

VZ29-VZ39-VZ49



Small linear Zone valves

These small linear zone valves are used for the fine 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 reasonable 5.5mm stroke length coupled with the high resolution MZ20 electro-mechanical actuator, provides good hydronic control. The MZ20 actuator is available in either 3-point floating or proportional control. The proportional control types have 7 different command signals including 0-10V and 4-20mA.

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.

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 (Linear operation)

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

Stroke 5.5 mm

Max fluid speed 3 m/s

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

Temperature..... 2°C to 95°C

Rangeability 50:1

Flow Characteristic

equal percentage (EQM)..... on direct (A-AB) way

linearon by-pass (B-AB) way

Connection

VZ29, VZ39, VZ49BSP male thread to
ISO 228/1 (flat face seal)

VZ29C, VZ39C, VZ49C15mm and 22mm
O/D compression

Leakage 0%, Tight close off (A-AB & B-AB)

Materials

Valve body.....Brass (EN 12165 CW 617 N)

StemStainless steel (AISI 303)

Stem packing double EPDM O-ring

Plug materialBrass (EN 12165 CW 617 N)

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

Seat Sealing EPDM

SUITABLE VALVES

Two-way valves								
Flat face external thread connection				O/D tube compression				
VZ29				VZ29C (**)		Kv		Close-off MZ20 actuator kPa
Flat face				Compression		A-AB	B-AB	
Size	Kv	Part Number	Connection	Part Number	Connection			350
DN 15	0,25	721-0531-000	G1/2A	721-0551-000	15mm	0.25		
DN 15	0,4	721-0532-000	G1/2A	721-0552-000	15mm	0.4		
DN 15	0,6	721-0533-000	G1/2A	721-0553-000	15mm	0.6		
DN 15	1	721-0534-000	G1/2A	721-0554-000	15mm	1		
DN 15	1,6	721-0535-000	G1/2A	721-0555-000	15mm	1.6		
DN15	2	721-0536-000	G1/2A	721-0556-000	15mm	2		
DN20	2,5	721-0537-000	G3/4A	721-0557-000	22mm	2.5		
DN20	4	721-0538-000	G3/4A	--	--	4		
DN20	6	721-0539-000	G3/4A	--	--	6		

Three-way valves								
VZ39				VZ39C (**)		Kv		Close-off MZ20 actuator kPa
Flat face				Compression		A-AB	B-AB	
Size	Kv	Part Number	Connection	Part Number	Connection			350
DN 15	0,25	731-0531-000	G1/2A	731-0551-000	15mm	0.25		
DN 15	0,4	731-0532-000	G1/2A	731-0552-000	15mm	0.4		
DN 15	0,6	731-0533-000	G1/2A	731-0553-000	15mm	0.6		
DN 15	1	731-0534-000	G1/2A	731-0554-000	15mm	1		
DN 15	1,6	731-0535-000	G1/2A	731-0555-000	15mm	1.6		
DN15	2	731-0536-000	G1/2A	731-0556-000	15mm	2		
DN20	2,5	731-0537-000	G3/4A	731-0557-000	22mm	2.5		
DN20	4	731-0538-000	G3/4A	--	--	4		
DN20	6	731-0539-000	G3/4A	--	--	6		

Three-way valves with integral by-pass (4 ports)								
VZ49				VZ49C (**)		Kv		Close-off MZ20 actuator kPa
Flat face				Compression		A-AB	B-AB	
Size	Kv	Part Number	Connection	Part Number	Connection			350
DN 15	0,25	741-0531-010	G1/2A	741-0551-000	15mm	0.25		
DN 15	0,4	741-0532-010	G1/2A	741-0552-000	15mm	0.4		
DN 15	0,6	741-0533-010	G1/2A	741-0553-000	15mm	0.6		
DN 15	1	741-0534-010	G1/2A	741-0554-000	15mm	1		
DN 15	1,6	741-0535-010	G1/2A	741-0555-000	15mm	1.6		
DN15	2	741-0536-000	G1/2A	741-0556-000	15mm	2		
DN20	2,5	741-0537-000 741-0537-010*	G3/4A	741-0557-000*	22mm	2.5		
DN20	4	741-0538-000	G3/4A	--	--	4		
DN20	6	741-0539-000	G3/4A	--	--	6		

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

741-0537-000: 50mm between centres

* 741-0537-010 and 741-0557-000: 44 mm between centres

**For Multi-pack order of 5 pcs, change last 3 digits of Part number from 000 to 100 (e.g. 741-0553-000 single - 741-0553-100 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 MZ20 actuators is easily made thanks to its threaded ring nut, which allows a comfortable cable positioning (See MZ20 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

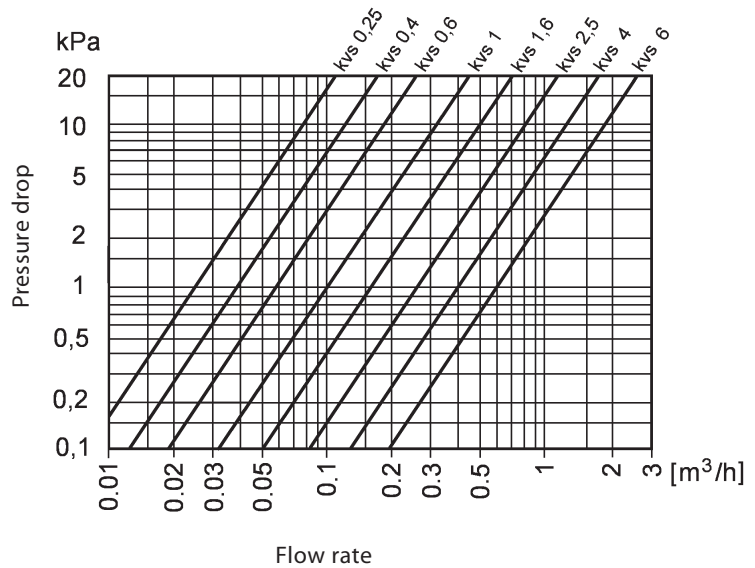
Valves should preferably be mounted in the return flow to reduce the media temperature exposed to the valve and actuator. If the Delta p values exceed 60 kPa attention should be paid to the development of noise and cavitations.

