

VZ28-VZ38-VZ48



Small linear Zone valves

These small linear zone valves are used for the control of hot or chilled water in terminal units such as fan coils, radiator heating; or for small re-heaters, re-coolers. The range consists of two-way, three-way and three-way with bypass.

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Valves with a Kv of 0.25 to 2.5 are used with thermal actuators MZ88T/TA. Valves with a Kv of 4-6 are used with thermal actuators MZ89T/TA. All valves are normally closed.

The valves utilise a double O-ring design on the plug to ensure a leak tight seal on both valve ports, this ensures no loss of energy leakage through the valve.

Thermal actuators are used to drive these valves and are available in ON-OFF (110 to 230V and 24V) or as 0-10V a modulating control.

An adjustment cap for manually operating the valves, e.g. for priming the system upon installation, is provided with models Kv 0.25÷6.

Versions with compression ends are supplied as standard complete with nuts, olives and adjustment caps, these are individually packed. Multi-packs of 5 pcs are also available on special request for the compression ended valves; these versions do not include the nuts, olives or adjustment caps and are not stocked for general sale.

Spare nuts, olives and adjustment caps are available as accessories but only in bags of 10 pcs.

SPECIFICATIONS

Design

PN16, Two-way, Three-way and Three-way with bypass (see part numbers on page 2)

Function..... Normally Closed (A-AB)
[Without actuator fitted]

Stroke 2.5 mm

Max fluid speed 3 m/s

Allowed fluids Water, water+glycol (30% max)

Temperature.....5°C to -95°C

Leakage 0%, Tight close off
A-AB & B-AB) direct and angle way)

Connection

VZ28, VZ38, VZ48BSP male thread to
ISO 228/1 (flat face seal)

VZ28C, VZ38C, VZ48C15mm and 22mm
compression

Materials:

Valve body..... Brass

StemStainless steel

Stem packing double Viton™ O-ring

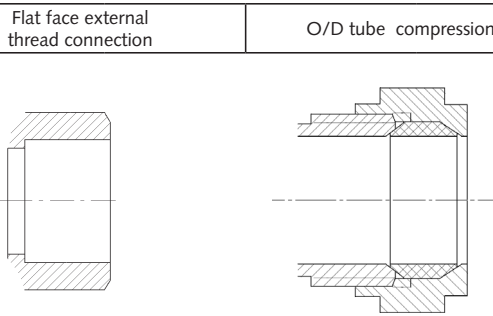
Plug materialPPS

Seat/cartridge material.... LCP Glass Fiber Reinforced

Seat Sealing Viton™

PART NUMBER ORDERING

Two-way valves



		VZ28 Flat face		VZ28C (**) Compression		Kv		Close-off kPa (MZ88T/TA)	Close-off kPa (MZ89T/TA)
Size	Kv	Part Number	Connection	Part Number	Connection	A-AB	B-AB		
DN 15	0,25	721-0430-000	G1/2A	721-0450-000	15mm	0.25	--	250	250
	0,4	721-0431-000		721-0451-000	15mm	0.4			
	0,6	721-0432-000		721-0452-000	15mm	0.6			
	1	721-0433-000		721-0453-000	15mm	1			
	1,6	721-0434-000		721-0454-000	15mm	1.6			
DN20	2,5	721-0435-000	G3/4A	721-0455-000	22mm	2.5	--	--	150
	4	721-0436-000		--	--	4			
	6	721-0437-000		--	--	6			

Three-way valves

		VZ38 Flat face		VZ38C (**) Compression		Kv		Close-off kPa (MZ88T/TA)	Close-off kPa (MZ89T/TA)
Size	Kv	Part Number	Connection	Part Number	Connection	A-AB	B-AB		
DN 15	0,25	731-0431-000	G1/2A	731-0451-000	15mm	0.25	0.25	250	250
	0,4	731-0432-000	G1/2A	731-0452-000	15mm	0.4	0.4		
	0,6	731-0433-000	G1/2A	731-0453-000	15mm	0.6	0.6		
	1	731-0434-000	G1/2A	731-0454-000	15mm	1	0.8		
	1,6	731-0435-000	G1/2A	731-0455-000	15mm	1.6	1		
DN20	2,5	731-0436-000	G3/4A	731-0456-000	22mm	2.5	1.6	150	150
	4	731-0437-000	G3/4A	--	--	4	2.5	--	100 A-AB 40 B-AB
	6	731-0438-000	G3/4A	--	--	6	4		

Three-way valves with integral by-pass (4 ports)

		VZ48 Flat face		VZ48C (**) Compression		Kv		Close-off kPa (MZ88T/TA)	Close-off kPa (MZ89T/TA)
Size	Kv	Part Number	Connection	Part Number	Connection	A-AB	B-AB		
DN 15	0,25	741-0430-010	G1/2A	741-0450-000	15mm	0.25	0.25	250	250
	0,4	741-0431-010	G1/2A	741-0451-000	15mm	0.4	0.4		
	0,6	741-0432-010	G1/2A	741-0452-000	15mm	0.6	0.6		
	1	741-0433-010	G1/2A	741-0453-000	15mm	1	0.8		
	1,6	741-0434-010	G1/2A	741-0454-000	15mm	1.6	1		
DN20	2,5	741-0435-000 741-0435-010*	G3/4A	741-0455-000*	22mm	2.5	1.6	150	150
	4	741-0436-000	G3/4A	--	--	4	2.5	--	100 A-AB 40 B-AB
	6	741-0437-000	G3/4A	--	--	6	4		

Close-off = Max differential pressure (kPa) allowed across the valve seat for reliable operation.

