass	1.6 kg
V6R25F200	DN 25	10 m³/h	linear	brass	1.6 kg
V6R40F310	DN 40	16 m³/h	equal-percentage	brass	3.4 kg
V6R40F300	DN 40	25 m³/h	equal-percentage	brass	3.4 kg
V6R40F210	DN 40	16 m³/h	linear	brass	3.4 kg
V6R40F200	DN 40	25 m³/h	linear	brass	3.4 kg
V6R50F300	DN 50	35 m³/h	equal-percentage	brass	4.6 kg
V6R50F200	DN 50	35 m³/h	linear	brass	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. asbestos-free seal, 2 pcs required
0360391025	Screw fitting, DN 25, incl. asbestos-free seal, 2 pcs required
0360391040	Screw fitting, DN 40, incl. asbestos-free seal, 2 pcs required

1) *At temperatures under 0 °C, use stuffing-box heating (accessory)*

Type	Description
0360391050	Screw fitting, DN 50, incl. asbestos-free seal, 2 pcs required
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C

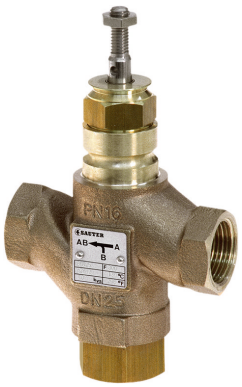
Combination of V6R with AVP142 pneumatic actuator

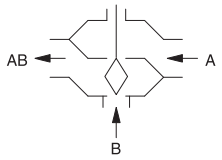
i *Warranty: the technical data and pressure differences indicated here are applicable only in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.*

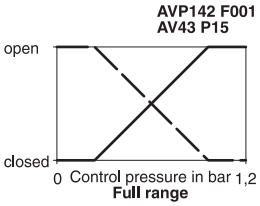
i *The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.*

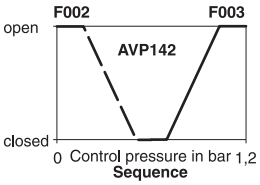
Closes against the pressure

Actuator		AVP142F001	
Page		352	
Permissible operating pressure $_{pstat}$		≤ 16 bar	
Running time		10 s	
Valve	(bar)	Δp_{max}	Δp_s
V6R15F350, V6R15F340, V6R15F330, V6R15F320, V6R15F310, V6R15F300, V6R15F200	(bar)	4	16
V6R25F310, V6R25F300, V6R25F210, V6R25F200	(bar)	4	13.6
V6R40F310, V6R40F300, V6R40F210, V6R40F200	(bar)	3	3.1
V6R50F300, V6R50F200	(bar)	2	2.3









B6R: 3-way valve with female thread, PN 16

Features

- Regulating valve, free of silicone grease, with female thread DIN EN ISO 228-1 G
- The valve is closed when the spindle is extended
- Use as control valve
- Valve body and seat made of gun metal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM
- Stainless-steel spindle

Technical data

Specifications

Control ratio	50 (typical)
Valve stroke	14 mm
Nominal pressure	PN 16
Valve characteristic, mixing passage	linear
Leakage rate of control passage A-AB	≤ 0.05% of k_{vs} value
Leakage rate, mixing passage B-AB	≤ 1% of k_{vs} value

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic	Materials for valve plug	Weight
B6R15F330	DN 15	1 m³/h	equal-percentage	stainless steel	1.2 kg
B6R15F320	DN 15	1.6 m³/h	equal-percentage	stainless steel	1.2 kg
B6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	1.2 kg
B6R15F300	DN 15	4 m³/h	equal-percentage	brass	1.2 kg
B6R15F200	DN 15	4 m³/h	linear	brass	1.2 kg
B6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	1.6 kg
B6R25F300	DN 25	10 m³/h	equal-percentage	brass	1.6 kg
B6R25F210	DN 25	6.3 m³/h	linear	brass	1.6 kg
B6R25F200	DN 25	10 m³/h	linear	brass	1.6 kg
B6R40F310	DN 40	16 m³/h	equal-percentage	brass	3.4 kg
B6R40F300	DN 40	25 m³/h	equal-percentage	brass	3.4 kg
B6R40F210	DN 40	16 m³/h	linear	brass	3.4 kg
B6R40F200	DN 40	25 m³/h	linear	brass	3.4 kg
B6R50F300	DN 50	35 m³/h	equal-percentage	brass	4.6 kg
B6R50F200	DN 50	35 m³/h	linear	brass	4.6 kg

Accessories

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

[1] *At temperatures under 0 °C, use stuffing-box heating (accessory)*

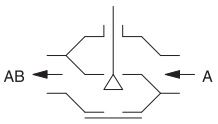
Combination of B6R with AVP142 pneumatic actuator

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 non-Sauter valve actuators are used.*

i *The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.*

Use as control valve

Actuator		AVP142F001	
Page		352	
Permissible operating pressure $_{pstat}$		≤ 16 bar	
Running time		10 s	
Valve	(bar)	Δp_{max}	Δp_s
B6R15F330, B6R15F320, B6R15F310, B6R15F300, B6R15F200	(bar)	4	16
B6R25F310, B6R25F300, B6R25F210, B6R25F200	(bar)	4	13.5
B6R40F310, B6R40F300, B6R40F210, B6R40F200	(bar)	2.4	3.1
B6R50F300, B6R50F200	(bar)	2	2.3



VUD: Flanged through valve, PN 6

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- When the spindle is retracted, the valve is closed
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless steel spindle
- Nominal diameter DN 15…50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…100 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Nominal pressure	6 bar
Connection	PN 6
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions[1)]

Operating temperature[2)]	–10…150°C

Overview of types

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUD015F320	DN 15	1.6 m³/h	3.2 kg	8 mm	Equal percentage
VUD015F310	DN 15	2.5 m³/h	3.2 kg	8 mm	Equal percentage
VUD015F300	DN 15	4 m³/h	3.2 kg	8 mm	Equal percentage
VUD020F300	DN 20	6.3 m³/h	4.1 kg	8 mm	Equal percentage
VUD025F300	DN 25	10 m³/h	4.7 kg	8 mm	Equal percentage
VUD032F300	DN 32	16 m³/h	7.3 kg	8 mm	Equal percentage
VUD040F300	DN 40	22 m³/h	8.6 kg	8 mm	Equal percentage
VUD050F300	DN 50	28 m³/h	11.2 kg	8 mm	Equal percentage
VUD050F200	DN 50	40 m³/h	11.2 kg	8 mm	Linear
VUD065F300	DN 65	49 m³/h	11.9 kg	20 mm	Equal percentage
VUD065F200	DN 65	63 m³/h	11.9 kg	20 mm	Linear
VUD080F300	DN 80	78 m³/h	17.7 kg	20 mm	Equal percentage
VUD080F200	DN 80	100 m³/h	17.7 kg	20 mm	Linear
VUD100F300	DN 100	124 m³/h	26 kg	40 mm	Equal percentage
VUD100F200	DN 100	160 m³/h	26 kg	40 mm	Linear

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100…130 °C (recommended for temperatures < 10 °C) DN 15…50
0372249002	Adaptor required when temperature of the medium is 130…150 °C, DN 15…50
0372336180	Adaptor (required when temperature of the medium is 130…150 °C) from DN 65

1) *Air humidity must not exceed 75%*

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

Type	Description
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50
0378369001	Complete replacement stuffing box for DN 65...100

Combination of VUD with pneumatic actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242F001 actuator (closing procedure against the pressure)

Actuator		AVP242F001	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 6 bar	
Running time		8 s	
Stroke		8 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUD015F320, VUD015F310, VUD015F300, VUD020F300, VUD025F300, VUD032F300	(bar)	6	6
VUD040F300	(bar)	4	4
VUD050F300, VUD050F200	(bar)	2.5	2.5

At temperatures above 100°C, accessories are required

With AVP242F021 actuator (closing procedure against the pressure)

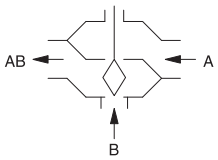
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 6 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUD065F300, VUD065F200	(bar)	1.5	1.5
VUD080F300, VUD080F200	(bar)	1	1

At temperatures above 130 °C, accessories are required

With AVP243 and AVP244 actuator (closing procedure against the pressure)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Running time		24 s		40 s		24 s		40 s	
Permissible operating pressure $_{pstat}$		≤ 6 bar		≤ 6 bar		≤ 6 bar		≤ 6 bar	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUD065F300, VUD065F200	(bar)	2.5	2.5	3	4.5	-	-	-	-
VUD080F300, VUD080F200	(bar)	1.5	1.5	3	3	-	-	-	-
VUD100F300, VUD100F200	(bar)	-	-	-	-	1	1	2	2

At temperatures above 130 °C, accessories are required



BUD: Flanged 3-way valve, PN 6

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, painted black
- When the spindle is extended, the valve is closed.
- Use as control valve
- Valve body and seat made of grey cast iron
- Stainless-steel spindle
- Nominal diameter DN 15…50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…100 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Nominal pressure	6 bar
Connection	PN 6
Valve characteristic, mixing passage	linear
Control ratio of valve	> 50:1
Leakage rate of control passage	≤ 0.05% of k_{vs} value
Leakage rate, mixing passage	≤ 1% of k_{vs} value

Permissible ambient conditions

Operating temperature[1]	–10…150 °C
Operating pressure	6 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Valve stroke	Valve characteristic of control passage	Weight
BUD015F300	DN 15	4 m³/h	8 mm	equal-percentage	3.2 kg
BUD015F310	DN 15	2.5 m³/h	8 mm	equal-percentage	3.2 kg
BUD015F320	DN 15	1.6 m³/h	8 mm	equal-percentage	3.2 kg
BUD020F300	DN 20	6.3 m³/h	8 mm	equal-percentage	4.1 kg
BUD025F300	DN 25	10 m³/h	8 mm	equal-percentage	4.7 kg
BUD032F300	DN 32	16 m³/h	8 mm	equal-percentage	7.1 kg
BUD040F300	DN 40	22 m³/h	8 mm	equal-percentage	8.4 kg
BUD050F200	DN 50	40 m³/h	8 mm	linear	11.2 kg
BUD050F300	DN 50	28 m³/h	8 mm	equal-percentage	10.9 kg
BUD065F200	DN 65	63 m³/h	20 mm	linear	11.9 kg
BUD065F300	DN 65	49 m³/h	20 mm	equal-percentage	11.9 kg
BUD080F200	DN 80	100 m³/h	20 mm	linear	17.7 kg
BUD080F300	DN 80	78 m³/h	20 mm	equal-percentage	17.7 kg
BUD100F200	DN 100	160 m³/h	40 mm	linear	26 kg
BUD100F300	DN 100	124 m³/h	40 mm	equal-percentage	26 kg

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100…130 °C (recommended for temperatures < 10 °C) DN 15…50

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

Type	Description
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0372336180	Adaptor (required when temperature of the medium is 130...150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50
0378369001	Complete replacement stuffing box for DN 65...100

Combination of BUD with pneumatic 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 non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242F001 actuator (use as control valve)

Actuator		AVP242F001	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 6 bar	
Running time		8 s	
Stroke		8 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUD015F300, BUD015F310, BUD015F320, BUD020F300, BUD025F300, BUD032F300	(bar)	6	6
BUD040F300	(bar)	4	4
BUD050F200, BUD050F300	(bar)	2.5	2.5

At temperatures above 100°C, accessories are required

With AVP242F021 actuator (use as control valve)

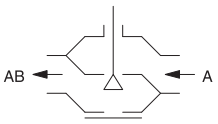
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 6 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUD065F200, BUD065F300	(bar)	1	1.5
BUD080F200, BUD080F300	(bar)	1	1

At temperatures above 130 °C, accessories are required

With AVP243 and AVP244 (use as control valve)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 6 bar		≤ 6 bar		≤ 6 bar		≤ 6 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUD065F200, BUD065F300	(bar)	2.3	2.3	3	4.5	-	-	-	-
BUD080F200, BUD080F300	(bar)	1.5	1.5	3	3	-	-	-	-
BUD100F200, BUD100F300	(bar)	-	-	-	-	1	1	2	2

At temperatures above 130 °C, accessories are required



VUE: Flanged through valve, PN 16 / 10

Features

- 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
- When the spindle is retracted, the valve is closed
- Closing procedure against the pressure
- Valve body and seat made of grey cast iron
- Stainless steel spindle
- Nominal diameter DN 15…50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…150 cones in brass, with metal-to-metal seal
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Nominal pressure	16 bar
Connection	PN 16/10
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions[1)]

Operating temperature[2)]	–10…150 °C
Operating pressure up to 120 °C	16 bar
Operating pressure up to 130 °C	13 bar
Operating pressure up to 150 °C	10 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUE015F350	DN 15	0.4 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F340	DN 15	0.63 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F330	DN 15	1 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F320	DN 15	1.6 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F310	DN 15	2.5 m³/h	3.2 kg	8 mm	Equal percentage
VUE015F300	DN 15	4 m³/h	3.2 kg	8 mm	Equal percentage
VUE020F300	DN 20	6.3 m³/h	4.1 kg	8 mm	Equal percentage
VUE025F300	DN 25	10 m³/h	4.7 kg	8 mm	Equal percentage
VUE032F300	DN 32	16 m³/h	7.3 kg	8 mm	Equal percentage
VUE040F300	DN 40	22 m³/h	8.6 kg	8 mm	Equal percentage
VUE050F300	DN 50	28 m³/h	11.2 kg	8 mm	Equal percentage
VUE050F200	DN 50	40 m³/h	11.2 kg	8 mm	Linear
VUE065F300	DN 65	49 m³/h	17.3 kg	20 mm	Equal percentage
VUE065F200	DN 65	63 m³/h	17.3 kg	20 mm	Linear
VUE080F300	DN 80	78 m³/h	22.9 kg	20 mm	Equal percentage
VUE080F200	DN 80	100 m³/h	22.9 kg	20 mm	Linear
VUE100F300	DN 100	124 m³/h	33 kg	40 mm	Equal percentage
VUE100F200	DN 100	160 m³/h	33 kg	40 mm	Linear
VUE125F300	DN 125	200 m³/h	48 kg	40 mm	Equal percentage
VUE125F200	DN 125	240 m³/h	48 kg	40 mm	Linear

1) *Air humidity must not exceed 75%*

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

Type	Nominal diameter	C_{vs} value	Weight	Valve stroke	Valve characteristic
VUE150F300	DN 150	300 m³/h	68 kg	40 mm	Equal percentage
VUE150F200	DN 150	320 m³/h	68 kg	40 mm	Linear

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0372336180	Adaptor (required when temperature of the medium is 130...150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50
0378369001	Complete replacement stuffing box for DN 65...100

Combination of VUE with pneumatic actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242F001 actuator (closing procedure against the pressure)

Actuator		AVP242F001	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 16 bar	
Running time		8 s	
Stroke		8 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUE015F350, VUE015F340, VUE015F330, VUE015F320, VUE015F310, VUE015F300, VUE020F300	(bar)	10	16
VUE025F300	(bar)	10	12
VUE032F300	(bar)	6.5	6.5
VUE040F300	(bar)	4	4
VUE050F300, VUE050F200	(bar)	2.5	2.5

At temperatures above 100°C, accessories are required

With AVP242F021 actuator (closing procedure against the pressure)

Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 16 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUE065F300, VUE065F200	(bar)	1.5	1.5
VUE080F300, VUE080F200	(bar)	1	1

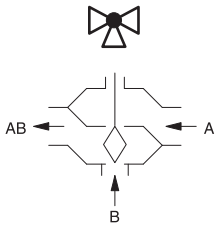
At temperatures above 130 °C, accessories are required

With AVP243 and AVP244 actuator (closing procedure against the pressure)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 16 bar		≤ 16 bar		≤ 16 bar		≤ 16 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUE065F300, VUE065F200	(bar)	2.3	2.3	3	4.5	-	-	-	-
VUE080F300, VUE080F200	(bar)	1.5	1.5	3	3	-	-	-	-
VUE100F300, VUE100F200	(bar)	-	-	-	-	1	1	2	2
VUE125F300, VUE125F200	(bar)	-	-	-	-	0.6	0.6	1.2	1.2
VUE150F300, VUE150F200	(bar)	-	-	-	-	0.4	0.4	1	1

At temperatures above 130 °C, accessories are required

BUE: Flanged 3-way valve, PN 16/10



Features

- 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
- When the spindle is extended, the control passage is closed.
- Use as control valve
- Valve body and seat made of grey cast iron
- Nominal diameter DN 15...50 cones in brass with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65...150 cones in brass, with metal-to-metal seal
- Stainless-steel spindle
- Stuffing box made of brass with wiper ring and double O-ring seal in EPDM

Technical data

Specifications

Connection	PN 16/10
Nominal pressure	16 bar
Control ratio	> 50:1
Valve characteristic, mixing passage	linear
Leakage rate of control passage	≤ 0.05% of k_{VS} value
Leakage rate, mixing passage	≤ 1% of k_{VS} value

Permissible ambient conditions

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

Overview of types

Type	Nominal diameter	C_{VS} value	Valve stroke	Weight	Valve characteristic, control passage
BUE015F300	DN 15	4 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F310	DN 15	2.5 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F320	DN 15	1.6 m³/h	8 mm	3.2 kg	equal-percentage
BUE015F330	DN 15	1 m³/h	8 mm	3.2 kg	equal-percentage
BUE020F300	DN 20	6.3 m³/h	8 mm	4.1 kg	equal-percentage
BUE025F300	DN 25	10 m³/h	8 mm	4.7 kg	equal-percentage
BUE032F300	DN 32	16 m³/h	8 mm	7.1 kg	equal-percentage
BUE040F300	DN 40	22 m³/h	8 mm	8.4 kg	equal-percentage
BUE050F200	DN 50	40 m³/h	8 mm	11.2 kg	linear
BUE050F300	DN 50	28 m³/h	8 mm	11.2 kg	equal-percentage
BUE065F200	DN 65	63 m³/h	20 mm	17.3 kg	linear
BUE065F300	DN 65	49 m³/h	20 mm	17.3 kg	equal-percentage
BUE080F200	DN 80	100 m³/h	20 mm	22.9 kg	linear
BUE080F300	DN 80	78 m³/h	20 mm	22.9 kg	equal-percentage
BUE100F200	DN 100	160 m³/h	40 mm	33 kg	linear
BUE100F300	DN 100	124 m³/h	40 mm	33 kg	equal-percentage
BUE125F200	DN 125	240 m³/h	40 mm	48 kg	linear
BUE125F300	DN 125	200 m³/h	40 mm	48 kg	equal-percentage
BUE150F200	DN 150	320 m³/h	40 mm	68 kg	linear
BUE150F300	DN 150	300 m³/h	40 mm	68 kg	equal-percentage

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

Accessories

Type	Description
0372240001	Manual adjustment for valves with 8 mm stroke
0372249001	Adaptor required when temperature of the medium is 100...130 °C (recommended for temperatures < 10 °C) DN 15...50
0372249002	Adaptor required when temperature of the medium is 130...150 °C, DN 15...50
0372336180	Adaptor (required when temperature of the medium is 130...150 °C) from DN 65
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378368001	Complete replacement stuffing box for DN 15...50
0378369001	Complete replacement stuffing box for DN 65...100

Combination of BUE with pneumatic 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 non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242F001 actuator (use as control valve)

Actuator		AVP242F001	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 10 bar	
Running time		8 s	
Stroke		8 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUE015F300, BUE015F310, BUE015F320, BUE015F330, BUE020F300	(bar)	10	16
BUE025F300	(bar)	10	12
BUE032F300	(bar)	6	6.5
BUE040F300	(bar)	4	4
BUE050F200, BUE050F300	(bar)	2.5	2.5

At temperatures above 100°C, accessories are required

With AVP242F021 actuator (use as control valve)

Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 10 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	1.2	1.5
BUE080F200, BUE080F300	(bar)	0.8	1

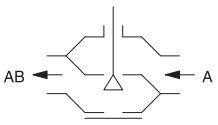
At temperatures above 130 °C, accessories are required

With AVP243 and AVP244 actuator (use as control valve)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 10 bar		≤ 10 bar		≤ 10 bar		≤ 10 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE065F200, BUE065F300	(bar)	2	2.3	3	4.5	-	-	-	-
BUE080F200, BUE080F300	(bar)	1.3	1.5	3	3	-	-	-	-
BUE100F200, BUE100F300	(bar)	-	-	-	-	1	1	2	2

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 10 bar		≤ 10 bar		≤ 10 bar		≤ 10 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUE125F200, BUE125F300	(bar)	-	-	-	-	0.6	0.6	1.2	1.2
BUE150F200, BUE150F300	(bar)	-	-	-	-	0.4	0.4	1	1

At temperatures above 130 °C, accessories are required



VUG: Flanged through valve, PN 25/16

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar; deviating: VUG065F316, nominal pressure 16 bar
- Regulating valve, free of silicone grease, painted black
- When the spindle is extended, the valve is closed.
- Closes against the pressure
- Ductile cast iron valve body, stainless-steel seat and spindle
- Nominal diameter DN 15…50 cones in stainless steel with glass-fibre reinforced PTFE sealing ring
- Nominal diameter DN 65…150 cones in stainless steel with metal-to-metal seal
- Maintenance-free stuffing box in brass with spring-loaded PTFE washer

Technical data

Specifications

Valve characteristic	equal-percentage
Control ratio of valve	> 50:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[1)]	30…240 °C
Operating pressure	up to 120 °C, 25 bar up to 240 °C, 20 bar (VUG065F316 up to 240 °C, 16 bar)

Overview of types

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

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

Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Anti-torsion device DN 65...150

Combination of VUG with pneumatic 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 non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242 actuator (closes against the pressure)

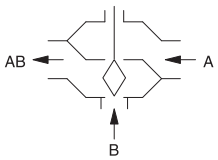
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 25 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304	(bar)	16	16.5
VUG020F304	(bar)	13	13
VUG025F304	(bar)	8.8	8.8
VUG032F304	(bar)	5.5	5.5
VUG040F304	(bar)	3.7	3.7
VUG050F304	(bar)	2.5	2.5

At temperatures above 130 °C, accessories are required

With AVP243...AVP244 actuator (closes against the pressure)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 25 bar		≤ 25 bar		≤ 25 bar		≤ 25 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUG015F374, VUG015F364, VUG015F354, VUG015F344, VUG015F334, VUG015F324, VUG015F314, VUG015F304	(bar)	16	22.7	16	25	-	-	-	-
VUG020F304	(bar)	16	18	16	25	-	-	-	-
VUG025F304	(bar)	12.2	12.2	16	24.5	-	-	-	-
VUG032F304	(bar)	7.8	7.8	15.5	15.5	-	-	-	-
VUG040F304	(bar)	5.2	5.2	10.3	10.3	-	-	-	-
VUG050F304	(bar)	3.3	3.3	6.6	6.6	-	-	-	-
VUG065F316, VUG065F304	(bar)	-	-	-	-	2.2	2.2	4.4	4.4
VUG080F304	(bar)	-	-	-	-	1.5	1.5	3	3
VUG100F304	(bar)	-	-	-	-	1	1	2	2
VUG125F304	(bar)	-	-	-	-	0.7	0.7	1.3	1.3
VUG150F304	(bar)	-	-	-	-	0.5	0.5	1	1

At temperatures above 130 °C, accessories are required



BUG: Flanged 3-way valve, PN 25/16

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 25 bar; deviating: BUG065F316, nominal pressure 16 bar
- Regulating valve, free of silicone grease, painted black
- When the spindle is extended, the control passage is closed.
- Use as control valve
- Ductile cast iron valve body
- Stainless-steel seat and spindle
- Nominal diameter DN 15…50 cones in stainless steel with glass-fibre-reinforced PTFE sealing ring
- Nominal diameter DN 65…150 cones in stainless steel with metal-to-metal seal
- Maintenance-free stuffing box, brass with spring-loaded PTFE washer

Technical data

Specifications

Valve characteristic, control passage	equal-percentage
Control ratio	> 50: 1
Valve characteristic, mixing passage	linear
Leakage rate of control passage	≤ 0.05% of k_{vs} value
Leakage rate, mixing passage	≤ 1.0% of k_{vs} value

Permissible ambient conditions

Operating temperature[1)]	30...240 °C
Operating pressure up to 120 °C	25 bar
Operating pressure up to 240 °C	20 bar (BUG065F316 to 240 °C, 16 bar)

Overview of types

Type	Nominal diameter	PN connection	C_{vs} value	Weight	Valve stroke
BUG015F304	DN 15	PN 25/16	4 m³/h	3.1 kg	20 mm
BUG015F314	DN 15	PN 25/16	2.5 m³/h	3.1 kg	20 mm
BUG015F324	DN 15	PN 25/16	1.6 m³/h	3.1 kg	20 mm
BUG015F334	DN 15	PN 25/16	1 m³/h	3.1 kg	20 mm
BUG020F304	DN 20	PN 25/16	6.3 m³/h	4 kg	20 mm
BUG025F304	DN 25	PN 25/16	10 m³/h	4.7 kg	20 mm
BUG032F304	DN 32	PN 25/16	16 m³/h	7.2 kg	20 mm
BUG040F304	DN 40	PN 25/16	25 m³/h	9.2 kg	20 mm
BUG050F304	DN 50	PN 25/16	40 m³/h	11.9 kg	20 mm
BUG065F304	DN 65	PN 25	63 m³/h	27.1 kg	40 mm
BUG065F316	DN 65	PN 16	63 m³/h	26.8 kg	40 mm
BUG080F304	DN 80	PN 25/16	100 m³/h	36.3 kg	40 mm
BUG100F304	DN 100	PN 25	160 m³/h	53 kg	40 mm
BUG125F304	DN 125	PN 25	250 m³/h	79.1 kg	40 mm
BUG150F304	DN 150	PN 25	340 m³/h	108.7 kg	40 mm

*1) For cold water applications below 30 °C, the versions BUG***F3**S with a stuffing box containing silicone (e.g.: BUG015F304S) should be used.*

Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C. Down to –10 °C, as per AD code of practice W 10, water with anti-freeze and brine solution.

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...240 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378384001	Anti-torsion device DN 65...150

Combination of BUG with pneumatic 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 non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242 actuator (use as control valve)

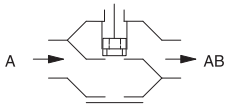
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 16 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334	(bar)	16	16.5
BUG020F304	(bar)	10	13
BUG025F304	(bar)	6.5	8.8
BUG032F304	(bar)	4	5.5
BUG040F304	(bar)	2.6	3.7
BUG050F304	(bar)	1.7	2.4

At temperatures above 130 °C, accessories are required

With AVP243...AVP244 actuator (use as control valve)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 16 bar		≤ 16 bar		≤ 25 bar		≤ 25 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUG015F304, BUG015F314, BUG015F324, BUG015F334	(bar)	16	22.7	16	25	-	-	-	-
BUG020F304	(bar)	16	18	16	25	-	-	-	-
BUG025F304	(bar)	11.9	12.2	26	24.4	-	-	-	-
BUG032F304	(bar)	7.4	7.8	15.5	15.5	-	-	-	-
BUG040F304	(bar)	4.2	5.2	10.3	10.3	-	-	-	-
BUG050F304	(bar)	3.1	3.3	6.5	6.5	-	-	-	-
BUG065F304, BUG065F316	(bar)	-	-	-	-	2.2	2.2	4.4	4.4
BUG080F304	(bar)	-	-	-	-	1.5	1.5	3	3
BUG100F304	(bar)	-	-	-	-	1	1	2	2
BUG125F304	(bar)	-	-	-	-	0.6	0.7	1.3	1.3
BUG150F304	(bar)	-	-	-	-	0.4	0.5	1	1

At temperatures above 130 °C, accessories are required



VUP: Pressure-relieved through valve, flanged, PN 25

Features

- 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
- When the spindle is pressed in, the valve is closed.
- Closing procedure only against pressure
- Ductile cast iron valve body
- Valve seat, cone and spindle made of stainless steel
- Maintenance-free, brass stuffing box with spring-loaded PTFE/FKM/PTFE washer

Technical data

Specifications

Nominal pressure	25 bar
Connection	PN 25
Valve characteristic	equal-percentage
Control ratio	> 100:1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[1]	–20...200 °C
Operating pressure	up to 120 °C, 25 bar up to 200 °C, 20 bar –20...–10 °C, 18 bar

Overview of types

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

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...200 °C)
0378284100	Stuffing box heater 230V~, 15 W for medium below 0 °C
0378284102	Stuffing box heater 24V~, 15 W for medium below 0 °C
0378356001	Replacement pack for stuffing box DN 40-80
0378357001	Replacement pack for stuffing box DN 100-150

[1] *Use stuffing box heater at temperatures below 0 °C, use the relevant adaptor (accessory) at temperatures above 130 °C or 180 °C*

Combination of VUP with pneumatic actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

VUP with AVP only possible in combination with XSP31.

