



2-port seat valves PN25 with externally threaded connections

VVG55..

- Valve body bronze CC491K (Rg5)
- DN 15...25 (½ ...1 ")
- kvs 0.25...6.3 m³/h
- Stroke 5.5 mm
- Sets of ALG.. with threaded and ALS.. with weldable connections available from Siemens
- Suitable for actuators type SQS.. and SAS..

Use

For use as a control, safety or isolating valve in district heating and heating systems.
For closed hydraulic circuits.

Type summary

Type	DN	external thread [Inch]	k_{vs} [m ³ /h]	S_v
VVG55.15-0.25	15	G ¾B	0.25	>50
VVG55.15-0.4			0.4	
VVG55.15-0.63			0.63	
VVG55.15-1			1.0	
VVG55.15-1.6			1.6	
VVG55.15-2.5			2.5	
VVG55.20-4	20	G 1B	4.0	>100
VVG55.25-6.3	25	G 1¼B	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	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..3B are brass fittings, for media temperatures up to 100 °C.
ALG..2B	S55846-Z1..	
ALS..2	ALS..2	Set of 2 fittings with weldable connections for 2-port valves, consisting of - 2 union nuts, 2 discs and 2 flat seals

Order

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

Example:

Type	Stock No.	Description	Quantity
VVG55.20-4	VVG55.20-4	Ventil	3
ALG152B	S55846-Z100	Verschraubungs-Sets	2

Delivery

Valves, actuators and accessories are packed and supplied separately.

Spare parts, rev. no.

See overview, page 8.

Equipment combinations

Valves	actuator SQS.. and SAS..		Fitting sets		
	Δp_{max} [kPa]	Δp_s [kPa]	Malleable cast iron Type / Stock No.	Type brass ¹⁾ Type Stock no.	steel Type / Stock No.
VVG55.15-0.25	1200	2500	ALG122	ALG142	ALS152
VVG55.15-0.4					
VVG55.15-0.63					
VVG55.15-1		2000			
VVG55.15-1.6					
VVG55.15-2.5					
VVG55.20-4	1000	1000	ALG152	ALG152B S55846-Z100	ALS202
VVG55.25-6.3	800	800	ALG202	ALG202B S55846-Z102	ALS252

¹⁾ Medium temperature ALG..B maximum 100 °C, ALG142 pipe side with R ½B

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

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

Actuator overview

Type	Operating voltage	Positioning signal		Positioning time	Spring return function		Data-sheet		
SQS35.00	AC 230 V	3-position		150 s	yes	8 s	N4573		
SQS35.03				35 s					
SQS35.50				150 s					
SQS35.53				35 s					
SQS65.5	AC 24 V	DC 0...10 V	0...1000 Ω	35 s	yes	8 s			
SQS65									
SQS65.2		DC 2...10 V							
SQS85.00		3-position						150 s	
SQS85.03								35 s	
SAS31.00	AC 230 V	3-position		120 s	yes	<28 s	N4581		
SAS31.03				30 s					
SAS31.50				120 s					
SAS31.53				30 s					
SAS61.03 ¹⁾	AC/DC 24 V	DC 0...10 V	DC 4...20 mA	30 s	yes	<14 s			
SAS61.03U ²⁾									
SAS61.33 ¹⁾								0...1000 Ω	
SAS61.33U ²⁾									
SAS61.53 ¹⁾									
SAS81.00 ¹⁾	AC 230 V	3-position		120 s	yes	<14 s			
SAS81.00U ²⁾									
SAS81.03 ¹⁾									
SAS81.03U ²⁾									
SAS81.33 ¹⁾									
SAS81.33U ²⁾									
SAS81.33U ²⁾									

¹⁾ Approbation: CE and UL

²⁾ Approbation: CE and UL, cable gland: ½" (UL514C)

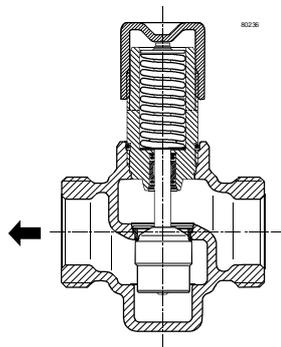
A positioning force of 400 N is required to operate these valves. Suitable actuators for this purpose are

- D-series motorized actuators, types SQS.. and
- motorized actuators, types SAS..

