

## V582, V583, V584, VS582, VS583, VS584, -F SMALL LINEAR VALVES PN16 FOR MODULATING AND ON/OFF-CONTROL

### SPECIFICATION DATA



V583-F, VS583-F

V582-F, VS582-F

V584-F, VS584-F

### GENERAL

These small linear valves are used in combination with small electric linear valve actuators and thermoelectric actuators for the control of hot and/or chilled water for fan coil units and small reheaters/recoolers in electric/electronic temperature control systems.

### FEATURES

- Small size allows installation where space is limited
- Long stroke results in a high quality characteristic
- Soft seat provides low leakage rate and high rangeability
- Reduced  $k_{VS}$  values in the bypass to facilitate hydronic balancing
- Range of fittings available for different connections (soldered, threaded)
- Adjustment cap for manual operation
- Flat surfaces on body to fit installation tools
- Flat sealing connections in standard sizes
- 40 mm distance between ports A/AB and the bypass (V584-F, VS584-F only)

### SPECIFICATIONS

Models	Two-way V582-F, VS582-F Three-way V583-F, VS583-F Three-way with bypass V584-F, VS584-F
Operation	Two-way stem up to open, port A to B; Three-way stem up to close, port A to AB
Nominal pressure rating	PN16
Capacity index ( $k_{VS}$ )	see tables on page 2 and 3
Leakage rate	$\leq 0.02\%$ of $k_{VS}$
Valve body	
Material	Brass
Size	DN15 (1/2"), DN20 (3/4")
Trim	
Stem	Stainless steel
Plug	Brass
Suitable medium	Water, with max. 50% glycol
Controlled water temperature	2...120 °C

## Modulating valves

Rangeability

Two-way valves 100:1

Three-way valves 100:1 for controlled port

Flow characteristic Equal percentage port A-AB,  
linear for bypass port B-AB

Stroke 6.5 mm

## On/Off valves

Stroke 2.5 mm

Dimensions see Fig 4 on page 5

## FLOW CAPACITIES AND CLOSE OFF PRESSURE RATINGS

### TWO-WAY VALVES

Valve			Close-Off Pressure (kPa) with Actuators		
DN	k <sub>vs</sub>	Order number	AL0206 (180 N)	AT0106 (90 N)	AL0102, AT0102 (90 N)
15	0.16	V582-15-0.16-F	1600	600	-
15	0.25	V582-15-0.25-F	1600	600	-
15	0.40	V582-15-0.4-F	1600	600	-
15	0.63	V582-15-0.6-F	1600	600	-
15	1.0	V582-15-1.0-F	1200	180	-
15	1.6	V582-15-1.6-F	1200	180	-
20	2.5	V582-20-2.5-F	400	50*	-
20	4.0	V582-20-4.0-F	400	50*	-
15	1.6	VS582-15-1.6-F**	1200	-	180
20	2.50	VS582-20-2.5-F**	400	-	50*

\*Up to 1000kPa system pressure. \*\*For on/off control, stroke 2.5mm.

### THREE-WAY VALVES

Valve				Close-Off Pressure (kPa) with Actuators		
DN	k <sub>vs</sub>		Order Number	AL0206 (180 N)	AT0106 (90 N)	AL0102, AT0102. (90 N)
	A-AB	B-AB				
15	0.25	0.16	V583-15-0.25-F	800	500	-
15	0.40	0.25	V583-15-0.4-F	800	500	-
15	0.63	0.40	V583-15-0.6-F	800	500	-
15	1.00	0.63	V583-15-1.0-F	250	150	-
15	1.60	1.00	V583-15-1.6-F	250	150	-
20	2.50	1.60	V583-20-2.5-F	240	-	-
20	4.00	2.50	V583-20-4.0-F	240	-	-
15	1.60	1.60	VS583-15-1.6-F*	250	-	150
20	2.50	2.50	VS583-20-2.5-F*	100	-	50

\*For on/off control, stroke 2.5mm.