With AVP242 actuator (closing procedure against the pressure)

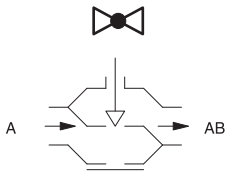
Actuator		AVP242F021	
Page		354	
Stroke		20 mm	
Running time		8 s	
Valve	(bar)	Δp_{max}	Δp_s
VUP040F304	(bar)	22.2	-
VUP050F304, VUP065F304	(bar)	15.1	-
VUP080F304	(bar)	9.8	-

At temperatures above 130 °C, accessories are required

With AVP243...AVP244 actuator (closing procedure against the pressure)

Actuator		AVP243F031		AVP244F031	
Page		354		354	
Running time		24 s		40 s	
Stroke		40 mm		40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUP100F304	(bar)	18.5	-	25	-
VUP125F304, VUP150F304	(bar)	10.7	-	25	-

At temperatures above 130 °C, accessories are required



VUS: Flanged through valve, PN 40

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Nominal pressure 40 bar
- Regulating valve, free of silicone grease, matt black
- The valve is closed when the spindle is retracted
- Closing procedure only against pressure
- Version with graphite seal up to 260 °C, available as accessory
- Valve body made of cast steel
- Stainless-steel seat and cone
- Stainless steel spindle
- Maintenance-free stuffing box, made of stainless steel, with spring-loaded PTFE washer

Technical data

Specifications

Nominal pressure	40 bar
Connection	PN 40
Valve characteristic	Equal percentage
Control ratio	> 50: 1
Leakage rate at max. Δp_s	≤ 0.05% of k_{vs} value

Permissible ambient conditions

Operating temperature[1)]	-10...220 °C
Operating pressure	40 bar at –10...50 °C
Operating pressure up to 120 °C	36 bar
Operating pressure up to 220 °C	29 bar

Overview of types

Type	Nominal diameter	Valve stroke	C_{vs} value	Weight
VUS015F305	DN 15	20 mm	4 m³/h	5.1 kg
VUS015F315	DN 15	20 mm	2.5 m³/h	5.1 kg
VUS015F325	DN 15	20 mm	1.6 m³/h	5.1 kg
VUS015F335	DN 15	20 mm	1 m³/h	5.1 kg
VUS015F345	DN 15	20 mm	0.63 m³/h	5.1 kg
VUS015F355	DN 15	20 mm	0.4 m³/h	5.1 kg
VUS015F365	DN 15	20 mm	0.25 m³/h	5.1 kg
VUS015F375	DN 15	20 mm	0.16 m³/h	5.1 kg
VUS020F305	DN 20	20 mm	6.3 m³/h	5.9 kg
VUS025F305	DN 25	20 mm	10 m³/h	6.8 kg
VUS032F305	DN 32	20 mm	16 m³/h	8.4 kg
VUS040F305	DN 40	20 mm	25 m³/h	10.6 kg
VUS050F305	DN 50	20 mm	40 m³/h	13.2 kg
VUS065F305	DN 65	30 mm	63 m³/h	18.6 kg
VUS080F305	DN 80	30 mm	100 m³/h	25.1 kg
VUS100F305	DN 100	30 mm	160 m³/h	36.4 kg
VUS125F305	DN 125	40 mm	220 m³/h	56.4 kg
VUS150F305	DN 150	40 mm	320 m³/h	77.9 kg

[1)] *No stuffing box heater required up to –10 °C. At temperatures below –10 °C and up to –60 °C use special version with bellows-type mechanical seal (available on request). Application: water with anti-freeze (glycol to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adaptor (accessory). Above 200 °C and up to 260 °C, use stuffing box with graphite seal (accessory)*

Accessories

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

Combination of VUS with pneumatic actuators

Warranty: The technical data and pressure differences indicated here are only applicable in combination with Sauter valve actuators. The warranty does not apply if non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242 actuator (closing procedure against the pressure)

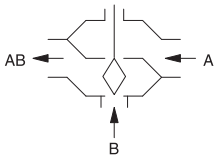
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 32 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
VUS015F305, VUS015F315, VUS015F325, VUS015F335, VUS015F345, VUS015F355, VUS015F365, VUS015F375, VUS020F305	(bar)	15.5	15.5
VUS025F305	(bar)	9.5	9.5
VUS032F305	(bar)	7.2	7.2
VUS040F305	(bar)	4.1	4.1
VUS050F305	(bar)	2.7	2.7

At temperatures above 130 °C, accessories are required

With AVP243...AVP244 actuator (closing procedure against the pressure)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 40 bar		≤ 40 bar		≤ 25 bar		≤ 40 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		30/40 mm		30/40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUS015F305, VUS015F315, VUS015F325, VUS015F335, VUS015F345, VUS015F355, VUS015F365, VUS015F375, VUS020F305	(bar)	21.7	21.7	40	40	-	-	-	-
VUS025F305	(bar)	13.1	13.1	26.2	26.2	-	-	-	-
VUS032F305	(bar)	10	10	19.9	19.9	-	-	-	-
VUS040F305	(bar)	5.7	5.7	11.4	11.4	-	-	-	-
VUS050F305	(bar)	3.7	3.7	7.4	7.4	-	-	-	-
VUS065F305	(bar)	-	-	-	-	2.2	2.2	4.4	4.4
VUS080F305	(bar)	-	-	-	-	1.5	1.5	2.9	2.9
VUS100F305	(bar)	-	-	-	-	1	1	1.5	1.9
VUS125F305	(bar)	-	-	-	-	0.6	0.6	1	1.2
VUS150F305	(bar)	-	-	-	-	0.4	0.4	0.6	0.8

At temperatures above 130 °C, accessories are required



BUS: Flanged 3-way valve, PN 40

Features

- Valve with flange connection as per EN 1092-2, seal form B
- Regulating valve, free of silicone grease, matt black
- The valve is closed when the spindle is retracted
- Use only as control valve
- Version with graphite seal up to 260 °C, available as accessory
- Valve body made of cast steel
- Stainless-steel seat and cone
- Stainless-steel spindle
- Maintenance-free stuffing box (stainless steel) with spring-loaded PTFE washer

Technical data

Specifications

	Nominal pressure	40 bar
	Connection	PN 40
	Valve characteristic, mixing passage	linear
	Control ratio	> 50: 1
Leakage rate at max. Δps	Leakage rate of control passage	≤ 0.05% of k_{vs} value
	Leakage rate, mixing passage	≤ 1.0% of k_{vs} value

Permissible ambient conditions

	Operating temperature[1]	–10...240 °C
	Operating pressure	40 bar at –10...50 °C
	Operating pressure up to 120 °C	36 bar
	Operating pressure up to 220 °C	29 bar

Overview of types

Type	Nominal diameter	C_{vs} value	Valve characteristic, control passage	Valve stroke	Weight
BUS015F205	DN 15	4 m³/h	linear	20 mm	7.2 kg
BUS015F215	DN 15	2.5 m³/h	linear	20 mm	7.2 kg
BUS015F225	DN 15	1.6 m³/h	linear	20 mm	7.2 kg
BUS020F205	DN 20	6.3 m³/h	linear	20 mm	8.4 kg
BUS025F205	DN 25	10 m³/h	linear	20 mm	9.4 kg
BUS032F205	DN 32	16 m³/h	linear	20 mm	12.4 kg
BUS040F205	DN 40	25 m³/h	linear	20 mm	15.5 kg
BUS050F205	DN 50	40 m³/h	linear	20 mm	19.2 kg
BUS065F205	DN 65	63 m³/h	linear	30 mm	27.6 kg
BUS080F205	DN 80	100 m³/h	linear	30 mm	36.5 kg
BUS100F205	DN 100	160 m³/h	linear	30 mm	61.2 kg
BUS125F305	DN 125	220 m³/h	equal-percentage	40 mm	82.5 kg
BUS150F305	DN 150	320 m³/h	equal-percentage	40 mm	113.5 kg

Accessories

Type	Description
0372336180	Adaptor (required when temperature of the medium is 130...180 °C)
0372336240	Adaptor (required when temperature of the medium is 180...260 °C)

[1] *No stuffing box heater required up to –10 °C. At temperatures below –10 °C and up to –60 °C use special version with bellows-type mechanical seal (available on request). Application: water with anti-freeze (glycol to 55% and brine solution), max. operating pressure 30 bar. Above 130 °C or 180 °C, use the relevant adaptor (accessory). Above 220 °C and up to 260 °C, use stuffing box with graphite seal (accessory).*

Type	Description
0378373001	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 15...50
0378373002	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 65...100
0378373003	Stuffing box with graphite seal for temperatures of 220...260 °C; DN 125...150

Combination of BUS with pneumatic 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 non-Sauter valve actuators are used.

The running time is in respect of the centair® capacity (400 l_n/h) and a supply line with a length of 20 m and a diameter of 4 mm.

With AVP242 actuator (use as control valve)

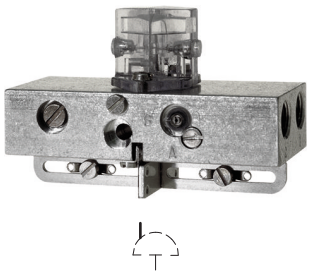
Actuator		AVP242F021	
Page		354	
Permissible operating pressure $_{pstat}$		≤ 32 bar	
Running time		8 s	
Stroke		20 mm	
Valve	(bar)	Δp_{max}	Δp_s
BUS015F205, BUS015F215, BUS015F225	(bar)	12.1	15.6
BUS020F205	(bar)	7.7	15.6
BUS025F205	(bar)	6.6	9.4
BUS032F205	(bar)	4.7	7.2
BUS040F205	(bar)	3	4.1
BUS050F205	(bar)	1.9	2.6

At temperatures above 130 °C, accessories are required

With AVP243...AVP244 actuator (use as control valve)

Actuator		AVP243F021		AVP244F021		AVP243F031		AVP244F031	
Page		354		354		354		354	
Permissible operating pressure $_{pstat}$		≤ 40 bar		≤ 40 bar		≤ 25 bar		≤ 40 bar	
Running time		24 s		40 s		24 s		40 s	
Stroke		20 mm		20 mm		30/40 mm		30/40 mm	
Valve	(bar)	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
BUS015F205, BUS015F215, BUS015F225	(bar)	21.1	21.7	24.5	24.5	-	-	-	-
BUS020F205	(bar)	13.5	21.7	17.5	17.5	-	-	-	-
BUS025F205	(bar)	11.6	13.1	14.7	14.7	-	-	-	-
BUS032F205	(bar)	8.3	9.9	10.4	10.4	-	-	-	-
BUS040F205	(bar)	5.3	5.7	6.2	6.2	-	-	-	-
BUS050F205	(bar)	3.4	3.7	3.9	3.9	-	-	-	-
BUS065F205	(bar)	-	-	-	-	1.7	2.2	4.4	4.4
BUS080F205	(bar)	-	-	-	-	1.1	1.5	2.9	2.9
BUS100F205	(bar)	-	-	-	-	0.7	0.9	1.9	1.9
BUS125F305	(bar)	-	-	-	-	0.4	0.7	1.3	1.3
BUS150F305	(bar)	-	-	-	-	0.3	0.5	1	1

At temperatures above 130 °C, accessories are required



XSP: Pneumatic positioner

Features

- Conversion of a continuous positioning signal into a defined position on the pneumatic drive
- The use of a positioner provides increased positioning accuracy, range partition, changing direction of operation and an increase in positioning speed.
- Compressed-air connection with Rp ⅛" female thread
- Measuring connection for output pressure with M4 thread
- Measuring valve stroke using a measuring spring

Technical data

Specifications		
	Control pressure[1)]	1.3 bar ±0.1
	Max. control pressure	1.4 bar
	Max. air capacity	1000 l_n/h
	Air consumption	approx. 30 l_n/h
	Setting range, zero point (bar)	0.2...1.0 bar
	Setting range, span (bar)	0.2...1.0 bar
Permissible ambient conditions		
	Permissible ambient temperature	0...70 °C
Inputs and outputs		
	Linearity error	approx. 1%
Structural design		
	Housing material	light metal
	Fitting	with cover
	Weight	0.1 kg
Standards and directives		
	Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

Overview of types

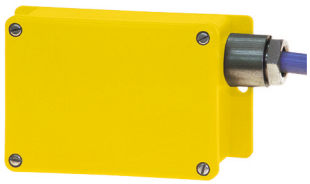
Type
XSP31F001

Accessories

Type	Description
0274553000	Restrictor Ø 0.7 mm to reduce the air capacity in networks with low supply pressure

[1)] *For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic_plants*

XAP: Position alarm/transmitter



Features

- Position feedback for monitoring tasks
- Auxiliary contact unit with two contacts
- The respective contacts are switched depending on whether the drive shaft is extended or retracted
- Potentiometer whose resistance changes depending on the particular drive thrust

Technical data

Specifications		
XAP1	Permissible contact load	10(2) A, 250 V~
	Switching point 'extended'	approx. 5% before final position
	Switching point 'retracted'	approx. 5% before final position
	Switching difference	2.5% of the stroke
XAP2	Potentiometer resistance	2000 Ω
	Resistance 'extended'	10…50 Ω
	Resistance 'retracted'	1.5…1.8 kΩ
	Resolution	2 Ω
	Load	max. 4 W, 42 V
Permissible ambient conditions		
	Permissible ambient temperature	–15…50 °C
Structural design		
	Weight	0.3 kg
	Housing material	glass-fibre-reinforced, fire-retardant plastic
Standards and directives		
	Type of protection	IP 54 (EN 60529)

Overview of types

Type	Features	Output signal	Power cable
XAP1F001	Auxiliary contacts	2 contacts open/close	4 × 1 mm²
XAP2F001	Potentiometer	approx. 10…1800 Ω	3 × 0.5 mm²

SAUTER EY-modulo 5

The epitome of a modern building automation system: open, efficient and multifunctional.

SAUTER's EY-modulo 5 automation technology turns the most complex of requirements into an easy-to-use and efficient building management system. With intelligent functions and modules that are fully forwards- and backwards-compatible, even to third-party systems, SAUTER meets all the demands made of an open, modular and cross-platform building automation system. The pioneering technology is based throughout on BACnet/IP, the open communication protocol.

SAUTER EY-modulo 5

HVAC automation

Room automation

EY-AS 525: Modular automation station with BACnet/IP and web server, modu525

Features

- Modular automation station
- Part of the SAUTER EY-modulo 5 family of systems
- Extensible by 8 I/O modules for up to 154 Inputs/outputs in total
- Extensible with communication modules for integrated non-Sauter systems
- Communication: BACnet/IP (EN ISO 16484-5)
- 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 override and indication units, located up to 10 m away

Technical data

Electrical supply		
	Power supply	230 V~, ±10%, 50…60 Hz 24 V=, ±10% 24 V~, ±20%, 50…60 Hz
	Power consumption	≤ 13 VA/5W (excluding accessories) ≤ 30 VA/5 W (excluding accessories)
	Dissipated power	≤ 5 W (excluding accessories)
Specifications		
	Battery (buffer: RTC/SRAM)	CR2032, pluggable
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity	10…85% rh, no condensation
Inputs and outputs		
	Digital inputs	8 (alarm/status)
	Digital outputs	6 (relays, 24…250 V~, 2 A)
	Universal inputs	8 (Ni1000/Pt1000, U/I/R, DI)
	Analogue outputs	4 (0…10 V)
	Watchdog output pulsed	1 (5 Hz)
Function		
	BACnet data point objects	512 (incl. HW)
	BACnet client links	200 (peer to peer)
	Control	32 (loop)
	active COV subscription	1500
	Structured view	128 (structured view)
	BBMD in BDT	32
	FD in FDT	32
Dynamic objects	Time programmes	64 (schedule)
	Calendar	16 (calendar)
	Historical data	100 (trend log) ≤ 30000 entries
	Alarms	16 (notification class)
	Chart	32 (log view), only via moduWeb
Architecture		
	Processor	32 bit, 400 MHz

	Flash	16 MB
	Embedded web server	moduWeb
	Application data	via CASE Engine
	SDRAM (operational memory)	32 MB
	SRAM (static memory)	1 MB
Interfaces and communication		
	Ethernet network	1 × RJ-45 socket
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
	Local operating unit, modu840 (LOP)	1 × integrated interface
Override and indication devices	Connection for modu6** (LOI)	1 × integrated interface
	Connection, I/O / COM module	1 × integrated I/O bus plug for up to 8 modules (max. load 1100 mA)
	Hardware extension	≤ 8 I/O modules
	Integration of non-Sauter systems	≤ 2 COM modules
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	160 × 170 × 115 mm
	Weight	0.8 kg
Standards and directives		
	Type of protection[1]	IP 20 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9 EN 60950-1
	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Software class A	EN 60730-1 Annexe H

Overview of types

Type	Power supply	Power consumption
EY-AS525F001	230 V~, ±10%, 50...60 Hz	≤ 13 VA/5 W (excluding accessories)
EY-AS525F005	24 V=, ±10%, 24 V~, 20%, 50...60 Hz	≤ 30 VA/5 W (excluding accessories)

Accessories

Plug-in I/O modules

Type	Description
EY-IO530F001	Digital and universal inputs (8 DI/8 UI)
EY-IO531F001	Digital inputs (16 DI)
EY-IO532F001	Universal inputs (16 UI)
EY-IO533F001	Universal and digital inputs (8 UI/4 DI/4 S0)
EY-IO550F001	Digital outputs (6 DO, relays)
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 inputs and digital inputs (4 AO/8 UI/3 DI)

Plug-in communication modules (COM)

Type	Description
EY-CM721F010	Integration of non-Sauter systems via EIA-232 and EIA-485 for Modbus/RTU master
EY-CM721F020	Integration of non-Sauter systems via EIA-232 and EIA-485 for M-Bus
EY-CM731F020	M-Bus and EIA-232 integration of non-Sauter systems for M-Bus

[1] *Only on front side with terminal cover, blanking piece for LOI and transparent cover*

Local override and indication

Type	Description
EY-LO625F001	Operation/indication, 6 switches auto-0-I, 4 LEDs alarm/status, 4 setpoint transmitters (A-0…100%), 8 LED alarm/status
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, auto-0-I-II, 4 LEDs operation/indication
EY-LO670F001	4 setpoint transmitters (A-0…100%), 8 LEDs for operation/indication
EY-OP840F001	Local operating and display unit modu840
0930240511	Front frame for 4 operating/indicating units
0930240540	Connection adaptor for RJ-45 operating/indicating units for front frame
0930240541	Connection adaptor for RJ-45 operating panel for front frame

Replacement relay

Type	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including terminals)

SAUTER EY-modulo 5 **I/O modules**

SAUTER's I/O modules are compatible with the EY-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

Models					
Type codes	EY-IO530F001	EY-IO531F001	EY-IO532F001	EY-IO533F001	EY-IO550F001
Further information	p. 388	p. 390	p. 392	p. 394	p. 396
Product name	modu530	modu531	modu532	modu533	modu550
Power supply	from modu525 AS	from modu525 AS	from modu525 AS	from modu525 AS	from modu525 AS
Inputs and outputs					
Digital inputs	8	16		8 (4 x S0)	–
Universal inputs	8	–	16	8	–
Optional operating elements	modu630	modu630	modu630	modu630	modu630, modu650
Digital outputs	–	–	–	–	6
Analogue outputs	–	–	–	–	–
Digital inputs/outputs	–	–	–	–	–

Models				
Type codes	EY-IO551F001	EY-IO570F001	EY-IO571F001	EY-IO572F001
Further information	p. 398	p. 400	p. 402	p. 404
Product name	modu551	modu570	modu571	modu572
Inputs and outputs				
Digital inputs	–	–	–	3
Universal inputs	–	8	–	8
Optional operating elements	modu630, modu650	modu630, modu670	modu630, modu650	modu630, modu670
Digital outputs	16	–	–	–
Analogue outputs	–	4	–	4
Digital inputs/outputs	–	–	16	–

EY-IO 530: I/O module, digital and universal inputs, modu530

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo 5 family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1.6 VA/0.65 W
	Dissipated power	≤ 0.65 W
	Power consumption[2]	40 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital inputs	8 fixed assignment (alarm/status)
	Pulse counter	≤ 50 Hz
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, pot
	Digital	DI (≤ 3 Hz)
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO530F001

[1] *On the primary side of modu525 base station (230V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360530	Electronics module, modu530, 8 UI, 8 DI

EY-IO 531: I/O module, digital inputs, modu531

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1 VA/0.4 W
	Dissipated power	≤ 0.4 W
	Power consumption[2]	25 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital inputs	16
	Pulse counter	≤ 10 Hz
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO531F001

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360531	Electronics module, modu531, 16 DI

EY-IO 532: I/O module, universal inputs, modu532

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo 5 family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1.2 VA/0.5 W
	Dissipated power	≤ 0.5 W
	Power consumption[2]	35 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Universal inputs	16
	Analogue	Ni1000/Pt1000, U/I/R, pot
	Digital	DI (≤ 3 Hz)
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO532F001

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360532	Electronics module, modu531, 16 UI

EY-IO 533: I/O module, universal, digital, S0 inputs, modu533

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 2.9 VA/1.5 W
	Dissipated power	≤ 1.5 W
	Power consumption[2]	100 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I(2x)/R, Pot
	Digital	DI (≤ 3 Hz)
	Digital inputs	8 (≤ 50 Hz)
	Fixed assignment	4
	Meter inputs S0	4 (as per IEC 62053-31)
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO533F001

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360533	Electronics module, modu533, 8 UI, 4 DI, 4 SO

EY-IO 550: I/O module, digital outputs (relays), modu550

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics/relay)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo 5 family of systems
- Can be equipped with a local override and indication device

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 2.9 VA/1.6 W
	Dissipated power	≤ 1.6 W
	Current consumption[2]	≤ 100 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital outputs	6
	Type of outputs	Relay (0-I), NO contacts, galvanically isolated
	Load	24...250 V~/2 A
	Switching frequency, mechanical	10^6 cycles
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	12 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.3 kg
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1
CE conformity as per	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO550F001

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, auto-0-I-II, 4 LEDs operation/indication

Components

Type	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including terminals)
0920361003	230 V I/O module baseplate (pack of 3)
0929360550	Electronics module, modu550, 6 DO, 250 V~

EY-IO 551: I/O module, digital outputs (open collector), modu551

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 0.7 VA/0.35 W
	Dissipated power	≤ 0.35 W
	Current consumption[2]	≤ 30 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital outputs	16
	Type of outputs	open collector, NO contacts (0-I) outputs switched with respect to earth
	Power supply for DO	external, positive ≤ 24 V=
	Load	≤ 100 mA
Interfaces and communication		
	Connection, modu6**	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[3]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO551F001

1) *On the primary side of modu525 base station (230 V~)*

2) *Supply via modu525 base station*

3) *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

Accessories

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, auto-0-II, 4 LEDs operation/indication
0920360003	24 V I/O module baseplate (pack of 3)
0929360551	Electronics module, modu551, 16 DO (OC) 24 V

EY-IO 570: I/O module, analogue outputs and universal inputs, modu570

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo 5 family of systems
- Can be equipped with a local override and indication device

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1.5 VA/0.8 W
	Dissipated power	≤ 0.8 W
	Current consumption[2]	≤ 50 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Analogue outputs	4 (push-pull)
	Load	≤ 2 mA
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (approx. 3 Hz)
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO570F001

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO670F001	4 setpoint transmitters (A-0…100%), 8 LEDs for operation/indication

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360570	Electronics module, modu570, 8 UI / 4 AO 24 V

EY-IO 571: I/O module, digital inputs/outputs (open collector), modu571

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo 5 family of systems
- Can be equipped with a local indication device (bi-colour LED)

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1 VA/0.4 W
	Dissipated power	≤ 0.4 W
	Current consumption[2]	≤ 25 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital inputs/outputs	16
	Type of inputs/outputs	open collector, NO contacts (0-I), outputs switched with respect to earth (any arrangement)
	Power supply for DO	external, positive ≤ 24 V=
	Load	≤ 100 mA
	Power supply for DI	internal, 13.5 V
	Pulse counter	(DI) ≤ 10 Hz
Interfaces and communication		
	Connection, modu6**	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 x 170 x 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[3]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO571F001

1) *On the primary side of modu525 base station (230 V~)*

2) *Supply via modu525 base station*

3) *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, auto-0-I-II, 4 LEDs operation/indication

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360571	Electronics module, modu571, 16 DI/DO (OC) 24 V

EY-IO 572: I/O module, analogue outputs, universal and digital inputs, modu572

Features

- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics)
- Power supply from modu525 AS
- Direct inscription on the front
- Part of the SAUTER EY-modulo family of systems
- Can be equipped with a local override and indication device

Technical data

Electrical supply		
	Power supply	from modu525 AS via I/O bus
	Power consumption[1]	≤ 1.8 VA/0.8 W
	Dissipated power	≤ 0.8 W
	Current consumption[2]	≤ 110 mA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Analogue outputs	4× 0...10 V/0...20 mA (source)
	Load	≤ 20 mA
	Universal inputs	8
	Analogue	Ni1000/Pt1000, U/I/R, Pot
	Digital	DI (≤ 3 Hz)
	Digital inputs	3 fixed allocation
	Pulse counter	≤ 10 Hz
Interfaces and communication		
	Connection for modu6** (LOI)	6-pin, integrated
	Connection, I/O bus	12-pin, integrated
	Connection terminals	24 (0.5...2.5 mm²)
Structural design		
	Fitting	on top-hat rail
	Dimensions W x H x D	42 × 170 × 115 mm
	Weight	0.29 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-IO572F001

[1] *On the primary side of modu525 base station (230 V~)*

[2] *Supply via modu525 base station*

Accessories

Local override and indication device (LOI)

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO670F001	4 setpoint transmitters (A-0…100%), 8 LEDs for operation/indication

Components

Type	Description
0920360003	24 V I/O module baseplate (pack of 3)
0929360572	Electronics module, modu572, 8 UI, 4 AO 24 V, 3 DI

SAUTER EY-modulo 5 **operating units**

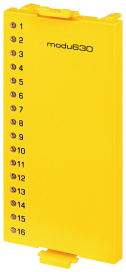
SAUTER's operating units indicate the current status of the digital inputs and enable the outputs of the automation station and the I/O modules to be directly overridden.

