

VZ*08*

VZ208E, VZ308E, VZ408E
VZ208C, VZ308C, VZ408C



SPECIFICATIONS

Design

Two-way, Three-way and Three-way with bypass

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

Stroke 2.5 mm

Pressure class PN16

Max fluid speed..... 3m/s
(quiet operation 2m/s)

Max glycol concentration 30%

Media Temperature 5°C to 95°C

Leakage0%, Tight close off A-AB & B-AB

Connection

VZ208E, VZ308E, VZ408EExternal 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)

StemStainless steel (AISI 303)

Stem packingdouble 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.

Reccomendations

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 -
(Datasheet 03-00260)

MZ140-230T 110-230V, on-off control -
(Datasheet 03-00260)

MZ140-24M, 24V, 0-10V modulating control -
(Datasheet 03-00261)

Compression Ended Valves (VZ*08C)

VZ208C, VZ308C and VZ408C are integral compression ended valves. Single pack ordering of these valve types are delivered with the nuts and olives and manual adjustment caps. For economic ordering on large projects, multipacks of 5 pcs are also available. Multipack versions do not include the Compression nuts, olives or manual adjustment caps. Multipacks are not stocked so should be pre-ordered on projects.

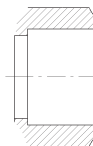
Spare nuts, olives and adjustment caps are available as accessories in multipack bags of 10 pcs

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.

Multipacks are not available on the externally threaded VZ*08E valves

PART NUMBER ORDERING - EXTERNALLY THREADED VALVES



Two-way valves, VZ208E

Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ140 actuator
		A-AB		Part Number	Type Designation	
DN 15	G1/2A	0.25		VZ208E-15BP01	VZ208E-15BP 0.25E SU 00	250 kPa
		0.4		VZ208E-15BP02	VZ208E-15BP 0.4E SU 00	
		0.6		VZ208E-15BP03	VZ208E-15BP 0.6E SU 00	
		1		VZ208E-15BP04	VZ208E-15BP 1.0E SU 00	
		1.6		VZ208E-15BP05	VZ208E-15BP 1.6E SU 00	
DN20	G3/4A	2.5		VZ208E-20BP07	VZ208E-20BP 2.5E SU 00	150 kPa
		4		VZ208E-20BP08	VZ208E-20BP 4.0E SU 00	
		6		VZ208E-20BP09	VZ208E-20BP 6.0E SU 00	

Three-way valves, VZ308E

Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ140 actuator
		A-AB	B-AB	Part Number	Type Designation	
DN 15	G1/2A	0.25	0.25	VZ308E-15BP01	VZ308E-15BP 0.25E SU 00	250 kPa
		0.4	0.25	VZ308E-15BP02	VZ308E-15BP 0.4E SU 00	
		0.6	0.4	VZ308E-15BP03	VZ308E-15BP 0.6E SU 00	
		1	0.6	VZ308E-15BP04	VZ308E-15BP 1.0E SU 00	
		1.6	1	VZ308E-15BP05	VZ308E-15BP 1.6E SU 00	
DN20	G3/4A	2.5	1.6	VZ308E-20BP07	VZ308E-20BP 2.5E SU 00	150 kPa
		4	2.5	VZ308E-20BP08	VZ308E-20BP 4.0E SU 00	100 kPa A-AB
		6	4	VZ308E-20BP09	VZ308E-20BP 6.0E SU 00	40 kPa B-AB

Three-way valves with integral by-pass (4 ports), VZ408E

Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ140 actuator
		A-AB	B-AB	Part Number	Type Designation	
DN 15	G1/2A	0.25	0.25	VZ408E-15BP01	VZ408E-15BP 0.25E SU 00	250 kPa
		0.4	0.25	VZ408E-15BP02	VZ408E-15BP 0.4E SU 00	
		0.6	0.4	VZ408E-15BP03	VZ408E-15BP 0.6E SU 00	
		1	0.6	VZ408E-15BP04	VZ408E-15BP 1.0E SU 00	
		1.6	1	VZ408E-15BP05	VZ408E-15BP 1.6E SU 00	
DN20	G3/4A	2,5	1.6	VZ408E-20BP07	VZ408E-20BP 2.5E SU 00	150 kPa
		4	2.5	VZ408E-20BP08	VZ408E-20BP 4.0E SU 00	100 kPa A-AB
		6	4	VZ408E-20BP09	VZ408E-20BP 6.0E SU 00	40 kPa B-AB

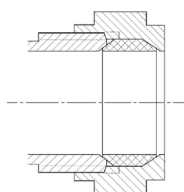
Close-off = Max differential pressure allowed across the valve seat for reliable operation.