741-0435-000: 50mm between centres

* 741-0435-010 and 741-0455-000: 44 mm between centres

**For Multi-pack order of 5 pcs, change last 3 digits of Part number from 000 to 100 (e.g. 741-0450-000 single -

741-0450-100 5 pcs multi-pack). Multi-packs do not include olives, nuts and adjustment caps.

Ordering: Adjustment Caps, M30 x 1.5, 10pc multi-pack, code No.: 911-4000-000.

FUNCTION

The main spring on the valve, provides a tight close-off against the pressure values given in the ordering table. The valve with no actuator force applied is in a closed state.

An O-ring between seat and plug ensures zero leakage on both direct and angle way designs.

The valve assembly with MZ88T/TA-MZ89T/TA actuators is easily made thanks to its threaded ring nut, which allows a comfortable cable positioning.

(See MZ88T/TA-MZ89T/TA data sheet).

MOUNTING AND TYPICAL OPERATION

When installing the valve care must be taken to ensure the valve is mounted with the flow direction in accordance to the flow arrows on the valve body.

The valve must not be mounted with the stem pointing downwards and the actuator thus upside down.

Two-way valves

Direction of flow always from port A to port B.

The adjustment cap should be removed from the valve only when the actuator is fitted. The adjustment cap can be screwed down to prime and fill the system.

The valve should be mounted with minimum stress onto the connecting pipe work.

Mounting the valve connectors should not exceed a tightening torque of 25 to 30 Nm (18 to 22 lbf-ft).

Three-way valves

The valves should be installed as mixing valves, with ports connected as:

- Port AB: Combined flow outlet
- Port A: Controlled flow inlet
- Port B: Bypass inlet

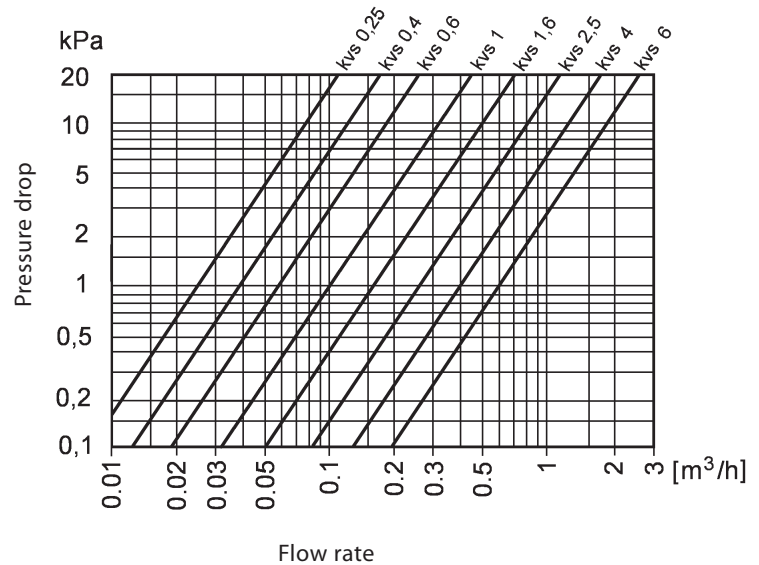
Valves should preferably be mounted in the return flow to reduce the media temperature exposed to the valve and actuator. If the Delta p values exceed 60 kPa attention should be paid to the development of noise and cavitations.

Three-way valves with integral bypass

These versions can simplify and reduce the installation time, since the bypass pipe is an integral part of the valve.

The port connections as for the 3 way valves also apply for these bypass types.

