SIEMENS

OEM

2-port valves
VVP469.10-0.63 to VVP469.20-4

3-port valves
VXP469.10-0.25 to VXP469.20-4

3-port valves with bypass
VMP469.10-0.63 to VMP469.15-4

acvatix

2-port and 3-port small valves PN 16

VVP469..
VXP469..
VMP469..

- VVP469.., VXP469.. brass valve body
  VVP469.15-4, VMP469.. bronze CC491K (Rg5) valve body, max 4% pB
- DN 10, DN 15 and DN 20
- k_{vs} 0.25/0.63…4 m^3/h
- Flat seal male threaded connections G..B to ISO 228-1 for
  - ALG.. screwed fitting sets with thread connection (available from Siemens)
  - SERTO compression fittings, type SO 00021.. (available from trade suppliers)
  - Screwed copper fittings (available from trade suppliers)
- Manual adjuster (VXP469... and VMP469...)
- Can be equipped with type STA.., electrothermal or type SFA.., SUA21/1 or SSA… electromotive actuators

Use

- In ventilation and air conditioning systems for water-side terminal unit control in closed circuits, e.g. induction units, fan coil units, small reheaters and small recoolers, for use in:
  - 2-pipe systems with one heat exchanger for heating and cooling
  - 4-pipe systems with two separate heat exchangers for heating and cooling
- In closed circuit zone heating systems, e.g.
  - Individual zones in a building
  - Apartments

Type summary

VVP469.. 2-port	VXP469.. 3-port	VMP469.. 3-port with bypass	DN	Connections		k_{vs} AB – A [m^3/h]	k_{vs} [1)] AB – B [m^3/h]	S_v
				[inch]	Copper pipe dia. [mm]			
	VXP469.10-0.25		10	G½B	14.2 +0.2/-0	0.25	0.18	> 10
	VXP469.10-0.4					0.4	0.28	
VVP469.10-0.63	**VXP469.10-0.63**	**VMP469.10-0.63**				0.63	0.44	
VVP469.10-1	**VXP469.10-1**	**VMP469.10-1**				1.0	0.70	
VVP469.10-1.6	**VXP469.10-1.6**	**VMP469.10-1.6**				1.6	1.12	
VVP469.15-2.5	**VXP469.15-2.5**	**VMP469.15-2.5**	15	G¾B	18.2 +0.2/-0	2.5	1.75	
VVP469.15-4		**VMP469.15-4**				4.0	2.80	
VVP469.20-4	**VXP469.20-4**		20	G1B	22.2 +0.2/-0			

[1)] Valid for 3-port version only. The k_{vs}-values represent 70 % of the AB → A nominal flow rate.

DN = Nominal size
k_{vs} = Nominal flow rate of cold water (5…30 °C) through the fully open valve (H_{100}) by a differential pressure of 100 kPa (1 bar)
S_v = Rangeability k_{vs} / k_{vr}
k_{vr} = Smallest k_v value, at which the flow characteristic tolerances can still be maintained, by a differential pressure of 100 kPa (1 bar)

Accessories

Type reference	Description
ALG..2	Set of 2 screwed fittings for 2-port valves, consisting of - 2 union nuts - 2 discs and - 2 flat seals
ALG..3	Set of 3 screwed fittings for 3-port valves, consisting of - 3 union nuts - 3 discs and - 3 flat seals
AL50	Supporting ring for SFA… and SUA… actuators

Order

When ordering please give quantity, product name and type reference.

Example:

15 3-port valves with bypass VMP469.10-1
30 sets of screwed fittings ALG132

For 3-port valves with bypass VMP469.., order two sets ALG..2 of 2 screwed fittings.

Delivery

The valves are supplied in optimized multipacks with minimum order quantities accordingly.
Valves, actuators and accessories are packed and supplied separately.