Connections Sets for VZ*08C valves

Drawing	Connection type	Pipe Size	DN	a	b	Part number	Pack quantity
	VZ*19E to solder (1)	12 mm	15 (1/2")	G1/2	12 mm	911-2076-000	1
		15 mm	20 (3/4")	G3/4	15 mm	911-2077-000	
	VZ*19E to External Thread	R 3/8"	15 (1/2")	G1/2	R 3/8	911-2078-000	10
		R 1/2"	20 (3/4")	G3/4	R 1/2	911-2079-000	
	VZ*19E to compression	15 mm	15 (1/2")	G1/2	15 mm	911-2080-000	1
		22 mm	20 (3/4")	G3/4	22 mm	911-2081-000	

¹WARNING. The valve must not be over heated: solder the pipes to the connection bush before connecting the valve - ²Olive and nut included
 For valves VZ208E two connection sets are required, for valves VZ308E three and for valves VZ408E four connection sets.
 Each set consists of a union nut, a solder bush (soldering) or tailpiece (external thread), and a gasket.

PART NUMBER ORDERING - COMPRESSION VALVES



Two-way valves VZ208C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part number	Type Designation	
DN 15	15 mm O/D	0.25		VZ208C-15BP01	VZ208C-15BP 0.25E SU 00	VZ208C-15BP51	VZ208C-15BP 0.25E SU M5	250 kPa
		0.4		VZ208C-15BP02	VZ208C-15BP 0.4E SU 00	VZ208C-15BP52	VZ208C-15BP 0.4E SU M5	
		0.6		VZ208C-15BP03	VZ208C-15BP 0.6E SU 00	VZ208C-15BP53	VZ208C-15BP 0.6E SU M5	
		1		VZ208C-15BP04	VZ208C-15BP 1.0E SU 00	VZ208C-15BP54	VZ208C-15BP 1.0E SU M5	
		1.6		VZ208C-15BP05	VZ208C-15BP 1.6E SU 00	VZ208C-15BP55	VZ208C-15BP 1.6E SU M5	
DN20	22 mm O/D	2.5		VZ208C-20BP07	VZ208C-20BP 2.5E SU 00	VZ208C-20BP57	VZ208C-20BP 2.5E SU M5	150 kPa

Three-way valves, VZ308C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ308C-15BP01	VZ308C-15BP 0.25E SU 00	VZ308C-15BP51	VZ308C-15BP 0.25E SU M5	250 kPa
		0.4	0.25	VZ308C-15BP02	VZ308C-15BP 0.4E SU 00	VZ308C-15BP52	VZ308C-15BP 0.4E SU M5	
		0.6	0.4	VZ308C-15BP03	VZ308C-15BP 0.6E SU 00	VZ308C-15BP53	VZ308C-15BP 0.6E SU M5	
		1	0.6	VZ308C-15BP04	VZ308C-15BP 1.0E SU 00	VZ308C-15BP54	VZ308C-15BP 1.0E SU M5	
		1.6	1	VZ308C-15BP05	VZ308C-15BP 1.6E SU 00	VZ308C-15BP55	VZ308C-15BP 1.6E SU M5	
DN20	22 mm O/D	2.5	1.6	VZ308C-20BP07	VZ308C-20BP 2.5E SU 00	VZ308C-20BP57	VZ308C-20BP 2.5E SU M5	150 kPa