Note If VVG55.. valves are controlled by SQS65.. valve actuators, the valve characteristic jumper in the actuator must be set to "Linear".

Technical design / mechanical design

Valve cross-section



- Valve housing and valve neck for fitting actuator (screwed connection, G ¾B).
- Sealing gland with double O-rings and dirt protection strip.
- The valves are supplied in a series with a manual adjuster.
- No special tools or adjustments are required to mount the actuator on the valve.

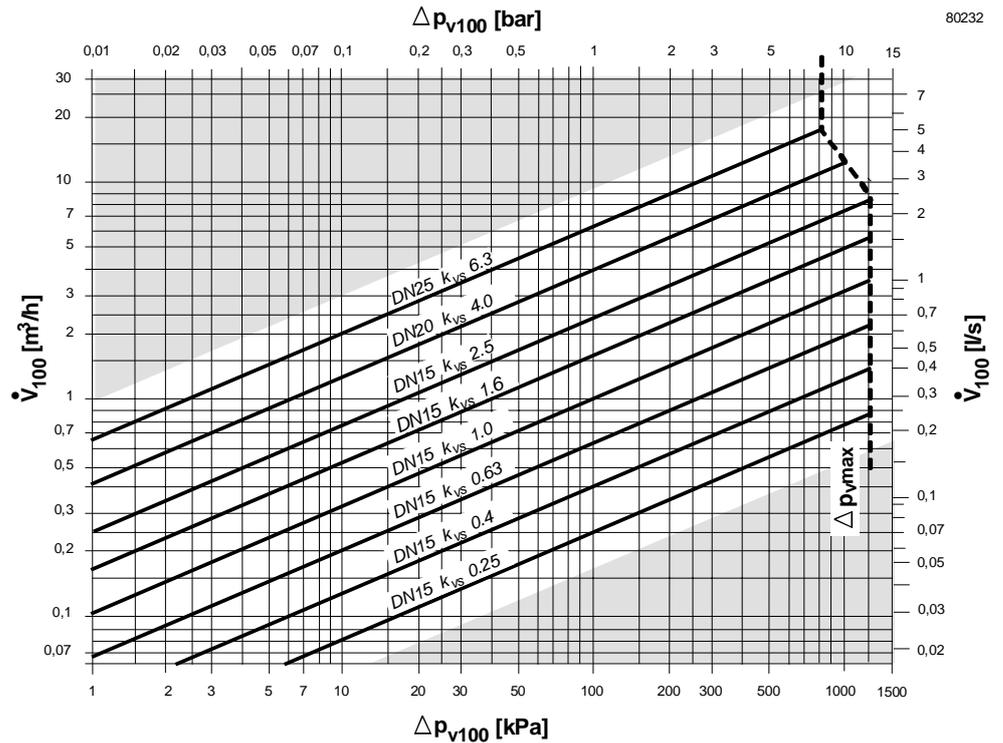
Manual adjustment

The valve can be adjusted manually from 0...100 % by use of the plastic manual adjuster (which also acts as a protective cover during transport).

Rotation of manual adjuster

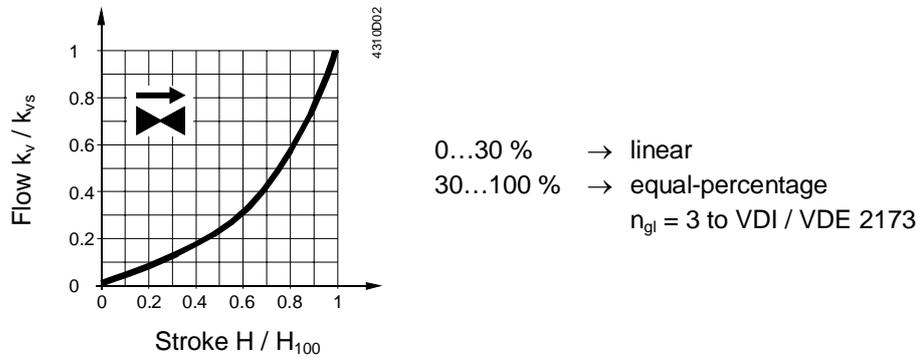
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|-------------------------|----------------------|--------------|-------------------|
| Clockwise | Valve stem retracts: | valve opens | = increasing flow |
| Counterclockwise | Valve stem extends: | valve closes | = decreasing flow |