Overview of operating units

Models						
Type codes	EY-OP840F001	EY-LO625F001	EY-LO630F001	EY-LO650F001	EY-LO650F002	EY-LO670F001
Further information	p. 409	p. 407	p. 407	p. 407	p. 407	p. 407
Product name	modu840	modu625	modu630	modu650	modu650	modu670
Power supply	from modu525 AS	from modu525 AS	from modu525 AS or I/O module	from modu525 AS or I/O module	from modu525 AS or I/O module	from modu525 AS or I/O module
Type of device	Operating unit	Operating unit with LED	Operating unit with LED	Operating unit with LED	Operating unit with LED	Operating unit with LED
Functions	Visualisation, operation	6 manual/auto switches, 4 slide switches	Status/alarm	6 manual/auto switches	3 manual/auto switches	4 slide switches
Indicators/display	Structured installastions	6 DO (A-0-I), 4 LEDs, AO (A-0...100%), 8 LEDs	16 LEDs	6 DO (A-0-I), 4 LEDs	3 DO (A-0-I), 4 LEDs	AO (A-0...100%), 8 LEDs
For stations	modu525	modu525	modu525	modu525	modu525	modu525
For I/O modules	–	–	modu530...533 modu550 modu551, 571 modu570, 572	modu550, modu551 modu571	modu550 modu551 modu571	modu570 modu572
Interfaces	I/O bus	I/O bus	I/O bus	I/O bus	I/O bus	I/O bus

EY-LO 625...670: Local operating and indicating units, modu625...670

EY-LO625F001



EY-LO630F001

EY-LO650F001

EY-LO650F002

EY-LO670F001

Features

- Part of the SAUTER EY-modulo family of systems
- Pluggable elements for direct operation/indication of automation station (AS) modu525 and I/O modules
- Direct operation with switches/sashes (as per EN ISO 16484-2:2004 "Local priority operator/indicator units")
- Separate display for manual operation
- Ready for use without parameterising
- Power supply from modu525 AS or I/O modules

Technical data

Electrical supply		
	Power supply	From AS modu525/ I/O module modu5**
	Current consumption	≤ 40 mA
Specifications		
	Factory setting	All switches set to "A" (Auto)
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Interfaces and communication		
	Connection, AS / I/O module	Spring contacts, 9-pin
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1) PELV
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-3

Overview of types

i *Power consumption: on primary side of modu525 base station (230 V~)*

i *Current consumption: Supply via modu525 base station*

Type	EY-LO625F001	EY-LO630F001	EY-LO650F001	EY-LO650F002	EY-LO670F001
Features	Operating, indicating unit	Indicating unit	Operating, indicating unit	Operating, indicating unit	Operating, indicating unit
Use	modu525 (from hardware index C)	modu525, modu530...572	modu525, modu550, 551, 571	modu525, modu550, 551, 571	modu525, modu570, 572
Power consumption	≤ 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
Operation	6 switches (A-0-I), 4 sashes (A-0...100%)	–	6 switches (A-0-I)	3 switches (A-0-I-II)	4 sliding switches (A-0...100%)
Indicator	4 LEDs (bi-colour), analogue: 8 LEDs (bi-colour)	16 LEDs (bi-colour)	4 LEDs (bi-colour)	4 LEDs (bi-colour)	8 LEDs (bi-colour)

Type	EY-LO625F001	EY-LO630F001	EY-LO650F001	EY-LO650F002	EY-LO670F001
Dimensions W x H x D	84 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm	42 × 92 × 13 mm
Weight	0.07 kg	0.03 kg	0.03 kg	0.03 kg	0.03 kg

Accessories

Type	Description
0930240511	Front frame for 4 operating/indicating units
0930240540	Connection adaptor for RJ-45 operating/indicating units for front frame

EY-OP 840: Local operating unit, modu840

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Can be plugged directly onto an EY-modulo 5 automation station
- Pluggable element for extending the modu525 automation station
- Local operating and indication unit for direct local and manual operation of modu525 automation stations
- Intuitive single-button operation (using the 'turn and press' method)
- Graphic display with various font sets and types
- Menu-guided navigation with user login for operation rights
- Visualisation of information with structured plant display
- Two LED indicators for plant alarm and function status
- Displays objects, alarms and other information
- Choice of four languages
- Can be installed remotely (using accessories) in panel

Technical data

Electrical supply		
	Power supply	from AS
	Power consumption	≤ 50 mA
	Dissipated power	≤ 0.1 W
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
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, communication		
	Internal connection	5-pin pogo pins for supply and data communication
Structural design		
	Weight	0.11 kg
	Dimensions W x H x D	186 × 120 × 73 mm
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 55024

Overview of types

Type
EY-OP840F001

Accessories

Type	Description
7010035001	modu840 user manual, German
7010035002	modu840 user manual, French
7010035003	modu840 user manual, English
0930240511	Front frame for 4 operating/indicating units
0930240541	Connection adaptor for RJ-45 operating panel for front frame

EY-WS 500: Web server for BACNet networks moduWeb Vision, moduWeb500

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Visualisation and operation of facilities
- The facilities are operated via the internet using a standard web browser
- Online notification via e-mail and text message
- Recording of historical values and alarms
- Time and calendar functions (BACnet Schedule Client)
- Visualisation either in lists, dynamic images or diagrams
- Engineering/parameterising via PC using CASE Suite
- Communication to the web client via standard HTTP protocol
- Communication to the mail server and SMS gateway via standard SMTP
- Communication to the automation devices via BACnet/IP and BACnet web services (EN ISO 16484-5)
- Integrated firewall

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50…60 Hz
	Power consumption	≤ 6.5 VA/5.5 W (with accessories)
	Low-voltage connector	10…35 V=
	Battery (buffer: RTC)	Lithium button-cell (CR2032), insertable
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…65 °C
	Humidity without condensation	5…85% rh
Architecture		
	Processor	ARM Cortex A8, 600 MHz
	RAM	RAM, 256 MB
	Flash	128 MB (permanent memory)
	Memory expansion	SD-HC card slot ≤ 32 GB
	Back-up medium	USB mass storage device, max. 250 mA
Interfaces and communication		
	Ethernet network	1 × RJ-45 socket
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
	Watchdog	Pulse approx. 5 Hz, at open-collector output with respect to ground
	Max. load	15 V, 10 mA
Software		
	COV notifications	100
	Number of periodic inquiries	60 values/min
	Historical data points	600
	Size of historical database	2×10^9 entries
	Data points per chart	1…4
	Registered users	20
Protocols	Automation level	BACnet/IP Protocol Revision 10
	Web access	HTTP, HTTPS
	E-mail and text messaging	SMTP

	Time synchronisation	NTP, BACnet
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	133 x 170 x 61 mm
	Low-voltage connector	Ø 5.5 mm external, Ø 2.5 mm internal
	Fitting	panel, top-hat rail
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 55022, EN 55024
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60950-1
	Software class A	EN 60730-1 Appendix H

Overview of types

Type	Description	BACnet objects	Images	User accounts	Number of automation stations
EY-WS500F005	Hardware	–	–	–	–
EY-WS505F010	Software	800	75	25	20
EY-WS505F020	Software	2500	250	100	50

SAUTER EY-modulo 5 **communication modules**

SAUTER communication modules enable third-party systems to be incorporated 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 are mapped in BACnet objects and are visible in the BACnet/IP network.

Models		
Type codes	EY-CM 721	EY-CM 731
Further information	p. 414	p. 416
Product name	modu721	modu731

EY-CM 721: Communication module with EIA-232 and EIA-485 interfaces, modu721

Features

- Part of the SAUTER EY-modulo family of systems
- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics/LED indicators)
- Direct inscription on the front
- 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
- Two-wire EIA-485 (half-duplex)
- Galvanic isolation up to 300 V
- Jumper for EIA-485 bus voltage, bus termination and connection for galvanic isolation
- One or two COM modules per modu525 automation station

Technical data

Electrical supply		
	Power supply	from modu525
	Power consumption	≤ 150 mA
	Dissipated power	≤ 1.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Architecture		
	Protocol processor	FPGA
	COM interface	UART
	Memory	Flash memory (user and protocol data)
	Number of data points	≤ 512
Interfaces, communication		
	COM interface - EIA-232 (DTE)	D-sub connector (9-pin, male)
	COM port, EIA-485	6 screw terminals (2 × C, 2 × D+, 2 × D-)
	Baud rate	0.3...57.6 kBit/s
	Data bits	5, 6, 7, 8
	Stop bits	1, 1.5, 2
	Parity	none, even, odd
	Connection, I/O bus	12-pin, integrated in socket
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	42 × 170 × 115 mm
	Fitting	on top-hat rail
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

[1)] *EN 61000-6-1: EIA-232 cable may be up to 15 m in length. EIA-485: shielded cable, 2 × 2 cores, twisted pair*

Overview of types

Type	Protocol
EY-CM721F010	Modbus/RTU (Master)
EY-CM721F020	M-Bus (master)

Accessories

Type	Description
0386301001	Connection cable COM DB9(f)-DB9(f): 3 m (null modem)
7010037001	Manual for moduCom communication modules, German
7010037002	Manual for moduCom communication modules, French
7010037003	Manual for moduCom communication modules, English

EY-CM 731: Communication module with M-Bus and EIA-232 interfaces, modu731

Features

- Part of the SAUTER EY-modulo family of systems
- Pluggable element for extending the modu525 automation station
- Modular design (baseplate/electronics/LED indicators)
- Direct inscription on the front
- Connection to M-Bus meter networks for up to 250 meters (heat meter, electricity meter etc.)
- EIA-232 interface for point-to-point connection with an M-Bus level converter
- Two-wire M-Bus network (as per EN 1434-3)
- Without external power supply: up to 10 M-Bus meters
- With external power supply: up to 50 M-Bus meters
- D-sub plugs (9-pin, male, DTE) for connecting to external M-Bus level converter
- One or two COM modules per modu525 automation station

Technical data

Electrical supply		
	Power supply	from modu525
	Power consumption	≤ 200 mA
	Dissipated power	≤ 3.28 W
External power supply	for 1…50 meters on the M-Bus network	24 V~ (±20%)/24 V= (±20%)
	Power consumption	5 W, 6 VA
	Screw terminals	2 (MM, LS)
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
Architecture		
	Protocol processor	FPGA
	COM interface	UART
	Memory	Flash memory (user and protocol data)
	Number of data points	≤ 512
Interfaces, communication		
	COM interface - EIA-232 (DTE)	D-sub connector (9-pin, male)
	COM port, M-Bus (EN1434-3)	4 screw terminals (2 × M+, 2 × M-)
	Baud rate	0.3…9.6 (38.4) kBit/s
	Connection, I/O bus	12-pin, integrated in socket
	Protocol	M-Bus (master)
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	42 × 170 × 115 mm
	Fitting	on top-hat rail
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-3, EN 61000-6-4

[1)] *EN 61000-6-1: EIA-232 cable: max. 15 m in length. M-Bus cable: two-core, twisted pair*

Overview of types

Type
EY-CM731F020

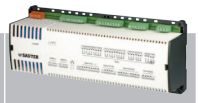
Accessories

Type	Description
0386301001	Connection cable COM DB9(f)-DB9(f): 3 m (null modem)
7010037001	Manual for moduCom communication modules, German
7010037002	Manual for moduCom communication modules, French
7010037003	Manual for moduCom communication modules, English

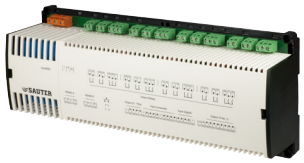
SAUTER EY-modulo 5 **room automation stations**

SAUTER's ecos room automation stations control heating, cooling, lighting, shading and ventilation. Control and regulation are adjusted individually to the different requirements in the buildings during the day and the night. This reduces energy consumption, costs and CO_2 emissions while provided maximum comfort and well-being.
The ecos enables the floor space to be used flexibly by dividing the room into segments, without disturbing operations.

Overview of room automation stations

Models		
Type codes	EY-RC500F001	EY-RC502F001
Product name	ecos500	ecos502
Further information	p. 419	p. 421
Usage	4 room segments	2 room segments
Power supply (V~)	230	230
Room operating units	4	4
RS485B extension interface	1	–
Plug-in terminals	EY-RC500F002	–
Inputs and outputs		
Universal inputs	8	8
Digital inputs	4	4
Analogue outputs	4	4
NO relays	16	18
Change-over relays	–	2
Triacs	8	8
Objects		
Data points	256	256
Loop	32	32
Calendar	8	8
Schedule	32	32
Trend log	16	16
Notification class	16	16

EY-RC 500: Room automation station, ecos500



Features

- Part of the SAUTER EY-modulo 5 family of systems
- Communication: BACnet/IP (EN ISO 16484-5)
- Room automation station for up to 4 rooms or 4 function segments
- The ecoUnit 3 (EY-RU3**) and ecoUnit 1 (EY-RU1**) room operating units enable the indoor climate to be adapted to personal preferences; it is possible to combine both
- Reduces energy consumption thanks to occupancy function, window contact monitoring, demand-led fan-speed switching, light and louvre control, and time-dependent setpoint specification.
- Time and calendar function
- Integration into the building management system via Ethernet or BACnet/IP data interface
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries

Technical data

Electrical supply		
	Power supply	230 V~, ±10%, 50...60 Hz
	Power consumption	≤ 34 VA (incl. 12 VA external)
	Dissipated power	≤ 15 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
Inputs	Universal inputs	8, Ni1000, Pt10000, 0...10 V, DI
	Digital inputs	4
Outputs	Relay	Eight sets of NO contacts, 250 V~, 5 A Eight sets of NO contacts, 250 V~, 1 A
	Triac	8, 0-I, 24 V~, 0.5 A
	Analogue	4, 0...10 V
Function		
	BACnet data point objects	256 incl. HW
Number of dynamic objects	Time programmes	32 (Schedule)
	Calendar	8 (Calendar)
	Alarms	16 (Notification Class)
	Historical data	16 (trend log) ≤ 2000 entries
	Control	32 (Loop)
	COV notifications	500
	Structured view	64 (Structured View)
	BACnet client links	200 (Peer-to-Peer)
	Number of BBMDs in BDT	32
	Number of FDs in FDT	32
Architecture		
	Processor	32 bit, 200 MHz
	SDRAM (operational memory)	32 MB
	SRAM (static memory)	128 kB
	Flash	16 MB
	Operating system	Linux
	Cycle time	100 ms
	Application data	via CASE Engine

Interfaces and communication		
	Ethernet network	2 × RJ-45 socket (switch)
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP
	Operating devices	≤ 4 in total, RS-485A EY-RU 3** EY-RU 1** via EY-EM 580
	Extension interface	RS-485 B
Structural design		
	Weight	2.5 kg
	Dimensions W x H x D	299 × 120 × 73 mm
	Fitting	top-hat rail/wall mounting
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	Software class A	EN 60730-1 Annexe H

Overview of types

Type
EY-RC500F001
EY-RC500F002

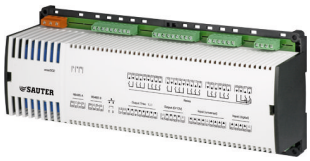
Accessories

Type	Description
0900240002	Terminal cover, 295 mm (2 pcs)
0900240011	Wiring box, 295 mm (2 pcs)

[1] *IP 10 with terminal cover (accessory 0900240002); IP 20 with wiring box (accessory 0900240011)*

[2] *EN 61000-6-2: If it is mandatory to comply with the European standard, the power cables for the digital inputs (DI), analogue inputs and outputs (AI/AO) and the RS-485 cables should not exceed 30 metres in length*

EY-RC 502: Room automation station, ecos502



Features

- Part of the SAUTER EY-modulo 5 family of systems
- Communication: BACnet/IP (EN ISO 16484-5)
- Room automation station for one or two rooms or segments
- The ecoUnit 3 (EY-RU3**) and ecoUnit 1 (EY-RU1**) room operating units enable the indoor climate to be adapted to personal preferences; it is possible to combine both
- Reduces energy consumption thanks to occupancy function, window contact monitoring, demand-led fan-speed switching, light and louvre control, and time-dependent setpoint specification.
- Time and calendar function
- Integration into the building management system via BACnet/IP data interface
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries

Technical data

Electrical supply		
	Power supply	230 V~, ±10%, 50…60 Hz
	Power consumption	≤ 24 VA (incl. 12 VA external)
	Dissipated power	≤ 7.6 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
Inputs and outputs		
Inputs	Universal inputs	8, Ni1000, Pt10000, 0…10 V, DI
	Digital inputs	4
Outputs	Relay[1)]	Two sets of change-over contacts, 250 V~, 10 A four sets of NO contacts, 250 V~, 1 A; start-up current 80 A ten sets of NO contacts, 250 V~, 1 A two sets of change-over contacts, 24 V=, 1 A
	Triac	8, 0-I, 24 V~, 0.5 A
	Analogue	4, 0…10 V
Function		
	BACnet data point objects	256 incl. HW
Number of dynamic objects	Time programmes	32 (Schedule)
	Calendar	8 (Calendar)
	Alarms	16 (Notification Class)
	Historical data	16 (Trend Log) ≤ 2000 entries
	Control	32 (Loop)
	COV notifications	500
	Structured view	64 (Structured View)
	Number of BACnet client links	200 (peer-to-peer)
	BBMD in BDT	32
	FD in FDT	32
Architecture		
	Processor	32 bit, 200 MHz

1) *Different phases can be fed to the switch-contact blocks; the voltage between any phase and neutral should not exceed 250 V~*

	SDRAM (operational memory)	32 MB
	SRAM (static memory)	128 kB
	Flash	16 MB
	Operating system	Linux
	Application data	via CASE Engine
Interfaces and communication		
	Ethernet network	2 x RJ-45 socket (switch)
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP
	Operating devices	≤ 4 in total, RS-485A EY-RU 3** EY-RU 1** via EY-EM 580
Structural design		
	Weight	2.5 kg
	Dimensions W x H x D	299 x 120 x 73 mm
	Fitting	top-hat rail/wall mounting
Standards and directives		
	Type of protection[2)]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	Software class A	EN 60730-1 Annexe H

Overview of types

Type
EY-RC502F001

Accessories

Type	Description
0900240002	Terminal cover, 295 mm (2 pcs)
0900240011	Wiring box, 295 mm (2 pcs)

[2)] *IP 10 with terminal cover (accessory 090024002); IP 20 with wiring box (accessory 090024011)*

SAUTER EY-modulo 5 **room operating units**

SAUTER's ecoUnit room operating unit combines technology with design. The key can be freely assigned with various functions. Due to the standard internal dimensions of 55 x 55 mm, these devices fit both SAUTER frames and the frames of third-party manufacturers of light switches.

Overview of room operating units

Models					
Type codes	EY-RU310F001	EY-RU311F001	EY-RU314F001	EY-RU316F001	EY-RU341F001
Further information	p. 425	p. 425	p. 425	p. 425	p. 427
Product name	ecoUnit310	ecoUnit311	ecoUnit314	ecoUnit316	ecoUnit341
Usage	Temperature	Temperature	Temperature, occupancy, fan	Temperature, occupancy, fan, window blinds/lighting	Temperature
Indicators	LED	LED	LED	LED	LCD
Push-button functions	–	–	–	2	–
Fan speeds	–	–	AUTO - 0 - 1 - 2 - 3	AUTO - 0 - 1 - 2 - 3	–
Setpoint adjustment	–	yes	yes	yes	yes
Room occupancy	–	–	3 modes	3 modes	–
Temperature sensor	•	•	•	•	•
Data transmission	RS-485	RS-485	RS-485	RS-485	RS-485

Overview of room operating units

Models					
Type codes	EY-RU344F001	EY-RU346F001	EY-RU110F001	EY-RU141F001	EY-RU144F001
Further information	p. 427	p. 427	p. 430	p. 430	p. 430
Product name	ecoUnit344	ecoUnit346	ecoUnit110	ecoUnit141	ecoUnit144
Usage	Temperature, occupancy, fan	Temperature, occupancy, fan, window blinds/lighting	Temperature	Temperature	Temperature, occupancy, fan
Indicators	LCD	LCD	–	LCD	LCD
Push-button functions	–	2	–	–	–
Fan speeds	AUTO - 0 - 1 - 2 - 3	AUTO - 0 - 1 - 2 - 3	–	–	AUTO - 0 - 1 - 2 - 3
Setpoint adjustment	yes	yes	–	yes	yes
Room occupancy	3 modes	3 modes	–	–	2 modes
Temperature sensor	•	•	•	•	•
Data transmission	RS-485	RS-485	EnOcean® wireless	EnOcean® wireless	EnOcean® wireless

Models			
Type codes	EY-RU146F001	EY-SU306F001	EY-SU106F001
Further information	p. 430	p. 429	p. 432
Product name	ecoUnit146	ecoUnit306	ecoUnit106
Usage	Temperature, occupancy, fan, window blinds/lighting	Control of window blinds/lighting	Control of window blinds/lighting
Indicator	LCD	–	–
Push-button functions	2	6	–
Fan speeds	AUTO - 0 - 1 - 2 - 3	–	–
Setpoint adjustment	yes	–	–
Room occupancy	2 modes	–	–
Temperature sensor	•	–	–
Data transmission	EnOcean® wireless	–	–

EY-RU 310...316: Room operating unit, ecoUnit310...316

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Extensible with the EY-SU306 push-button unit
- Room operating unit with a wide range of different functions, designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- The frames should be ordered as accessories
- Indoor climate can be adapted individually
- Operating mode is set for room occupancy and control of a three-speed fan
- Control of window blinds, windows and lighting (on/off, dim)

Technical data

Electrical supply		
	Power supply	from ecos5
Specifications		
Sensor	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	approx. 7 min
Functionality	Setpoint correction	variable
	Room occupancy	3 modes, LED indicator
	Fan speeds	5 functions, LED indicator
	Position LED	green
Connection	Line	4-wire, twisted (shielding recommended)
	Length	≤ 30 m
	Connection terminals	pluggable; for wire of 0.12...0.5 mm² (Ø 0.4...0.8 mm)
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Keys
EY-RU310F001	NTC sensor	–
EY-RU311F001	NTC sensor, setpoint adjuster dXs	–
EY-RU314F001	NTC sensor, setpoint adjuster dXs, fan, occupancy	2
EY-RU316F001	NTC sensor, setpoint adjuster dXs, fan, occupancy, window blinds/lighting	4

Accessories

Operating unit

Type	Description
EY-SU306F001	Push-button unit, without frame

Fitting

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

EY-RU 341...346: Room operating unit, ecoUnit341...346

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Can be extended with switching unit EY-SU306
- Room operating unit with a wide range of different functions, designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- The frames should be ordered as accessories.
- Indoor climate can be adapted individually
- Operating mode is set for room occupancy and control of a 3-speed fan
- Control of window blinds, windows and lights (on/off, dim)
- Display with extensive status information on room conditions

Technical data

Electrical supply		
	Power supply	from ecos 5
Specifications		
Sensor	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	approx. 7 min
Functionality	Setpoint correction	adjustable
	Room occupancy	3 modes, LCD
	Fan speeds	5 functions, LCD
	Position LED	green
Connection	Line	4-wire, twisted (shielding recommended)
	Length	≤ 30 m
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Keys
EY-RU341F001	NTC sensor, setpoint adjuster dXs	2
EY-RU344F001	NTC sensor, setpoint adjuster dXs, fan, occupancy	4
EY-RU346F001	NTC sensor, setpoint adjuster dXs, fan, occupancy, window blinds/lighting	6

Accessories

Operating unit

Type	Description
EY-SU306F001	Push-button unit, without frame

Fitting

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

EY-SU 306: Push-button unit for room operating unit, ecoUnit306

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Push-button unit to supplement ecoUnit310…346 or ecoUnit216…246
- Many different design and colour variations
- Control of window blinds and lighting (on/off, dim)
- Six key functions
- The frames should be ordered as accessories.

Technical data

Electrical supply		
	Power supply	from ecoUnit 3 or ecoUnit 2
Specifications		
Functionality	Position LED	green
Connection	Line	2-wire
	Length	≤ 30 m (ecoUnit 2 or ecoUnit 3)
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 × 59.5 × 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-SU306F001	Push-button unit for 6 button functions

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

EY-RU 110...146: Room operating unit with wireless technology, ecoUnit110...146

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Battery-free with LCD display, EY-SU106 keypad can be added
- Room operating unit with a wide range of different functions, designs and colours
- Display with extensive status information on room conditions
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- Frame can be ordered as an accessory
- Indoor climate can be adapted individually
- Operating mode is set for room occupancy and control of a three-speed fan
- Control of window blinds, windows and lights (on/off, dim)

Technical data

Electrical supply		
	Illuminance	min. 125 lux
	Bridging time	typ. 60 h, without lighting
Specifications		
Sensor	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant	approx. 7 min
	Measuring accuracy, temperature	typ. 0.5 K in 5...35 °C range
Functionality	Setpoint correction	adjustable
	Room occupancy	3 modes, LCD
	Fan speeds	5 functions, LCD
	Technology	EnOcean, STM 300
	Transmission frequency	868.3 MHz
	Range	approx. 30 m, depending on structure
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	5...85% rh
Interfaces, communication		
	Connection	wireless, connection to ecos 5 via EY-EM580 wireless interface
	EnOcean Equipment Profile[1)]	EEP: 2D-00-01 (in bidirectional mode). EEP: 07-10-01 (in uni-directional operating mode). EEP: 05-03-01 (buttons 3, 4, 7...12)
Structural design		
	Weight	0.1 kg
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Fitting	in single or double frame
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)

1) *2D-00-01: ecoUnit141...146*
07-10-01, 05-03-01: ecoUnit110...146

CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	R&TTE directive 1999/5/EC	EN 50371, EN 300489-1 (V1.8.1), EN 300489-3 (V1.4.1), EN 300220-1 (V2.1.1), EN 300220-2 (V2.1.2)

Overview of types

Type	Features	Keys
EY-RU110F001	Operating unit, NTC sensor	–
EY-RU141F001	Operating unit with LCD, NTC temperature sensor, dXs setpoint adjuster	–
EY-RU144F001	Operating unit with LCD, NTC temperature sensor, dXs setpoint adjuster, fan, occupancy	4
EY-RU146F001	Operating unit with LCD, NTC temperature sensor, dXs setpoint adjuster, fan, occupancy, window blinds, lighting	6

Accessories

Operating unit

Type	Description
EY-SU106F001	Push-button unit with solar panel, without frame

Fitting

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949570001	Battery pack, 10 pcs
0940240705	Clamping spring for mounting on cavity wall
0940240710	Adhesive plate, single, black, 83 × 83 mm, 10 pcs
0940240711	Adhesive plate, double, black, 83 × 143 mm, 10 pcs

EY-SU 106: Push-button unit for room operating unit with radio technology, ecoUnit106

Features

- Part of the SAUTER EY-modulo 5 family of systems
- Push-button unit to supplement the ecoUnit110 or ecoUnit141…146
- Six key functions
- Integrated solar cell for connecting to ecoUnit 1
- Many different design and colour variations
- Control of window blinds and lighting (on/off, dim)
- The frames should be ordered as accessories.