THREE-WAY VALVES WITH BYPASS

Valve				Close-Off Pressure (kPa) with Actuators		
DN	k <sub>vs</sub> A-AB	k <sub>vs</sub> B-AB	Order Number	AL0206 (180 N)	AT0106 (90 N)	AL0102. AT0102. (90 N)
15	0.25	0.16	V584-15-0.25-F	800	500	-
15	0.40	0.25	V584-15-0.4-F	800	500	-
15	0.63	0.40	V584-15-0.6-F	800	500	-
15	1.00	0.63	V584-15-1.0-F	250	150	-
15	1.60	1.00	V584-15-1.6-F	250	150	-
20	2.50	1.60	V584-20-2.5-F	240	-	-
20	4.00	2.50	V584-20-4.0-F	240	-	-
15	1.60	1.60	VS584-15-1.6-F*	250	-	150
20	2.50	2.50	VS584-20-2.5-F*	100	-	50

\*For on/off control, stroke 2.5mm.

OPERATION

A built-in return spring in the two-way valve produces an opening force. In the three-way valve and the three-way valve with bypass, the spring produces a closing force on the A to AB ports.

The valves are supplied with a screwed-on adjustment cap for manual operation and for protection of the stem. This allows the stem to be set up for filling or initial heating/cooling during the building construction phase without the use of a controller or actuator.

The small electric valve actuators as well as the thermoelectric actuators provide automatic control over the opening and closing movement of the valve stem.

TYPICAL OPERATION

All types of valves should be mounted in the return flow. If the Δp-values exceed 60 kPa, attention should be paid to the development of noise.

Two-Way Valves

Direction of flow always from port A to port B  
Port B: Outlet

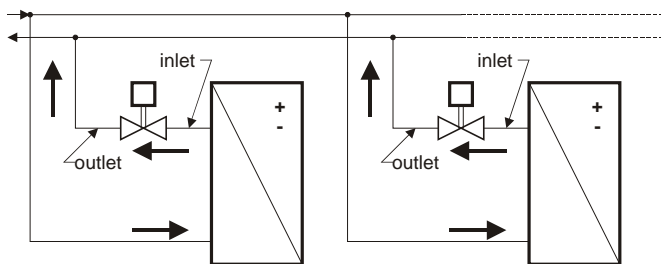


Fig. 1. Two-way valve operation

Three-Way Valves

These valves are preferably used as mixing valves, this means:

- Port AB: Total flow outlet
- Port A: Controlled flow inlet
- Port B: Bypass inlet

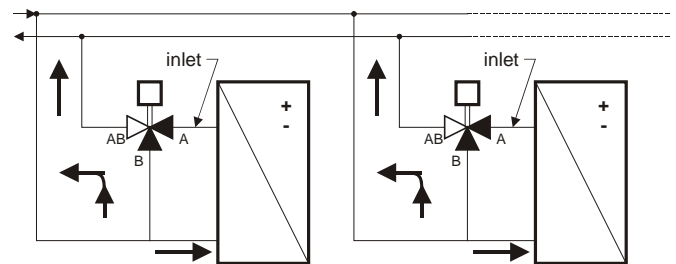


Fig. 2. Three-way valve operation

Three-Way Valves with Bypass

Because the bypass pipe is part of the valve, these valves simplify the installation, which depends on the layout of the pipework. The information for the normal three-way valves is also valid for this type.

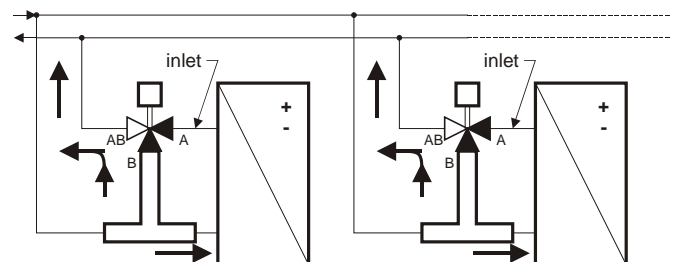


Fig. 3. Three-way valve with bypass

## MOUNTING


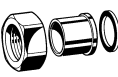

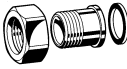
When installing the valve, care must be taken that the flow direction is correct (see section "Typical Operation"). The valve must not be mounted with the stem pointing downward.

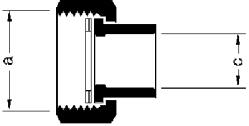
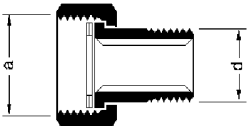
The adjustment cap must be removed from the valve only when the actuator is fitted. The valve should be installed as stress-free as possible with a tightening torque of 25 to 30 Nm.

