

VUL: 2-way valve, PN16

How energy efficiency is improved

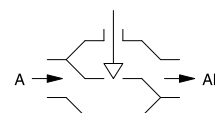
Absolutely no losses through leaks. Energy is restrained.

Features

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



VUL010F310



Technical data

Parameters		
Nominal pressure		PN 16
Valve characteristic		Equal-percentage
Valve stroke ¹⁾		4 mm
Leakage rate		0.002% of k_{VS} value

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

Standards and directives	
Pressure and temperature data	EN764, EN1333
Flow parameters	VDI/VDE 2173
Pressure Equipment Directive	97/23/EC (fluid group II) No CE label article 3.3

Overview of types				
Type	Nominal diameter	k_{VS} value	Connection	Weight
VUL010F340	DN 10	0.16 m ³ /h	G½" B	0.19 kg
VUL010F330	DN 10	0.4 m ³ /h	G½" B	0.18 kg
VUL010F320	DN 10	0.63 m ³ /h	G½" B	0.18 kg
VUL010F310	DN 10	1 m ³ /h	G½" B	0.18 kg
VUL010F300	DN 10	1.6 m ³ /h	G½" B	0.18 kg
VUL015F310	DN 15	2.5 m ³ /h	G¾" B	0.28 kg
VUL015F300	DN 15	3.5 m ³ /h	G¾" B	0.28 kg
VUL020F300	DN 20	4.5 m ³ /h	G1" B	0.33 kg
VUL010F630	DN 10	0.4 m ³ /h	Clamping ring vers. Ø15 mm	0.18 kg
VUL010F620	DN 10	0.63 m ³ /h	Clamping ring vers. Ø15 mm	0.18 kg

¹⁾ The valve stroke is limited by the actuator.



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

Accessories

Type	Description
0378133010	1 threaded sleeve, R ³ / ₈ ", flat-sealing, DN 10, with cap nut and flat seal
0378133015	1 threaded sleeve, R ¹ / ₂ ", flat-sealing, DN 15, with cap nut and flat seal
0378133020	1 threaded sleeve, R ³ / ₄ ", 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, ³ / ₄ " 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 applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.*

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

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

Pressure differences with motorised actuators

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

Δp [bar]

Closes against the pressure	Δp_{max}	Δp_{max}	Δp_{max}
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	4.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	3.8	3.8	3.8
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1

Cannot be used to close with the pressure

Pressure differences with thermal actuators

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

 Δp [bar]

Closes against the pressure	Δp_{max}	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	4.0	6.0	4.0	6.0	4.0	6.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Cannot be used to close with the pressure

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

 Δp [bar]

Closes against the pressure	Δp_{max}	Δp_{max}	Δp_s
VUL010F340 VUL010F330 VUL010F320 VUL010F630 VUL010F620	4.0	4.0	6.0
VUL010F310 VUL010F300 VUL010F610 VUL010F600	4.0	4.0	4.0
VUL015F310 VUL015F300 VUL020F300	1.1	1.1	1.1

Cannot be used to close with the pressure

Additional technical data

Technical information

SAUTER slide rule for valve sizing	P100013496
Technical manual on control units	7 000477 001

Description of operation

When the spindle is pressed in, the 2-way valve is closed (passage A-AB). It is returned by the spring force from the spring in the valve. The valve can be controlled to the OPEN or CLOSED positions with the thermal actuator for unit valves AXT 211. Used in combination with the "normally closed" version of the actuator, the control passage of the valve closes in the event of a power failure.

The valve can be controlled to any desired position with the continuous actuator for unit valves AXS 215S. Depending on the position of the DIP switches, the valve is adjusted continuously with a control voltage of 0...10 V / 10...0 V or 2...10 V / 10...2 V. The control signal is then assigned linearly to the valve stroke and produces the equal-percentage characteristic in the valve. The positioner integrated into the actuator controls the actuator according to the setting of the DIP switches and positioning signal y. The continuous actuator positions the valve and, as soon as the position is reached, it stops.

The valve can be controlled to any desired position with motorised actuator for unit valves AXM 217. With type AXM 217S (with positioner) the valve is continuously adjusted using a 0...10 V or 4...20 mA control signal, according to the position of the DIP switches.

The practically equal-percentage characteristic allows optimal control together with a continuous 0...10 V actuator.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

Engineering and fitting notes

The control unit can be fitted in any desired position, but not in a suspended fitting position. Condensate, dripping water, etc. must be prevented from entering the actuator.

To prevent any flow noise from being audible in very quiet rooms, the pressure difference over the valve must not exceed 0.8 bar:

So that impurities are retained in the water (welding beads, rust particles, etc.) and the spindle seal is not damaged, we recommend installing collecting filters, for example one for each floor or pipe run. Requirements for water quality as per VDI 2035.

The stuffing box can be replaced when there is pressure on the valve, and no additional tool is required. The stuffing box is sealed against the medium. Medium with coolant such as glycol, min. 16%, max. 40%.

To prevent damage resulting from non-usage, the valves should be activated for a short time at regular intervals. We recommend performing a stroke movement of at least 10% every month.

To increase the functional reliability of the valves, the system should conform to DIN/EN 14336 (heating systems in buildings). DIN EN 14336 states, amongst other things, that the system has to be flushed through before being put into service.

When insulating the unit valve, it may only be insulated up to the cap nut or the bayonet ring of the actuator.

