

# VZ\*08\*

VZ208E, VZ308E, VZ408E  
VZ208C, VZ308C, VZ408C

## Design

Two-way, Three-way and Three-way valves with integral bypass (4 ports).

## Specifications

Function	Normally Closed (A-AB) [Valve stem UP, without actuator fitted]
Stroke	2.5 mm
Pressure Class	PN16
Max fluid speed	3 m/s (quiet operation 2m/s)
Max Glycol concentration	50%
Media Temperature	5°C to 95°C
Leakage	0%, Tight close off (A-AB & B-AB)
Connection	
VZ208E, VZ308E, VZ408E	External thread to ISO 228/1 (flat face seal)
VZ208C, VZ308C, VZ408C	15mm and 22mm O/D tube compression
Materials	
Valve body	Brass (EN 12165 CW 617 N)
Stem	Stainless steel (AISI 303)
Stem packing	Double EPDM O-ring
Plug material	PPS Glass Fiber Reinforced
Seat/cartridge material	PPS Glass Fiber Reinforced
Seat Sealing	EPDM

It is the responsibility of the installer or product specifier to verify media compatibility of the valves construction materials with the supplier of water treatment/heat transfer solution.

## Recommendations

It is recommended to fit a strainer upstream of the valve to increase reliability and to follow water treatment guidelines as detailed in VDI 2035. Valves should be installed in the return pipe to reduce exposure to media temperature extremes.



## 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.

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.

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

## Suitable Actuators

All VZ\*08\* valves are designed to be used with the MZ140 family of thermal actuators.

- MZ140-24T, 24V on-off control - 03-00260
- MZ140-230T, 110-230V, on-off control - 03-00260
- MZ140-24M, 24V, 0-10V modulating control 03-00261

## Compression Ended Valves (VZ\*08C)

VZ208C, VZ308C and VZ408C are integral compression ended valves. Ordering of these valve types are delivered with the nuts and olives and manual adjustment caps.

## Externally threaded Valves (VZ\*08E)

VZ208E, VZ308E and VZ408E are BSP male threaded valves with flat face seals, a range of connection sets are available to mate onto pipe.

Part Number Ordering



**Two-way valves**

Size	Kvs	Part Number	Connection	Part Number	Connection	A-AB
DN15	0.25	VZ208E-15BP01 SU 00	G1/2A	VZ208C-15BP01 SU 00	15mm	400
	0.4	VZ208E-15BP02 SU 00		VZ208C-15BP02 SU 00		
	0.6	VZ208E-15BP03 SU 00		VZ208C-15BP03 SU 00		
	1	VZ208E-15BP04 SU 00		VZ208C-15BP04 SU 00		
	1.6	VZ208E-15BP05 SU 00		VZ208C-15BP05 SU 00		350
DN20	2.5	VZ208E-20BP07 SU 00	G3/4A	VZ208C-20BP07 SU 00	22mm	150
	4	VZ208E-20BP08 SU 00				
	6	VZ208E-20BP09 SU 00				

**Three-way valves**

	Kvs		Part Number	Connection	Part Number	Connection	A-AB	B-AB
	A-AB	B-AB						
DN15	0.25	0.25	VZ308E-15BP01 SU 00	G1/2A	VZ308C-15BP01 SU 00	15mm	400	400
	0.4	0.4	VZ308E-15BP02 SU 00		VZ308C-15BP02 SU 00			
	0.6	0.6	VZ308E-15BP03 SU 00		VZ308C-15BP03 SU 00			
	1	0.8	VZ308E-15BP04 SU 00		VZ308C-15BP04 SU 00			
	1.6	1	VZ308E-15BP05 SU 00		VZ308C-15BP05 SU 00		350	
DN20	2.5	1.6	VZ308E-20BP07 SU 00	G3/4A	VZ308C-20BP07 SU 00	22mm	100	40
	4	2.5	VZ308E-20BP08 SU 00					
	6	4	VZ308E-20BP09 SU 00					

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

DN15	0.25	0.25	VZ408E-15BP01 SU 00	G1/2A	VZ408C-15BP01 SU 00	15mm	400	400
	0.4	0.4	VZ408E-15BP02 SU 00		VZ408C-15BP02 SU 00			
	0.6	0.6	VZ408E-15BP03 SU 00		VZ408C-15BP03 SU 00			
	1	0.8	VZ408E-15BP04 SU 00		VZ408C-15BP04 SU 00			
	1.6	1	VZ408E-15BP05 SU 00		VZ408C-15BP05 SU 00		350	
DN20	2.5	1.6	VZ408E-20BP07 SU 00	G3/4A	VZ408C-20BP07 SU 00	22mm	100	40
	4	2.5	VZ408E-20BP08 SU 00					
	6	4	VZ408E-20BP09 SU 00					

\* Nuts and Olives supplied with Valve

Connections Sets for VZ\*08E valves

	Connection type	Pipe size	DN	a	c (mm)	d	e	Part Number	Pack quantity
	Flat Face External thread to Solder *	15mm 12mm	15 20	G 1/2 G 3/4	12 15	-- --	-- --	911 2076 000 911 2077 000	1 1
	External Thread	R 3/8" R 1/2"	15 20	G 1/2 G 3/4	-- --	R 3/8 R 1/2	-- --	911 2078 010 911 2079 010	10 10
	Flat face external thread to compression*	15mm 22mm	15 20	G 1/2 G 3/4	-- --	-- --	15 22	911 2080 000 911 2081 000	1 1

\*One fitting required per valve port.