The valve is supplied complete with mounting instructions. The water quality must meet VDI 2035 requirements.

## ACCESSORIES

Valves V582, VS582 need two connection sets, valves V583, VS583 three connection sets, and valves V584, VS584 four connection sets.

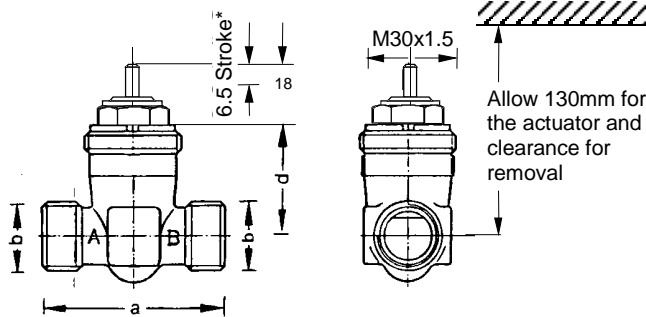
Connection	Pipe Size	DN	Order Number	Connection Set		Description
Soldering	12 mm 15 mm	15 20	VACC/15FS VACC/20FS			Consisting of 1 union nut, 1 solder bush, and 1 gasket
External Thread	R3/8" R1/2"	15 20	VACC/15FT VACC/20FT			Consisting of 1 union nut, 1 tailpiece, and 1 gasket

	Dimensions of Connection Sets			Order Number
	a	c	d	
	G1/2"	12 mm		VACC/15FS
	G3/4"	15 mm		VACC/20FS
	G1/2"		R3/8"	VACC/15FT
	G3/4"		R1/2"	VACC/20FT

Adjustment Caps: **ACCV-5585100** pack of 10 adjustment caps

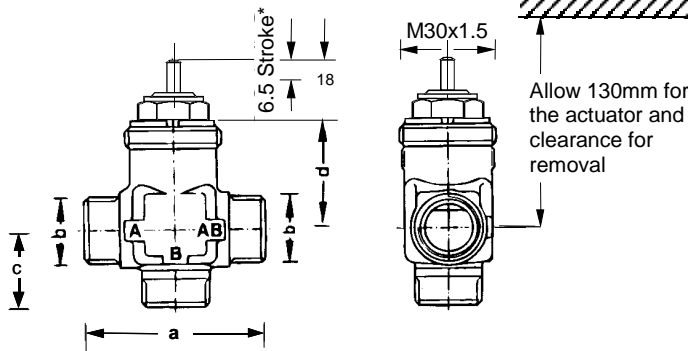
DIMENSIONS

Two-way valve



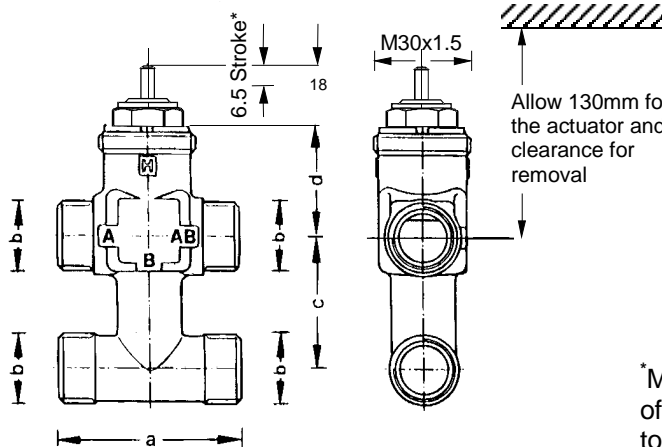
	a	b	d
DN15	56	G1/2A	34
DN20	66	G3/4A	33

Three-way valve



	a	b	c	d
DN15	56	G1/2A	24.5	34
DN20	66	G3/4A	33	33

Three-way valve with bypass



	a	b	c	d
DN15	56	G1/2A	40	34
DN20	66	G3/4A	40	33

\*Modulating valves, only (in the case of on/off valves, the stroke amounts to 2.5 mm and the closure distance to 14 mm).

Fig. 4. Dimensions V582-F, V583-F, V584-F, VS582-F, VS583-F, VS584-F in mm

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