Technical data

Electrical supply		
	Power supply	from ecoUnit 1
Specifications		
Connection	Line	4-wire
	Length	≤ 1 m (for ecoUnit 1)
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-SU106F001	Push-button unit with 6 button functions, integrated solar cell

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0940240705	Clamping spring for mounting on cavity wall
0940240710	Adhesive plate, single, black, 83 x 83 mm, 10 pcs

Type	Description
0940240711	Adhesive plate, double, black, 83 × 143 mm, 10 pcs
0949241301	Cover, transparent, 10 pcs

EY-EM 580: Wireless interface, ecoMod580

Features

- Part of the SAUTER EY-modulo 5 system family, bidirectional wireless communication
- Incorporation of SAUTER wireless room control units ecoUnit110…146 and other EnOcean Standard sensor/actuators
- Wireless interface in a wide range of designs and colours
- Subbus EIA-485 interface, SLC protocol
- Cable inlet at rear; pluggable connection terminals for wire of 0.12…0.5 mm² (Ø 0.4…0.8 mm)

Technical data

Electrical supply		
	Power supply	from ecos 5 (5 V)
	Current consumption	typically 60 mA
Specifications		
	Radio technology	EnOcean, TCM300
	Transmission frequency	868.3 MHz
	Range	approx. 30 m inside building
Connection	Line	4-wire, twisted (shielding recommended)
	Length	≤100 m
Permissible ambient conditions		
	Operating temperature	0…40 °C
	Storage and transport temperature	–25…70 °C
	Humidity, no condensation	10…85% rh
Structural design		
	Fitting	in single or double frame
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4
	R&TTE directive 1999/5/EC	EN 50371 EN 300489-1 (V1.8.1) EN 300489-3 (V1.4.4) EN 300220-1 (V2.1.1) EN 300200-2 (V2.1.2)

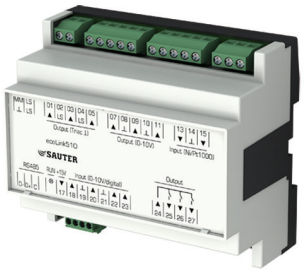
Overview of types

Type	Features
EY-EM580F001	Wireless interface, bidirectional, with EnOcean wireless standard

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs

Type	Description
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs
0940240705	Clamping spring for mounting on cavity wall
P100007832	Operating instructions



EY-EM 510...512: Remote I/O module, ecoLink510...512

- Part of the SAUTER EY-modulo 5 family of systems
- Remote I/O module for ecos500
- Can be located up to 500 m from the automation station

Technical data

Electrical supply

	Power supply	24 V~, ±20%, 50...60 Hz
	Current consumption	≤ 500 mA, without load current from Triacs and relay outputs
	Dissipated power	≤ 10 W (typically approx. 4 W)

Permissible ambient conditions

	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh

Inputs and outputs

Inputs	Analogue/digital	0...10 V/0-I
	Ni1000/Pt1000	–20...100 °C
Relay outputs	Type	0-I, NO contacts
	Load	230 V~, 5 A (total max. 10 A)
	Switching frequency	> 5 × 10^6 cycles
Triac outputs	Type	0-I, 24 V~, 0.5 A
Analogue outputs	Type	0...10 V=, 2 mA

Interfaces and communication

	Control	From ecos500
	Connection to ecos500	≤ 500 m (depending on type of cable)

Structural design

	Weight	0.215 kg
	Dimensions W x H x D	105 × 95 × 60 mm

Standards and directives

	Type of protection[1]	IP 00 (EN 60730)
	Protection class	II (EN 60730-1) for EY-EM510 , III (EN 60730-1) for EY-EM511, EY-EM512
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Electrical safety 2006/95/EG	EN 60730-1

Overview of types

Type	Description
EY-EM510F001	Remote IO module, 24 V~, 3 relays, 3 Triacs
EY-EM511F001	Remote IO module, 24 V~, 3 Triacs
EY-EM512F001	Remote IO module, 24 V~, 2 Triacs

Overview of specifications	EY-EM510	EY-EM511	EY-EM512
Relay	3	0	0
Triac	3	3	2

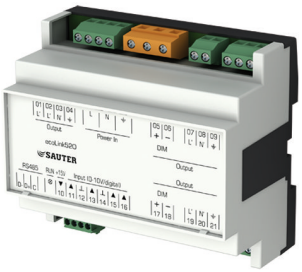
[1] *IP 20 with terminal cover (accessory 0900240020); IP 40 at front when mounted*

[2] *EN 61000-6-2: In order to meet the European standard, the power cable for the outputs should not exceed 30 metres in length*

Overview of specifications	EY-EM510	EY-EM511	EY-EM512
0...10 V Out	3	3	2
Ni1000/Pt1000	2	2	0
0...10 V In, Digital In	4	4	4

Accessories

Type	Description
0900240020	Terminal cover



EY-EM 520...526: Remote I/O module, ecoLink520...526

- Part of the SAUTER EY-modulo 5 family of systems
- Remote I/O module for ecos500
- Can be located up to 500 m from the automation station

Technical data

Electrical supply

	Power supply	230 V~, ±10%, 50...60 Hz
	Current consumption	≤ 35 mA (typically 20 mA) excl. load current of the digital outputs
	Dissipated power	≤ 8 W (typically approx. 4 W)

Permissible ambient conditions

	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh

Inputs and outputs

Inputs	Analogue/digital	0...10 V/0–I
Outputs	DIM-10 V	Passive output
Digital outputs	Load	230 V~/1 A or 5 A (total max. 10 A)
	Switching frequency	> 5 × 10^6 cycles

Interfaces, communication

	Control	from ecos500
	Connection to ecos500	≤ 500 m (depending on type of cable)

Structural design

	Weight	0.32 kg
	Dimensions W x H x D	105 × 95 × 60 mm

Standards and directives

	Type of protection[1]	IP 00 (EN 60730)
	Protection class	I (EN 60730-1) II (EN 60730-1) for EY-EM526
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Description
EY-EM520F001	Remote I/O module, 4 relays, NO contacts
EY-EM521F001	Remote I/O module, 2 relays, NO contacts
EY-EM526F001	Remote I/O module, 3 relays, change-over contacts

Overview of specifications	EY-EM520	EY-EM521	EY-EM526
NO relay (potential-loaded)	4	2	0
Change-over relay (potential-free)	0	0	3
DIM-10 V	2	2	2
0...10 V In, Digital In	4	4	4

[1] *IP 20 with terminal cover (accessory 0900240020); IP 40 at front when mounted*

[2] *EN 61000-6-2: In order to meet the European standard, the power cable for the outputs should not exceed 30 metres in length.*

Accessories

Type	Description
0900240020	Terminal cover

SAUTER EY-modulo 4

Open solutions and room automation in accordance with the LonMark standard.

The structures in the world of business are manifold; and so, too, are the demands placed on the building automation system. For many consultants, operators and users, the LON protocol has some important advantages, which is why SAUTER offers the now-indispensable LonMark standard in its own family of systems. SAUTER EY-modulo 4 fulfils all the demanding requirements placed on a modular and cross-platform building management system.

SAUTER EY-modulo 4

HVAC automation

Room automation

SAUTER EY-modulo 4 **automation stations**

SAUTER LON automation stations of the EY-modulo 4 series are freely programmable and can be used for a wide range of applications. Amongst these are the control of fan-coil units, chilled-beam systems, lighting, heat pumps, ventilation systems and rooftop units.

Overview of automation stations

Models					
Type codes	EY-AS422F001/ F002	EY-AS421F001	EY-AS420F001	EY-AC430F001	EY-IO471F002
Further information	p. 443	p. 445	p. 447	p. 449	p. 451
Product name	modu422	modu421	modu420	modu430	modu471
Bus	LON	LON	LON	LON	LON
Power supply (V~/=)	24	24	24	24	24
Inputs and outputs					
Universal inputs	12	10	6	6	12
Universal outputs	12	8	2	2	–
Triacs	–	–	5	5	12
Supported LonMark profiles					
#0/#1/#3	•	•	•	•	•
#20020/#20100	•	•	•	–	–
#3300	•	•	–	–	–
#8030	–	–	–	•	–
Trend (12288 Event)	•	•	•	–	–
Scheduler objects	2	2	2	–	–

EY-AS 422: Automation station, modu422

Features

- Compact, freely programmable LON automation station
- Supports LonMark® object types #0, #1, #3, #20020, #3300 and #20100
- LonMark®-certified as per Interoperability Guideline, Version 3.4
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON network
- LNS plug-in for rapid programming of the automation station
- Universal inputs and outputs can be configured using software
- Two scheduler objects
- Real-time clock
- TP/FT 10, 78 kbps
- Neuron® 3150® processor

Technical data

Electrical supply		
	Power supply	24 V~/=, ±15%, 50/60 Hz,
	Power consumption	17 VA, 43 VA with field modules
Permissible ambient conditions		
	Operating temperature	0…70 °C
	Storage and transport temperature	–20…70 °C
	Humidity	0…90% rh, no condensation
Inputs and outputs		
Inputs	Type	12, universal
	Resolution	16 bit, digital/analogue
Use	Meter	potential-free contacts (≤ 1 Hz)
	Analogue input	U/I/R
	Temperature measurement	Ni1000, NTC, PT100, PT1000
	Potentiometer	R
Outputs	Type	12, universal (secured)
	Resolution	10 bit, digital/analogue
Use	Analogue output	U/I
	Digital output	0-I
	PWM	max. 60 mA for 12 V=
Structural design		
	Weight	0.39 kg
	Housing	ABS PA-765A
	Dimensions W x H x D	196 × 120 × 51 mm
	Fitting	top-hat rail
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3

Overview of types

Type	Features
EY-AS422F001	–
EY-AS422F002	with manual operation

EY-AS422F002: Manual operating level to switch over between manual and automatic modes

Accessories

Type	Description
EY-RU482F001	4-sensor FCU, display
EY-RU481F002	4 sensors, presence
EY-RU481F001	4 sensors
EY-RU481F003	4 sensors, presence, setpoint
0940240010	Terminal cover and cable fixture

EY-AS 421: Automation station, modu421

Features

- Compact, freely programmable LON® automation station
- Supports LonMark® object types #0, #1, #3, #20020, #3300 and #20100
- LonMark®-certified as per Interoperability Guideline, Version 3.4
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON® network
- LNS plug-in for rapid programming of the automation station
- Universal inputs and outputs can be configured using software
- Two scheduler objects
- Real-time clock
- TP/FT 10, 78 kbps
- Neuron® 3150® processor

Technical data

Electrical supply		
	Power supply	24 V~/=, ±15%, 50/60 Hz
	Power consumption	max. 18 VA
Permissible ambient conditions		
	Operating temperature	0…70 °C
	Storage and transport temperature	–20…70 °C
	Humidity	0…90% rh, no condensation
Inputs and outputs		
Inputs	Type	10, universal
	Resolution	16 bit, digital/analogue
Use	Meter	potential-free contacts (≤ 1 Hz)
	Analogue input	U/I/R
	Temperature measurement	Ni1000, NTC, PT100, PT1000
	Potentiometer	R
Outputs	Type	8, universal (secured)
	Resolution	10-bit analogue/digital
Use	Analogue output	U/I
	Digital output	0-I
	PWM	max. 60 mA for 12 V=
Structural design		
	Weight	0.35 kg
	Housing	ABS PA-765A
	Dimensions W x H x D	145 × 120 × 51 mm
	Fitting	top-hat rail
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-1, EN 61000-6-3

Overview of types

Type
EY-AS421F001

Accessories

Type	Description
EY-RU482F001	4-sensor FCU, display
EY-RU481F001	4 sensors
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

EY-AS 420: Automation station, modu420

Features

- Compact, freely programmable LON® automation station
- Supports LonMark® object types #0, #1, #3, #20020, #3300 and #20100
- LonMark®-certified as per Interoperability Guideline, Version 3.4
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON® network
- LNS plug-in for rapid programming of the automation station
- Universal inputs and outputs can be configured using software
- Two scheduler objects
- TP/FT 10, 78 kbps
- Neuron® 3150® processor

Technical data

Electrical supply		
	Power supply	24 V~/=, ±15%, 50/60 Hz
	Power consumption	max. 12 VA
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity	0...90% rh, no condensation
Inputs and outputs		
Inputs	Type	6, universal
	Resolution	16 bit, digital/analogue
Use	Meter	potential-free contacts
	Analogue input	U/I/R
	Temperature measurement	Ni1000, NTC, PT100, PT1000
	Potentiometer	R
Outputs	Type	3, universal
	Resolution	10 bit digital/analogue
Use	Analogue output	U/I
	Digital output	0-I
	PWM	max. 60 mA for 12 V=
Outputs	Type	5, triac, ≤ 1 A
Structural design		
	Weight	0.35 kg
	Housing	ABS PA-765A
	Dimensions W x H x D	145 x 120 x 51 mm
	Fitting	top-hat rail
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3

Overview of types

Type
EY-AS420F001

Accessories

Type	Description
EY-RU482F001	4-sensor FCU, display
EY-RU481F001	4 sensors
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

EY-AC 430: Automation station, modu430

Features

- Part of the SAUTER EY-modulo 4 family of systems
- Compact, application-specific LON automation station
- Supports the LonMark functional profiles #8030 Roof Top Units, #8051 Heat Pump and #8080 Unit Ventilation
- LonMark-certified as per interoperability guidelines, version 3.3
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON network
- LNS plug-in for easy configuration of the functions
- Universal inputs and outputs can be configured using software

Technical data

Electrical supply		
	Power supply	24 V~/=, ±15%, 50...60 Hz
	Power consumption	6...15 VA
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity, no condensation	0...85% rh
Inputs and outputs		
	Universal inputs	6 0...10 V= 4...20 mA potential-free contacts Ni1000 thermistor type 2, 3 10 kΩ potentiometer
	Universal outputs	2 0...10 V= 0...12 V= (on/off) PMW (pulse modulation width)
	Triac outputs	5 1.0 A, 24 V~ external supply
Interfaces, communication		
	Protocol	LonTalk®
	Processor	Neuron 3150, 8 bits, 10 MHz
	Memory	Non-volatile, 64 K for application and configuration
	Network	TP/FT-10, 78 kbps
	Connection	LON plug, ⅛" jack
Structural design		
	Weight	0.35 kg
	Dimensions W x H x D	145 × 120 × 51 mm
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3
	FCC	Product complies with FCC rules, Part 15, subpart B, class B

Overview of types

Type
EY-AC430F001

Accessories

Type	Description
EY-RU481F001	4 sensors
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

EY-IO 471: Remote I/O module, modu471

Features

- Part of the SAUTER EY-modulo 4 family of systems
- Compact remote I/O module
- Supports LonMark objects #0, #1 and #3
- LonMark-certified as per interoperability guidelines, version 3.4
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON network
- LNS plug-in for easy configuration of the inputs and outputs
- Universal inputs and outputs can be configured using software

Technical data

Electrical supply		
	Power supply	24 V~
	Power consumption	6...15 VA
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity	0...85% rh, no condensation
Inputs and outputs		
Inputs	Type	12, universal 0...10 V= 4...20 mA potential-free contacts Ni1000 thermistor type 2, 3 10 kΩ potentiometer
Outputs	Type	12, triac 1.0 A, 24 V~ external supply PMW (pulse modulation width)
Interfaces, communication		
	Protocol	LonTalk®
	Processor	Neuron 3150, 8 bits, 10 MHz
	Memory	Non-volatile, 64 K for application and configuration
	Network	TP/FT-10, 78 Kbps
	Connection	LON plug, ⅛" jack
Structural design		
	Weight	0.39 kg
	Dimensions W x H x D	195 × 120 × 51 mm
Standards and directives		
	CE emission	EN 55022: 1998 class B
	CE immunity	EN 61000-4-2: 1995, level 3 in air
	Environmental class	EN 61000-4-2: 1995, level 2 when touched EN 61000-4-4: 1995, level 2 EN 61000-4-6: 1996, level 2 ENV 50204: 1995, level 2
	FCC	Product complies with FCC rules, Part 15, subpart B, class B

Overview of types

Type
EY-IO471F002

Accessories

Type	Description
0940240010	Terminal cover and cable fixture

SAUTER EY-modulo 4 **room automation stations**

Using efficient control strategies, SAUTER's LON room automation stations provide the demand-led regulation of air flows.
They are used for the variable regulation of air flows in single rooms. They also support additional functions such as fan control, heating/cooling in two- and four-pipe installations, frost-protection function and lighting control.

Overview of room automation stations

Models					
Type codes	EY-RC416F001	EY-RC416F002	EY-RC415F003	EY-RC415F004	EY-RC401F001
Further information	p. 454	p. 454	p. 456	p. 456	p. 458
Product name	ecos416	ecos416	ecos415	ecos415	ecos401
Usage	VAV	VAV	VAV	VAV	Fan-coil units
Power supply (V~)	24	24	24	24	24
Bus	LON	LON	LON	LON	LON
Inputs and outputs					
Universal inputs	4	4	2	2	6
Universal outputs	2	2	2	–	–
Triacs	4	4	4	4	5
Supported LonMark profiles					
#8020	–	–	–	–	•
#8502	•	•	•	•	–
Funk EnOcean®	–	•	–	•	–

EY-RC 416: DDC air-volume controller, ecos416

Features

- Part of the SAUTER EY-modulo 4 family of systems
- Compact LON air-volume controller
- Supports LonMark® Functional Profile #8502
- LonMark®-certified as per interoperability guidelines, version 3.3
- Inputs and outputs can be configured using software
- LNS plug-in for easy configuration of the functions

Technical data

Electrical supply

	Power supply	24 V~, ±15%, 50/60 Hz
	Power consumption	approx. 5 VA (10...50 VA with internal power supply for triac)

Specifications

Differential pressure sensor	Pressure range	2...250 Pa
	Measuring accuracy	± 3% full scale
Damper drive	Running time	120 s
	Torque	4 Nm
	Angle of rotation	95°, settable
	Damper shaft	□ 8.5...18.2 mm

Permissible ambient conditions

	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity, no condensation	0...90% rh

Inputs and outputs

Inputs	Type	4, universal
	Resolution	16-bit analogue/digital
Use	Digital input	Potential-free contacts
	Analogue input	U/I/R
	Temperature measurement	NTC, PT100, PT1000
	Potentiometer	R
Outputs	Type	2, universal
Use	Analogue output	U
	Digital output	0...12 V= PWM ≤ 20 mA with 600 Ω
Digital outputs	Type	4, triac 0.75 A with 24 V~

Interfaces, communication

	Processor	Neuron® 3150®
	Protocol	LonTalk®
	Transceiver	FT-X1
	Network	TP/FT-10, 78 kbps
	Connection	LON audio jack mono ⅛"
	EnOcean®	6 available channels (EY-RC416F002)
	Radio frequency	868.3 MHz

Structural design

	Weight	1.05 kg
	Dimensions W x H	214 x 123 mm

Standards and directives

	Type of protection	IP 30 (EN 60529)
	Protection class	I

	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-RC416F001	DDC air-volume controller
EY-RC416F002	DDC air-volume controller with EnOcean® wireless technology

Accessories

Type	Description
EY-RU481F001	4 sensors
EY-RU483F001	Sensor-VAV, display
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

EY-RC 415: DDC air-volume controller, ecos415

Features

- Part of the SAUTER EY-modulo 4 family of systems
- Compact LON® air-volume controller
- Supports LonMark® Functional Profile #8502
- LonMark®-certified as per interoperability guidelines, version 3.4
- Inputs and outputs can be configured using software
- One output to operate the LED on EY-RU 481
- LNS plug-in for easy configuration of the functions

Technical data

Electrical supply		
	Power supply	24 V~, ±15%, 50/60 Hz
	Power consumption	approx. 5 VA (10...50 VA with internal power supply for triac)
Specifications		
Differential pressure sensor	Pressure range	2...250 Pa
	Measuring accuracy	± 3% full scale
Damper drive	Running time	120 s
	Torque	4 Nm
	Angle of rotation	95°, settable
	Damper shaft	□ 8.5...18.2 mm
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity, no condensation	0...90% rh
Inputs and outputs		
Inputs	Type	2, universal
	Resolution	16-bit analogue/digital
Use	Digital input	Potential-free contacts
	Analogue input	U/I/R
	Temperature measurement	NTC, PT100, PT1000
	Potentiometer	R
Outputs	Type	2, universal
Use	Analogue output	U
	Digital output	0...12 V= PWM ≤ 20 mA with 600 Ω
Digital outputs	Type	4, triac 0.75 A with 24 V~
Interfaces, communication		
	Processor	Neuron® 3150®
	Protocol	LonTalk®
	Transceiver	TP/FT-10, 78 kbps
	Network	FT-X1
	EnOcean®	6 available channels (EY-RC415F002)
	Radio frequency	868.3 MHz
Structural design		
	Weight	1 kg
	Dimensions W x H x D	214 x 123 mm
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	I

	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY-RC415F003	DDC air-volume controller
EY-RC415F004	DDC air-volume controller with EnOcean® wireless technology

Accessories

Type	Description
EY-RU481F001	4 sensors
EY-RU482F001	4-sensor FCU, display
EY-RU483F001	Sensor-VAV, display
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

EY-RC 401: Fan-coil single-room controllers, ecos401

Features

- Compact LON fan-coil controller
- Supports LonMark® Functional Profile #8020
- LonMark®-certified as per Interoperability Guideline, Version 3.3
- Inputs and outputs can be configured using software
- Lower housing can be separated so that terminals and electronics can be installed separately
- Audio jack plug for rapid access to the LON network
- LNS plug-in for easy configuration of the functions

Technical data

Electrical supply		
	Power supply	24 V~, ±15%, 50/60 Hz
	Power consumption	≤ 15 VA
Permissible ambient conditions		
	Operating temperature	0...50 °C
	Storage and transport temperature	–20...70 °C
	Humidity, no condensation	0...90% rh
Inputs and outputs		
Inputs	Type	6, universal
Use	Digital input	Potential-free contacts
	Analogue input	U/I/R
	Temperature measurement	NTC, PT100, PT1000
	Potentiometer	R
Digital outputs	Type	5, triac1.0 A
Analogue outputs	Type	2, universal 0...10 V 0...12 V (on/off) PWM
Interfaces and communication		
	Processor	Neuron® 3150®
	Protocol	LonTalk®
	Transceiver	FT-X1
	Network	TP/FT-10, 78 kbps
	Connection	LON audio jack mono ⅛"
Structural design		
	Weight	0.35 kg
	Dimensions W x H x D	145 x 120 x 51 mm
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	I
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3

Overview of types

Type
EY-RC401F001

Accessories

Type	Description
EY-RU481F001	4 sensors
EY-RU481F002	4 sensors, presence
EY-RU481F003	4 sensors, presence, setpoint

SAUTER EY-modulo 4 **room operating units**

SAUTER's operating units measure the room temperature and enable single rooms to be controlled in accordance with demand. They can be used for fan coils, chilled-beam systems, radiators and VAV applications.

Overview of room operating units

Models					
Type codes	EY-RU483F001	EY-RU482F001	EY-RU481F001	EY-RU481F002	EY-RU481F003
Further information	p. 461	p. 462	p. 463	p. 463	p. 463
Usage	VAV	Fan-coil units	Room temperature	Room temperature	Room temperature
Display/setpoint adjustment	LCD	LCD		Scale ±	Scale 15…27 °C
Input	NTC 10 K	NTC 10 K	NTC 10 K, Type 2	NTC 10 K, Type 2	NTC 10 K, Type 2
Measuring range	0…70 °C	0…70 °C	–	–	–

EY-RU 483: VAV room operating unit, ecoUnit483

- Can be used for VAV controllers EY-RC415 and EY-RC416
- Display for room temperature, setpoint, fan speed, occupancy status, outside temperature
- Buttons for adjusting temperature setpoint, occupancy change-over and menu access
- Can be used as a manual operating unit for starting up the volume flow control loop
- Audio jack plug for rapid access to the LON network
- Temperature sensor in NTC technology

Technical data

Specifications		
Indicators	LCD	2 lines, 8 characters
Sensor	Sensor	10K NTC thermistor
	Measuring range	0...70 °C
	Accuracy	±0.2 °C
	Resolution	0.1 °C
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Humidity, no condensation	0...85% rh
Interfaces and communication		
	Communication	2400 baud serial
	Interface	2-wire
	Protocol	EIA-232
	Connection	LON plug, ⅛" jack
Cable	Length	≤ 15 m
	Type	22 AWG twisted pair braid
	Shielding	without
Structural design		
	Dimensions W x H x D	124 x 85 x 28 mm
	Weight	0.18 kg
	Housing	plastic, pure white
Standards and directives		
	CE immunity	EN 61000-4-2: 1995, EN 61000-4-3: 1995, EN 61000-4-4: 1995, EN 61000-4-6: 1996
	FCC	FCC rules, part 15, subpart B, class B

Overview of types

Type	Description
EY-RU483F001	VAV room operating unit with display

EY-RU 482: Fan-coil room operating unit, ecoUnit482

- Can be used for fan-coil controllers RY-RC402 and RY-RC403
- Display for room temperature, setpoint, fan speed, occupancy status
- Buttons for adjusting fan speed and temperature setpoint
- Audio jack plug for rapid access to the LON network
- Temperature sensor in NTC technology

Technical data

Specifications

Indicators	LCD	2 lines, 8 characters
Sensor	Sensor	10K NTC thermistor
	Measuring range	0…70 °C
	Accuracy	±0.2 °C
	Resolution	0.1 K

Permissible ambient conditions

	Operating temperature	0…50 °C
	Storage and transport temperature	–30…30 °C
	Humidity, no condensation	0…85% rh

Interfaces and communication

	Communication	2400 baud serial
	Interface	2-wire
	Protocol	EIA-232
	Connection	LON plug, ⅛" jack
Cable	Length	≤ 15 m
	Type	22 AWG twisted pair braid
	Shielding	without

Structural design

	Dimensions W x H x D	124 × 85 × 28 mm
	Weight	0.28 kg
	Housing	plastic, pure white

Standards and directives

	CE immunity	EN 61000-4-2: 1995, EN 61000-4-3: 1995, EN 61000-4-4: 1995, EN 61000-4-6: 1996
	FCC	FCC rules, part 15, subpart B, class B

Overview of types

Type	Description
EY-RU482F001	Fan-coil room operating unit with display

EY-RU 481: Room operating unit, ecoUnit481

- Part of the SAUTER EY-modulo 4 family of systems
- Room operating unit for wall/surface mounting
- Indoor climate can be adapted individually
- Local occupancy button
- Audio jack plug for rapid access to the LON network

Technical data

Specifications

Setpoint adjuster	±6 °C
Temperature sensor	NTC

Permissible ambient conditions

Operating temperature	0…70 °C
Storage and transport temperature	–20…70 °C
Humidity, no condensation	0…85% rh

Interfaces, communication

Connection	LON plug, ⅛" jack

Structural design

Weight	0.18 kg
Dimensions W x H x D	124 × 85 × 32.5 mm
Housing material	plastic
Housing	pure white

Overview of types

Type	Description	Power supply
EY-RU481F001	NTC sensor	-
EY-RU481F002	NTC sensor with LED, presence, warmer/cooler	24 V~/=
EY-RU481F003	NTC sensor with LED, presence, set temperature	24 V~/=

EY-OP 490: Operating unit, modu490

Features

- Compact display with calendar function
- Supports LonMark® objects #0 and 16, scheduler object types #20020, real-time clock #3300 and display #20010
- Access to the data can be protected by password
- Audio jack plug for rapid access to the LON® network
- LNS plug-in for rapid programming of the functions
- Illuminated LCD
- Six keys for navigation and data input
- Battery-backed real-time clock with 15-year serviceable life
- TP/FT 10, 78 kbps
- Neuron® 3150® processor

Technical data

Electrical supply		
	Power supply	24 V~/=, ±15%, 50/60 Hz
	Power consumption	8 VA
Permissible ambient conditions		
	Operating temperature	0...70 °C
	Storage and transport temperature	–20...70 °C
	Permissible ambient humidity	0...85% rh, no condensation
Indicators, display, operation		
	Pixels	128 × 128
	Size of display	55 × 55 mm
Structural design		
	Weight	0.4 kg
	Dimensions W x H x D	116 × 116 × 38 mm
	Fitting	surface-mounted
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 55022, class B, EN 61000-4-2, EN 61000-4-3, EN 61000-4-3, EN 61000-4-4, EN 61000-4-6
	FCC	Part 15, subpart B, class B

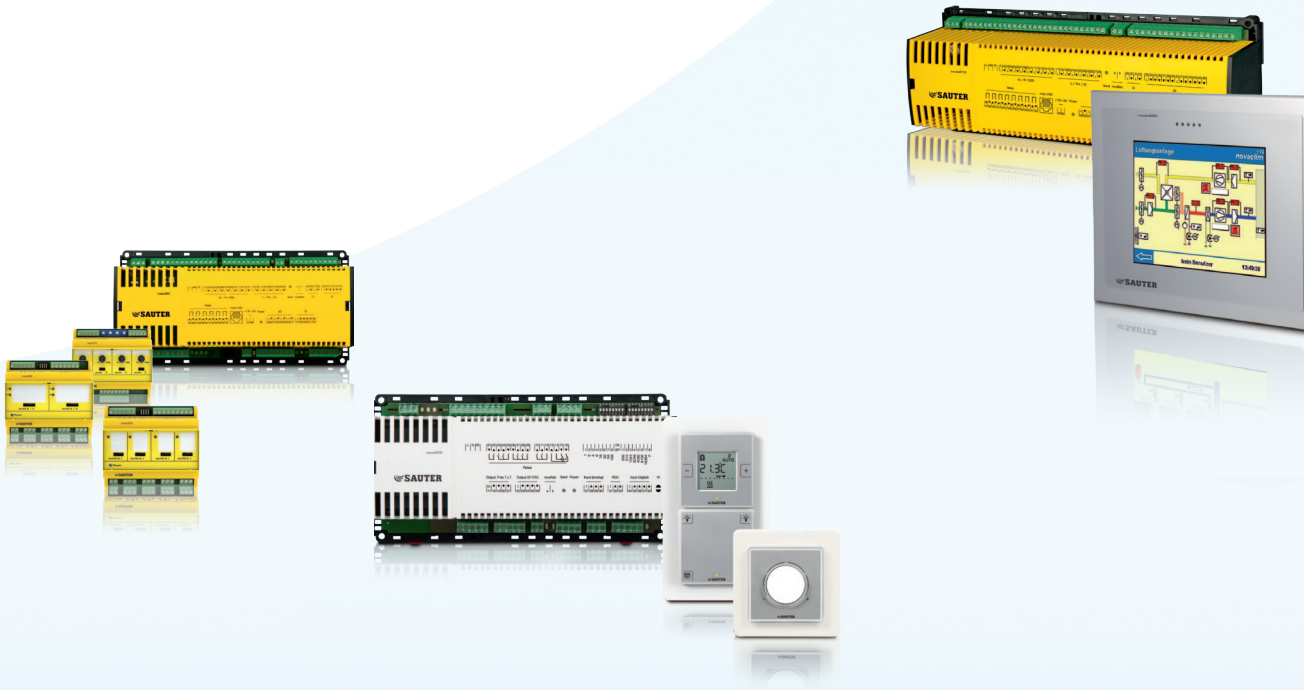
Overview of types

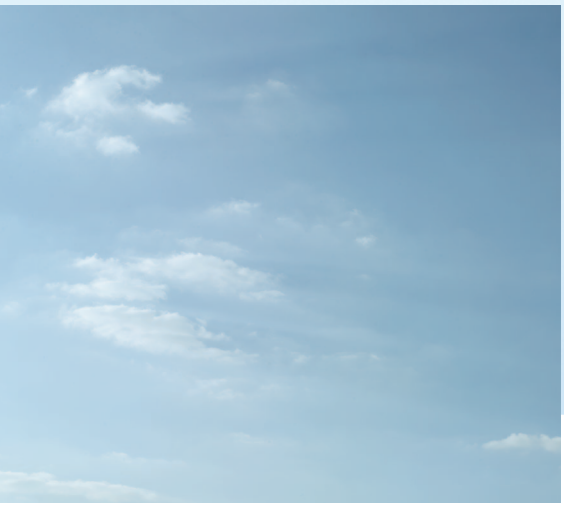
Type
EY-OP490F001

SAUTER EY-modulo 2

Meets ever-increasing standards: modular, efficient and compatible.