Type	Quantity per package
VVP469.10-0.63 - VVP469.10-1.6	**24**
VXP469.10-0.25 - VXP469. 10-1.6	
VMP469.10-0.63 - VMP469.15-4	**15**
VVP469.15-2.5 - 20-4	**20**
VXP469.15-2.5 - 20-4	
AL50	**40**

Equipment combinations

Valves	Electromotive actuators						Electro-thermal actuators		Sets of screwed fittings Siemens [2]	
	SUA21/1		SFA.. [1]		SSA..		STA..			
	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Male thread	Female thread
	[kPa]									
VVP469.10-0.63..1.6	200	300	200	300	100	150	200	200	ALG132	
VVP469.15-2.5									ALG142	
VVP469.15-4							150	150		
VVP469.20-4							200	200		ALG152
VXP469.10-0.25..1.6	200		200		100		200		ALG133	
VXP469.15-2.5							150		ALG143	
VXP469.20-4							200			ALG153
Data sheet	N4830		N4863		A6V11858276		N4884			

[1] AL50 needed for mounting SFA… actuator

[2] Thread on pipe side

Δp_{max} = Maximum permissible differential pressure across the valve, valid for the entire actuating range of the motorized valve.

Δp_s = Maximum permissible differential pressure at which the motorized valve closes securely against pressure (close off pressure).

Actuator overview

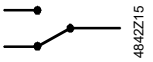
Type reference	Actuator type	Operating voltage	Positioning signal	Positioning time	Positioning force
STA23MP/00[2]	Electro-thermal	AC 230 V	2-position	210 s	100 N
STA73MP/00[2]		AC/DC 24 V	(2-position, PDM [1])	270 s	
STA63		AC 24 V	DC 0…10 V	270 s[3]	
SFA219/18	Electro-motive	AC 230 V	2-position (On/Off)	10 s	200 N
SFA719/18		AC 24 V	with spring return		
SUA21/1		AC 230 V	SPST[4]		150 N
SSA331.00			3-position	67.5 s	100 N
SSA161.05		AC/DC 24 V	DC 0…10 V	25 s	
SSA131.00		AC 24 V	3-position	67.5 s	

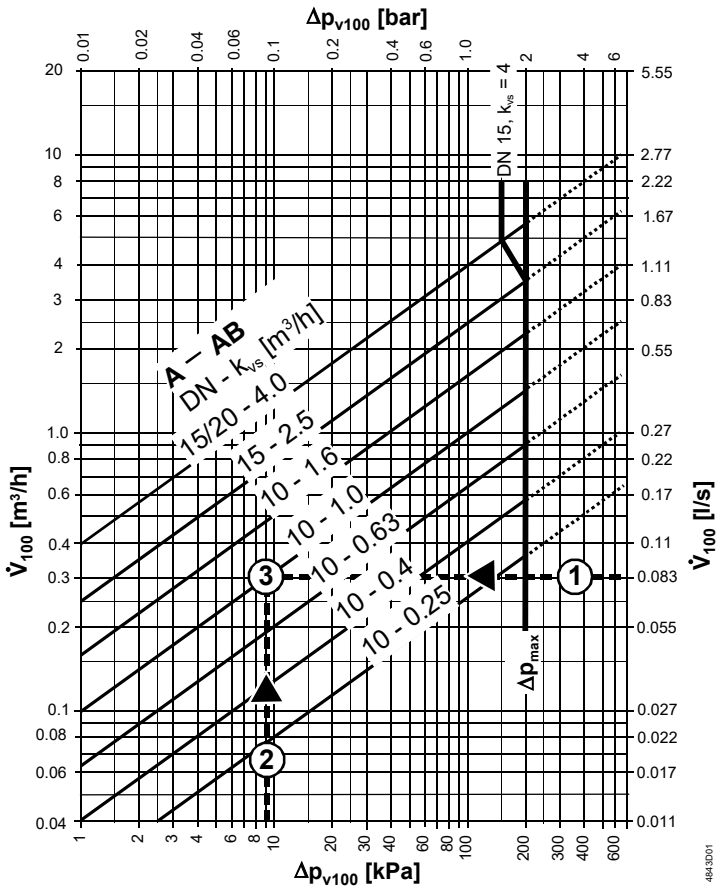
[1] PDM = Pulse duration modulation in conjunction with room controllers

[2] Packaging unit: 50 pieces (OEM) without cable, must be ordered separately

[3] Min. runtime ca. 30 s/mm in control mode (heat-up time)/mm

[4] SPDT = Single Pole, Double Throw





Δp_{max} = Maximum permissible differential pressure across the valve, valid for the entire actuating range of the motorized valve

