

MZ140-24M

Modulating Thermo-electric Actuator



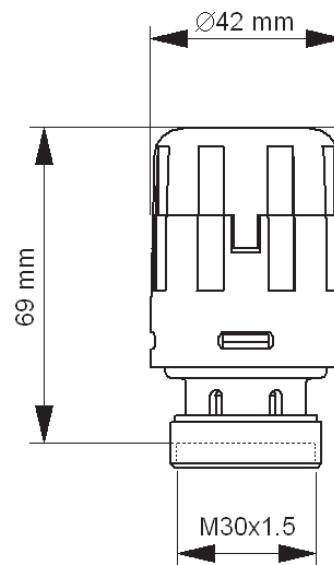
Product Description

The MZ140-24M is a thermoelectric actuator designed to provide modulating control together with the VZ*08* zone valve. The MZ140-24M actuator at power off or 0 Vdc control signal will ensure the VZ*08* zone valve is closed. With a control signal of 10 Vdc the actuator will fully open the valve.

Specifications

Nominal Power Supply	21.8...26.8 Vac 50/60 Hz
Control Signal	0...10 Vdc
Starting current	0.17A
Working current	75 mA
Power consumption	2 W
Opening/closing time	See fig. on page 2
Temperature working	2...50°C
Temperature storage	-45...60°C
Humidity	Max 95 % non condensing
Stem force	140N
Stroke	
MZ140-24M	2,5mm
Coupling ring	M30x 1.5mm
Max. Ambient temperature	50 °C
Power cable	2m 3-pole cable (0.35 mm ²)
Material	
Fire-resistant case	Class V0
Protection class	
Vertical mounting	IP 44
Horizontal mounting	IP41
Suitable for valves	See table on last page
Product conforms, for CE marking, to the following directives:	EMC 2004/108/CE according to the EN 61326-1 standard. LVD 2006/95/CE according to the EN 61010-1 standard for the products powered 230 V.

Dimensions (mm)



Ordering Table

Part number	Type Designation	Description
MZ140-24M	MZ140-24M 2M44 00	24 Vac 50/60 Hz supply, 0...10 Vdc control signal

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Function

The modulating MZ140-24M actuator is operated by a thermostatic wax element whose stem position is closely controlled internally by a closed loop feedback.

With 0 Vdc control signal, the actuator is fully retracted for a closed valve state. At 10 Vdc control signal, the actuator is fully extended for an open valve state.

After power up, a small dead band time is required before the actuator is operational.

A green light will slowly flash to indicate normal modulating action.

The valve and actuator stroke indication is visible through the yoke of the actuator, (fig. 2).

Mounting

Prior to the actuator being mounted onto the valve, follow good practice regarding the valve installation for instance, install the valve in the return loop from the heat exchanger to reduce excessive pipe fluid temperatures.

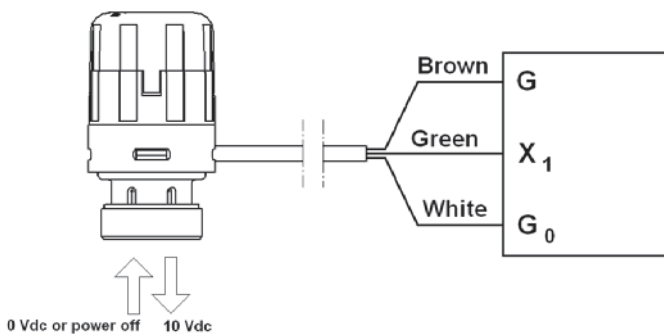
The valve adjustment cap, if present from system balancing and flushing, will need to be removed from the valve prior to actuator connection.

Actuator assembly onto the valve is completed by an M30 threaded ring nut. No tools are to be used as excessive tightening could cause damage the valve assembly.

The threaded ring nut allows for comfortable cable positioning at any 360° angle on the valve. The actuator is able to operate in any mounting position but it is advisable not to install it upside down.