Three-way valves with integral by-pass (4 ports), VZ408C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part Number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ408C-15BP01	VZ408C-15BP 0.25E SU 00	VZ408C-15BP51	VZ408C-15BP 0.25E SU M5	250 kPa
		0.4	0.25	VZ408C-15BP02	VZ408C-15BP 0.4E SU 00	VZ408C-15BP52	VZ408C-15BP 0.4E SU M5	
		0.6	0.4	VZ408C-15BP03	VZ408C-15BP 0.6E SU 00	VZ408C-15BP53	VZ408C-15BP 0.6E SU M5	
		1	0.6	VZ408C-15BP04	VZ408C-15BP 1.0E SU 00	VZ408C-15BP54	VZ408C-15BP 1.0E SU M5	
		1.6	1	VZ408C-15BP05	VZ408C-15BP 1.6E SU 00	VZ408C-15BP55	VZ408C-15BP 1.6E SU M5	
DN20	22 mm O/D	2.5	1.6	VZ408C-20BP07	VZ408C-20BP 2.5E SU 00	VZ408C-20BP57	VZ408C-20BP 2.5E SU M5	150 kPa

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

Connections Sets for VZ*08E valves

Drawing	Connection type	Pipe Size	DN	a	b	Part number	Pack quantity
	Compression nut and olive	15 mm	15 (1/2")	G1/2	15 mm	911-2082-000	10
		22 mm	20 (3/4")	Withworth 1 1/8" - 14	22 mm	911-2083-000	

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 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

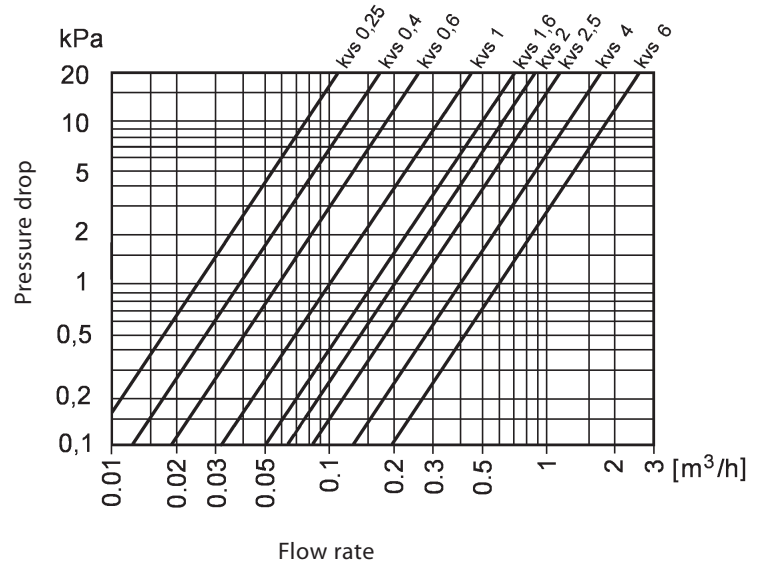
Valves should preferably be mounted in the return flow to reduce the media temperature exposed to the valve and actuator. If the Delta p values exceed 60 kPa (or 2m/s) attention should be paid to the development of noise and cavitations.

Three-way valves with integral bypass, VZ408*

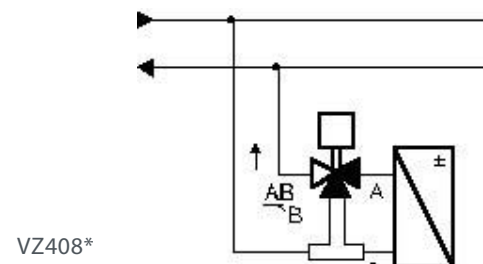
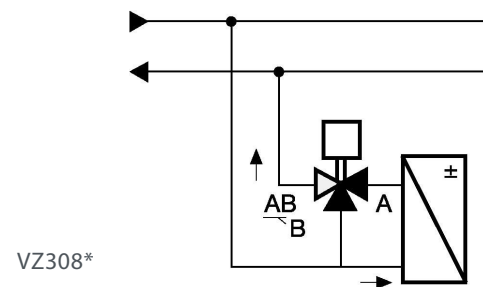
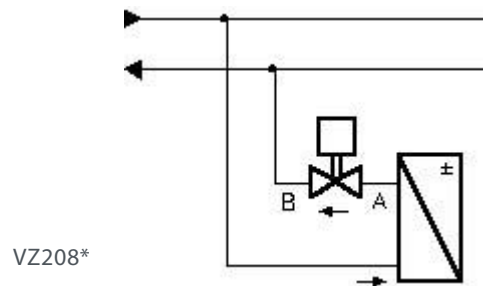
These versions can simplify and reduce the installation time, since the bypass pipe is an integral part of the valve.