Δp_{v100} = Differential pressure across the fully open valve and the valve's control path by a volume flow V_{100}

$\dot{V}_{100}$ = Volume flow through the fully open valve (H_{100})

100 kPa = 1 bar ≈ 10 mWC

1 m^3/h = 0.278 l/s water at 20 °C

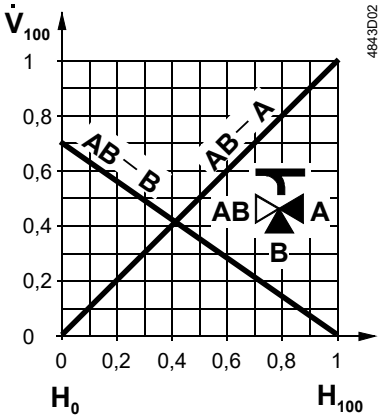
Example:

1 $\dot{V}_{100}$ = 0.083 l/s

2 Δp_{v100} = 9 kPa

3 Required k_{vs}-value = 1.0 m^3/h

Valve flow characteristic

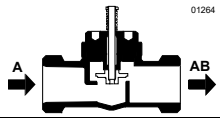


The k_{vs}-values in bypass B for valve types V..P469.. represent only 70 % of the k_{vs}-value in the straight-through control path AB → A. This compensates for the flow resistance of the heat exchanger or radiator, thus keeping the overall flow rate, $\dot{V}_{100}$ as constant as possible.

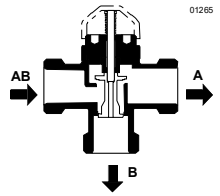
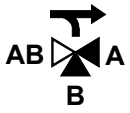
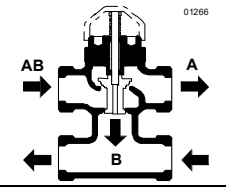
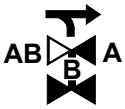
Engineering notes

⚠ **Do not mount a shutoff on bypass port B.**

Recommendation: Always use a strainer upstream of the valve to increase the valve's functional safety.

Valve construction	Function	Valve flow in control mode		Valve stem	
		Inlet A	Outlet AB	Retracted	Extended
VVP469.. 		variable	variable	A → AB closes	A → AB opens

Warning! **The direction of flow MUST be as indicated by the arrow, from A → AB.**

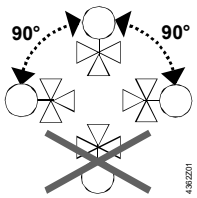
Valve construction	Function diverting	Valve flow in control mode			Valve stem	
		Port AB	Port A	Port B	Retracted	Extended
VXP469.. 		Inlet: constant	Outlet: variable	Outlet: variable	AB → A closes AB → B opens	AB → A opens AB → B closes to 30 %
VMP469.. 		Inlet: constant	Outlet: variable	Outlet: variable	AB → A closes AB → B opens	AB → A opens AB → B closes to 30 %

Warning! VXP469.. and VMP469.. are diverting valves; they cannot be used as mixing valves. The direction of flow MUST be as indicated by the arrow, from
AB → A and **AB → B.**

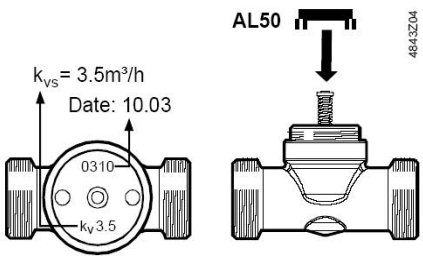
Mounting instructions

The valve and actuator are easily assembled directly on site without need for special tools or calibration.
Mounting Instructions 74 319 0271 0 are enclosed with the multipack.

Orientation



AL50 supporting ring



The AL50 supporting ring must be positioned prior to mounting the SFA… actuator onto the valve.

Commissioning notes

⚠ **Resume valve operation only if the manual knob or actuator has been mounted correctly.**

Manual adjustment

Using the manual adjuster or actuator allows for opening through-port AB ↔ A of the valve. With three-port valves, this throttles or closes bypass B.
Through-port AB → B (bypass B) can be opened between 0% and max.70% manually.
The valves are opened using their own spring (normally open).