For fluid temperatures above 80°C it is recommended to install the actuator horizontally rather than vertically above the media pipe work. Note the protection degree granted is IP44 for a vertical mounting and IP41 for a horizontal mounting.

Electrical Connections



Open Closing Time

Opening Time, Full stroke

Step change from 0 V...10 V control signal after initial power on. < 6 min.

Step change from 0 V...10 V control signal during normal operation: <4 min.

Closing Time, Full stroke

Step change from 10 V...0 V control signal: <7 min.

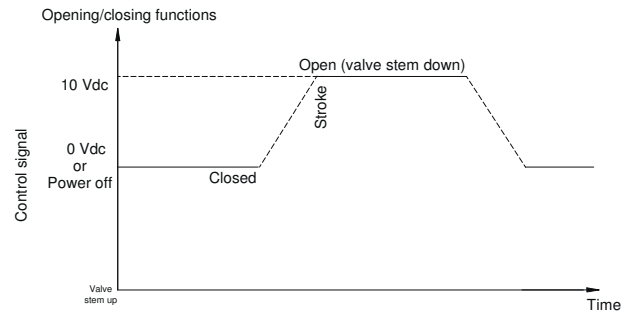
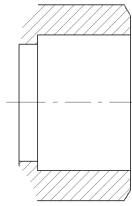


Fig. 1



Fig. 2

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

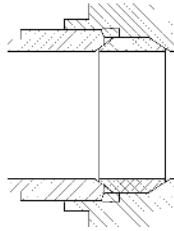
Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ140 actuator
		A-AB	B-AB	Part Number	Type Designation	
DN 15	G1/2A	0.25	0.25	VZ308E-15BP01	VZ308E-15BP 0.25E SU 00	250 kPa
		0.4	0.25	VZ308E-15BP02	VZ308E-15BP 0.4E SU 00	
		0.6	0.4	VZ308E-15BP03	VZ308E-15BP 0.6E SU 00	
		1	0.6	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.

Part Number Ordering - Compression Valves



Two-way valves VZ208C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	
DN 15	15 mm O/D	0.25		VZ208C-15BP01	VZ208C-15BP 0.25E SU 00	250 kPa
		0.4		VZ208C-15BP02	VZ208C-15BP 0.4E SU 00	
		0.6		VZ208C-15BP03	VZ208C-15BP 0.6E SU 00	
		1		VZ208C-15BP04	VZ208C-15BP 1.0E SU 00	
		1.6		VZ208C-15BP05	VZ208C-15BP 1.6E SU 00	
DN20	22 mm O/D	2.5		VZ208C-20BP07	VZ208C-20BP 2.5E SU 00	150 kPa

Three-way valves, VZ308C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ308C-15BP01	VZ308C-15BP 0.25E SU 00	250 kPa
		0.4	0.25	VZ308C-15BP02	VZ308C-15BP 0.4E SU 00	
		0.6	0.4	VZ308C-15BP03	VZ308C-15BP 0.6E SU 00	
		1	0.6	VZ308C-15BP04	VZ308C-15BP 1.0E SU 00	
		1.6	1	VZ308C-15BP05	VZ308C-15BP 1.6E SU 00	
DN20	22 mm O/D	2.5	1.6	VZ308C-20BP07	VZ308C-20BP 2.5E SU 00	150 kPa

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

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ408C-15BP01	VZ408C-15BP 0.25E SU 00	250 kPa
		0.4	0.25	VZ408C-15BP02	VZ408C-15BP 0.4E SU 00	
		0.6	0.4	VZ408C-15BP03	VZ408C-15BP 0.6E SU 00	
		1	0.6	VZ408C-15BP04	VZ408C-15BP 1.0E SU 00	
		1.6	1	VZ408C-15BP05	VZ408C-15BP 1.6E SU 00	
DN20	22 mm O/D	2.5	1.6	VZ408C-20BP07	VZ408C-20BP 2.5E SU 00	150 kPa

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