Flow diagram

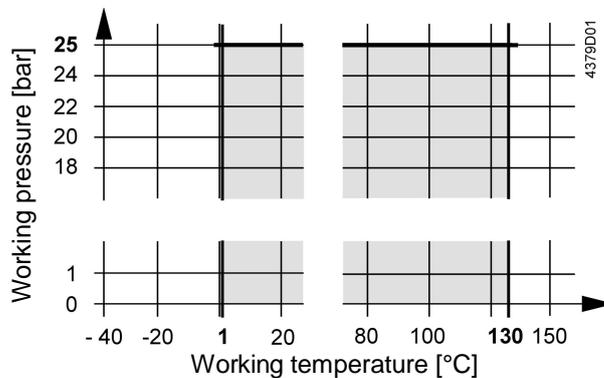


- Δp_{max} = Maximum permissible differential pressure across the valve (mixing: port A - AB, B - AB), valid for the entire actuating range of the motorized valve
- Δp_{v100} = Differential pressure across the fully open valve and the valve's control path A - AB, B - AB by a volume flow V_{100}
- \dot{V}_{100} = Volume flow through the fully open valve (H_{100})
- 100 kPa = 1 bar \approx 10 mWC
- 1 m³/h = 0.278 l/s water at 20 °C

Valve characteristic



Working pressure and temperature



Working pressure and medium temperature staged as per ISO 7005

Current local legislation must be observed.

Notes

Engineering

The valves should preferably be installed in the return water, since in heating applications, this is where the lower temperatures prevail. This will help extend the life of the spindle seal. **Water quality specifications in accordance with VDI 2035.**

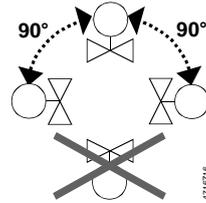
To ensure reliable functioning of the valve, the installation of a **strainer** on the inlet side of the valve is required.

Mounting

The valve and actuator can be assembled directly on site. No special tools or adjustments are required for this purpose.

Mounting instructions are enclosed with the valve.

Orientation



Direction of flow

Before installation, check the flow indication → on the valve.

Commissioning

The valve can be commissioned with the actuator fitted in accordance with instructions, or by fitting the manual adjuster.

Valve stem retracts: valve opens = increasing flow

Valve stem extends: valve closes = decreasing flow

Maintenance

Warning

VVG55.. valves require no maintenance.

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 certain the actuator is correctly fitted.

Disposal



Before disposal the valve must be dismantled and separated into its various constituent materials.

Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.

Current local legislation must be observed.

Warranty

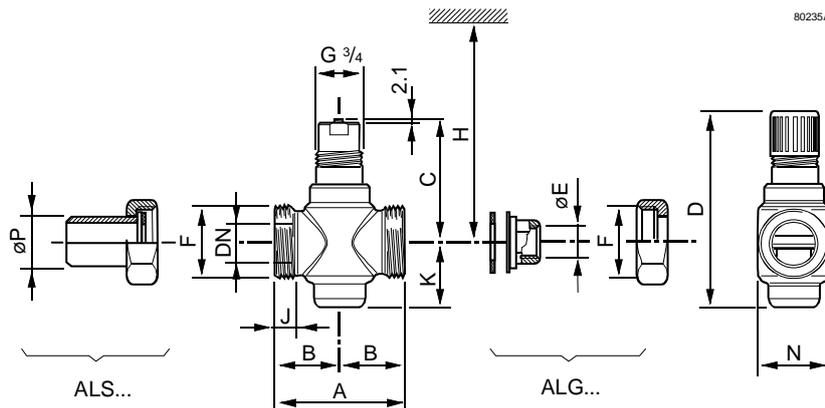
The technical data given for these applications is valid only in conjunction with the Siemens actuators as detailed under "Equipment combinations", page 2.