1 Note: The valve must not be over heated: solder the pipes to the connection bush before connecting the valve

2 Olive and nut included.

For valves VZ219E two connection sets are required, for valves VZ319E three and for valves VZ419E four connection sets. Each set consists of a union nut, a solder bush (soldering) or tailpiece (external thread), and a gasket.

### 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 MZ140 actuators is easily made thanks to its threaded ring nut, which allows a flexible cable positioning. (See MZ140 data sheets - 03-00260 / 03-00261).

### 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. Always mount the valve on the return of the heat exchanger.

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

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).

#### Two-way valves, VZ208\*

Direction of flow always from port A to port B.

#### Three-way valves, VZ308

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

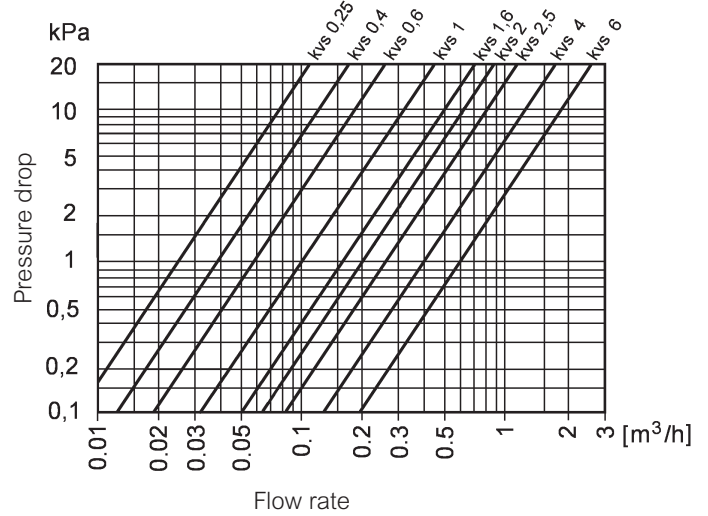
Valves should preferably be mounted in the return flow to reduce the media temperature exposed to the valve and actuator. If the Delta P values exceed 60 kPa (or 2m/s) attention should be paid to the development of noise and cavitations.

#### Three-way valves with integral bypass, VZ408

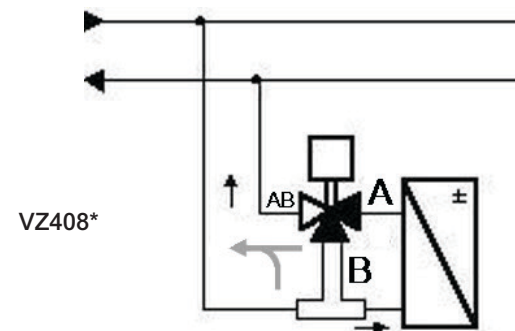
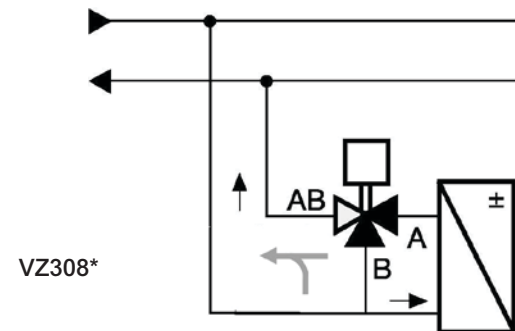
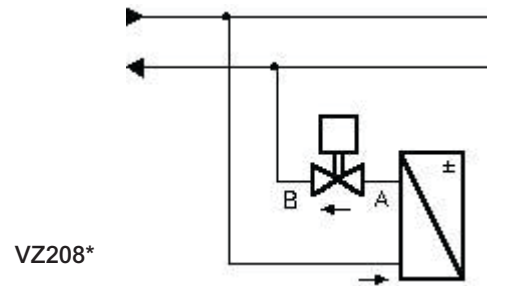
These versions can simplify and reduce the installation time, since the bypass pipe is an integral part of the valve.

