SS - VS

C ∈ In compliance with 97/23/CE PED

USE

SS - VS series valves are used to control fluids belonging to the group showed in the table according to article 9 of 97/23/CE directive (PED) in air-conditioning, thermoventilation and heating plants and in industrial processes; therefore, they cannot be employed as safety valves.

MANUFACTURING CHARACTERISTICS

They consist in a two-way simple seat valve body to be assembled on an electrical bidirectional actuator, driving mechanical connection with elastic pin and position indicator.



TECHNICAL CHARACTERISTICS

Model	VSG	SSGA	VSS	SSAA	SSAACP
WOUEI	DN 25÷150	DN15÷100	DN25÷65	DN15÷80	DN15÷80
Construction	PN 16	PN 16	PN 25	PN 40	PN 40
Body	cast iron	cast iron	spheroidal cast iron	steel	steel
Seat	cast iron	stainless steel	steel	stainless steel	stainless steel
Plug	forged brass	stainless steel	steel	stainless steel	stainless steel
Stem (Ø 9mm)	stainless steel	stainless steel	stainless steel	stainless steel	stainless steel
Control characteristic	equal percentage	equal percentage	equal percentage	equal percentage	equal percentage
Stem packing	Viton O-ring ⁽⁴⁾	Teflon V-ring	Teflon V-ring	Teflon V-ring	(2)
Max fluid temperature °C	150	200	230	230	350
Min fluid temperature °C	-10 ⁽¹⁾	-10 ⁽¹⁾	-10 ⁽¹⁾	-10 ⁽¹⁾	-20 ^{(1) (3)}
Fluid (5)	Group 2	Group 2	Group 2	Group 2	Group 1
Connections	flanges PN 16	flanges PN 16	flanges PN 25	flanges PN 40	flanges PN 40
Leakage % of Kvs	0,03	0,02	0,02	0,02	0,02
Action	normally open	normally closed	normally open	normally closed	normally closed

- (¹) For applications with possible ice formation on stem and gasket, see 245 accessory.
- (²) Graphite packing for high temperatures; forced lubrication on extended neck. Teflon gasket for low temperatures, see (³)
- (³) For applications on fluids from -10 to -20 °C, add letter B to the model name, e.g. SSAACP50B. In such a case, the max. temperature is 230 °C.

MOTORIZED VALVES OPTIONS

MODEL DESCRIPTION

A150-2 flanges with ANSI 150 bolt holes (for SSAA valves) **A300-2** flanges with ANSI 300 bolt holes (for SSAA valves) (⁴) Double O-ring and graphited teflon scraper ring.

(⁵) Group 1: water, overheated water, steam, diathermic oil. For different fluids belonging to group 1, please contact our Sales Support.

Group 2: water, overheated water, steam.

For different fluids belonging to group 2, please contact our Sales Support.

ACCESSORIES

MODEL DESCRIPTION

245 stem heater for applications on -10 °C low temperature fluid with SH - ST - MVL actuators.

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MAX DIFFERENTIAL AND CLOSE-OFF PRESSURE (bar) *