SAUTER EY-modulo 2 is the logical further development of the successful building and room automation system based on EY3600 and novaNet. With intelligent automation stations, freely-programmable unitary controllers and customised function modules. With its solutions that fulfil all the requirements placed on a multifaceted building automation system, the excellence of the EY-modulo 2 is immediately obvious. With its variety of operating stations, controllers and field equipment, SAUTER EY-modulo 2 provides both small and large installations with great flexibility and functionality without interface losses.





SAUTER EY-modulo 2

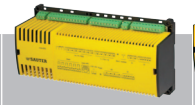
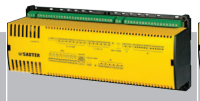
HVAC automation

Room automation

SAUTER EY-modulo 2 **automation stations**

SAUTER EY-modulo 2 automation stations regulate, control, monitor and improve energy efficiency in HVAC installations. The basis for the network of the installation is the proven novaNet bus system.

Overview of automation stations

Models					
Type codes	EYR203F001	EY-AS200F001	EY-AS201F001	EY-210F001	EY-AS225F001
Further information	p. 469	p. 471	p. 473	p. 475	p. 477
Product name	moduFlex	modu200	modu201	modu210	modu225
Power supply (V~/=)	24	24	24	24	24
Inputs and outputs					
Analogue inputs	10	12	2	14	14
Digital inputs	8	12	24	12	12[1]
Pulse counter	–	2	2	2	2
Analogue outputs	4	4	2	6	6[2]
Digital outputs	6	6	8	8	8[3]

1) Extension +48 (moduLink174)
2) Extension +4 (moduLink170)
3) Extension +8 (moduLink164, 165)

EYR 203: Universal controller, moduFlex

Features

- Universal controller for regulation and control
- 18 inputs
- 10 outputs
- Can be given network and communication capability by fitting an auxiliary module for novaNet
- Communication with EY-OP250 touch-panel is possible by fitting an auxiliary module
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	10 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital inputs	8 (2 can be used as pulse counters)
	Analogue inputs	5 × Ni1000/Pt1000, 5 × 0...10 V
	Digital outputs	2 × 0-I, 2 × 0-I-II
	Analogue outputs	4 × 0...10 V
Interfaces and communication		
	AS network/novaNet	With auxiliary module on main pcb
	Local operating unit, modu240	1 × RJ-45 socket
	modu250 touch-panel	With auxiliary module (point to point)
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	128
	Time commands	320 entries
HDB entries	Digital (block 1)	1792
	Analogue (block 2)	1792
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	235 × 147.5 × 64.5 mm
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4 Interference Class A

[1)] *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

Overview of types

Type
EYR203F001

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Microprogram

Type	Description
0501149002	Microprogram for modu240 languages: German, French, English, Polish, Slovenian, Hungarian, Romanian, Russian, Czech, Turkish, Slovakian

Connecting cables

Type	Description
0367842002	moduFlex to modu240: 1.5 m
0367842003	moduFlex to modu240: 2.9 m
0367842004	moduFlex to modu240: 6.0 m
0367862001	moduFlex to modu250: 1.5 m
0367862002	moduFlex to modu250: 2.9 m
0367862003	moduFlex to modu250: 6.0 m

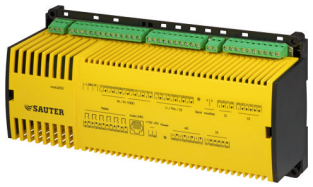
Data memory

Type	Description
0367883001	6x EPROM (empty) (USER-EPROM)

Auxiliary module

Type	Description
0374413001	Auxiliary module, novaNet
0374448001	Auxiliary module, pt. to pt. for direct connection of modu250; distance max. 6 m

EY-AS 200: Automation station, modu200



Features

- Compact automation station (AS)
- Part of the SAUTER EY-modulo 2 family of systems
- 26 inputs
- 10 outputs
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24~, ±20%, 50…60 Hz 24 V= (18…30 V)
	Power consumption	≤ 11.5 VA
	Dissipated power	≤ 6 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity	10…85% rh, no condensation
Inputs and outputs		
	Digital inputs	12 (alarm/status)
	Analogue inputs	7 (Ni1000/Pt1000) 5 (U, Pot)
	Pulse counter	2
	Digital outputs	6 (relay)
	Analogue outputs	4 (0…10 V)
Interfaces and communication		
	AS network/novaNet	1 × a/b terminal, insertable
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish, Polish, Slovenian, Hungarian, Rumanian, Russian, Czech, Turkish, Slovakian
	MFA	256
	Time commands	320 entries
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Weight	0.65 kg
	Dimensions W x H x D	244 × 120 × 73 mm
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)

[1] *IP 10 with terminal cover (accessory 0900240001)*

	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[2)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

Overview of types

Type
EY-AS200F001

Accessories

Manual operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)

Data memory

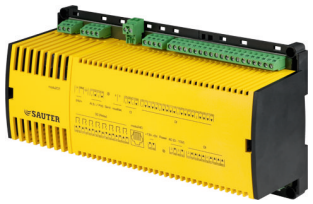
Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

General

Type	Description
0900240001	Terminal cover (240 mm), pack of 2
0929360001	Plug-in connector, novaNet for AS, pack of 10

2) *EN 61000-6-2: In order to meet the European standard, the power cables for the digital inputs, analogue inputs, analogue outputs, meter inputs and the voltage outputs (5, 13 V) should not exceed 30 metres in length*

EY-AS 201: Automation station, modu201



Features

- Compact automation station (AS)
- Part of the SAUTER EY-modulo 2 family of systems
- 28 inputs
- 10 outputs
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50…60 Hz 24 V= (18…30 V)
	Power consumption	≤ 13.5 VA
	Dissipated power	≤ 7 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity	10…85% rh, no condensation
Inputs and outputs		
	Digital inputs	24 (alarm/status)
	Analogue inputs	2 (U, Pot)
	Pulse counter	2
	Digital outputs	8 (relay)
	Analogue outputs	2 (0…10 V)
Interfaces and communication		
	AS network/novaNet	1 × a/b terminal, insertable
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish, Polish, Slovenian, Hungarian, Rumanian, Russian, Czech, Turkish, Slovakian
	MFA	256
	Time commands	320 entries
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Weight	0.61 kg
	Dimensions W x H x D	244 × 120 × 73 mm
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)

[1] *IP 10 with terminal cover (accessory 0900240001)*

	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[2)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

Overview of types

Type
EY-AS201F001

Accessories

Manual operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)

Data memory

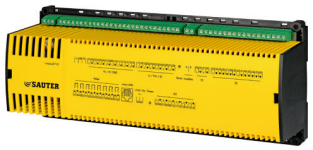
Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

General

Type	Description
0900240001	Terminal cover (240 mm), pack of 2
0929360001	Plug-in connector, novaNet for AS, pack of 10

2) *EN 61000-6-2: In order to meet the European standard, the power cables for the digital inputs, analogue inputs, analogue outputs, meter inputs and the voltage outputs (5, 13 V) should not exceed 30 metres in length*

EY-AS 210: Automation station, modu210



Features

- Compact automation station (AS)
- Part of the SAUTER EY-modulo 2 family of systems
- 28 inputs
- 14 outputs
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24~, ±20%, 50…60 Hz 24= (18…30 V)
	Power consumption	≤ 14.5 VA
	Dissipated power	≤ 7.5 W
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity	10…85% rh, no condensation
Inputs and outputs		
	Digital inputs	12 (alarm/status)
	Analogue inputs	8 (Ni1000/Pt1000)
	Analogue inputs	6 (U, Pot)
	Pulse counter	2
	Analogue outputs	6 (0…10 V/2 × 0…20 mA)
	Digital outputs	8 (relay)
Interfaces and communication		
	AS network/novaNet	1 × a/b terminal, insertable
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish, Polish, Slovenian, Hungarian, Rumanian, Russian, Czech, Turkish, Slovakian
	MFA	256
	Time commands	320 entries
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Weight	0.75 kg
	Dimensions W x H x D	300 × 120 × 73 mm
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)

[1] *IP 10 with terminal cover (accessory 0900240001)*

	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[2)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

Overview of types

Type
EY-AS210F001

Accessories

Manual operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Touch-panel

Type	Description
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)

Data memory

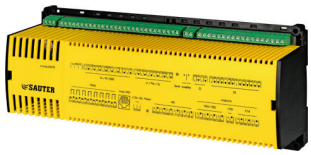
Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

General

Type	Description
0900240002	Terminal cover, 295 mm (2 pcs)
0929360001	Plug-in connector, novaNet for AS, pack of 10

2) *EN 61000-6-2: In order to meet the European standard, the power cables for the digital inputs, analogue inputs, analogue outputs, meter inputs and the voltage outputs (5, 13 V) should not exceed 30 metres in length*

EY-AS 225: Automation station, modu225



Features

- Compact automation station (AS)
- Part of the SAUTER EY-modulo 2 family of systems
- 28 inputs
- 14 outputs
- Can be extended to 102 I/O using moduLink field modules
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz 24 V= (18...30)
	Power consumption	17 VA/43 VA with field modules
	Dissipated power	8.7 W/23 W with field modules
	Battery (buffer: RTC/SRAM)	Lithium button-cell (CR2032), insertable
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...85% rh, no condensation
Inputs and outputs		
	Digital inputs	12 (alarm/status)
	Analogue inputs	8 (Ni1000/Pt1000) 6 (U, Pot)
	Pulse counter	2
	Digital outputs	8 (relay 0-I)
	Analogue outputs	6 (0...10 V/2 × 0...20 mA)
Extension	Digital inputs	48 (moduLink174)
	Digital outputs	8 (moduLink164, 165)
	Analogue outputs	4 (moduLink170)
Interfaces and communication		
	AS network/novaNet	1 × a/b terminal, insertable
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish, Polish, Slovenian, Hungarian, Rumanian, Russian, Czech, Turkish, Slovakian
	MFA	256
	Time commands	320 entries
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	300 × 120 × 73 mm

Standards and directives

	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 730-2-9

Overview of types

Type
EY-AS225F001

Accessories

Manual operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Touch-panel

Type	Description
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Field modules

Type	Description
EY-FM164F001	moduLink164 digital output 4× 0-I (change-over relay)
EY-FM165F001	moduLink165 digital output 2× 0-I-II (change-over relay)
EY-FM170F001	moduLink170 analogue output 4× 0...10 V (2× 0...20 mA)
EY-FM174F001	moduLink174 digital input 16×

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)

Data memory

Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

General

Type	Description
0900240002	Terminal cover, 295 mm (2 pcs)
0929360001	Plug-in connector, novaNet for AS, pack of 10

[1] *IP 10 with terminal cover (accessory 0900240001)*

[2] *EN 61000-6-2: In order to meet the European standard, the power cables for the digital inputs, analogue inputs, analogue outputs, meter inputs and the voltage outputs (5, 13 V) should not exceed 30 metres in length*

SAUTER EY-modulo 2 **field modules**

Field modules from SAUTER expand the automation stations by adding more inputs and outputs. The field modules can be situated up to 100 metres away from the automation station.

Overview of field modules

Models				
Type codes	EY-FM164F001	EY-FM165F001	EY-FM170F001	EY-FM174F001
Further information	p. 486	p. 484	p. 482	p. 480
Product name	modu164	modu165	modu170	modu174
Power supply	via bus	via bus, 24 V~/=	via bus, 24 V~/=	via bus, 24 V~/=
For stations	EY-AS225F001	EY-AS225F001	EY-AS225F001	EY-AS225F001
Connection	novaLink	novaLink	novaLink	novaLink
Inputs and outputs				
Digital inputs	16	–	–	–
Analogue outputs	–	4	–	–
Digital outputs	–	–	2	4

Models			
Type codes	EY-FM264F001	EY-FM265F001	EY-FM270F001
Further information	p. 488	p. 490	p. 492
Product name	modu264	modu265	modu270
Power supply	24 V~/=	V~/=	V~/=
For stations	EY-modulo 2, 5	EY-modulo 2, 5	EY-modulo 2, 5
Connection	straight wiring	straight wiring	straight wiring
Inputs and outputs			
Digital inputs	–	–	–
Analogue outputs	–	4	–
Digital outputs	4	–	–

EY-FM 174: Field module digital inputs, moduLink174

Features

- Remote unit for modu225
- Part of the SAUTER EY-modulo family of systems
- Front insert for direct labelling/inscription
- Can be located up to 100 m from the automation station (AS)
- Bi-colour LED indicators (red/green)
- Communication and power supply via novaLink bus (2-wire) from AS

Technical data

Electrical supply		
	Power supply	From modu225, nova225, nova106 (EYX176) (via novaLink)
	Current consumption	≤ 120 mA
	Input resistance	≤ 1 kΩ (incl. cable)
	Dissipated power	≤ 1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital inputs	16 potential-free contacts, earthed
	Polling cycle	150 ms
	Recording time	30 ms
Interfaces and communication		
	Control	From modu225, nova225, nova106 (EYX176)
	Connection	novaLink bus ≤ 100 m (cable screened, twisted and earthed at both sides, < 5 nF/< 7.5 Ω)
Structural design		
	Weight	0.24 kg
	Dimensions W x H x D	105 x 90 x 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-FM174F001

[1)] *EN 61000-6-2: In order to meet the European standard, the power cables for the inputs should not exceed 30 m in length*

Accessories

Type	Description
0920000174	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 170: Field module analogue outputs 0...10 V (0...20 mA), moduLink170

Features

- Remote unit for modu225
- Part of the SAUTER EY-modulo family of systems
- Front insert for direct labelling/inscription
- Can be located up to 100 m from the automation station (AS)
- Defined signal values can be preselected for the priority or watchdog functions
- Can be used for local priority condition with manual control of outputs
- Communication and power supply via novaLink connection (2-wire) from AS
- 1 output, novaLink bus monitoring

Technical data

Electrical supply		
	Power supply	From modu225, nova225, nova106 (EYX172)
	External supply	24 V~/=
	Current consumption	≤ 100 mA
	Dissipated power	≤ 1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Analogue outputs	2 × 0...10 V 2 × 0...10 V/0...20 mA
Interfaces and communication		
	Control	From modu225, nova225, nova106 (EYX172)
	Connection	novaLink bus ≤ 100 m (cable screened, twisted and earthed at both sides, < 5 nF/< 7.5 Ω)
Structural design		
	Weight	0.24 kg
	Dimensions W x H x D	105 × 90 × 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-FM170F001

1) *EN 61000-6-2: In order to meet the European standard, the power cables for the inputs should not exceed 30 m in length*

Accessories

Type	Description
0920000170	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 165: Field module digital outputs 0-I-II, moduLink165

Features

- Remote unit for modu225
- Part of the SAUTER EY-modulo family of systems
- Front insert for direct labelling/inscription
- Can be located up to 100 m from the automation station (AS)
- Defined relay statuses can be preselected for the priority or watchdog functions
- Can be used for local priority condition with manual control of outputs
- Communication / power supply via novaLink connection (2-wire) from AS
- 1 output, novaLink bus monitoring
- LED display and manual operation

Technical data

Electrical supply		
	Power supply	From modu225, nova225, nova106 (EYX168) (via novaLink)
	External supply	24 V~/=
	Current consumption	≤ 150 mA
	Dissipated power	≤ 1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital outputs	2 x 0-I-II relay, change-over contacts
	Switching frequency	> 5 x 10^6 cycles
	Load	250 V~/2 A resistive load
Interfaces and communication		
	Control	From modu225, nova225, nova106 (EYX168)
	Connection	novaLink bus ≤ 100 m (cable screened, twisted and earthed at both sides< 5 nF/< 7.5 Ω)
Structural design		
	Weight	0.24 kg
	Dimensions W x H x D	105 x 90 x 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EY-FM165F001

1) *EN 61000-6-2: In order to meet the European standard, the power cables for the inputs should not exceed 30 m in length*

Accessories

Type	Description
0920000165	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 164: Field module digital outputs 0-I, moduLink164

Features

- Remote unit for modu225
- Part of the SAUTER EY-modulo family of systems
- Front insert for direct labelling/inscription
- Can be located up to 100 m from the automation station (AS)
- Defined relay statuses can be preselected for the priority or watchdog functions
- Can be used for local priority condition with manual control of outputs
- Communication / power supply via novaLink connection (2-wire) from AS
- 1 output, novaLink bus monitoring
- LED display and manual operation

Technical data

Electrical supply		
	Power supply	From modu225, nova225, nova106 (EYX168) (via novaLink)
	External supply	24 V~/=
	Current consumption	≤ 150 mA
	Dissipated power	≤ 1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital outputs	4 x 0-I relay, change-over contacts
	Switching frequency	> 5 x 10^6 cycles
	Load	250 V~/2 A resistive load
Interfaces and communication		
	Control	From modu225, nova225, nova106 (EYX168)
	Connection	novaLink bus ≤ 100 m (cable screened, twisted and earthed at both sides < 5 nF/< 7.5 Ω)
Structural design		
	Weight	0.24 kg
	Dimensions W x H x D	105 x 90 x 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EY-FM164F001

1) *EN 61000-6-2: In order to meet the European standard, the power cables for the inputs should not exceed 30 m in length*

Accessories

Type	Description
0920000164	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 264: Field module digital outputs 0-I, modu264

Features

- Remote unit as part of the SAUTER system families EY3600, EY-modulo 2, 4 and 5
- Independent, local priority operation through external power supply
- Individual activation of field module
- Manual control of digital outputs
- Feedback (digital output status) available
- Priority function with definable relay statuses for system errors
- Front insert for direct labelling/inscription
- LED indicators and manual operation

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz 24 V=, ±10%
	Current consumption	≤ 290 mA
	Power consumption	≤ 3 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital outputs	4 × 0-I relay, change-over contacts
	Switching frequency	> 5 × 10^6 cycles
	Load	250 V~/10 A resistive load
	Connections	Screw terminals for: power supply function activation priority control control of devices feedback signals
Structural design		
	Weight	0.25 kg
	Dimensions W x H x D	105 × 90 × 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EY-FM264F001

1) *EN 61000-6-2: In order to meet the European standard (EN 61000-6-2), the power cables for the outputs should not exceed 30 m in length*

Accessories

Type	Description
0920000164	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 265: Field module digital outputs 0-I-II, modu265

Features

- Remote unit as part of the SAUTER system families EY3600, EY-modulo 2, 4 and 5
- Independent, local priority operation through external power supply
- Individual activation of field module
- Manual control for each digital output
- Feedback (digital output status) available
- Priority function, definable relay statuses for system errors
- Front insert for direct labelling/inscription
- LED indicators and manual operation

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz 24 V=, ±10%
	Current consumption	≤ 300 mA
	Power consumption	≤ 3 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Digital outputs	2 × 0-I-II relay, change-over contacts
	Switching frequency	> 5 × 10^6 cycles
	Load	250 V~/10 A resistive load
	Connections	Screw terminals for: power supply function activation priority control control of devices feedback signals
Structural design		
	Weight	0.25 kg
	Dimensions W x H x D	105 × 90 × 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	II (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type
EY-FM265F001

1) *EN 61000-6-2: In order to meet the European standard, the power cables for the inputs should not exceed 30 m in length*

Accessories

Type	Description
0920000165	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

EY-FM 270: Field module analogue outputs 0...10 V, modu270

Features

- Remote unit as part of the SAUTER system families EY3600, EY-modulo 2, 4 and 5
- Independent, local priority operation through external power supply
- Individual activation of field module
- Manual control for each analogue output
- Manual operation feedback available
- Priority function with definable signal values for system errors
- Front insert for direct labelling/inscription

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz 24 V=, ±10%
	Current consumption	≤ 190 mA
	Power consumption	≤ 1.8 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Inputs and outputs		
	Connections	Screw terminals for: power supply function activation priority control control of devices feedback signal for manual operation
	Analogue outputs	4 x 0...10 V=, max. 20 mA (source) or 4 x 2...10 V=, max. 5 mA (sink)
Structural design		
	Weight	0.2 kg
	Dimensions W x H x D	105 x 90 x 60 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EY-FM270F001

Accessories

Type	Description
0920000174	Front insert, printable, yellow, 1 A4 sheet with 6 inserts each, perforated
0368962001	Terminal cover

1) *EN 61000-6-2: In order to meet the European standard, the power cable for the outputs should not exceed 30 metres in length.*

SAUTER EY-modulo 2 **operating units**

SAUTER operating units are distinguished by their clear displays and easy navigation, which makes it easy to operate the automation stations intuitively on site.

Models		
Type codes	EY-OP 240	EY-OP 250
Further information	p. 494	p. 496
Product name	modu240	modu250

EY-OP 240: Local operating unit, modu240

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Local operating and indication unit for direct local and manual operation of automation stations
- Menu-guided user interface to visualise the data points of an automation station
- Display of measured values, alarms and status reports
- Input of setpoints, parameters and digital positioning commands
- Operated using six membrane keys
- Edit time programmes
- Display: 8 lines of 21 characters each
- Multilingual character set direct from AS
- RJ-45 interface for point-to-point connection with AS
- Can be installed remotely in front of panel

Technical data

Electrical supply		
	Power supply	from AS
	Power consumption	100 mA
	Dissipated power	1,5 W
Specifications		
1 × RJ-45 socket	Range	≤ 20 m, shielded
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...65 °C
	Humidity, no condensation	10...85% rh
Indicators, display, operation		
	Resolution	128 × 64 pixels (LCD)
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish, Polish, Slovenian, Hungarian, Russian, Czech, Turkish, Slovakian
Structural design		
	Weight	0.3 kg
	Dimensions W x H x D	80 × 144 × 36 mm
Standards and directives		
	Type of protection	IP 40/20 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	IEC 60721 3K3
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 55022 Class A

Overview of types

Type
EY-OP240F001

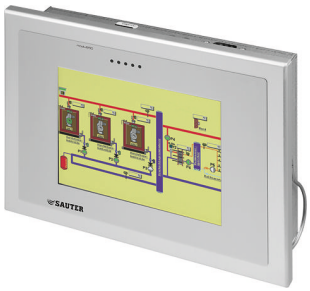
Accessories

Connecting cables

Type	Description
0367842001	Automation station to modu240: 0.35 m
0367842002	Automation station to modu240: 1.5 m
0367842003	Automation station to modu240: 2.9 m
0367842004	Automation station to modu240: 6.0 m

Fitting

Type	Description
0367829001	Bracket for front fitting for modu240
0367878001	Holder for wall or top-hat rail
0367880001	Desktop stand



EY-OP 250: Touch-panel, modu250

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Graphic, pressure-sensitive operating and display unit for network-wide operation of the automation stations
- Menu-guided user interface to visualise automation stations and plants
- Alarm lists, data point lists, time switching programmes, calendars and trend data
- Change of specified setpoints, positioning values and digital positioning commands
- Edit time switching programmes and calendars
- Freely-programmable graphic plant presentations with dynamic data points
- Access rights with individual entry of users
- Can be parameterised via CASE Suite (languages, applications)
- RJ-45, DB-9 interfaces for parameterisation and updating
- RJ-11 interface for novaNet system bus

Technical data

Electrical supply		
	Power supply	85...250 V~ (48...62 Hz)
	Power consumption	≤ 7 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...80% rh
Indicators, display, operation		
	Display	5.7 inches
	Resolution	320 x 240 pixels (QVGA)
	Active area (W x H)	140 x 105 mm
	Touch	resistive, 4-wire
	Background illumination	time-controlled cut-off
	Memory	8 MB flash, 8 MB RAM
Interfaces and communication		
	novaNet	1× RJ-11 socket
	Ethernet	1 × RJ-45 socket (10BaseT)
	EIA-232	1 × DB9 plug
Structural design		
	Weight	1 kg
	Dimensions W x H x D	204 x 156 x 46 mm
Standards and directives		
	Type of protection	IP 20 (EN 60529)
	Protection class	I (EN 60950-1)
	Environmental class	3K3 (IEC 60721)
	Low-voltage directive 2006/95/EC	EN 60950-1
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 55022 Class A

Overview of types

Type	Description
EY-OP250F001	Touch-panel, colour (256 colours)
EY-OP250F002	Touch-panel, monochrome (b/w)

Accessories

Software

Type	Description
GZS100F599	CASE Tools CD, latest version (CASE TPC, CASE HWC, CASE Sun, novaNet292 SW ...)
7001064001	User manual, German

Connecting cables

Type	Description
0367862001	Automation station to modu250: 1.5 m
0367862002	Automation station to modu250: 2.9 m
0367862003	Automation station to modu250: 6.0 m

General

Type	Description
0374494001	Stylus set for modu250
0374509001	Power supply connector, 3-pin, packaged
0374515001	Set to extend degree of protection, IP 65 (incl. seal, 0374680001)
0374680001	Seal, single (for set 0374515001)

SAUTER EY-modulo 2 **room automation stations**

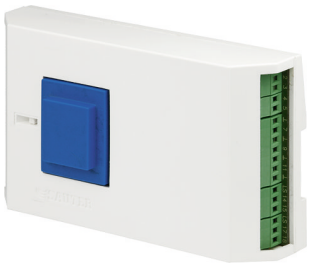
The high-performance room automation stations from the SAUTER EY-modulo 2 range enable accurate room control, thereby ensuring minimum energy consumption. They are used for controlling fan-coil units, in chilled-beam systems, VAV applications and even complete unitary control systems. Devices that are eu.bac-certified confirm the high degree of product quality and the excellent control features.