PRESSURE DROP



MOUNTING

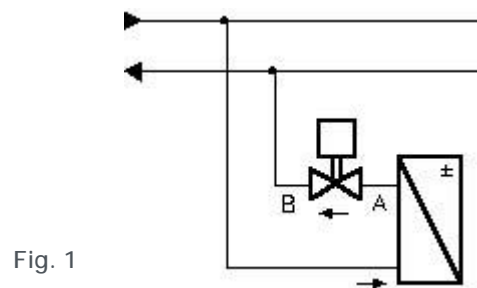


Fig. 1

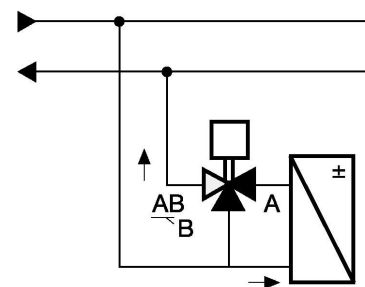


Fig. 2

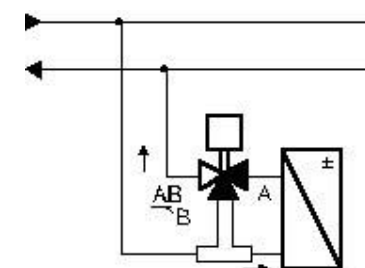
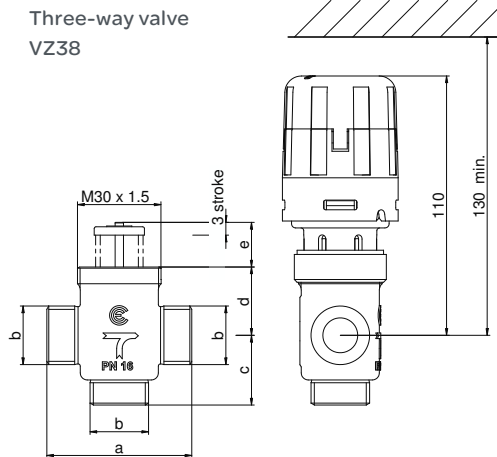
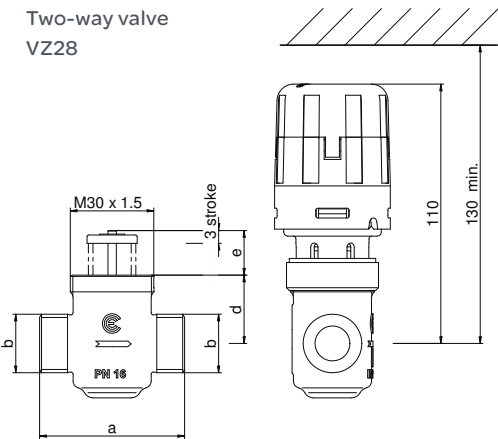


Fig. 3

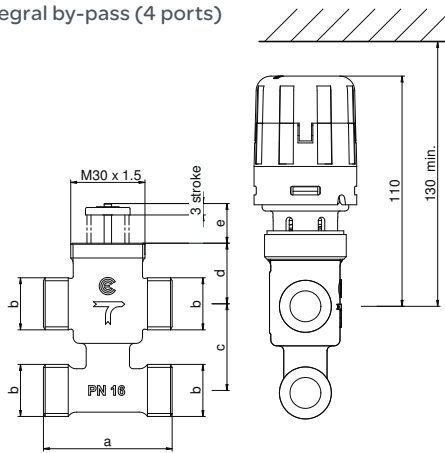
DIMENSIONS mm



	a	b	c	d	e
DN15	52	G1/2"A	--	24,5	16
DN20 VZ28-20-2.5	56	G3/4"A		41	
DN20 VZ28-20-4.0 VZ28-20-6.0	78				

	a	b	c	d	e
DN15	52	G1/2"A	25	24,5	16
DN20 VZ38-20-2.5	56	G3/4"A	34		
DN20 VZ38-20-4.0 VZ38-20-6.0	78		35,5	41	

Three-way valve with integral by-pass (4 ports)
VZ48



	a	b	c	d	e
DN15	52	G1/2"A	40	24,5	16
DN20 VZ38-20-2.5	56	G3/4"A	50*		
DN20 VZ48-20-4.0 VZ48-20-6.0	78		44	41	

*50 mm for p/n 741-0435-000
44 mm for p/n 741-0435-010 and 741-0455-000

CONNECTION SETS

	Connection type	Pipe size	DN	a	c (mm)	d	e	Part number	Pack quantity
	Solder *	12 mm 15 mm	15 (1/2") 20 (3/4")	G 1/2 G 3/4	12 15	-- --	-- --	911-2076-000 911-2077-000	1
	External Thread	R 3/8" R 1/2"	15 (1/2") 20 (3/4")	G 1/2 G 3/4	-- --	R 3/8 R 1/2	-- --	911-2078-000 911-2079-000	10
	Flat to compression	15 mm 22 mm	15 (1/2") 20 (3/4")	G 1/2 G 3/4	-- --	-- --	15 22	911-2080-000 911-2081-000	1
	Compression nut and olive	15 mm 22 mm	15 (1/2") 20 (3/4")	G 1/2A Withworth 1 1/8" - 14	-- --	-- --	15 22	911-2082-000 911-2083-000	10

* WARNING. The valve must not be over heated: solder the pipes to the connection bush before connecting the valve

**Olive and nut included

For valves VZ28 two connection sets are required, for valves VZ38 three and for valves VZ48 four connection sets.

Each set consists of 1 union nut, 1 solder bush (soldering) or tailpiece (external thread), and 1 gasket.