Maintenance

V..P469.. valves require no maintenance.

Warning ⚠

When servicing the valve/actuator:

- Deactivate the pump and turn off power
- Close the shut-off valves
- Fully reduce pressure in the piping system and allow pipes to completely cool down

If necessary, disconnect the electrical wires.

Before resuming valve operation, make sure the manual knob or the actuator is fitted properly.

Stem sealing gland

The stem sealing gland cannot be exchanged. In case of leakage, the entire valve must be replaced. Contact your local office or branch.

Disposal

Prior to disposal, dismantle the valve and separate it intoo its various constituent materials.
Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.

Comply with all local, applicable laws.

Warranty

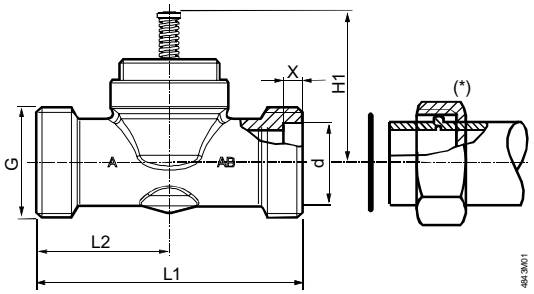
The technical data for these applications is valid only together with Siemens actuators as described in ”Equipment combinations”.
Use with third-party actuators expressely voids any warranty offered by Siemens Switzerland Ltd / HVAC Products.

Technical data

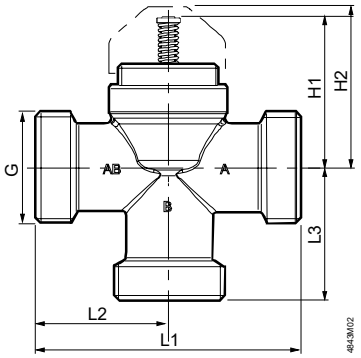
Functional data	PN class	PN 16 to EN 1333
	Permissible operating pressure	1600 kPa (16 bar)
	Valve flow characteristic	
	Through-port AB → A (0…100%)	Linear
	Bypass AB → B (0…70%)	Linear
	Leakage rate	As per DIN EN 1349
	Through-port AB → A	0…0.05 % of k_{vs}-value
	Bypass B	Max. 2…5% of k_{vs}-value
	Permissible media	Low temperature hot water, chilled water, water with anti-freeze; recommendation: water treatment to VDI 2035
	Medium temperature	1...110 °C
	Rangeability S_v	> 10
	Nominal stroke	2.5 mm
Standards	Pressure Equipment Directive	PED 97/23/EC
	Pressure accessories	As per article 1, section 2.1.4
	Fluid group 2	Without CE-marking as per article 3, section 3 (sound engineering practise)
Materials	VVP469... and VXP469.. valve body	Brass
	VVP469.15-4 and VMP469.. valve body	Bronze CC491K (Rg5) max. 4% pB
	Stem	Stainless steel
	Plug, seat, gland	Brass or bronze CC491K (Rg5) max. 4% pB
	Sealing gland	EPDM-O-rings
Dimensions / Weight	Dimensions	Refer to ”Dimensions”
	Threaded connections Valve	G..B as per ISO 228-1
	Screwed fittings	R/Rp.. as per ISO 7-1, G.. as per ISO 228-1
	Actuator connection	M30 x 1.5
	Weight	Refer to ”Dimensions”
Accessories	ALG.. screwed fittings (supplier: Siemens)	Nut, nipple and flat seal for steel pipes with gas-pipe threads
	SERTO SO 00021.. screwed fittings (available from suppliers to the trade)	Nut and compression fitting for seamless copper and mild-steel piping
	Copper pipe connections screwed fittings (available from suppliers to the trade)	For welded copper pipes

Dimensions

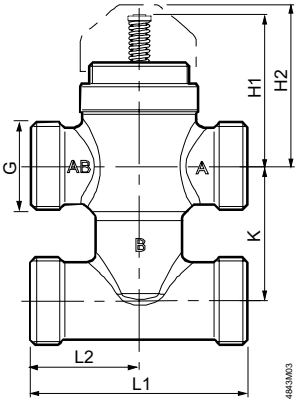
2-port valves
VVP469..