Overview of room automation stations

Models			
Type codes	EYE200F001/ F901	EYE200F002/ F902	EYE201F001
Further information	p. 500	p. 500	p. 502
Product name	ecos200	ecos200	ecos201
Usage	DDC unitary controller	DDC unitary controller	DDC unitary controller
Power supply (V~)	230	230	24
Room operating units	1	1	1
Plug-in terminals	EYE200F901	EYE200F902	–
Inputs and outputs			
Temperature sensors	1	1	1
Analogue inputs	–	–	1
Digital inputs	2	2	2
Analogue outputs	2	2	–
NO relay	3	4	1
Triacs	2	2	1

Overview of room automation stations

Models			
Type codes	EYE202F001	EYE205F002	EYE206F002
Further information	p. 502	p. 503	p. 503
Product name	ecos202	ecos205	ecos206
Usage	DDC unitary controller	DDC unitary controller	DDC unitary controller
Power supply (V~)	24	24	24
Room operating units	1	1	1
Plug-in terminals	–	–	–
Inputs and outputs			
Temperature sensors	2	1	2
Analogue inputs	1	1	1
Digital inputs	3	2	3
Analogue outputs	2	1	2
NO relay	3	–	1
Triac	2	2	3



EYE 200: DDC single-room controller, ecos200

Features

- Part of the SAUTER EY-modulo 2 family of systems
- The indoor climate can be set according to needs by using the room operating units of the EY-RU2** and EYB2** series.
- Optimisation of energy consumption thanks to occupancy function, window contact monitoring, demand-led fan stage switching and time-dependent setpoint specification.
- Time and calendar function
- Recording of historical data
- Integration into the building management system via novaNet data interface
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- novaNet system bus, 2-wire

Technical data

Electrical supply		
	Power supply	230 V~, ±10%
	Power consumption	≤ 14 VA, incl. 6 VA external
	Dissipated power	≤ 14 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Humidity, no condensation	≤ 85% rh
Inputs and outputs		
Inputs	Operating unit	EYB2**/EY-RU2**
	Temperature sensor	Ni1000
	Control contacts	ON/OFF
Outputs	Triac switching outputs	2 × 0-I-II (24 V~, 1 A)
	Relay switching outputs	3 × normally-open contacts 250 V~, 2 A, 1 × normally-open contact 250 V~, 10 A (only with type EYE200F002, EYE200F902)
	Analogue	0...10 V, load = 1 kΩ
Structural design		
	Weight	0.7 kg
	Dimensions W x H x D	244 x 120 x 72.5 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730
	Software class A	EN 60730-1 Appendix A

Overview of types

Type	Description
EYE200F001	3 relays
EYE200F002	4 relays

1) *EN 61000-6-2: For mandatory compliance with the European standard, the power cables for the digital inputs (DI), the analogue inputs/outputs (AI/AO) and the counter inputs (CI) must be no longer than 30 m*

Type	Description
EYE200F901	3 relays with plug-in connectors
EYE200F902	4 relays with plug-in connectors

EYE 201, 202: DDC single-room controller, ecos202

Features

- Part of the SAUTER EY-modulo 2 family of systems
- The indoor climate can be set according to needs by using the room operating units of the EY-RU2** and EYB2** series.
- Optimisation of energy consumption thanks to occupancy function, monitoring of window contacts, demand-led fan-speed switching and time-dependent setpoint specification.
- Time and calendar function
- Recording of historical data
- Integration into the building management system via novaNet data interface
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50/60 Hz
	Power consumption	10 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Humidity, no condensation	< 85% rh
Structural design		
	Weight	0.37 kg
	Dimensions W x H x D	178 × 103 × 42 mm
Standards and directives		
	Type of protection	IP 10 (EN 60529)
	Protection class	II (EN 60730-1)
	Software class A	EN 60730-1 Appendix H
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-4 EN 55022 Class A
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9

Inputs		**EYE201F001**	**EYE202F001**
Operating unit	EYB2**/EY-RU2**	1 pc.	1 pc.
Temperature sensor	Ni1000	1 pc.	2 pcs.
Command variable	0...10 V, (R_i= 10 kΩ)	1 pc.	1 pc.
Control contacts	On/off	2 pcs.	3 pcs.
Outputs			
Triac switching outputs	0-I-II (24 V~, 1 A)	1 pc.	2 pcs.
Relay switching outputs	NO contacts (250 V~, 2 A)	1 pc.	3 pcs.
Analogue	0...10 V (load ≥ 1 kΩ)	–	2 pcs.

Overview of types

Type	Description
EYE201F001	DDC single-room controller, 1 relay
EYE202F001	DDC single-room controller, 3 relays

1) *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

EYE 205, 206: DDC air-volume controllers, ecos205, 206

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Can be used for variable air-volume control in single rooms.
- 2- and 4-pipe systems, heating/cooling
- Electric reheater
- Frost protection function
- Room lighting control
- Compact DDC air-volume controller
- Static differential-pressure sensor (position-independent)
- Time and calendar functions

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50/60 Hz
	Power consumption	10 VA
	Battery	Buffer for parameters and time
Specifications		
Static differential pressure	Pressure range[1]	0...250 Pa
	Linearity	typically 2% FS
	Reproducibility	typically 0.2% FS
	Diaphragms	liquid silicone rubber
	Influence of position	±0.51% FS
	Zero point stability	< 0.2% FS
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Humidity, no condensation	< 85% rh
	Permissible operating pressure p_{stat}	±3 kPa
Inputs and outputs		
Inputs	Operating unit	EYB2**/EY-RU**
	Temperature sensor	Ni1000
	Command variable	0...10 V, R_i= 10 kΩ
	Control contacts	ON/OFF
Outputs	Triac switching outputs	0-I-II, 24 V~, 1 A
	Relay switching outputs	NO contacts (250 V~, 2 A)
	Analogue	0...10 V; load ≥ 1 kΩ
Structural design		
	Weight	0.4 kg
	Dimensions W x H x D	178 × 103 × 42 mm
Standards and directives		
	Type of protection	IP 10(EN 60529)
	Protection class	II (EN 60730-1)
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-4 (Interference Class A) EN 55022 Class A
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	Software class A	EN 60730-1 Annexe H

[1] *Static pressure difference: for the plant to operate ideally, the minimum pressure difference for V_{min} should not exceed 2 Pa.*

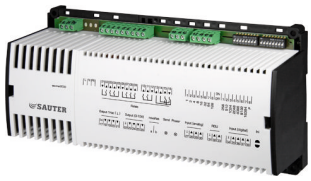
[2] *EN 61000-6-2: If it is mandatory to comply with the European standard, the power cables for the digital inputs (DI), analogue inputs and outputs (AI/AO) and the counter inputs (CI) should not exceed 30 metres in length*

Overview of specifications	EYE205F002	EYE206F002
Inputs		
Operating unit	1	1
Temperature sensors	1	2
Command variable	1	1
Control contacts	2	3
Outputs		
Triac switching outputs	2	3
Relay switching outputs	-	1
Analogue	1	2

Overview of types

Type	Description
EYE205F002	DDC air-volume controller
EYE206F002	DDC air-volume controller

EY-RC 208, 209: Room automation stations, ecos208, 209



Features

- Part of the SAUTER EY-modulo 2 family of systems
- The indoor climate can be set according to needs by using the room operating units of the EY-RU2** and EYB2** series.
- Reduces energy consumption thanks to occupancy function, window contact monitoring, demand-led fan-speed switching, light and louvre control, and time-dependent setpoint specification.
- Time and calendar function
- Recording of historical data
- Integration into the building management system via novaNet data interface
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- System bus: novaNet (2-wire)

Technical data

Electrical supply		
	Power supply	230 V~, ±10%
	Power consumption/dissipated power	≤ 24 VA/8W (unloaded outputs) ≤ 40 VA/32W (external load 20 VA)
	Battery (buffer: RTC/SRAM)	CR20320 insertable (lithium)
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Humidity, no condensation	≤ 85% rh
Inputs and outputs		
Inputs	Operating unit	EYB2**/EY-RU2**
	Temperature sensor	Ni1000
	Power supply	0...10 V=, potentiometer
	Control contacts	ON/OFF
Outputs	Triac switching outputs	0-I-II (24 V~, 1 A)
	Relay switching outputs	Change-over contacts, 250 V~, 10 A NO contacts, 250 V~, 1 A; start-up current 80 A NO contacts, 250 V~, 1 A change-over contacts, 250 V~, 1 A
	Analogue	0...10 V, load = 1 kΩ
Structural design		
	Dimensions W x H x D	244 x 120 x 72.5 mm
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2 EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of specifications	EY-RC208F001	EY-RC209F001
Inputs		
Operating unit	1	1
Temperature sensors	2	2
U/Pot/(I) ŭ	1	1

[1] *IP 10 with terminal cover (accessory 0900240001)*
IP 20 with wiring box (accessory 0900240010)

[2] *EN 61000-6-2: If it is mandatory to comply with the European standard, the power cables for the digital inputs (DI), analogue inputs and outputs (AI/AO) and the counter inputs (CI) should not exceed 30 metres in length*

Overview of specifications	EY-RC208F001	EY-RC209F001
Control contacts	4	4
Outputs		
Triac switching outputs	2	2
Relay switching outputs, change-over contacts 10 A	1	1
Relay switching outputs, NO contacts, 1 A, start-up current 80 A	2	2
Relay switching outputs, NO contacts, 1 A	3	6
Relay switching outputs, change-over contacts 1 A	-	1
Analogue	4	4

Overview of types

Type	Description	Weight
EY-RC208F001	6 relays	1.35 kg
EY-RC209F001	10 relays	1.4 kg

Accessories

Type	Description
0900240001	Terminal cover (240 mm), pack of 2
0900240010	Wiring box, 240 mm (2 pcs)
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

SAUTER EY-modulo 2 **room operating units**

SAUTER's ecoUnit room operating unit combines technology with design. The key can be freely assigned with various functions. Due to the standard internal dimensions of 55 x 55 mm, these devices fit both SAUTER frames and the frames of third-party manufacturers of light switches.

Overview of room operating units

Models					
Type codes	EY-RU210F001	EY-RU211F001	EY-RU214F001	EY-RU216F001	EY-RU241F001
Further information	p. 509	p. 509	p. 509	p. 509	p. 511
Product name	ecoUnit210	ecoUnit211	ecoUnit214	ecoUnit216	ecoUnit241
Usage	Temperature	Temperature	Temperature, occupancy, fan	Temperature, occupancy, fan, window blinds/ lighting	Temperature
Display/indicators	–	Scale ±	LED	LED	LCD
Temperature sensor	•	•	•	•	•
Push-button functions	–	–	–	2	–
Fan speeds	–	–	AUTO - 0 - 1 - 2 - 3	AUTO - 0 - 1 - 2 - 3	–
Setpoint adjustment	–	adjustable	adjustable	adjustable	adjustable
Room occupancy	–	–	3 modes	3 modes	–

Overview of room operating units

Models		
Type codes	EY-RU244F001	EY-RU246F001
Further information	p. 511	p. 511
Product name	ecoUnit244	ecoUnit246
Usage	Temperature, occupancy, fan	Temperature, occupancy, fan
Display/indicators	LCD	LCD
Temperature sensor	•	•
Push-button functions	–	2
Fan speeds	AUTO - 0 - 1 - 2 - 3	AUTO - 0 - 1 - 2 - 3
Setpoint adjustment	adjustable	adjustable
Room occupancy	3 modes	3 modes

EY-RU 210...216: Room operating unit, ecoUnit210...216

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Room operating unit with a wide range of different functions, designs and colours
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- The frames should be ordered as accessories
- Indoor climate can be adapted individually
- Operating mode is set for room occupancy and control of a three-speed fan

Technical data

Electrical supply		
	Power supply	from ecos 2
Specifications		
Sensor	Measuring range	0...40 °C
	Resolution	0.1 K
	Time constant in still air	approx. 10 min
Functionality	Setpoint correction	variable
	Room occupancy	3 modes, LED indicator
	Fan speed	LED indicator
	Position LED	green
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Connection		
	Line	3-core, twisted
	Length	≤ 100 m
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Keys
EY-RU210F001	NTC sensor	–
EY-RU211F001	NTC, setpoint adjuster dXs	–
EY-RU214F001	NTC, setpoint adjuster dXs, fan, occupancy	2
EY-RU216F001	NTC, setpoint adjuster dXs, fan, occupancy, window blinds/lighting	4

1) *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

EY-RU 241...246: Room operating unit, ecoUnit241...246

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Room operating unit with a wide range of different functions, designs and colours
- Displays various function symbols
- Device insert with transparent front, fits into frame with 55 x 55 mm aperture
- The frames should be ordered as accessories
- Indoor climate can be adapted individually
- Operating mode is set for room occupancy and control of a three-speed fan

Technical data

Electrical supply		
	Power supply	from ecos 2
Specifications		
Sensor	Measuring range	0...40 °C
	Resolution	0.2 K
	Time constant	approx. 12 min
Functionality	Setpoint display (LCD)	0...10 V= / 16...25.5 °C, resolution 0.2 K
	Resolution	0.2 K
	Setpoint correction	variable
	Presence (room occupancy)	3 modes, LCD
	Fan speed	5 functions, LCD
	Position LED	green
Connection	Line	3(4)-wire, twisted
	Length	≤ 100 m
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...85% rh
Structural design		
	Fitting	recessed/surface-mounted (see list of accessories)
	Dimensions W x H x D	59.5 x 59.5 x 25 mm
	Weight	0.1 kg
Standards and directives		
	Type of protection	IP 30 (EN 60529)
	Protection class	III (EN 6730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Keys
EY-RU241F001	LCD, NTC sensor, setpoint adjuster dXs	2
EY-RU244F001	LCD, NTC sensor, setpoint adjuster dXs, fan, occupancy	4
EY-RU246F001	LCD, NTC sensor, setpoint adjuster dXs, fan, occupancy, window blinds/lighting	6

1) *EN 61000-6-2: In order to meet the European standard, the power cable should not exceed 30 metres in length.*

Accessories

Type	Description
0940240101	Frame, single, including mounting plate (for recessed mounting), 10 pcs
0940240201	Frame, double, including mounting plate (for recessed mounting), 10 pcs
0940240301	Baseplate, single (for wall mounting), 10 pcs
0940240401	Baseplate, double (for wall mounting), 10 pcs
0940240501	Cable plate, single (for surface-mounted wiring), 10 pcs
0940240601	Cable plate, double (for surface-mounted wiring), 10 pcs
0940240701	Mounting plate, single (for third-party frames), 10 pcs
0940240801	Mounting plate, double (for recessed mounting), 10 pcs
0949241301	Cover, transparent, 10 pcs

SAUTER EY-modulo 2 **communication and network**

The devices of the moduNet series enable the SAUTER novaNet bus system to be incorporated into parent IT networks. To this end, a direct Ethernet port and BACnet gateway functionality are available.

Models			
Type codes	EY-BU 292	EY-BU 180	EY-AM 300
Further information	p. 514	p. 516	p. 518
Product name	moduNet292	moduNet180	moduNet300

EY-BU 292: novaNet-Ethernet interface, moduNet292

Features

- 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
- Part of the SAUTER EY-modulo 2 family of systems
- 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

Electrical supply		
	Power supply	230 V~, +10%, –15% 115 V~, +10%, –15% (50…60 Hz)
	Power consumption	6 VA, < 7 W
Permissible ambient conditions		
	Operating temperature	0…45 °C (32…113 °F)
	Storage and transport temperature	–25…70 °C (–13…158 °F)
	Humidity without condensation	10…85% rh
Interfaces and communication		
	Ethernet	1 × RJ-45 socket 10 Mbit/s (10 Base-T)
	Serial port RS-232	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)
Structural design		
	Fitting	EY-BU292F001: Fitted to DIN rail EY-BU292F002: Desktop model
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Software class A	EN 60730-1 Annexe H
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1 EN61000-6-2 EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60950-1

Overview of types

Type	Description	Dimensions W x H x D	novaNet	Weight
EY-BU292F001	Panel-fitted model	193 × 131 × 41 mm	1 × a/b terminal	0.65 kg
EY-BU292F002	Desktop model	228 × 131 × 41 mm	1× RJ-11 socket	0.7 kg

Accessories

Software

Type	Description
GZS100F599	CASE Tools CD, latest version (CASE TPC, CASE HWC, CASE Sun, novaNet292 SW ...)

Connecting cables

Type	Description
0367862001	novaNet RJ-11 to RJ-11: 1.5 m
0367862002	novaNet RJ-11 to RJ-11: 2.9 m
0367862003	novaNet RJ-11 to RJ-11: 6.0 m
0367842002	Ethernet RJ-45 to RJ-45: 1.5 m
0367842003	Ethernet RJ-45 to RJ-45: 2.9 m
0367842004	Ethernet RJ-45 to RJ-45: 6.0 m
0386301001	Connection cable COM DB9(f) to DB9(f): 3 m (null modem)
0386507001	Ethernet crossover RJ45 to RJ45: 3 m

General

Type	Description
0374509001	Power supply connector, 3-pin, packaged
0010240105	Cable housing for 0374509 001, cord grip
0374677001	Installation kit for 2-DIN rail mounting (for F001)

EY-BU 180: novaNet Repeater system bus, moduNet180

Features

- Part of the SAUTER EY-modulo 2 family of systems
- Device which physically extends the novaNet system bus
- Transparent repeater with four channels with equal rights
- Provision for connecting copper cable and OWG with RS-232
- 'Send' and 'Receive' LEDs for each novaNet channel

Technical data

Electrical supply		
	Power supply	230 V~, ±20%, 50...60 Hz 24 V~/=, ±10%
	Power consumption	≤ 11 VA
	Power consumption	400 mA
	Dissipated power	≤ 5 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity without condensation	10...85% rh
Indicators, display, operation		
LED	Power	1 × green
	novaNet (telegram traffic)	4 × yellow (send/receive)
Interfaces and communication		
	Delay time	approx. 20 µs for novaNet, approx. 25 µs for OWG
	novaNet bus system	2-core twisted, 200 nF/300 Ω
	Number of segments	4 for novaNet copper cable, 3 of which are for OWG
	Power supply for E/O converter	13 V= ≤ 100 mA
Structural design		
	Weight	0.9 kg
	Dimensions W x H x D	244 × 120 × 73 mm
Standards and directives		
	Type of protection[1]	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
	Over-voltage category	II
CE conformity as per	EMC Directive 2004/108/EC[2]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60950-1

Overview of types

Type
EY-BU180F001

[1] *IP 10 with terminal cover (accessory 0900240001)*

[2] *EN 61000-6-2: In order to meet the European standard, the power cables for the voltage outputs (13 V) should not exceed 30 metres in length, while the power cables for the RS-232 ports should not exceed 3 metres in length*

Accessories

Type	Description
0900240001	Terminal cover (240 mm), pack of 2

EY-AM 300: novaNet-BACnet Application Master, moduNet300

Features

- BACnet Application Master for novaNet
- To integrate novaNet stations (EY3600, EY-modulo 2) in BACnet/IP systems (EY-modulo 5)
- Automatic generation of BACnet I/O objects from defined stations, based on novaNet
- Special features such as loop objects and intrinsic reporting for I/O objects
- Objects that can be generated dynamically, such as schedules and calendars, for optimised time-controlled plant operation
- Trendlog objects that can be generated dynamically to analyse the plant
- Event Enrollment objects that can be generated dynamically for individual notification
- BACnet/IP network integration with BBMD and/or FD functionality
- Part of the SAUTER EY-modulo family of systems
- Communication: BACnet/IP (EN ISO 16484-5)
- Communication with two-wire novaNet system bus as novaNet PC
- Six LEDs for status, link, activity, speed, novaNet send, power

Technical data

Electrical supply		
	Power consumption	10 VA
	Dissipated power	5 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity without condensation	10...85% rh
Function		
	Number of BACnet objects	≤ 1000 (total)
Number of dynamic objects	Time programmes	≤ 100 (Schedule)
	Calendar	≤ 40 (Calendar)
	Historical data	≤ 50 (Trend Log)
	Data files log	≤ 10000 (Log Buffer)
	Notification objects	≤ 16 (Notification Class)
	Event reporting objects	≤ 100 (Event Enrollment)
	Number of BACnet client links	≤ 100 (peer-to-peer links)
	Number of BBMDs in BDT	≤ 16
	Number of FDs in FDT	≤ 16
Interfaces, communication		
	COM interface	2 x DB-9 plugs (male, DTE)
	COM 1	RS-232 parameterising, configuration
	COM 2	RS-232
	novaNet interface	RJ-11 socket (6/6), 2 x a/b terminals
	BACnet interface	RJ-45 Ethernet socket
	10/100 Base Tx	Auto-sensing
	Communication protocols	BACnet/IP, novaNet
Structural design		
	Dimensions W x H x D	244 x 120 x 73 mm
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I
	Environmental class	3K3 (IEC 60721)

	Over-voltage category	II
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60950-1

Overview of types

Type	Power supply	Weight
EY-AM300F001	24 V~, ±20%, 50/60 Hz, 24 V= (18...30 V=)	0.6 kg
EY-AM300F002	230 V~, ±10%, 50/60 Hz	1 kg

Accessories

Manuals

Type	Description
7001007001	User manual, German
7001007002	User manual, French
7001007003	User manual, English
7010011003	SAUTER BACnet PICS

Connecting cables

Type	Description
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
0386301001	Connection cable COM DB9(f) to DB9(f): 3 m (null modem)
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

General

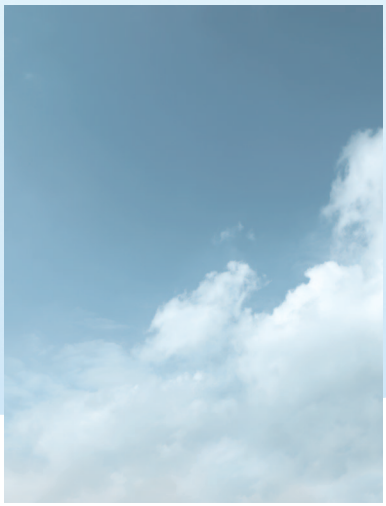
Type	Description
0900240001	Terminal cover (240 mm), pack of 2

SAUTER EY3600

Compatibility, comfort and energy efficiency at all levels of building automation.

SAUTER's EY3600 building management system provides continuity and security of investment for existing buildings.

Due to the extensibility with EY-modulo 2 or EY-modulo 5, it is simple to perform and keep track of tasks designed to increase comfort and energy efficiency.



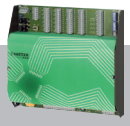
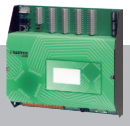
SAUTER EY3600

HVAC automation

SAUTER EY3600 **automation stations**

SAUTER EY3600 automation stations regulate, control, monitor and improve energy efficiency in HVAC installations. The basis for the network of the installation is the proven novaNet bus system.