DN		Kvs			VSG		SSGA			VSS			SSAA	
mm	VSG	VSS	SS	SH/ST	MVL	MVLA/C**	SH	MVL	MVLA/C**	SH	MVL	MVLA/C**	MVL	MVLA/C**
15 R			1,6	-	-	-	6(16)	6(16)	6(16)	-	-	-	10(30)	10(30)
15			4	-	-	-	6(16)	6(16)	6(16)	-	-	-	10(30)	10(20)
20			6,3	-	-	-	6(16)	6(16)	6(14)	-	-	-	10(30)	10(12)
25 R	4	4		2(10)	2(10)	2(10)	-	-	-	8(20)	8(20)	7(10)	-	-
25 I	6,3	6,3		2(10)	2(10)	2(10)	-	-	-	8(18)	8(20)	7(10)	-	-
25	10	10	10	2(10)	2(10)	2(10)	6(16)	6(16)	6(9)	8(16)	8(20)	7(10)	10(20)	7,5
32		16	16	-	-	-	6(16)	6(16)	6(9)	7,5(12)	8(14)	6	10(20)	7,5
40	25	25	24	2(7,5)	2(9,5)	2(3,5)	6(10)	6(13,5)	5,5	6,5(8)	8(10)	4,5	10(13)	4,5
50	40	40	32	2(4,7)	2(6)	2(2,4)	6(7)	6(9)	3,5	5,2	6,5	2,7	8	3
65	63	63	63	2(2,8)	2(3,6)	1,4	2,5	3,5	1,4	2,7	3,7	1,4	3,5	1
80	100		110	1,7	2(2,3)	0,8	1,5	2,3	0,9	-	-	-	2,4	0,8
100	130		140	0,8	1,4	0,4	1	1,4	0,5	-	-	-	-	-
125	200			0,5	0,8	-	-	-	-	-	-	-	-	-
150	300			0,3	0,4	-	-	-	-	-	-	-	-	-

Kvs is the flow rate in m³/h of water at a temperature between 5 °C and 40 °C passing through a valve open at nominal stroke with 100 kPa (1 bar) differential pressure.

* The values in brackets represent the max differential pressure the actuator can bear, in order to maintain the value in closed position. When only one value is indicated, this corresponds to the max differential and close-off pressure.

** **VS** valves: in emergency MVLA valve closed; MVLC valve open. **SS** valves: in emergency MVLA valve open; MVLC valve closed. Note: The max operating pressures at different temperatures for various NP classes must correspond to the UNI 1284 table.

ACTUATORS TECHNICAL CHARACTERISTICS, ELECTRICAL WIRING DIAGRAM AND INSTALLATION See SH - ST - MVL actuators data sheets and mounting instructions.

INSTALLATION

HYDRAULIC CONNECTIONS

Respect the fluid direction as indicated by the arrow on the valve body or, in case letters are used with inlet in A and outlet AB.

VALVE MOUNTING

Before mounting the valve, make sure pipes are clean, free from welding slags. The pipes must be perfectly aligned with the valve body and not subjected to vibrations. For installations on plants with high temperature fluids (steam, overheated water, diathermic oil) use expansion joints to avoid the dilatation of pipes to overload the valve body. Install the valves with the actuator in vertical position for fluid temperature up to 120°C; with higher temperatures they should be mounted horizontally.

The valves can also be mounted in any other position provided that the actuator main shaft is always horizontal. Leave sufficient room over the actuator, at least 10 cm., to allow the actuator disassembling from the valve body for eventual maintenance. The actuator must not be installed in explosive atmosphere, at a room temperature higher than 50 $^{\circ}$ C and lower than -5 $^{\circ}$ C; they must not be subjected to steam or water jets or dripping.

Avoid the valve installation in plants which are considered aggressive and/or corrosive for valve materials.

Please contact our Sales Support in order to define which potentially aggressive or polluting substances can be used. We disclaim all responsibility in case of valve failure due to external fortuitous events (fire, earthquakes etc.).

Notes: The actuator can be rotated with respect to the valve body by blocking the ring nut; after such operation re-tighten the ring nut.

Following the hydraulic installation it is necessary to check the tight of the stem packing placed on the bonnet, both in cases of low and high temperatures. The valves require periodic maintenance.

OVERALL DIMENSIONS (mm)