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.

FLOW CAPACITY / PRESSURE DROP CHART



MOUNTING

Fig. 1

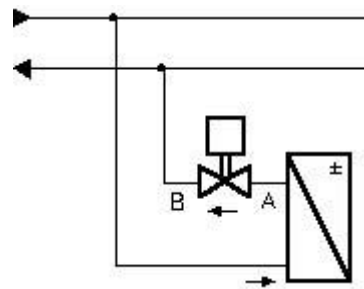


Fig. 2

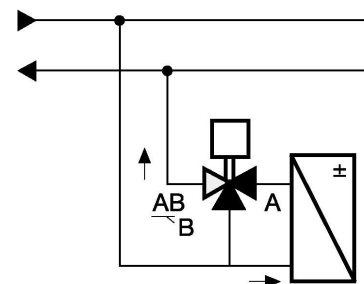
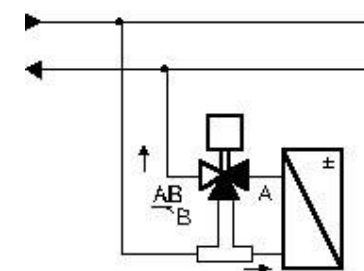


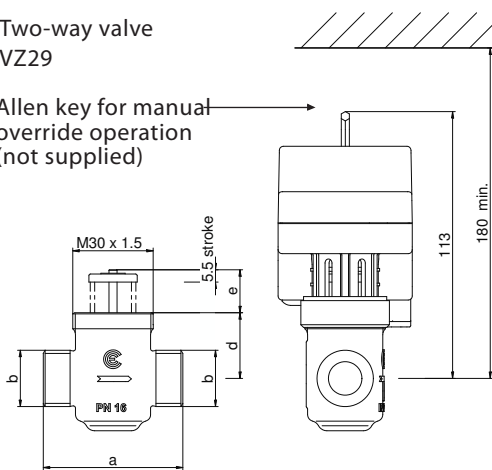
Fig. 3



DIMENSIONS mm (in)

Two-way valve
VZ29

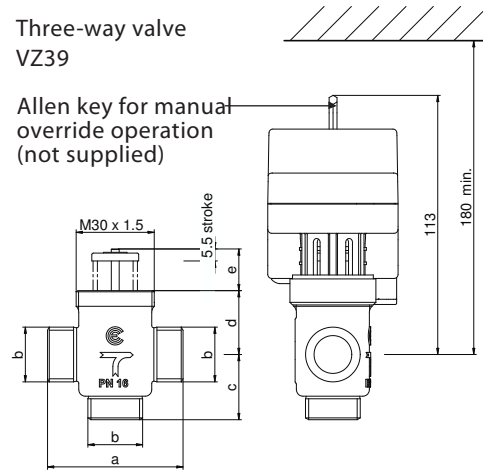
Allen key for manual
override operation
(not supplied)



	a	b	c	d	e
DN15	52	G1/2"A			
DN20 VZ29-20-2.5	56	G3/4"A	--	24,5	16
DN20 VZ29-20-4.0 VZ29-20-6.0	78			41	

Three-way valve
VZ39

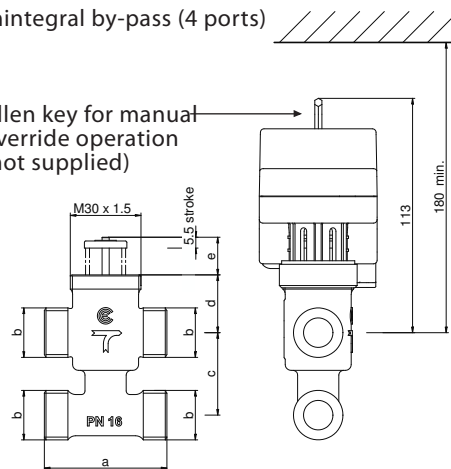
Allen key for manual
override operation
(not supplied)



	a	b	c	d	e
DN15	52	G1/2"A	25		
DN20 VZ39-20-2.5	56	G3/4"A	34	24,5	16
DN20 VZ39-20-4.0 VZ39-20-6.0	78		35,5	41	

Three-way valve with integral by-pass (4 ports)
VZ49

Allen key for manual
override operation
(not supplied)



	a	b	c	d	e
DN15	52	G1/2"A	40		
DN20 VZ49-20-2.5	56	G3/4"A	50*	24,5	16
DN20 VZ49-20-4.0 VZ49-20-6.0	78		44	41	

*50 mm for p/n 741-0537-000

44 mm for p/n 741-0537-010 and 741-0557-000

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	-- --	911-2078-010 911-2079-010	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 VZ29 two connection sets are required, for valves VZ39 three and for valves VZ49 four connection sets.

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