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## ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

# SIEMENS



VVP45.15-2.5N, VVP45.20-4N



VVP45.25-6.3N

ACVATIX™

## 2-port valves PN 16

## VVP45..N

- Bronze valve body (RoHS compliant)
- DN 15...25
- $k_{vs}$  2.5...6.3 m<sup>3</sup>/h
- Flat seal male threaded connections G...B to ISO 228-1 for
  - Sets of ALG.. screwed fittings with threaded connection (available from Siemens)
  - SERTO compression fittings, type SO 00021.. (available from suppliers to the trade)
- Manual adjuster
- Can be equipped with SSC.. electromotoric 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 re-coolers, 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

## Type summary

Type reference	DN	Connection	$k_{vs}$ [m <sup>3</sup> /h]	$S_v$
VVP45.15-2.5N	15	G 3/4B	2.5	> 50
VVP45.20-4N	20	G 1B	4.0	
VVP45.25-6.3N	25	G 1 1/4B	6.3	

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	Stock no.	Description
ALG..2	ALG..2	Set of 2 fittings with threaded connections for 2-port valves, consisting of 2 union nuts, 2 discs and 2 flat seals. ALG..2B are brass fittings, for medium temperatures up to 100 °C.
ALG..2B	S55846-Z1..	

## Ordering

Product number	Stock no.	description	Quantity
VVP45.20-4N	VVP45.20-4N	2-port valve PN 16, externally threaded	3
ALG152B	S55846-Z100	Set of 2 fittings, brass	3

delivery Valves, actuators and accessories are packed and supplied separately.

## Rev. Nr.

See overview, page 7.

## Equipment combinations

Valves	Actuators SSC..		Set of fittings			
	$\Delta p_{max}$ [kPa]	$\Delta p_s$ [kPa]	Externally threaded		Internally threaded	
			Type reference / stock no. Malleable cast iron	Type reference   Stock no. Brass <sup>1)</sup>	Type reference / stock no. Brass	
VVP45.15-2.5N	400	550				ALG142
VVP45.20-4N			ALG152	ALG152B	S55846-Z100	
VVP45.25-6.3N		500	ALG202	ALG202B	S55846-Z102	

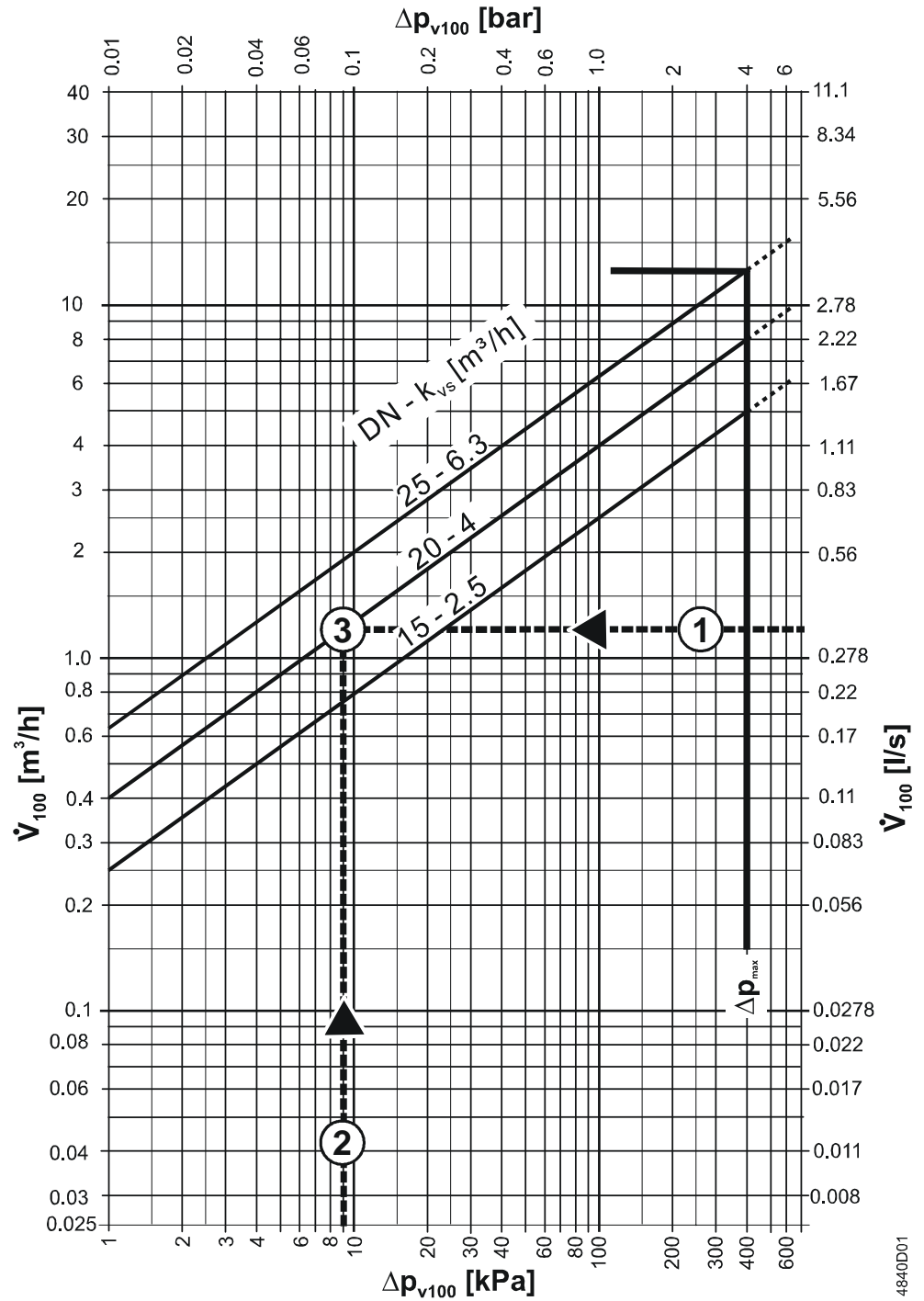
$\Delta p_{max}$  = Maximum permissible differential pressure across valve's control path, valid for the entire actuating range of the motorized valve.