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

Technical data

Functional data	PN class	PN 25 to ISO 7268	
	Operating pressure	to ISO 7005 within the permissible medium temperature range according to the diagram on page 4 ANSI class 250 psi	
	Flow characteristic	0...30 %	Linear
		30...100 %	Equal-percentage; $n_{gl} = 3$ to VDI / VDE 2173
	Leakage rate	0 ... 0.02 % of k_{vs} value, VDE / VDI 2173	
	Permissible media	water Chilled water, low temperature hot water, high temperature hot water, water with anti-freeze; Water with oxygen-binding additives, Water with additives as specified in VDI 2035 Recommendation: water treatment to VDI 2035	
	Medium temperature	1 ... 130 °C	
	Rangeability S_v	$k_{vs} \leq 1$: >50 $k_{vs} \geq 1,6$: >100	
	Nominal stroke	5,5 mm	
	Manual adjustment	Using manual adjuster, without actuator: 0 ... 100 %	
	Norms and 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 practice)
Environmental compatibility		ISO 14001 (Environment) ISO 9001 (Quality) SN 36350 (Environmentally compatible products) RL 2002/95/EG (RoHS)	
Materials	Valve body	Bronze CC491K (Rg5) as per EN 1982	
	Seat, plug, spindle and spring	Stainless steel	
	Gland	Brass	
	Sealing materials	EPDM O-Ring	
Dimensions / Weight	Refer to "Dimensions"		
	External thread connections	G..B to ISO 228-1	
	Actuator connection	G 3/4"	

Dimensions



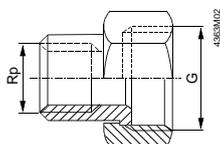
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Valve type	DN	A [mm]	B [mm]	C [mm]	D [mm]	F [Inch]	H* [mm]	H** [mm]	J [mm]	K [mm]	N [mm]	G [mm]
VVG55.15-0.25	15	65	32.5	66.5	105	G ¾B	220	237	11.5	31.5	33	0.48
VVG55.15-0.4												
VVG55.15-0.63												
VVG55.15-1												
VVG55.15-1.6												
VVG55.15-2.5												
VVG55.20-4	20	70	35	71.5	116	G 1B	225	242	12	37.5	37	0.63
VVG55.25-6.3	25	75	37.5	71.5	116	G 1¼B	225	242	12	37.5	42	0.72

* in combination with SQS..

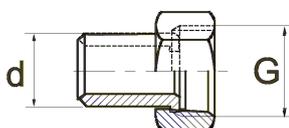
** in combination with SAS..

Screwed fittings



Type / Stock No.	Type	Stock No.	for valve type	G [Inch]	Rp [Inch]
	ALG142		VVG55.15..	G ¾	R ½ Rp ⅜
ALG122					
ALG152	ALG152B	S55846-Z100	VVG55.20-4	G 1	Rp ½
ALG202	ALG202B	S55846-Z102	VVG55.25-6.3	G 1¼	Rp ¾

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



Type	for valve type	G [Inch]	Ø d [Inch]
ALS152	VVG55.15..	G ¾	21.3
ALS202	VVG55.20-4	G 1	26.8
ALS252	VVG55.25-6.3	G 1¼	33.7

H = Total height of valve and actuator including minimum clearance from wall or ceiling for mounting, connection, operation, maintenance etc.

G = Weight of valve in kg, excluding screwed fittings and packaging

G* = Weight in kg, excluding packaging

Ø E = Diameter of threaded pipe Rp.. to ISO 7-1

Ø P = External diameter of pipe [mm]

Spare parts

Type	Stock No.	Description	Number
74 6760 273 0	74 6760 273 0	Manual knob for short stroke valves	10

Revision numbers

Type	Valid from rev. no.	Type	Valid from rev. no.	Type	Valid from rev. no.
VVG55.15-0.25	..01	VVG55.15-1	..01	VVG55.20-4	..01
VVG55.15-0.4	..01	VVG55.15-1.6	..01	VVG55.25-6.3	..01
VVG55.15-0.63	..01	VVG55.15-2.5	..01		