Further information

Fitting instructions	MV 505864
Assembly of AXT 211/AXS 215S	MV P100002547
With auxiliary contact:	
Assembly of AXM 217/217S	MV P100011418
Assembly of AXM217F200	MV P100000986
Declaration on materials and the environment	MD 55.008

Material

Valve body nickel-plated, DN 10 made of moulded brass, DN 15 and DN 20 made of gunmetal and male thread as per ISO 228/1, class B, flat seal on body. Stuffing box with O-ring made of ethylene propylene, plastic protective cap (or manual adjusting knob).

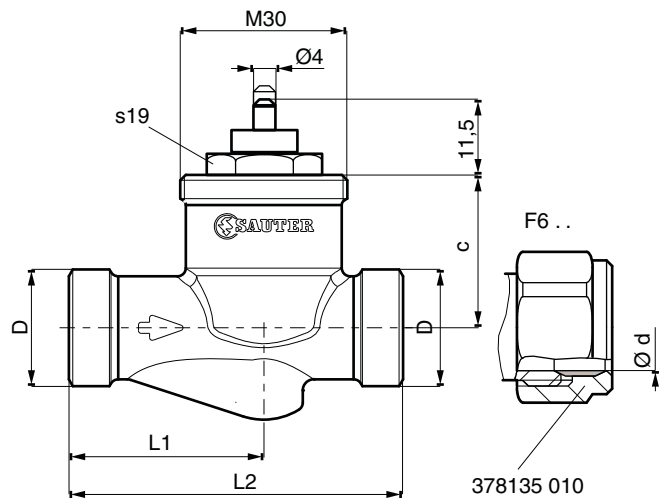
Material number as per DIN

	EN/DIN material no.	EN/DIN designation
Valve body DN 10	CW617N	Cu Zn 40 Pb2 according to EN12164
Valve body DN 15 and DN2 0	CC490K	Cu Sn 3 Zn 8 Pb5-C according to EN1982
Valve seat DN 10	CW617N	Cu Zn 40 Pb2 according to EN12164
Valve seat DN 15 and DN 20	CC490K	Cu Sn 3 Zn 8 Pb5-C according to EN1982
Spindle	1.4310	X10 Cr Ni18-8 according to EN188-1
Plug	CW617N	Cu Zn 40 Pb2 according to EN12164
Stuffing box	CW617N	Cu Zn 40 Pb2 according to EN12164

Disposal

When disposing of the product, observe the currently applicable local laws.
 More information on materials can be found in the Declaration on materials and the environment for this product.

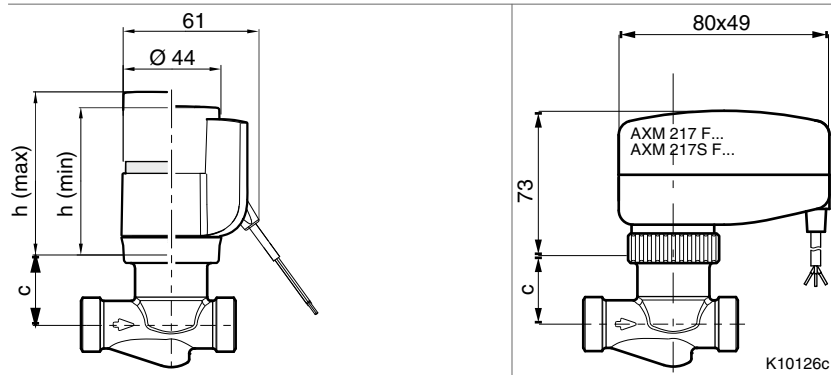
Dimension drawing



DN	D	d	L1	L2	c
10	G1/2	15	35	60	27,5
15	G3/4	-	36,5	65	33,7
20	G1	-	30	65	33,7

Combination

With thermal actuator AXT/AXS and motorised actuator AXM

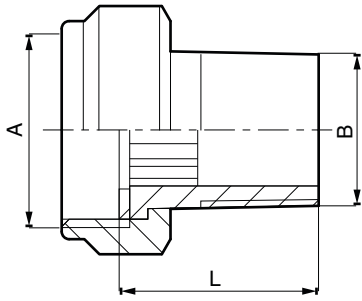


	H (min)	H (max)
NC	59	66
NO	59	64
Manual	66.5	73.5

Accessories

Threaded fitting

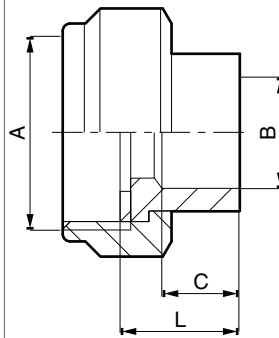
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DN	A	B	L
10	G1/2	R3/8	24
15	G3/4	R1/2	27,5
20	G1	R3/4	32,5

Solder-joint screw fitting

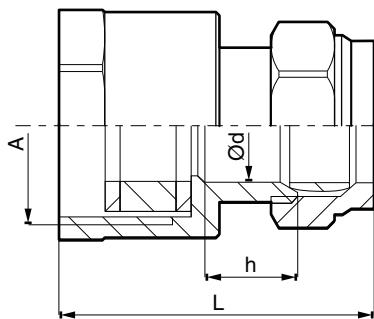
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DN	A	B	C	L
10	G1/2	12	8,6	14
15	G3/4	15	10,6	15,5
20	G1	22	15,4	20

Clamping ring screw fitting

0378145



DN	A	L	Ød	h
15	G3/4	39	15,2	12,5
20	G1	41,5	22,2	16

Table of pressure losses for VUL valves

