

MODELS		DN	Kvs		STROKE [mm]
2-way	3-way		A-AB	B-AB	
VSB3T	VMB3T	3/4"	6,3	5,5	5,5
VSB4T	VMB4T	1"	10	9	
VSB5T	VMB5T	1 1/4"	14	11	
VSB6T	VMB6T	1 1/2"	18	12	
VSB8T	VMB8T	2"	25	17	



APPLICATION AND USE

VSB.T two-way and VMB.T three-way valves can be used for fluid control in industrial and residential air-conditioning, thermoventilation and heating plants and in machinery for product thermal process.

Three-way valves must be used only as mixers, angle way must never be employed for control purposes.

MANUFACTURING CHARACTERISTICS

G25 cast iron valve body.

Brass plug with Contoured-type profile on direct way and V-port profile on angle way.

CrNi steel stem. Female threaded connections.

Double EPDM O-ring stem packing.

TECHNICAL CHARACTERISTICS

Construction:	PN16
Control characteristic:	linear
Rangeability (Kvs/Kvm):	> 50
Leakage*:	
- VSB.T:	< 0,03% of Kvs
- VMB.T:	direct way < 0,03% of Kvs angle way < 2% of Kvs
Connections:	female thread
Stroke:	5,5 mm
Allowed fluids:	
- Water:	max temperature 95 °C min. temperature 5 °C
- glycol-added:	max 50%
Weight:	see dimensions

*Leakage is measured according to the EN1349 standard.

OPERATION

By pushing the stem inwards, the actuator opens A-AB way and, in three-way valves, it contemporary closes the angle way B-AB

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INSTALLATION

Before mounting, ensure pipes are clean, free from weld slag, perfectly aligned with the valve body and not subjected to vibrations. As far as valve mounting positions are concerned, follow the instructions given in the actuator data sheets.

While mounting, respect the fluid directions indicated by the letters on the valve body (see fig. 1 and 2).

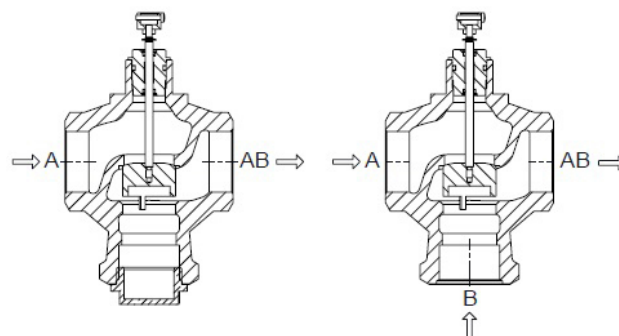


FIG. 1

FIG. 2

ACTUATORS

VSB.T and VMB.T valves can be motorized by CONTROLLI MVC.03 and MVC503R actuators.

MAX DIFFERENTIAL CLOSE-OFF PRESSURE [kPa]

DN	DIRECT WAY	ANGLE WAY
3/4"	900	700
1"	550	450
1 1/4"	350	300
1 1/2"	250	200
2"	190	160

100 kPa = 1 bar = 10 m_{H₂O}

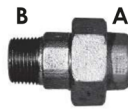
MAX REGULATION DIFFERENTIAL PRESSURE [kPa]

The max regulation differential pressure, it means the pressure which can be used during the stroke, is conditioned by wear between seat and plug and by the performance guaranteed by the actuator for the evaluated valve. So we recommend not to overcome the differential pressure whose value corresponds to the minimum between 200kPa (maximum admitted value not to cause wear) and the one shown in the previous table (max close-off differential pressure).

Note: The max operating pressures at different temperatures for various PN classes must correspond to the following standards: UNI 1092-2 and UNI 12516-1.

ACCESSORIES

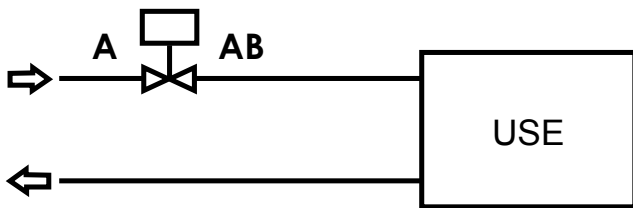
CAST IRON FITTINGS 3 PIECES			
THREAD		FITTING CODE	SEAL CODE
A	B		
G 3/4" F	G 3/4" M	89948-02	89949-02
G 1" F	G 1" M	89948-03	89949-03
G 1 1/4" F	G 1 1/4" M	89948-04	89949-04
G 1 1/2" F	G 1 1/2" M	89948-05	89949-05
G 2" F	G 2" M	89948-06	89949-06