Figure	Model	DN	L	Н	h	ØD	b	Ød	Øf	Holes	Weig	ht Kg	Stroke mm
b Ø9		25	160	37	106	115	16	85	14	4	5	5	16,5
		40	200	51	128	150	18	110	18	4	9	,6	25
		50	230	53	145	165	20	125	18	4	1	3	25
	VSG	65	290	71	175	185	20	145	18	4	1	8	25
	PN16	80	310	81	187	200	22	160	18	8	28	3,6	45
		100	350	93	207	220	22	180	18	8	3	2	45
		125	400	115	234	250	24	210	18	8	4	5	45
N4040		150	480	133	277	285	24	240	22	8	6	0	45
<u>Ø</u> 9 #											SSGA	SSAA	
	SSGA	15	130	76	-	95	16	65	14	4	3,5	4,1	16,5
<u> </u>	PN16	20	150	79	-	105	16	75	14	4	4,5	5,1	16,5
b	SSAA	25	160	81	-	115	16	85	14	4	5,5	6,1	16,5
	PN40	32	180	129	-	140	18	100	18	4	8,7	10,1	25
		40	200	137	-	150	18	110	18	4	10,3	12,3	25
	(DN100=	50	230	145	-	165		125	18	4	13,7	17	25
	only for SSGA)	65	270	160	-	185	20	145	18	4/8*	19,6	23,8	25
	55GA)	80	310	176	-	200	22	160	18	8	31,7	32	45
N4123		100	350	190	-	220	24	180	18	8	43,5	-	45
Ø 9 – –		25	160	83	83	115	18	85	14	4	6	6	16,5
		32	180	123	102	140	18	100	18	4	1	0	25
	VSS									-			
	PN25 DN25÷65	40	200	123	104	150	18	110	18	4	1	1	25
	DNZ5÷05	50	230	123	110	165	20	125	18	4	1	6	25
		05	070	4 4 7	104	105	22	445	10	0	2	0	25
N4068 L Øf		65	270	147	124	185		145	18	8			
n ^H n		15	130	162	-	95	16	65	14	4	6		16,5
		20	150	164	-	105	18	75	14	4	8		16,5
		25	160	167	-	115	18	85	14 10	4	8		16,5 25
	SSAACP	32	180 200		-	140 150	18 18	100	18 1 0	4	14		25 25
	PN40	40 50	200 230		-	165		110 125	18 18	4 4	2	5,4 5	25 25
		50 65	230 270	270	-	185	20 22	125	10 18	4 8	2		25 25
		80	270 310		_	200		145	18	о 8	3		25 45
		00	510	301	-	200	24	100	10	U	5	0	40

* No. 4 holes for SSGA No. 8 holes for SSAA

The performances stated in this sheet can be modified without any prior notice due to design improvements.

12/05

2 Emissione

CONTROLLI

Automatic control systems for: air-conditioning/heating/industrial thermal process.

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DBL074E

MODEL	STROKE TIME FOR CONTROLLI VALVES			POWER SUPPLY	CONTROL	
	16,5 mm	25 mm	45 mm	(Vac)		
MV/L2K	26 s	40 s	70 s	24 V	proportional	
MVL3K	300/60 s	300/60 s	300/60 s	24 V	floating	

APPLICATION AND USE

MVL actuators have linear characteristic (linear ratio between input signal and valve coupling joint movement). They are used for fluid control in air-conditioning and heating systems and in industrial processes. The control signal can be set as proportional or floating by acting on the dip switches. They are designed for direct coupling on all CONTROLLI globe valves and they may also be used easily on other manufacturers' valves having a stroke between 0 and 52 mm.

The very high force of the actuator (3000 $\mbox{N})$ enables high performances.

OPERATION

The actuators are equipped with bidirectional electrical motor, they self-adjust according to the valve stroke, granting a constant torque at the valve mechanical stroke ends regardless of their position.

All models are also provided with a feedback output signal indicating the valve position.

MANUFACTURING CHARACTERISTICS

The actuator consists in a die-cast aluminium housing, which includes mounting bracket for connection to valve body.

Reduction gears supported by ball bearings. Movement is transmitted to a rack-and-pinion mechanism connected to the valve stem through a suitable joint.

Internal electronic card with easily accessible terminals for electrical connections.

The manual control knob is placed on the front part of the actuator; the knob is in thermoplastic material. The actuator is maintenance-free.

POSSIBLE COMBINATIONS AND CONNECTIONS

All actuators can be connected to any controller, providing that the relevant output signal complies with the requirements at "Technical Characteristics" paragraph. In particular they can be connected to CONTROLLI 500-line controllers, DIGITROLL 2000, 3000, and 200, 300, 400-line controllers and all MicroNet models.



