

MZ140-24M

Modulating Thermo-electric Actuator



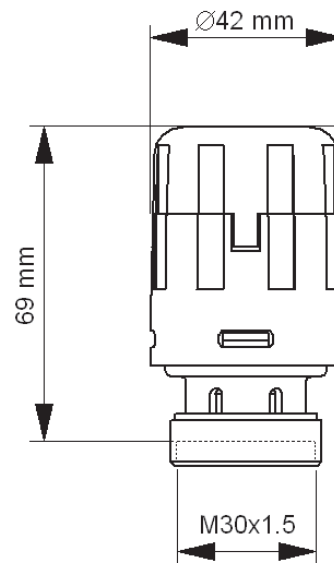
Product Description

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 |
| Input impedance | 95 k Ohms |
| 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 |
| storage | -45...60°C |
| Humidity | Max 95 % non condensing |
| Stem force | 140 N |
| 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 | IP44 |
| 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 Vac. |

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 |

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.

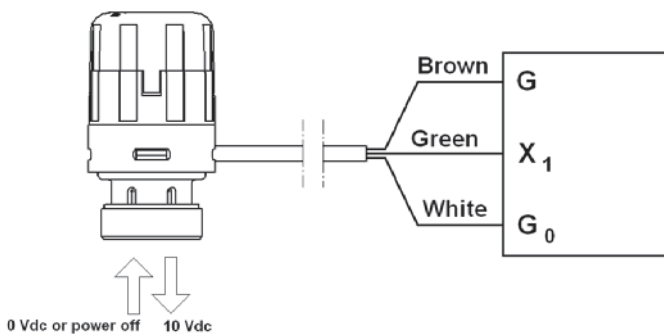
The valve adjustment cap, if present from system balancing and flushing, will need to be removed from the valve prior to actuator connection.

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.

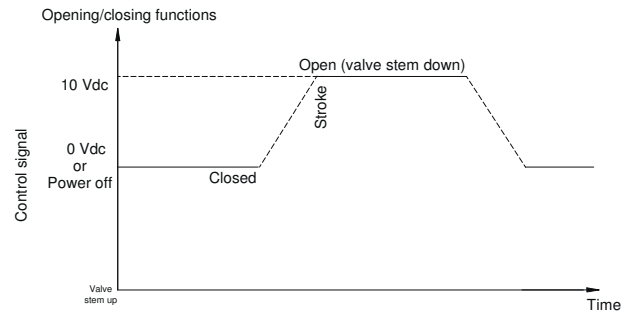


Fig. 1



Fig. 2

Part Number Ordering - Externally Threaded Valves



| Two-way valves | | | | | | | | |
|--|------|---------------------|---------------------|---------------------|---------------------|------------|--------|------|
| 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 | |
| | 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 | |
| | 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

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