$\Delta p_s$  = Maximum permissible differential pressure at which the motorized valve will close securely against the pressure (close off pressure).

<sup>1)</sup> Usable up to maximum medium temperature of 100 °C

## Actuator overview

Actuator	Operating voltage	Positioning signal	Positioning time	Positioning force	Remarks	Data sheet
SSC31	AC 230 V	3-position	150 s	300 N	With fail-safe function (30 s)	N4895
SSC81	AC 24 V					
SSC61	AC / DC 24 V	DC 0...10 V	30 s			
SSC61.5						

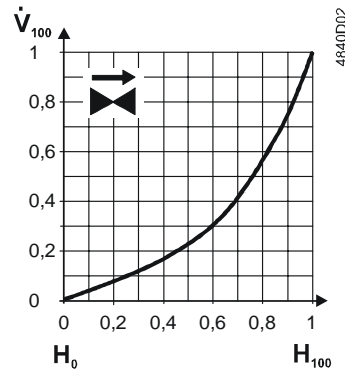


$\Delta p_{max}$  = Maximum permissible differential pressure across the valve's control path, valid for the entire actuating range of the motorized valve  
 $\Delta p_{v100}$  = Differential pressure across the fully open valve and the valve's control path by a volume flow  $V_{100}$   
 $\dot{V}_{100}$  = Volume flow through the fully opened valve ( $H_{100}$ )  
 100 kPa = 1 bar  $\approx$  10 mWC  
 1 m<sup>3</sup>/h = 0,278 l/s water at 20 °C

**Example:**  
 ①  $\dot{V}_{100}$  = 0.34 l/s  
 ②  $\Delta p_{v100}$  = 9 kPa  
 ③  $k_{vs}$  value = 4 m<sup>3</sup>/h

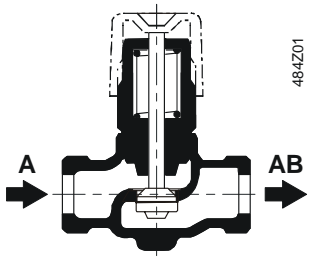
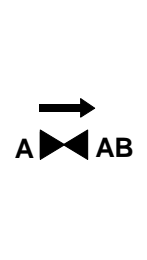
4840D01

## Valve flow characteristic



0...30 % → linear  
 30...100 % → equal percentage  
 $n_{gl} = 2,2$  to VDI / VDE 2173

## Engineering notes

Valve construction		Flow in control mode		Stem	
		Inlet A: Variable	Outlet AB: Variable	Retracts A → AB Opens	Extends A → AB Closes

**Warning!** The direction of flow must be as indicated by the arrow  $A \rightarrow AB$ .

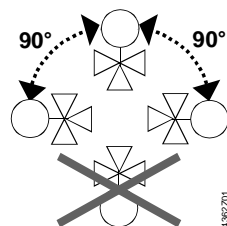
We recommend installation in the return pipe, as the temperatures in this pipe are lower for applications in heating systems, which in turn, extends the stem sealing gland's life.

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

## Mounting notes

Both valve and actuator can easily be assembled at the mounting location. Neither special tools nor adjustments are required.  
 The valve is supplied with mounting instructions 4 319 9526 0.

Orientation



## Commissioning notes



Commission the valve only if the manual knob or actuator has been mounted correctly.

### Manual adjustment

The straight-through path  $A \rightarrow AB$  can be opened electrically via the actuator, or manually.  
 Manually, path  $A \rightarrow AB$  can only be opened to 70 %.  
 The valves are closed by a return spring.

## Maintenance notes

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VVP45..N valves require no maintenance.

### Warning

When doing service work on the valve / actuator:

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

If necessary, disconnect the electrical wires.

Before putting the valve into operation again, make sure the manual knob or the actuator is correctly fitted.

### Stem sealing gland

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

### Disposal

Do not dispose of the device as household waste.

#### **Warning**

Due to the tensioned spring return, valve disassembly may result in flying parts causing possible injury.

Only authorized staff may disassemble valves with tensioned spring return!