3-port valves
VXP469..

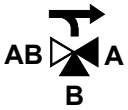


3-port valves with bypass
VMP469..

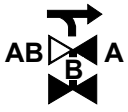


(*) Compression fitting for welded copper pipes (available from suppliers to the trade)

Type reference	DN	G [inch]	d [mm]	X [mm]	H1 [mm]	L1 [mm]	L2 [mm]	Weight [kg]
VVP469.10-0.63…1.6	10	G½B	14.2 +0.2/-0	5 +0/-0.2	45.2	60	30	0.22
VVP469.15-2.5	15	G¾B	18.2 +0.2/-0			65	32.5	0.25
VVP469.15-4								0.30
VVP469.20-4	20	G1B	22.2 +0.2/-0			80	40	0.32

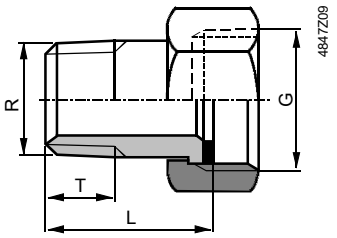
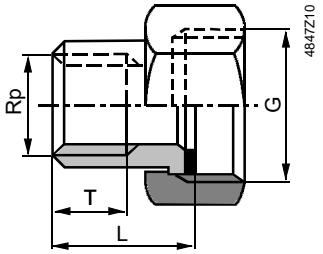
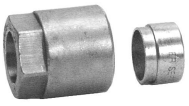
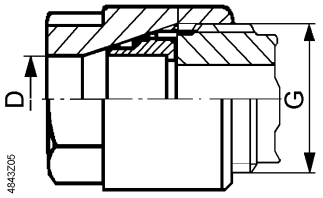


Type reference	DN	G [inch]	d [mm]	X [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Weight [kg]
VXP469.10-0.63…1.6	10	G½B	14.2 +0.2/-0	5 +0/-0.2	45.2	48	60	30	30	0.27
VXP469.15-2.5	15	G¾B	18.2 +0.2/-0				65	32.5	32.5	0.29
VXP469.20-4	20	G1B	22.2 +0.2/-0				80	40	40	0.40



Type reference	DN	G [inch]	d [mm]	X [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	K [mm]	Weight [kg]
VMP469.10-0.63…1.6	10	G½B	14.2 +0.2/-0	5 +0/-0.2	45.2	48	60	30	40	0.38
VMP469.15-2.5	15	G¾B	18.2 +0.2/-0				65	32.5		0.46
VMP469.15-4										0.44

Screwed fittings

Sets of screwed fittings with flat seal available from Siemens ALG…2: Set of 2 screwed fittings ALG…3: Set of 3 screwed fittings	ALG132 ALG133 ALG142 ALG143	With male thread on tube side	
	ALG152 ALG153	With female thread on tube side	
Compression fittings  Available from other suppliers	SERTO SO 00021..		

ALG... type	For valve type	DN	G [inch]	R [inch]	Rp [inch]	L [mm]	T [mm]	SERTO type SO 00021.. [1] www.serto.com	D [mm]
ALG132	VVP469.10-0.63...1.6	10	G½	R⅜		≈ 24	≈ 9	**SO 00021-12-1/2"**	12
ALG133	VXP469.10-0.25...1.6							**SO 00021-14-1/2"**	14
2 x ALG132	VMP469.10-0.63...1.6							**SO 00021-15-1/2"**	15
ALG142	VVP469.15-2.5…4	15	G¾	R½		≈ 29.5	≈ 12	**SO 00021-17-3/4"**	17
ALG143	VXP469.15-2.5							**SO 00021-18-3/4"**	18
2 x ALG142	VMP469.15-2.5…4								
ALG152	VVP469.20-4	20	G1		Rp½	≈ 23	≈ 13		
ALG153	VXP469.20-4								

1) SO 00021-17.. and SO 00021-18 on request

DN = Nominal size
G = Valve thread (internal cylindrical)
D = External diameter for seamless copper and mild-steel piping

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