Models			
Type codes	EYR 203, 207	EYL 210	EYL 215
Further information	p. 523	p. 525	p. 527
Product name	novaFlex	nova210	nova215

Models			
Type codes	EYL 220	EYL 225	EYL 230
Further information	p. 529	p. 531	p. 533
Product name	nova220	nova225	nova230

EYR 203, 207: Universal controller, novaFlex

Features

- Universal controller for regulation and control (DDC and PLC)
- 18/20 inputs
- 10 outputs
- Can be given network and communication capability by fitting an auxiliary module for novaNet
- Communication with EY-OP250 touch-panel is possible by fitting an auxiliary module
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24 V~, ±20%, 50...60 Hz
	Power consumption	10 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Digital inputs	8 (2 can be used as pulse counters)
	Analogue inputs	5 × 0...10 V 5 × Ni1000/Pt1000 (EYR203) 7 × Ni1000/Pt1000 (EYR207)
	Digital outputs	2 × 0-I, 2 × 0-I-II
	Analogue outputs	4 × 0...10 V
Interfaces and communication		
	AS network/novaNet	With auxiliary module on main pcb
	Local operating unit, modu240	1 × RJ-45 socket
	modu250 touch-panel	With auxiliary module (point to point)
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	128
	Time commands	320 entries
HDB entries	Digital (block 1)	1792
	Analogue (block 2)	1792
Structural design		
	Weight	0.8 kg
	Dimensions W x H x D	235 × 147.5 × 64.5 mm
Standards and directives		
	Type of protection	IP 10
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	Low-voltage directive 2006/95/EC	EN 60730
	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4 Interference Class A

Overview of types

Type
EYR203F002
EYR207F001

Accessories

Operating units

Type	Description
EY-OP240F001	Local operating unit, modu240
EY-OP250F001	Touch-panel modu250, colour
EY-OP250F002	Touch-panel modu250, monochrome

Microprogram

Type	Description
0501149002	Microprogram for modu240 languages: German, French, English, Polish, Slovenian, Hungarian, Romanian, Russian, Czech, Turkish, Slovakian

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

Data memory

Type	Description
0367883001	6× EPROM (empty) (USER-EPROM)
0367883002	PROM memory, 1 Mb empty (user data), pack of 5

Fitting

Type	Description
0367829001	Bracket for front fitting for modu240

Auxiliary modules

Type	Description
0374413001	Auxiliary module, novaNet
0374448001	Auxiliary module, pt. to pt. for direct connection of modu250; distance max. 6 m

EYL 210: Compact automation station, nova210

Features

- Compact automation station (AS)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- 28 inputs
- 10 outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	24/230 V~, 50...60 Hz
	Power consumption	14 VA
	Max. dissipated power	16 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	-25...70 °C (-13...158 °F)
	Humidity	10...90% rh, no condensation
Inputs and outputs		
	Digital inputs	16
	Analogue inputs	6 × Ni1000/Pt1000, 4 × U/I/R
	Meter	2
	Digital outputs	1 × 0-I, 3 × 0-I-II
	Analogue outputs	3 × 0...10 V, 20 mA max. (1 × 0...20 mA)
Interfaces and communication		
	Station network	2 × a/b terminals, 1 × RJ-11 socket
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	256
	Time commands	32
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Dimensions W x H x D	191 × 266 × 78 mm (7.5 × 10.5 × 3 inches)
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of types

Type	Features	Power supply	Weight
EYL210F001	Compact AS	230 V~, 50...60 Hz	2.0 kg (4.4 lb)
EYL210F101	Compact AS with LED	230 V~, 50...60 Hz	2.1 kg (4.6 lb)
EYL210F005	Compact AS, UL-certified	24 V~, 50...60 Hz	2.0 kg (4.4 lb)
EYL210F105	Compact AS with LED, UL-certified	24 V~, 50...60 Hz	2.1 kg (4.6 lb)

EYL210F005, EYL210F105: Agency USA UL Listed: UL 916; Agency Canada CSA certified: CSA C22.2

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Microprogram

Type	Description
0501111002	nova210 microprogram with modu240 languages: German, French, English, Polish, Slovenian, Hungarian, Romanian, Russian, Czech, Turkish, Slovakian

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

Data memory

Type	Description
0367883001	6× EPROM (empty) (USER-EPROM)
0367888001	5× EPROM (4 MBit (empty))

General

Type	Description
0367893001	Conversion kit: EYL210F001 (without LED) to EYL210F101 (with LED)

EYL 215: Compact automation station, nova215

Features

- Compact automation station (AS)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- 44 inputs
- 16 outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power consumption	24 VA
	Max. dissipated power	24 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	-25...70 °C (-13...158 °F)
	Humidity	10...90% rh, no condensation
Inputs and outputs		
	Analogue inputs	6 x Ni1000/Pt1000, 4 x U/I/R
	Digital inputs	32 (2 channels for moduLink174 field modules)
	Meter	2
	Digital outputs	12 (3 channels for moduLink164/165 field modules)
	Analogue outputs	4 (1 channel for moduLink170 field modules)
Interfaces and communication		
	AS network/novaNet	2 x a/b terminals, RJ-45 socket (6/6)
	Local operating unit, modu240	1 x RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	256
	Time commands	32
HDB entries	Digital	2 x 3584 (Block 1; 3)
	Analogue	2 x 3584 (Block 2; 4)
Structural design		
	Weight	2.3 Kg (5 lb)
	Dimensions W x H x D	191 x 266 x 78 mm (7.5 x 10.5 x 3 inches)
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)

CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of types

Type	Features	Power supply
EYL215F001	Automation station	230 V~, 50...60 Hz
EYL215F005	Automation station, UL-certified	24 V~, 50...60 Hz

EYL215F005: Agency USA UL Listed: UL 916; Agency Canada CSA certified: CSA C22.2

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Microprogram

Type	Description
0501113002	nova215 and nova225 microprogram with modu240 languages: German, French, English, Polish, Slovene, Hungarian, Romanian, Russian, Czech, Turkish

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

Data memory

Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5
0367888001	5× EPROM (4 MBit (empty))

EYL 220: Compact automation station, nova220

Features

- Compact automation station (AS)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- 48 inputs
- 18 outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power consumption	24 VA
	Max. dissipated power	27 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	-25...70 °C (-13...158 °F)
	Humidity	10...90% rh, no condensation
Inputs and outputs		
	Digital inputs	32
	Analogue inputs	8 × Ni1000/Pt1000, 6 × U/I/R
	Meter	2
	Digital outputs	4 × 0-I, 4 × 0-III
	Analogue outputs	6 × 0...10 V (2 × 0...20 mA)
Interfaces and communication		
	AS network/data line	2 × a/b terminals, 1 × RJ-45 socket (6/6)
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	256
	Time commands	32
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Dimensions W x H x D	280 × 266 × 78 mm (11 × 10.5 × 3 inches)
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of types

Type	Features	Power supply	Weight
EYL220F001	Compact AS	230 V~, 50...60 Hz	3.0 kg (6.6 lb)
EYL220F101	Compact AS with LED	230 V~, 50...60 Hz	3.1 kg (6.8 lb)
EYL220F005	Compact AS, UL-certified	24 V~, 50...60 Hz	3.0 kg (6.6 lb)
EYL220F105	Compact AS with LED, UL-certified	24 V~, 50...60 Hz	3.1 kg (6.6 lb)

EYL220F005, EYL220F105: Agency USA UL Listed: UL 916; Agency Canada CSA certified: CSA C22.2

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Microprogram

Type	Description
0501112002	nova220 microprogram with modu240 languages: German, French, English, Polish, Slovenian, Hungarian, Romanian, Russian, Czech, Turkish, Slovakian

Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

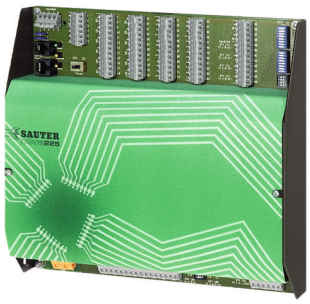
Data memory

Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5
0367888001	5x EPROM (4 MBit (empty))

General

Type	Description
0367894001	Conversion kit: EYL220F001 (without LED) to EYL220F101 (with LED)
0374504001	Cover with BACnet communication card

EYL 225: Compact automation station, nova225



Features

- Compact automation station (AS)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- 86 inputs
- 28 outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power consumption	34 VA
	Dissipated power	Max. 34 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	–25...70 °C (–13...158 °F)
	Humidity	10...90% rh, no condensation
Inputs and outputs		
	Digital inputs	64 (4 channels for moduLink174 field modules)
	Analogue inputs	12 × Ni1000/Pt1000, 8 × U/I/R
	Meter	2
	Digital outputs	16 (4 channels for moduLink164 field module) 32 (8 channels for moduLink165 field module)
	Analogue outputs	12 (3 channels for moduLink170 field modules)
Interfaces and communication		
	AS network/novaNet	2 × a/b terminals, 1 × RJ-11 socket (6/6)
	Local operating unit, modu240	1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	MFA	256
	Time commands	32
HDB entries	Digital	2 × 3584 (Block 1; 3)
	Analogue	2 × 3584 (Block 2; 4)
Structural design		
	Weight	3 kg (6.6 lb)
	Dimensions W x H x D	280 × 266 × 78 mm (11 × 10.5 × 3 inches)
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)

	Environmental class	3K3 (IEC 60721)
CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of types

Type	Features	Power supply
EYL225F001	Compact AS	230 V~, 50...60 Hz
EYL225F005	Compact AS, UL-certified	24 V~, 50...60 Hz

EYL225F005: Agency USA UL Listed: UL 916; Agency Canada CSA certified: CSA C22.2

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Microprogram

Type	Description
0501113002	nova215 and nova225 microprogram with modu240 languages: German, French, English, Polish, Slovene, Hungarian, Romanian, Russian, Czech, Turkish

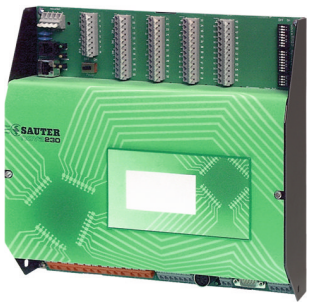
Connecting cables

Type	Description
0367842002	Automation station to modu240 1.5 m (4.9 ft)
0367842003	Automation station to modu240 2.9 m (9.5 ft)
0367842004	Automation station to modu240 6.0 m (19.7 ft)
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

Data memory

Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5
0367888001	5x EPROM (4 MBit (empty))

EYL 230: Compact universal automation station, nova230



Features

- Compact automation station (AS)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Control and regulation for HVAC applications
- COM port (EIA-232) for system integration and integration of third-party devices, for data exchange or printer function
- 256 MFA (machine fine addresses = data points), up to 192 of which are for system integration
- 28 inputs
- 10 outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply		
	Power consumption	36 VA
	Max. dissipated power	approx. 38 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Humidity	10...90% rh, no condensation
Inputs and outputs		
	Digital inputs	16
	Analogue inputs	6 × Ni1000/Pt1000, 4 × U/I/R
	Meter	2
	Digital outputs	1 × 0-I, 3 × 0-HI
	Analogue outputs	3 × 0...10 V, (1 × 0...20 mA)
Interfaces, communication		
	novaNet	2 × a/b terminals, 1 × RJ-11 socket
	Local operating unit, modu240	EY-OP 240, 1 × RJ-45 socket
	Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)
	Service	RS232 7-pin DIN socket
	Integration of non-Sauter systems	RS232 9-pin plug, M-Bus from terminal (EYL230F010)
Structural design		
	Weight	2 kg
	Dimensions W x H x D	280 × 266 × 78 mm (11 × 10.5 × 3 inches)
Standards and directives		
	Type of protection	IP 00 (EN 60529)
	Protection class	I (EN 60730-1)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730

Overview of types

Type	Description	Power supply
EYL230F010	Compact AS with M-Bus interface	230 V~, 50/60 Hz
EYL230F015	Compact AS with M-Bus, UL-certified	24 V~, 50/60 Hz
EYL230F020	Data point router	230 V~, 50/60 Hz
EYL230F025	Data point router, UL-certified	24 V~, 50/60 Hz
EYL230F030	Printer interface	230 V~, 50/60 Hz
EYL230F035	Printer interface, UL-certified	24 V~, 50/60 Hz
EYL230F040	Compact AS, Modbus RTU	230 V~, 50/60 Hz
EYL230F045	Compact AS, Modbus RTU, UL-certified	24 V~, 50/60 Hz
EYL230F060	Compact AS, Grundfos	230 V~, 50/60 Hz
EYL230F065	Compact AS, Grundfos, UL-certified	24 V~, 50/60 Hz
EYL230F070	Compact AS, EIB (Elka)	230 V~, 50/60 Hz
EYL230F075	Compact AS, EIB (Elka), UL-certified	24 V~, 50/60 Hz
EYL230F090	Compact AS, Wilo	230 V~, 50/60 Hz
EYL230F095	Compact AS, Wilo, UL-certified	24 V~, 50/60 Hz
EYL230F110	Compact AS, LON (Sysmik)	230 V~, 50/60 Hz
EYL230F115	Compact AS, LON (Sysmik), UL-certified	24 V~, 50/60 Hz
EYL230F120	Compact AS, Siemens 3964R/RK512	230 V~, 50/60 Hz
EYL230F125	Compact AS, Siemens 3964R/RK512, UL-certified	24 V~, 50/60 Hz
EYL230F130	Compact AS, Danfoss VLT6000	230 V~, 50/60 Hz
EYL230F140	Compact AS, Danfoss VLT2800	230 V~, 50/60 Hz

*EYL230F**5: Agency USA UL Listed: UL 916; Agency Canada CSA certified: CSA C22.2*

Accessories

Microprogrammes

Type	Description
0501130001	F010, F040...F140 versions (Languages: German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish)
0501130002	Languages: German, French, English, Polish, Slovene, Hungarian, Romanian, Russian, Czech, Turkish
0501133001	F020 version
0501136001	F030 version (Languages: German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish)
0501136002	Languages: German, French, English, Polish, Slovene, Hungarian, Romanian, Russian, Czech, Turkish

Connecting cables

Type	Description
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)

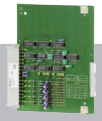
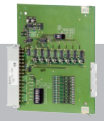
General

Type	Description
0374504001	Cover with BACnet communication card

EY3600 **modular automation stations**

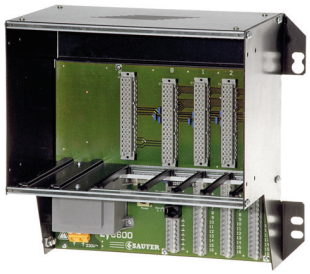
Using plug-in cards, SAUTER's modular EY3600 automation stations can be flexibly adapted to the particular requirements of the installation; they regulate, control, monitor and improve energy efficiency in HVAC installations. The basis for the network of the installation is the proven novaNet bus system.

Modelle					
Type codes	EYU 108, 109	EYK 300	EYS 100	EYL 106	EYS 110
Further information	p. 536	p. 537	p. 539	p. 540	p. 542
Product name	nova106	nova106	nova106	nova106	nova106

Modelle					
Type codes	EYS 119	EYS 121	EYS 123	EYS 124	EYS 135
Further information	p. 543	p. 544	p. 545	p. 546	p. 547
Product name	nova106	nova106	nova106	nova106	nova106

Modelle					
Type codes	EYS 141	EYS 151	EYS 153	EYS 155	EYS 158
Further information	p. 548	p. 549	p. 550	p. 551	p. 552
Product name	nova106	nova106	nova106	nova106	nova106

Modelle					
Type codes	EYS 181	EYX 168	EYX 172	EYX 176	EYZ 101
Further information	p. 553	p. 554	p. 555	p. 556	p. 557
Product name	nova106	nova106	nova106	nova106	–



EYU 108, 109: Rack for modular automation station, nova106

Features

- Basic unit for modular system
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- 24 or 60 hardware addresses

Technical data

Electrical supply		
	Power supply	230 V~, 50/60 Hz
	Max. power consumption	40 VA
	Max. current consumption	3 A
	Max. dissipated power	10 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity	10...90% rh, no condensation
Interfaces and communication		
	novaNet station network	2 × a/b terminals, insertable 1 × RJ-11 socket
Structural design		
	Fitting	Panel
Standards and directives		
	Type of protection	IP 00
	Protection class	I (EN 60730)
	Environmental class	3K3 (IEC 60721)
CE conformity as per	Low-voltage directive 2006/95/EC	EN 60730
	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4

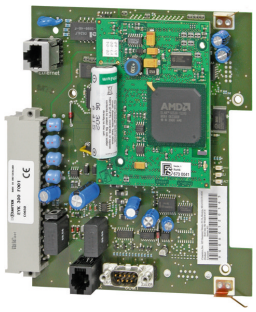
Overview of types

Type	Card slots	Weight	Dimensions W x H x D
EYU108F001	5	3 kg	267 × 282 × 180 mm
EYU109F001	11	5 kg	267 × 465 × 180 mm

Accessories

Type	Description
0367854001	Front plate (EYU108)
0367846001	Front plate (EYU109)

EYK 300: BACnet communication card



Features

- BACnet communication card for novaNet
- To integrate novaNet stations (EY3600, EY-modulo 2) in BACnet/IP systems (EY-modulo 5)
- Can be installed in the EY3600 AS rack for nova106 (slot A)
- Automatic generation of BACnet I/O objects from defined stations, based on novaNet
- Special features such as loop objects and intrinsic reporting for I/O objects
- Objects that can be generated dynamically, such as schedules and calendars, for optimised time-controlled plant operation
- Trendlog objects that can be generated dynamically to analyse the plant
- Event Enrollment objects that can be generated dynamically for individual notification
- BACnet/IP network integration with BBMD and/or FD functionality
- Part of the SAUTER EY-modulo family of systems
- Communication: BACnet/IP (EN ISO 16484-5)
- Communication with two-wire novaNet system bus as novaNet PC
- Four LEDs for status, link, activity, speed

Technical data

Electrical supply		
	Power supply	from AS rack (EYU 109, 108)
	Max. current consumption	0.4 A
Permissible ambient conditions		
	Operating temperature	0…45 °C
	Storage and transport temperature	–25…70 °C
	Humidity	10…90% rh, no condensation
Function		
	Number of BACnet objects	≤ 1000 (total)
Number of dynamic objects	Time programmes	≤ 100 (Schedule)
	Calendar	≤ 40 (Calendar)
	Historical data	≤ 50 (Trend Log)
	Data files log	≤ 10000 (Log Buffer)
	Notification objects	≤ 16 (Notification Class)
	Event reporting objects	≤ 100 (Event Enrollment)
	Number of BACnet client links	≤ 100 (peer-to-peer links)
	Number of BBMDs in BDT	≤ 16
	Number of FDs in FDT	≤ 16
Interfaces, communication		
	COM interface	RS-232, DB9 plug as per DTE
	novaNet interface	RJ-11 socket (6/6)
	BACnet interface	RJ-45 Ethernet
	Transport protocol	BACnet/IP
	Configuration	TCP/IP (port 51966) RS-232
Structural design		
	Weight	0.23 kg
Standards and directives		
	Type of protection	IP 00 (EN 60529)

	Environmental class	3K3 (IEC 60721)
CE conformity as per	EMC Directive 2004/108/EC[1)]	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 50024

Overview of types

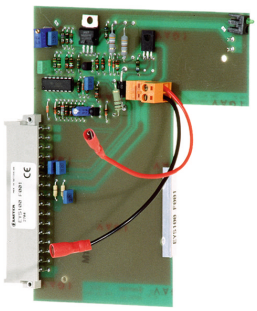
Type
EYK300F001

Accessories

Type	Description
0367842002	Connecting cable, Ethernet RJ45-RJ45: 1.5 m
0367842003	Connecting cable, Ethernet RJ45-RJ45: 2.9 m
0367842004	Connecting cable, Ethernet RJ45-RJ45: 6 m
0367862004	Connecting cable, novaNet RJ11-RJ11: 0.21 m (supplied)
0386301001	Connection cable COM DB9(f) to DB9(f): 3 m (null modem)

1) *EN 61000-6-3: This is class A equipment. It may cause radio interference in residential premises; if so, the operator may be requested to implement appropriate measures.*

EYS 100: UPS card, nova106



Features

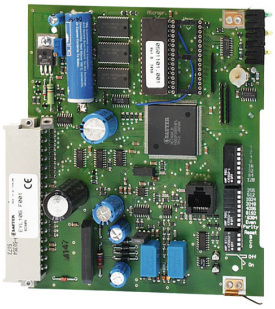
- Function card for modular system
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	165 mA
	Power consumption	7 VA
	Max. dissipated power	7 W
	Max. charging current for battery	150 mA
	Accumulator specifications	12 V/6.0 Ah lead battery
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Structural design		
	Weight	0.1 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS100F001



EYL 106: Processor and power supply card, nova106

Features

- CPU card for modular system
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Data recording (historical database)

Technical data

Electrical supply

Power supply	from rack
Power consumption	250 mA
Max. dissipated power	3 W
Current load	max. 3 A from 12 V supply
AS address range	0...28671

Permissible ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	–25...70 °C
Humidity	10...90% rh, no condensation

Interfaces and communication

Local operating unit, modu240	1 × RJ-45 socket
Languages	German, French, English, Italian, Dutch, Spanish, Swedish, Norwegian, Danish, Portuguese, Finnish (for other languages, see accessories)

Structural design

Weight	0.235 kg

Standards and directives

CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 55022 class A

Overview of types

Type
EYL106F001

Accessories

Operating unit

Type	Description
EY-OP240F001	Local operating unit, modu240

Microprogram

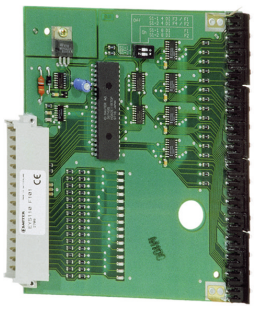
Type	Description
0501101002	nova106 microprogram with modu240 languages: German, French, English, Polish, Slovene, Hungarian, Romanian, Russian, Czech, Turkish

Connecting cables

Type	Description
0367842001	Automation station to modu240: 0.35 m
0367842002	Automation station to modu240: 1.5 m
0367842003	Automation station to modu240: 2.9 m
0367842004	Automation station to modu240: 6.0 m

Data memory

Type	Description
0367883002	PROM memory, 1 Mb empty (user data), pack of 5
0367888001	5× EPROM (4 MBit (empty))



EYS 110: DI function card, nova106

Features

- Function card for modular system
- 16 inputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply

	Power supply	from rack
	Max. output current of the input	1.3 mA with respect to earth
	Max. permissible input resistance	1 kΩ (incl. cable)
	Protection against extraneous voltage	≤ 24 V ~/=
	Max. dissipated power	2 W

Permissible ambient conditions

	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh

Inputs and outputs

	Number of inputs	16, digital
	Type of inputs	Potential-free contacts (with ground connection) Opto-coupler transistor (open collector)

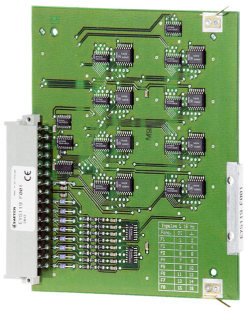
Standards and directives

CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Max. current consumption	Weight
EYS110F001	Digital input card	17 mA	0.23 kg
EYS110F101	Digital input card with LED	160 mA (all LEDs on)	0.24 kg

EYS 119: Function card for pulse metering, nova106



Features

- Function card for modular system
- 8 inputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply

	Power supply	from rack
	Max. current consumption	10 mA
	Max. dissipated power	approx. 0.1 W
	Protection against extraneous voltage	≤ 24 V~/=

Permissible ambient conditions

	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh

Inputs and outputs

	Number of inputs	8, digital
	Type of inputs	Potential-free contacts opto-coupler transistor (open collector)
	Input frequency	< 20 Hz
	Max. output current of the inputs	1.2 mA with respect to earth
	Debounce time	20 ms
	Max. permissible line resistance	1 kΩ (incl. cable)

Structural design

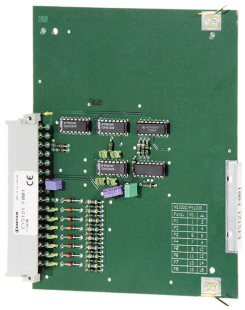
	Weight	0.12 kg

Standards and directives

CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS119F001



EYS 121: Function card for Ni1000/Pt100 temperature measurement, nova106

Features

- Function card for modular system
- 8 inputs (Ni1000/Pt1000)
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

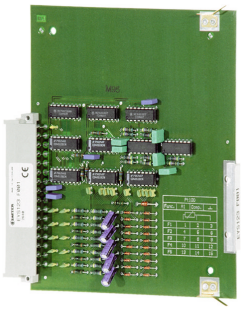
Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	12 mA
	Max. dissipated power	0.1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of inputs	8
	Type of inputs	Ni1000 (EN 43760) Pt1000 (EN 60751)
	Measuring current	max. 1 mA to earth, pulsed
Measuring range	Ni1000	-50...150 °C
	Pt1000	-100...500 °C
Accuracy	Ni1000 (linearity)	±0.06 °C
Structural design		
	Weight	0.12 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS121F001

EYS 123: Function card for Pt100 temperature measurement, nova106



Features

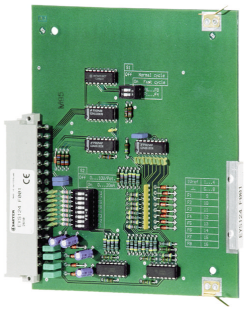
- Function card for modular system
- 5 inputs, Pt100
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	20 mA
	Max. dissipated power	0.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of inputs	5
	Type of inputs	Pt100 (EN60751)
	Measuring current	max. 10 mA to earth, pulsed
	Measuring range	-100...500 °C
Accuracy	Linearity	No deviation in the range 0...100 °C
Structural design		
	Weight	0.12 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS123F001



EYS 124: Function card U/I/R measurement for potential-free signals

Features

- Function card for modular system
- 8 inputs U/I/R
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

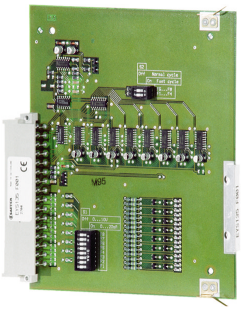
Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	20 mA
	Max. dissipated power	0.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of inputs	8
Type of inputs	Power supply	0(2)...10 V 0(0.2)...1 V
	Current	0(4)...20 mA
	Potentiometer	0.5 kΩ...2 kΩ
Specifications	Voltage measurement	< 50 V
	Current measurement	< 50 mA
	Load on reference outputs	< 10 mA
Structural design		
	Weight	0.13 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS124F001

EYS 135: Function card U/I measurement for potential-loaded signals, nova106



Features

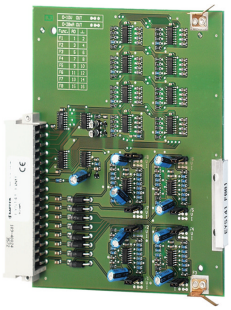
- Function card for modular system
- 8 inputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	1 mA
	Max. dissipated power	0.5 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–27...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of inputs	8, U/I
Type of inputs	Power supply	0(2)...10 V 0(0.2)...1 V
	Current	0(4)...20 mA
Specifications	Voltage measurement	< 50 V
	Current measurement	< 50 mA
	Common-mode voltage	< 80 V~/=, 55 V~
Structural design		
	Weight	0.135 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS135F001



EYS 141: Function card Analogue Out 0...10 V or 0...20 mA, nova106

Features

- Function card for modular system
- 8 outputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

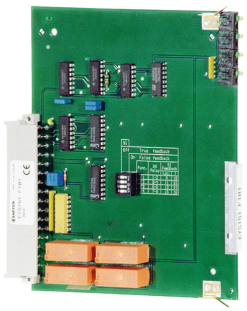
Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	190 mA
	Max. dissipated power	2.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of outputs	8, analogue
Type of outputs	Power supply	0...10 V, max. 20 mA
	Current	0...20 mA, max. 10 V
	Protection against extraneous voltage	600 V/1 ms
Structural design		
	Weight	0.145 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 55022 Class A

Overview of types

Type
EYS141F001

EYS 151: Function card, command 0-I with FB, nova106



Features

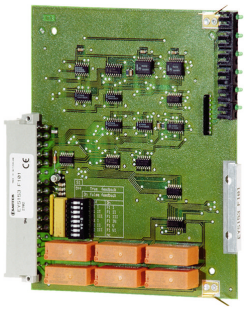
- Function card for modular system
- 8 digital inputs
- 4 digital outputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. dissipated power	3 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of outputs	4 (command 0-I)
	Type of outputs	Relay
	Load on outputs	42 V~/=, 2 A
	Number of FB inputs	8
	Type of FB inputs	Potential-free contacts opto-coupler transistor (open collector)
	Threshold	1 V/4 V
	Max. output current of the inputs	1.5 mA
	Max. line resistance of the FB inputs	600 Ω
	Protection against extraneous voltage	< 24 V~/=
Structural design		
	Weight	0.16 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Max. current consumption
EYS151F001	with FB	86 mA
EYS151F101	with FB and LED	92 mA



EYS 153: Function card, command 0-I-II-III/0-I-II-III-IV, nova106

Features

- Function card for modular system
- 8 digital inputs
- 6 digital outputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply

	Power supply	from rack
	Max. current consumption	130/134 mA
	Max. dissipated power	4.6 W

Permissible ambient conditions

	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh

Inputs and outputs

	Number of outputs	2 × 0-I-II-III 1 × 0-I-II-III-IV-V-VI
	Type of outputs	Relay
	Contact rating	42 V~/=/2 A
	Number of FB inputs	8
	Type of FB inputs	Potential-free contacts opto-coupler transistor (open collector)
	Threshold	1 V/4 V
	Max. output current of the inputs	1.5 mA
	Max. line resistance of the FB inputs	600 Ω

Structural design

	Weight	0.18 kg

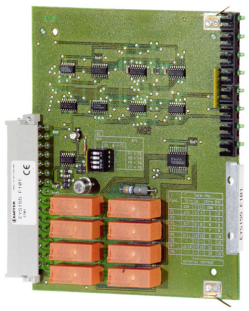
Standards and directives

CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Max. current consumption
EYS153F001	-	130 mA
EYS153F101	with LED	134 mA

EYS 155: Function card, command 0-I/0-I-II, nova106



Features

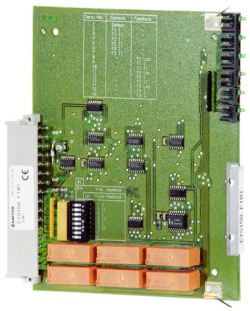
- Function card for modular system
- 8 digital outputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	170/185 mA
	Max. dissipated power	6.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of outputs	8 × 0-I/ 4 × 0-I-II
	Type of outputs	Relay
	Load on outputs	42 V~/=/2A
Structural design		
	Weight	0.18 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Max. current consumption
EYS155F001	-	170 mA
EYS155F101	with LED	185 mA