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

### Flow Capacity / Pressure Drop Chart



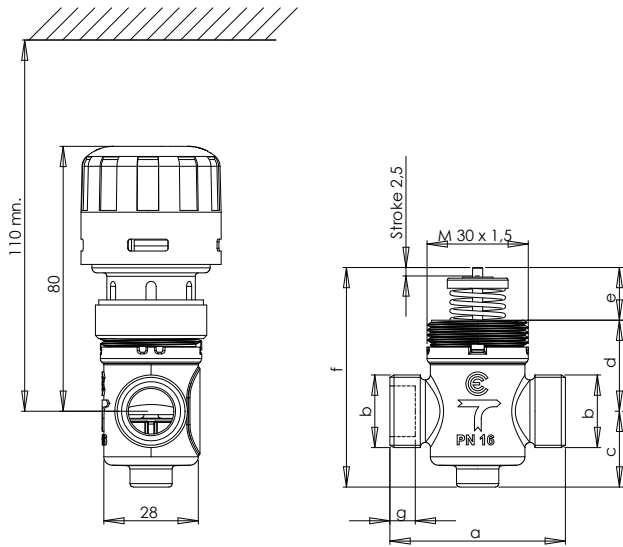
### Mounting



### Dimensions mm (inches)

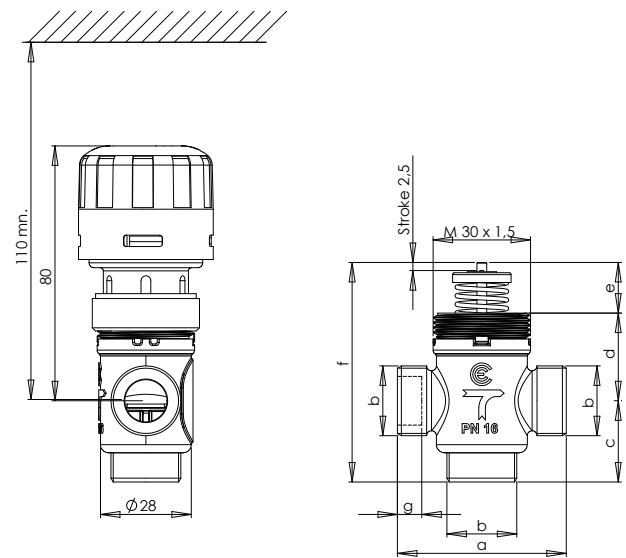
Two-way valve

#### VZ208\*-MZ140



Three-way valve

#### VZ308\*-MZ140

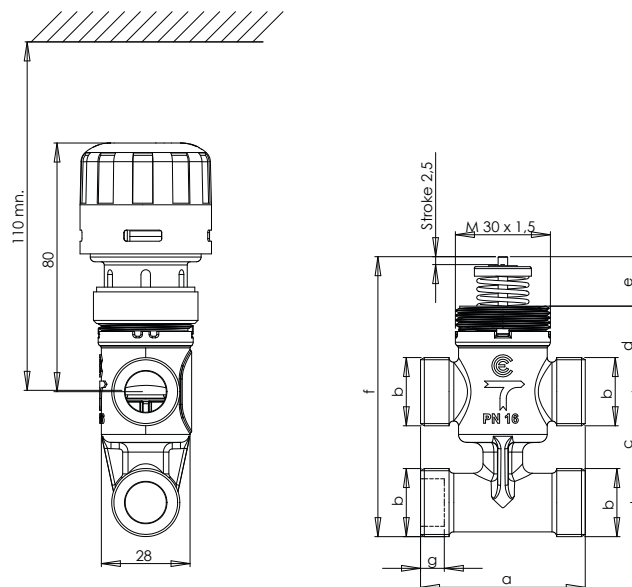


Valve	Actuator	a	b	c	d	e	f	g <sup>3</sup>
VZ208*-15BP01 to -15BP05	MZ140-*T	52	G1/2"A	22,5	27	15,6	65	7,5
VZ208*-20BP07		56	G3/4"A	23,6	25,8			9,5
VZ208*-20BP08/20BP09		11						

Valve	Actuator	a	b	c	d	e	f	g <sup>3</sup>
VZ308*-15BP01 to -15BP05	MZ140-*T	52	G1/2"A	25	27	15,6	67,6	7,5
VZ308*-20BP07		56	G3/4"A	34	25,8		75,4	9,5
VZ308*-20BP08/-20BP09		11						

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

#### VZ408\*-MZ140



Valve	Actuator	a	b	c	d	e	f	g <sup>3</sup>
VZ408*-15BP01 to -15BP05	MZ140-*T	52	G1/2"A	40	27	15,6	88,4	7,5
VZ408*-20BP07		56	G3/4"A	50	25,8		98,4	9,5
VZ408*-20BP08 / -20BP09		44	11					

Notes for VZ\*08C valves: The overall dimensions for V\*08C models are without fittings mounted.

3 - g dimensions relevant only for compression models (VZ\*08C).

## Type Designation