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

FLOW CAPACITY / PRESSURE DROP CHART



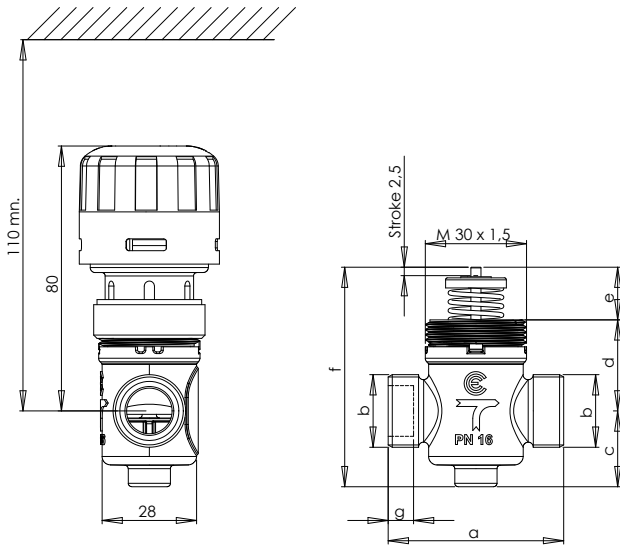
MOUNTING



DIMENSIONS mm

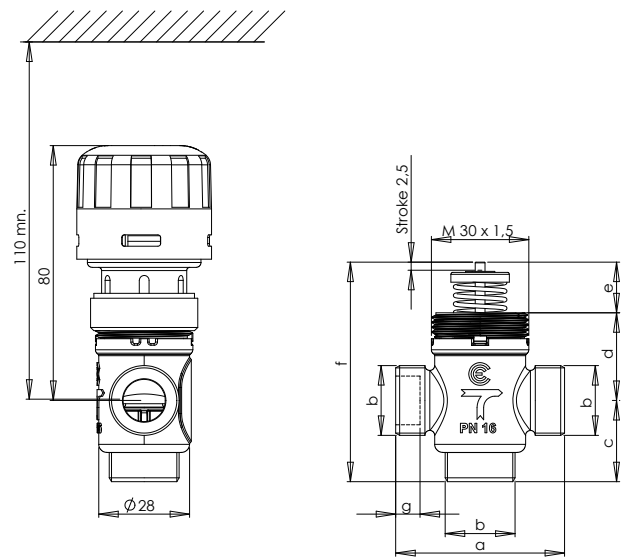
Two-way valve

VZ208*-MZ140



Three-way valve

VZ308*-MZ140

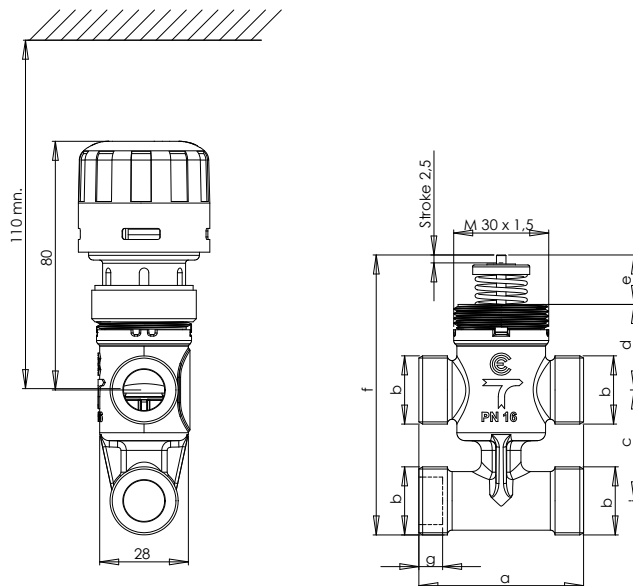


Valve	Actuator	a	b	c	d	e	f	g ³
VZ208*-15BP01 to -15BP05	MZ140-*T	52	G1/2"A	22,5	27	15,6	65	7,5
VZ208*-20BP07		56	G3/4"A	23,6	25,8			9,5
VZ208*-20BP08/20BP09								11