TECHNICAL CHARACTERISTICS

I LOI INIOAL OI AN	AUTENIUTIOU
Power supply	24 Vac, +25%÷ -20%
Consumption	25 VA
Dimensioning	30 VA
Frequency	5060 Hz
Stroke	052 mm
Stroke time	See available models
Thrust	3000 N
Temperature	
- operating	-15T 50 °C
- storage	-25T 65°C
Allowed room humidity	Class R according to DIN 40040
Terminal board	screw-type 1,5 mm ² wires
N. 2 conduit opening	plastic punchable, replaceable by
	PG 13,5 compression glands
Protection degree	IP 55 DIN 40050 (IEC 529)
	For highly polluted environments
	according to IEC 730-1(93)/6.5.3
Weight	4 Kg
Control signal	
Floating	2 SPST contacts
Proportional	
- voltage	010V (factory setting), 210V/
	47V/811V/15V/69V
-current	see MVLFS5 accessory
Output indication	
G0-Y	210 Vdc (max 2 mA)
Voltage outside powe	
G0-G1	16 Vdc (max 25 mA)
The product complice w	ith EMC 90/226 directive according

The product complies with EMC 89/336 directive according to the following standards: EN50081-1 for emission, EN50082-1 for immunity.

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ACCESSORIES

DMVL (only factory-mounted. To be ordered together with the actuator).

2 auxiliary microswitches (SPDT 10 (3) A-250V~) adjustable on the whole stroke. Microdisconnection type 1B according to IEC 730-1(93)/ 6.4.3.2. It is possible to place the cams so that the microswitches act according to the required position. Keep in mind that when the lever is on the cam protruding part, the contact is closed between b and c and open between c and a (see figure below).



Make the electrical connections in compliance with the rules in force.

Attention: during operation, the cables must not interfere with the cams and the gears.

- **DMVF** 2 stroke end microswitches with electronic control, not adjustable.
- MVLFS5 Accessory for 4÷20 mA control signal. This accessory is factory-supplied with MVL56FA/C actuators.
- **MVLHT** Valve body-actuator spacer reducing the actuator direct exposure in case of installation with high-temperature fluids. Dimensions: \emptyset 120 mm; h = actuator height + 102 mm
- 245 Stem heater 24 V~, 50 W (for applications with fluid temperature <-10 $^{\circ}$ C)

INSTALLATION AND MOUNTING

The actuator can be mounted in the positions shown in Fig. 3. It is advisable to use the motorized valve with MVLHT spacer in order to reduce the actuator working temperature in case of fluids at high temperatures (approximately > 120° C) in the valve body. For fluids over 160° C avoid mounting the actuator in vertical position on the valve so as to avoid the direct exposure to heat sources.

Carry out the electrical connections by removing the cover, in compliance with the rules in force. For valve mounting, follow the assembly instructions inside the package.

These actuators are factory-supplied with 0...10 V- control signal. To select different ranges, move the "DIP" micros-witches (see fig. 1 and 2).

For 4...20 mA range it is necessary to select 1...5 V range and use the MVLFS5 accessory.

To reverse the action direction, move the DIP 7 from OFF to ON.

ELECTRONIC BOARD

OPERATION MODE SELECTION (CONFIGURATION DIP)



WIRING DIAGRAMS



FIG. 2



FIG. 3

DELTA P MAX (BAR) WITH CONTROLLI VALVES

Two-way

	80	100	125	150
SSGA	5,5	3,5		
SSAA/SSAACP	5			
VSG	5,7	3,7	2,3	1,6

Three-way

	80	100	125	150
VMB16	5,7	3,7	2,3	1,6
3VSA	5,5			
3VSATS	5			
3VAA/3VAACP	5,3	3,3	2,1	

OVERALL DIMENSIONS (mm)



The performance stated in this sheet can be modified without any prior notice due to design improvement.

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Automatic control system for: air-conditioning/heating/industrial thermal process.

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