EYS 158: Function card, command 0-I-II with FB, nova106

Features

- Function card for modular system
- 9 digital inputs
- 6 digital outputs
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

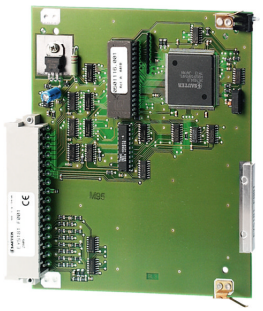
Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	150/163 mA
	Max. dissipated power	approx. 5 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Number of outputs	3 x 0-I-II
	Type of outputs	Relay
	Load on outputs	42 V~/=/2 A
	Type of FB inputs	Potential-free contacts opto-coupler transistor (open collector)
	Max. line resistance of the FB inputs	600 Ω
	Max. output current of the FB inputs	1.5 mA
Structural design		
	Weight	0.175 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features	Max. current consumption
EYS158F001	with FB	150 mA
EYS158F101	with FB and LED	163 mA

EYS 181: Emax function card, nova106



Features

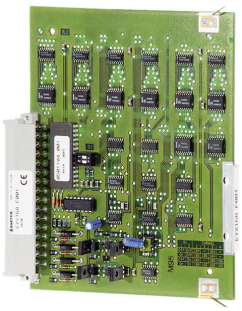
- Function card for modular system
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Energy metering via counter pulses; also includes switching off the loads (gradually)
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	100 mA
	Max. dissipated power	1.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
Inputs	Number of inputs	4 pulse meters (quantity counters)
	Counting frequency	15 Hz
	Synchronisation input	1 pulse (high/low)
	Type of inputs	Potential-free contacts opto-coupler transistor (open collector)
Structural design		
	Weight	0.145 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYS181F001



EYX 168: Driver card DO, nova106

Features

- Function card for modular system
- 2/4 output channels
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Six outputs
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

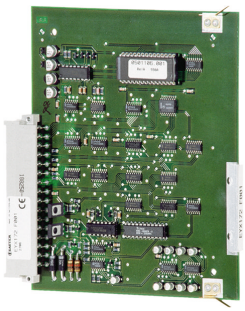
Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	220 mA
	Max. dissipated power	2.6 W
Specifications		
	Factory setting	All switches to 'Off' position
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Field telegram, novaLink	≤ 100 m (5 nF/7.5 Ω) twisted and shielded, both ends to ground
novaLink channels		
	Digital outputs	8 (2 channels for moduLink164 field modules) 16 (4 channels for moduLink165 field modules)
Structural design		
	Weight	0.175 kg
Standards and directives		
CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYX168F001

EYX 172: Driver card AO 0...10 V, nova106



Features

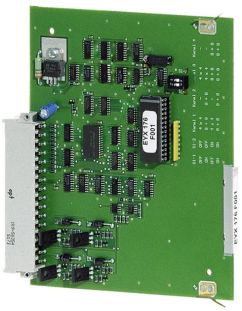
- Function card for modular system
- 2 output channels
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	120 mA
	Max. dissipated power	0.1 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Field telegram, novaLink	≤ 100 m (5 nF/7.5 Ω) twisted and shielded, both ends to ground
	Analogue outputs	8 (2 channels for moduLink170 field modules)
Structural design		
	Weight	0.17 kg
Standards and directives		
CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYX172F001



EYX 176: Driver card for field module DI, nova106

Features

- Function card for modular system
- 4 input channels
- Part of the SAUTER EY3600 family of systems
- Communication: SAUTER novaNet
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- Data recording (historical database)

Technical data

Electrical supply		
	Power supply	from rack
	Max. current consumption	600 mA
	Max. dissipated power	7.2 W
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Inputs and outputs		
	Field telegram, novaLink	100 m max. (5 nF/7,5 Ω) twisted and shielded, both ends to ground
	Digital inputs	64 (4 channels for moduLink174 field module)
Structural design		
	Weight	0.3 kg
	Card slots	1...7
Standards and directives		
CE conformity as per:	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYX176F001

EYZ 101: UPS for compact AS and field modules

Features

- Uninterruptible power supply (UPS) for EY3600 compact automation stations (AS) and field modules
- Provides an uninterrupted change-over to battery mode for the EY3600 compact AS in the event of a power failure
- Used for emergency power supply of 24 V~ for moduLink or novaLink field modules
- Four LEDs (Power, AS UPS, EYY UPS and Fault) for diagnosis purposes
- Part of the SAUTER EY-modulo 2 and EY3600 families of systems

Technical data

Electrical supply		
	Max. charging current	100 mA of 12 V/AS1 or 24 V~
	Charging voltage	13.5 V
	Charging time	72 h (max. for 6 Ah batt.)
	Deactivation	< 9.8 V
	Emergency power supply	from 11.9 V
	Accumulator specifications	12 V/6.0 Ah lead battery
	Information outputs	Battery mode, alarm
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity, no condensation	10...90% rh
Structural design		
	Weight	0.1 kg
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type
EYZ101F001

Accessories

Type	Description
0367887001	12 V/6 Ah lead battery

EYZ 291: Router, novaNet291

Features

- Bus access device for novaNet system bus with RS232 interface
- For parameterising 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 of novaNet stations to the PC with a serial connection
- Remote access with 'router function' via RS232 modem
- Remote monitoring in 'routel mode' via RS232 modem (i.e. automatic uploading of events)
- Communication using two-wire novaNet system bus
- Communication with RS232-compatible device pairs (dial-up modem, ISDN adaptor, electronic surge protector, OWG converter, wireless modem etc.)
- 1 MB buffer for de-coupling the time characteristic of novaNet and RS232 interface
- Part of the SAUTER EY-modulo 2 and EY3600 families of systems

Technical data

Electrical supply		
	Max. current consumption	10 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C (32...113 °F)
	Storage and transport temperature	–25...70 °C (–13...158 °F)
	Humidity without condensation	10...90% rh
Interfaces, communication		
	COM interface (DTE)	DB9 plug
	novaNet	1 × a/b terminal, 1 × RJ-11 socket
	DIP switch	4 (baud rate, router/routel function)
Structural design		
	Weight	0.99 kg (2.2 lb)
Standards and directives		
CE conformity as per	EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Description	Power supply
EYZ291F001	novaNet router	230 V~, 50/60 Hz
EYZ291F005	novaNet router, UL-certified	115 V~, 50/60 Hz

EYZ291F005: Agency USA UL Listed: UL 60950; Agency Canada CSA certified: CSA C22.2 No. 60950

Accessories

Type	Description
0367862001	novaNet291 or moduNet292 to automation station: 1.5 m (4.9 ft)
0367862002	novaNet291 or moduNet292 to automation station: 2.9 m (9.5 ft)
0367862003	novaNet291 or moduNet292 to automation station: 6.0 m (19.7 ft)
0386301001	Connection cable COM DB9(f)-DB9(f): 3 m (null modem)

YYO 300: OPC server, novaNet291

Features

- Integration of novaNet station of the EY-modulo 2 family and EY3600
- novaNet bus access with the devices
  - a. novaNet291 router as a direct connection or via modem for a remote connection
  - b. moduNet292 novaNet-Ethernet interface
- Data exchange for status, commands, measured values, setpoints
- Data retrieval of historical data
- Displaying and adjusting of time programmes and calendars in the stations (ActiveX components)
- OPC specifications in accordance with OPC Data Access 2.0 (OPC DA 2.0)
- For visualisation software with OPC client function and optional support for ActiveX
- Windows operating systems:
  - Windows XP Professional, Windows 7 (32- and 64-bit), Windows Server 2008
- PC interfaces:
  - EIA-232 (COM interface for novaNet291/router)
  - EIA232/modem (modem interface for dial-up operation with novaNet291/router)
  - Ethernet (via "novaVPort" driver for moduNet292)

Overview of types

Type	Features
YYO300F010	novaNet OPC server for EY-modulo 2 and EY3600 (incl. USB key/dongle)
YYO300F099	novaNet OPC server for EY-modulo 2 and EY3600 (software CD, without USB key/dongle)

Accessories

Type	Description
EY-BU292F001	novaNet-Ethernet interface (cabinet model)
EY-BU292F002	novaNet-Ethernet interface (desktop model)
EYZ291F001	novaNet router
EYZ291F005	novaNet router, UL-certified

EYZ 484: Current loop/DL converter

Features

- Current loop/DL converter for amplifying the communication on EY2400 data lines
- For large distances to external peripheral equipment (max. 4 km)
- Secures the preferred transmission speed on the data line (max. 19200 baud at 50 pF/m)
- For operating an EY2400-DL network with up to 100 substations (200 nF/300 Ω)
- For operating stations with EY2400-ProVi+
- For parameterising substations ('islands')
- For EY2400-DA programmes that are located away from the command centre (CC)
- For printers that are located away from the CC
- Part of the SAUTER family of systems for integrating EY2400

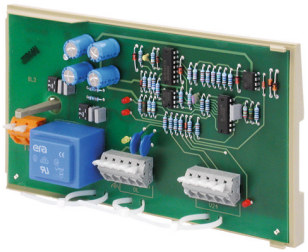
Technical data

Electrical supply		
	Power supply	230 V~, 50/60 Hz
	Power consumption	5 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity without condensation	10...90% rh
Interfaces, communication		
	EIA-232/V.24	Max. cable length: 15 m
	EY2400 data line	Max. cable length: 4 m
	Current loop	Max. cable length: 4 km
Structural design		
	Weight	0.4 kg
	Dimensions W x H x D	178.5 x 103 x 43 mm
Standards and directives		
	Type of protection	IP 20

Overview of types

Type
EYZ484F001

EYZ 485: DL converter for V.24



Features

- Auxiliary device for integrating EY2400 on the management level
- Communication on EY2400 data line via EIA-232/V.24 to PC
- For process visualisation of EY2400 substations
- Data-line access for novaPro Open to EY2400 substations
- For parameterising EY2400 substations
- Part of the SAUTER family of systems for integrating EY2400

Technical data

Electrical supply		
	Power supply	230 V~, 50/60 Hz
	Power consumption	5 VA
Permissible ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	–25...70 °C
	Humidity without condensation	10...90% rh
Interfaces, communication		
	EIA-232/V.24	Max. 15 m cable length, with monitoring of handshake signal
	EY2400 data line	Max. 300 Ω/200 nF (4 km)
Structural design		
	Weight	0.4 kg
	Dimensions W x H x D	178.5 x 103 x 43 mm
Standards and directives		
	Type of protection	IP 20

Overview of types

Type
EYZ485F001

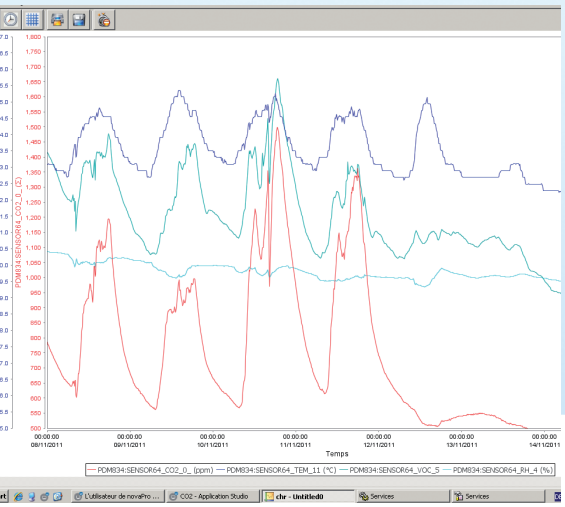
Management level

The special management level of the building automation system is open and flexible, for the utmost in efficiency.

SAUTER believes that efficiency begins with flexibility. SAUTER's novaPro Open and its Energy Management Solution (EMS) have been developed by specialists for all the specific needs of building automation. They allow the customer's particular wishes to be met.

For instance, novaPro Open can handle large or small systems, both existing ones and new ones alike. EMS indicates the energy flows and the consumption to both the user and the operator. This helps to improve energy efficiency and reduce costs.

SAUTER novaPro Open and EMS communicate openly, in all the usual protocols, in order to integrate sub-systems, so open interfaces are, of course supported.



Management level

Software

YZP 410...431: novaPro Open Suite

Features

- More than 100 drivers for the integration of non-Sauter systems
- Linking to databases via ODBC, DDE, SQL, OPC
- Due to scalability and modularity, can be adjusted to the particular requirements of a plant
- Extended alarm management facility permits reporting of events via text message, e-mail, fax or voice.
- The integrated time planner enables the organization of the duty personnel that are called out when an alarm occurs.
- Integration tools for CASE Suite, BACnet
- novaPro Open Suite basic package includes:
  - Visualisation
  - Scheduler
  - Driver for EY3600 novaNet
  - Report generator
  - PLC functionality
  - OPC server and OPC client
  - UCVT, ZP3600, ZP2400, BACnet scheduler (driver dependent)
- novaPro Open Suite Runtime includes:
  - Runtime (no Studio)
  - 300 tags
  - 1 web client
  - 1 driver (novaNet/BACnet)
  - PLC functionality

Overview of types

Type	Features
YZP410F001	novaPro Open suite basic package, incl. 500 addresses
YZP410F101	novaPro Open suite basic package, incl. 2000 addresses
YZP410F201	novaPro Open suite basic package, incl. 5000 addresses
YZP410F301	novaPro Open suite basic package, incl. 65000 addresses
YZP411F001	novaPro Open Suite Runtime with novaNet driver
YZP411F002	novaPro Open Suite Runtime with BACnet driver
YZP419F401	novaPro Open Suite Runtime: upgrade for basic package incl. 500 addresses (YZP410F001)

Accessories

Type	Description
YZP416F101	Driver for EY2400
YZP416F201	Driver for EY3600 for Wizcon (included in YZP410F***)
YZP416F302	Driver for Johnson Controls System 91, N2 Protocol
YZP416F303	Driver for Landis & Gyr PRV 1 Controller
YZP416F304	Driver for Landis & Gyr PRV 2 Controller
YZP416F311	Driver for native Bacnet (vpiwnbcn.dll)
YZP416F312	Driver for Siemens SIMATIC S5/S7, TCP/IP (vpiwnstp)
YZP417F101	Access for 10 web clients
YZP417F201	Access for 20 web clients
YZP417F301	Access for 100 web clients
YZP418F001	AAM Advanced Alarm Module
YZP418F201	Real Speak™
YZP419F101	Upgrade from 500 to 2000 addresses

Type	Description
YZP419F201	Upgrade from 2000 to 5000 addresses
YZP419F301	Upgrade from 5000 to 65000 addresses
YZP420F003	Version update: previous version to latest version
YZP420F004	Version update: older versions to latest version
YZP420F999	novaPro Open Suite: latest CD
YZP421F002	nova PLC upgrade from 500 to 65000 addresses
YZP422F001	Exchange of parallel dongle to USB
YZP423F001	XL Report
YZP425F001	eToken PKI Client Licence
YZP425F002	eToken USB 32K
YZP425F003	eToken USB 64K
YZP426F001	Biometry PID Enrolment Licence
YZP426F002	Biometry PID Verification Licence
YZP427F001	FPS Single Flat Silicon USB
YZP427F002	FPS Single Flat Optical USB Desktop
YZP427F003	FPS Single Flat Optical USB Kiosk
YZP427F004	FPS Single Flat Optical Ethernet
YZP427F005	FPS Single Flat Optical FBI USB
YZP427F006	FPS Single Flat/Rolled Optical FBI USB
YZP428F001	WizLogger
YZP429F001	WizAudit
YZP430F001	LDAPE Enrolment Licence
YZP430F002	LDAPV Verification Licence
YZP431F001	Licence PDA per web client (JVM)

Other accessories

Type	Description	Price
EY-BU 292	moduNet 292 (see product data sheet)	–
EYZ 291	novaNet 291, novaNet router (see product data sheet)	–
EYZ 485	V.24/EY2400 DL-converter (see product data sheet)	–

EMS 100, 200: Energy Management Solution

Features

- SAUTER EMS permits the central management and analysis of measurement data, key characteristics and reference variables. Measurement data can be read in automatically via one or more SDCs (Software Data Connectors), or they can be entered manually via the web. Systems without a building management system can be integrated into the EMS via one or more EDL hardware modules (EDL = Energy Data Logger). Measurement data are analysed and presented in the form of predefined standard reports. As an option, the SAUTER EMS server permits seamless integration into facility management systems.

Further features:

- Allocation of consumption and costs to internal cost centres and third-party tenants
- Optional connection of maintenance, CAFM and accounting systems
- Data acquisition, validation and automatic aggregation to daily, weekly, monthly and yearly values
- Time-dependent reference variables such as areas, operating and opening times, etc. are possible
- Measured data, reference variables and key figures can be shown as time series in charts for any desired periods
- Web-based graphic display of energy consumption including the basis for generating the Energy Performance Certificate
- Web-based graphic energy consumption comparisons with standardised benchmarks
- Alarm management
- As an option, reports can be created directly via the report module integrated in the SAUTER EMS server or through another commercially available reporting tool
- Alarm management
- Data point management
- Management of measurement data
- Aggregation (compression) of measurement data
- Presentation of measured values
- Benchmarking
- Standard reporting (monthly/annual energy report)
- User administration (1 client)
- Data export
- Configurable heating degree days
- 1 Software Data Connector (SDC) for novaPro Open, novaPro, novaPro 32, novaPro Web, novaPro Enterprise or EDL
- 5 users (of which 1 user for SERVice; when licence is purchased)
- 1 simultaneous user (with hosting solution)
- 10 addresses for data acquisition
- Software maintenance contract for hosting solution included in licence fee
- Software maintenance contract for system solution EMS420F001 to be concluded separately (min. 3 years, then automatic extension every year by one year)

Technical data

Hardware

Processor	Dual Core CPU 32/64 bit, x86-, x64-compatible
Clock rate	> 2 GHz
RAM	Min. 3 GB RAM (2 GB free for VMware)
Memory capacity	20 GB RAM free disk space

Software

Operating system[1]	VMware ESX(i) server from 4.0 (recommended: MS Windows XP (from Professional), MS Windows Vista (from Business), MS Windows Server 2003 (from Standard), MS Windows Server 2008 (from Standard)

Overview of types

Type	Description
EMS100F001	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Open
EMS100F002	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for EDL
EMS100F003	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro
EMS100F004	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro 32
EMS100F005	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Web
EMS100F006	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Enterprise
EMS110F001	(Sys) each with 10 EMS data points from 11 to 30 DP
EMS110F002	(Sys) each with 10 EMS data points from 31 to 100 DP
EMS110F003	(Sys) each with 10 EMS data points from 101 to 200 DP
EMS110F004	(Sys) each with 100 EMS data points from 201 to 1000 DP
EMS110F005	(Sys) each with 200 EMS data points from 1001 to 2000 DP
EMS110F006	(Sys) each with 500 EMS data points from 2001 to 6000 DP
EMS110F007	(Sys) each with 1000 EMS data points from 6001 to 10000 DP
EMS120F001	(Sys) each with 5 additional users (local users on EMS server)
EMS140F001	(Sys) SDC for novaPro Open
EMS140F002	(Sys) SDC for novaPro Web
EMS140F003	(Sys) SDC for novaPro 32
EMS140F004	(Sys) SDC for novaPro
EMS140F005	(Sys) SDC for novaPro Enterprise
EMS140F009	(Sys) SDC for EDL
EMS200F001	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Open
EMS200F002	Basic hosting package including 10 addresses, 1 user and 1 SDC for EDL
EMS200F003	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro
EMS200F004	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro 32
EMS200F005	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Web
EMS200F006	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Enterprise
EMS210F001	(Host) each with 10 EMS data points from 11 to 30 DP
EMS210F002	(Host) each with 10 EMS data points from 31 to 100 DP
EMS210F003	(Host) each with 10 EMS data points from 101 to 200 DP
EMS210F004	(Host) each with 100 EMS data points from 201 to 1000 DP
EMS210F005	(Host) each with 200 EMS data points from 1001 to 2000 DP
EMS210F006	(Host) each with 500 EMS data points from 2001 to 6000 DP
EMS210F007	(Host) each with 1000 EMS data points from 6001 to 50000 DP
EMS220F001	(Host) 1 additional user (user access on host)
EMS240F001	(Host) SDC for novaPro Open
EMS240F002	(Host) SDC for novaPro Web
EMS240F003	(Host) SDC for novaPro 32
EMS240F004	(Host) SDC for novaPro
EMS240F005	(Host) SDC for novaPro Enterprise

[1] *The SAUTER EMS server is supplied as a virtual machine (VMware)*

Type	Description
EMS240F009	(Host) SDC for EDL
EMS410F001	Option for generating customised reports (licence)
EMS420F001	(Sys) software maintenance contract (18% per year)

Accessories

Type	Description
EDL500F001	Energy Data Logger including 10 DP for data capture and drivers for BACnet/IP, M-Bus and Modbus (TCP/IP)
EDL510F001	Each with 10 EDL data points from 11 to 30 DP
EDL510F002	Each with 10 EDL data points from 31 to 100 DP
EDL510F003	Each with 10 EDL data points from 101 to 200 DP
EDL510F004	Each with 100 EDL data points from 201 to 1000 DP
EDL510F005	Each with 200 EDL data points from 1001 to 2000 DP
EDL510F006	Each with 500 EDL data points from 2001 to 6000 DP
EDL540F001	Driver for KNXnet/IP (EIBnet/IP)
EDL540F002	Driver for Danfoss

EDL 500: Energy Data Logger for EMS

Features

- No moving parts
- No fan
- Flash card as storage medium
- Power supply via terminal block connector using Phoenix screw terminals[1)]

Technical data

Electrical supply		
	Power supply	9...36 V=
	Current consumption	3 A
Permissible ambient conditions		
	Operating temperature	0...50 °C
	Humidity without condensation	10...90% rh
Architecture		
System requirements	Processor	AMD® Geode® LX800, 500 MHz
	System chipset	AMD® CS5536
	System Memory Speed	DDR 33 MHz/400 MHz
	System Memory Type	1× 200-pin SO-DIMM SDRAM socket supplies up to 1 GB
Interfaces and communication		
	Ethernet	Dual 10/100 Base-T RTL8100C
	COM	2× EIA-232
	Display	CRT integrated in Geode® LX800
	USB	2× USB 2.0 supported
	Extension	1x PC/104 module socket
Structural design		
	Weight	1.8/2.2 kg (net/gross)
	Dimensions W x H x D	200 × 60 × 163 mm
Standards and directives		
	EMC	FCC Class A

Overview of types

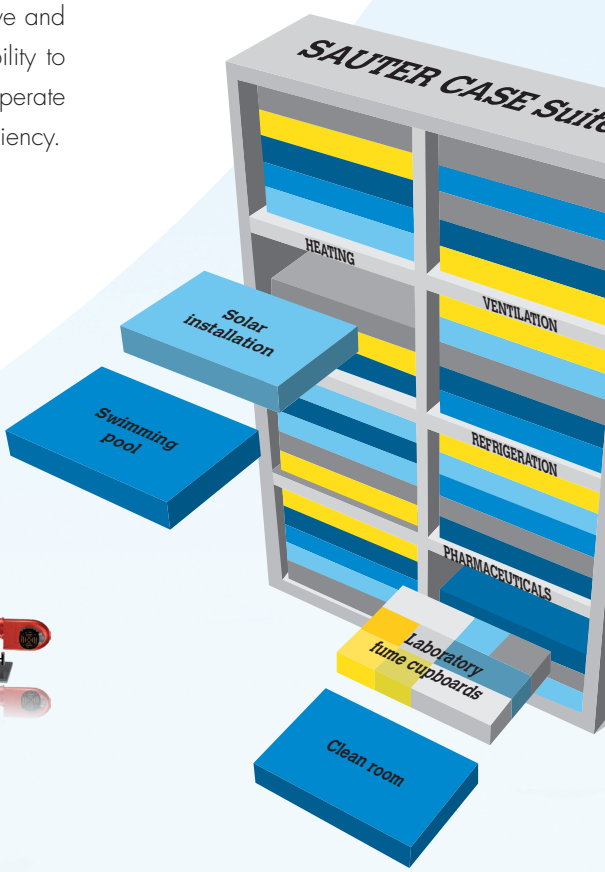
Type	Description
EDL500F001	Energy Data Logger including 10 DP for data capture and drivers for BACnet/IP, M-Bus and Modbus (TCP/IP)
EDL510F001	Each with 10 EDL data points from 11 to 30 DP
EDL510F002	Each with 10 EDL data points from 31 to 100 DP
EDL510F003	Each with 10 EDL data points from 101 to 200 DP
EDL510F004	Each with 100 EDL data points from 201 to 1000 DP
EDL510F005	Each with 200 EDL data points from 1001 to 2000 DP
EDL510F006	Each with 500 EDL data points from 2001 to 6000 DP
EDL540F001	Driver for KNXnet/IP (EIBnet/IP)
EDL540F002	Driver for Danfoss

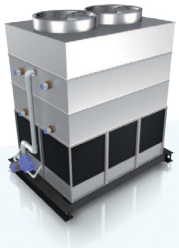
[1)] *Power supply not included in delivery*

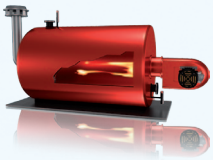
SAUTER CASE Suite

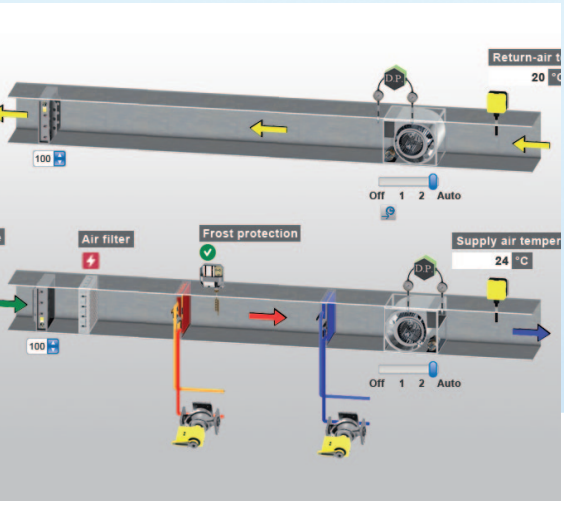
Project engineering made easy.

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

Features

- Supports the whole process of a project, from the planning stage to the engineering, commissioning and servicing phases
- 'Nerve centre' for the project data and software programs
- Seamless integration of the solution libraries
- Safeguards the workflow between the specialist sub-programs (CASE Builder, CASE Engine, CASE Vision)
- Planning and documentation of the plant technology
- Commercial and technical project processing
- Creates the regulation, control and optimisation functions
- Putting the automation stations into service
- Based on Microsoft's Windows operating system
- Multi-lingual program (German, English and French) on DVD
- Licence is required for full use of the program

Overview of types

i *All licence shipments exclude the CASE Suite application software*

Type	Description
GZS150F010	CASE Suite Enterprise licence
GZS150F011	CASE Suite Enterprise licence, excluding servicing
GZS150F020	CASE Suite Enterprise time licence
GZS150F021	CASE Suite Partner time licence
GZS150F022	CASE Suite Designer time licence
GZS100F599	CASE Tools DVD, latest version (CASE TPC, CASE HWC, CASE Sun, novaNet292 SW etc.)
GZS100F699	CASE Suite DVD, latest version

GZS150F010: Includes a servicing contract for which an annual fee is charged

Alphabetical list of contents

Index search

E

F

H

I

L

M

T

U

V

W

Systems

Components

Services

Facility Management

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