Valve	Actuator	a	b	c	d	e	f	g ³
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			9,5
VZ308*-20BP08/-20BP09								11

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

VZ408*-MZ140



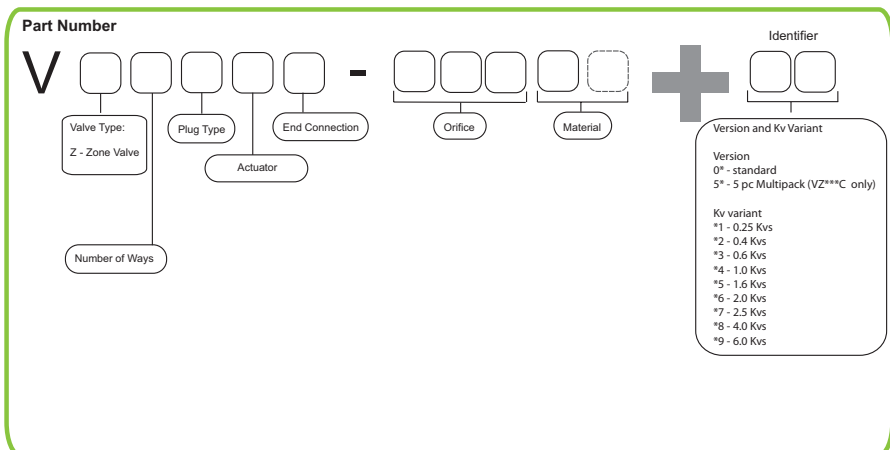
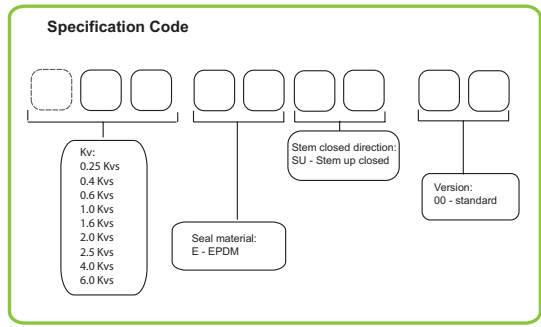
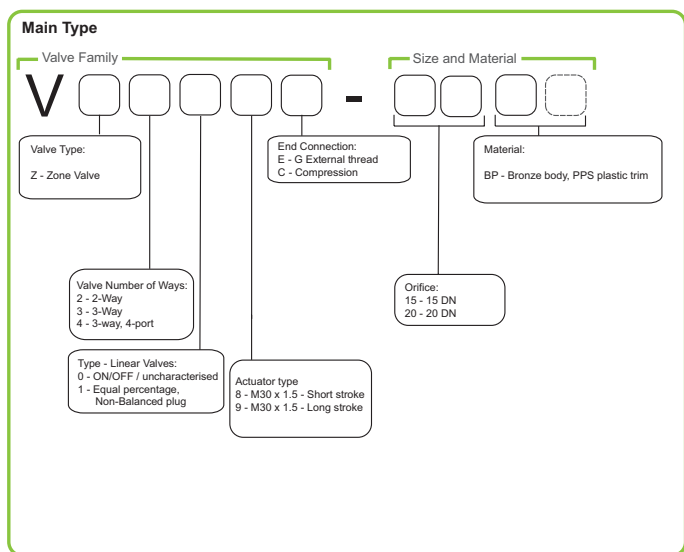
Valve	Actuator	a	b	c	d	e	f	g ³
VZ408*-15BP01 to -15BP05	MZ140-*T	52	G1/2"A	40	27	15,6	88,4	7,5
VZ408*-20BP07		56	G3/4"A	50	25,8			9,5
VZ408*-20BP08 / -20BP09				44				11

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 AND PART NUMBER CONSTRUCTION



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