#### **Disposal**

- Special handling of individual components may be mandated by law or make ecological sense.
- Observe all local and currently applicable laws and regulations.

### Warranty

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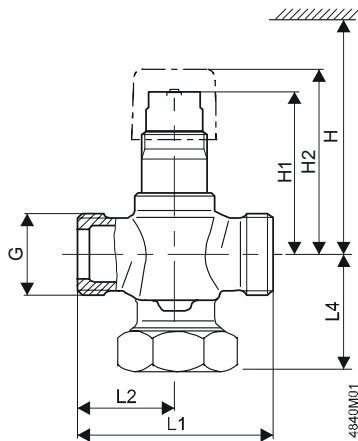
The technical data given for these applications is valid only in conjunction with the Siemens actuators as detailed under "Equipment combinations".

All terms of the warranty will be invalidated by the use of actuators from other manufacturers.

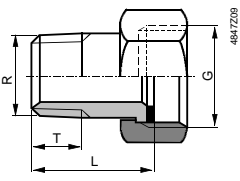
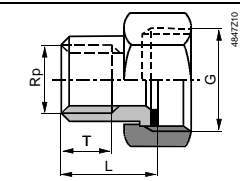

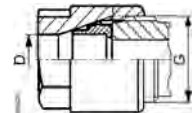
## Technical data

Functional data	PN class	PN16 to EN 1333
	Permissible operating pressure	1600 kPa (16 bar) to ISO 7628 / EN 1333
	Valve flow characteristic	Equal-percentage; $n_{ql} = 2,2$ to VDI / VDE 2173
	Leakage rate	0...0.1 % of $k_{vS}$ value (to DIN EN 1349)
	Permissible media	Low temperature hot water, chilled water, water with anti-freeze. Recommendation: water treatment to VDI 2035
	Medium temperature	1...110 °C, short-term max. 120 °C
	Rangeability $S_v$	> 50
	Nominal stroke	5.5 mm
Standards, directives and approvals	Pressure Equipment Directive Pressure Accessories	PED 2014/68/EU Scope: Article 1, section 1 Definitions: Article 2, section 5
	Fluid group 2	without CE-marking as per article 4, section 3 (sound engineering practice) <sup>1)</sup>
	EAC Conformity	Eurasia Conformity
	Environmental compatibility	The product environmental declaration CE1E4840en <sup>2)</sup> contains data on Environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Materials	Valve body	Bronze (RoHS compliant) CC499K
	Stem	CrNi steel
	Plug, seat, gland	Brass
	Sealing gland	EPDM O-rings
	Blank fitting bypass	VVP45.25-6.3N: Blank disk: stainless steel Union nut: Malleable cast iron
Dimensions / Weight	Dimensions	Refer to "Dimensions"
	Threaded connections	valve G...B to ISO 228-1 fittings R/Rp... to ISO 7-1, G... to ISO 228-1
	Actuator connection	G 3/4"
	Weight	Refer to "Dimensions"

## Dimensions



Type reference	DN	G [Inch]	H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	Weight [kg]
VVP45.15-2.5N	15	G ¾B	> 280	62	≈ 71	65	32,5	20	0,30
VVP45.20-4N	20	G 1B		66	≈ 75	80	40	24	0,42
VVP45.25-6.3N	25	G 1¼B		68	≈ 77	80	40	49	0,76

<b>Sets of screwed fittings with flat seal</b> (available from Siemens)  ALG..2, ALG..2B: Set of 2 screwed fittings	ALG142		pipe side with externally R threads	
	ALG152 ALG202	ALG152B ALG202B	pipe side with internally Rp threads	
<b>Compression fittings</b> (available from suppliers to the trade)		SERTO SO 00021..		

Type reference ALG..		For valve type	DN	G [Inch]	R [Inch]	Rp [Inch]	L [mm]	T [mm]	Type SERTO SO 00021.. <sup>2)</sup>	D [mm]
Malleable cast iron	Brass								<a href="http://www.serto.com">www.serto.com</a>	
	ALG142	VVP45.15-2.5	15	G ¾	R ½		≈ 29,5	≈ 12	SO 00021-17-3/4"	17
									SO 00021-18-3/4"	18
ALG152	ALG152B <sup>1)</sup>	VVP45.20-4	20	G 1		Rp ½	≈ 23	≈ 13		
ALG202	ALG202B <sup>1)</sup>	VVP45.25-6.3	25	G 1¼		Rp ¾	≈ 25	≈ 15		

<sup>1)</sup> Usable up to maximum medium temperature of 100 °C

<sup>2)</sup> SO 00021-17.. and SO 00021-18 on request (suppliers of the trade)

- On valve side: cylindrical thread to ISO 228-1
- On pipe side: with cylindrical thread to ISO 7-1
- ALG..B for medium temperatures up to 100 °C

## Spare parts

Type reference	Stock no.	Description	Quantity
74 6760 273 0	74 6760 273 0	Manual knob for short stroke valves	10

## Revision numbers

Type reference	Valid from rev. no.	Type reference	Valid from rev. no.	Type reference	Valid from rev. no.
VVP45.15-2.5N	01	VVP45.20-4N	01	VVP45.25-6.3N	01

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