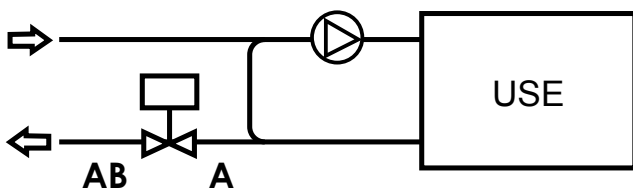
APPLICATION SCHEMES

VSB.T VALVES

a) Variable flow control when used

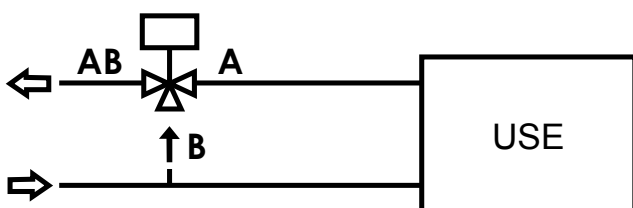


b) Constant flow control for use in injection circuits

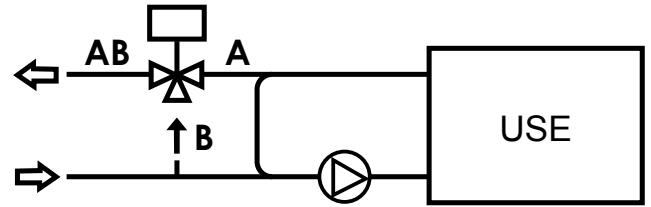


VMB.T VALVES

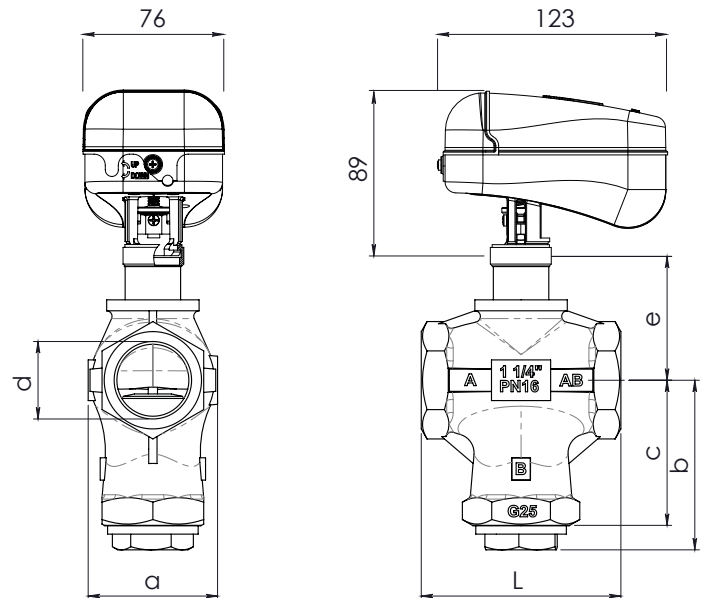
c) Variable flow mixing when used



d) Constant flow mixing when used in injection or tapping circuits



DIMENSIONS [mm]



DN	Ød	VSB.T				VMB.T				Peso [kg]
		L	a	e	b	L	a	e	c	
3/4"	G 3/4"	85	54	58	79	85	54	58	67,5	1,1
1"	G 1"	95	62	63	83	95	62	63	72,5	1,5
1 1/4"	G 1 1/4"	108	70	67	90	108	70	67	78,5	2
1 1/2"	G 1 1/2"	120	81	75	98	120	81	75	85,5	2,7
2"	G 2"	142	97	78	111	142	97	78	97	4

The performances stated in this sheet can be modified without any prior notice

MVC

New electro-mechanical actuator for globe valves and PICVs

- » **Electronic fail-safe actuator (with supercapacitor)**
- » 300 N force
- » Stepper motor for high precision and efficiency
- » **Fast opening/closing times:** 5,5 s/mm → 30 s on 5,5 mm stroke valves (speed adjustable in the Modbus model)
- » Self-stroking and self-adjusting on valves up to 12 mm stroke
- » **Modbus** connectivity (option)
- » M30x1.5 and M28x1.5 connections for globe valves and PICVs
- » **24 Vac/dc** power supply
- » Control signals: 0..10 V / 2..10 V / 0..5 V / 6..10 V / 4..20 mA
- » Feedback signal: 2..10 V
- » Diagnostic by LEDs and Modbus
- » 9 dip-switches for easy setting of all adjustable parameters
- » **IP54** protection
- » Manual override with allen key
- » Complete with 5 wires cable 1,5 m
- » Clear plastic front cover for visibility of LEDs and dip-switches configuration
- » **Fail-safe: one model provides both, stem up / stem down action, through jumper setting**



MODEL	CONTROL SIGNAL	POWER SUPPLY	MAX. STROKE	ELECTRONIC RETURN	CONNECTIVITY
MVC203	3 pos.	230 Vac	16 mm	No	No
MVC403		24 Vac			
MVC503	Proportional	24 Vac/dc	12 mm	Yes	No
MVC503R	Proportional				Modbus
MVC503RM					

MVC503R(M) TECHNICAL CHARACTERISTICS

Power supply	24 Vac/dc
Speed	5 s/mm
Force	300 N
Fail-safe action	with Supercap (45 s for a complete charge) and configurable parameters
Emergency return speed	3 s/mm
Protection rating	IP54
Control signal	0..10 Vdc, 2-10 Vdc, 0..5 Vdc, 6..10 Vdc, 4-20 mA
Feedback signal	2-10 Vdc
Stroke	Auto adaptive or fixed stroke
Reference directives and standards	EMC 2014/30/UE according to EN 61326-1:2013 LVD 2014/35/UE according to EN 61010

Fast opening/closing times, emergency return with Supercap, self-stroking capability make MVC503R an ideal actuator to motorize a variety of control valves, for example:

- » Push & pull action on globe valves without spring up to 12 mm stroke and DN50
- » Push action on globe valves and PICVs with spring return and fixed stroke between 2,5 and 6,5 mm

for PICVs
up to 1 ½"
(4000 l/h)



For bronze globe valves
2TBB.T & 3TBB.T
up to 2" (Kvs 38)



For cast iron globe valves
VSB.T & VMB.T
up to 2" (Kvs 25)

