MP140

Normally open

Normally closed

ON/OFF THERMOELECTRIC ACTUATOR (TWO POSITION)

MP140 is a thermoelectric actuator designed to provide two position on/off control together with the VP223R pressure independent control valves.

The MP140, when connected to the VP223R valve, provides pressure independent flow limiting on/off control.

Versions are available for normally open and normally closed duties.

SPECIFICATIONS

Stem force . . . . . 140 N
Max stroke . . . . . 4 mm
Coupling ring . . . . . M30 x 1,5
Power cable . . . . . 2m twin core (0,35 mm²)
Suitable for valves. VP223R (DN15-32)

Nominal Power Supply

MZ140-24T . . . . . 21.8 to 26.8V ac 50/60 Hz
MZ140-230T . . . . . 110 to 250V ac 50/60 Hz

Starting current

24V models 0.17A
230V models 0.25A

Working current

24V models . . . . . 75 mA
230V models. . . . . 8 mA

Power consumption

24V models 2W
230V models 2W

Environmental

Ambient working temperature. . . . . +2 to +50°C
Storage temperature. . . . . -45 to +60°C
Humidity . . . . . Max. 95% Non condensing
Material . . . . . Fire-resistant case: Class V0
Protection class . . . . . IP44 / IP42

STANDARDS

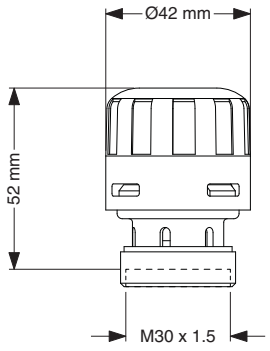
CE marked to the following directives:
- EMC 2004/108/CE to EN 61326-1
- LVD 2006/95/CE to EN 61010-1 standard for 230V products

ORDERING TABLE

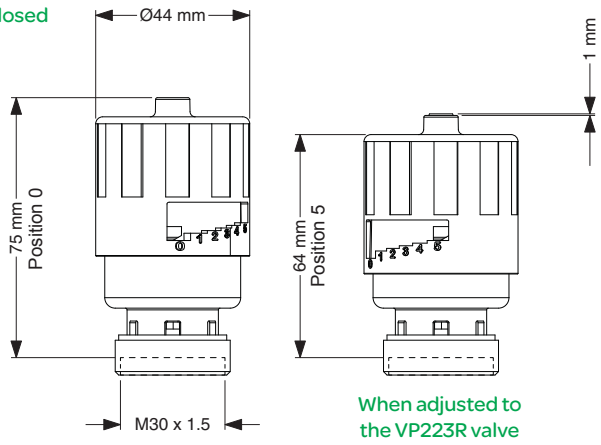
Part number	Function	Voltage
MP140NC-24T	Normally closed	24 Vac 50/60 Hz
MP140NO-24T	Normally open	24 Vac 50/60 Hz
MP140NC-230T	Normally closed	110 - 230 Vac 50/60 Hz
MP140NO-230T	Normally open	110 - 230 Vac 50/60 Hz

DIMENSIONS

Normally open



Normally closed



As factory delivered

When adjusted to the VP223R valve

Schneider Electric

OPERATION

The actuator operation is carried out by a built-in wax thermostatic element.

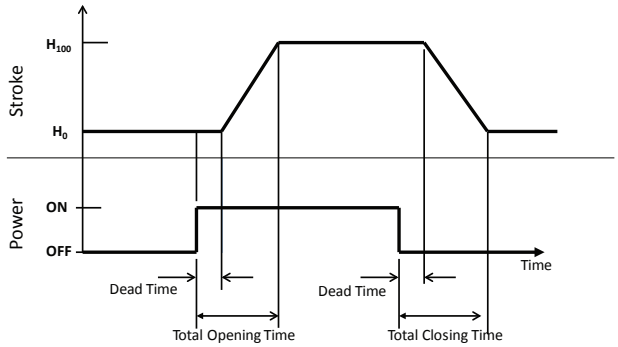
The normally closed or normally open valve function with the MP140 thermal actuators is defined by the actuator spindle position upon rest without power applied.

For a Normally Closed function, the actuator spindle is extended upon removing power, an extended actuator spindle closes the valve. As the stem in the VP223R valve is extended by an internal spring, there is some resistance to mount the actuator, this is normal.

For the normally Open function, the spindle is retracted when power is removed

When power is applied to the actuator, after a small dead band time, the actuator stem starts to move changing the valves open or closed state.

OPEN/CLOSING TIMES



Actuator timing details (approx.)					
Actuator	Supply voltage	Valve opening		Valve closing (after 5' power on)	
		Dead time	Total time	Dead time	Total time
MP140NC/NO-24T	24	2 min 30 sec	5 min 50 sec	2 min 20 sec	6 min 30 sec
MP140NC/NO-230T	230	1min 20 sec	3 min 50 sec	2 min 20 sec	6 min 30 sec
	110	1 min 40 sec	6 min 20 sec	1min 20 sec	5 min 30 sec

MOUNTING AND CHECKING THE FLOW SETTING

Prior to the actuator being mounted onto the valve, good practice should be followed regarding the valve installation.

Before the MP140 is mounted onto the VP223R pressure independent control valve, it is advisable, if not already done so, to adjust to the maximum flow required.

If the maximum flow rate has already been set, a valve tag/hanger ID should have been completed and attached to the valve.

If the maximum flow rate has been set using the hand flow setting knob, the top section of the valve tag should be completed, if the valve tag/hanger ID has the bottom section completed, presume a balancing engineer has finely set the flow on the valve already. In this instance the actuator should be mounted and commissioned as necessary.

If the desired flow through the valve is known, the flow can be set using the hand flow setting knob. The valve data sheet should be consulted for the setting position needed. Once done, the upper portion of the valve tag should be completed and the actuator mounted and commissioned as necessary.

If the desired flow is not known and it is necessary to fit the actuator for commissioning purposes, then the actuator may be fitted but the valve tag/hanger ID should not be filled in but left for the balancing engineer at a later stage.

The actuator can be mounted in any position but it is advisable to orientate the installation so that condensation or any potential water leaks can not enter the housing.

A ring nut M30 x1.5 allows for easy hand coupling to the valve, tools are not necessary and must not be used.

The Normally closed actuator must be fixed in position no.5 on the variable scale once it has been mounted on the valve. At this position, the button on the actuator will protrude slightly from the case (0.5 to 1mm). At any lower position than 5, full flow through the valve may not be achieved.

For fluid temperatures above 80°C it is recommended to install the actuator horizontally rather than vertically above the media pipe work. Note, for the NO version the protection degree granted is IP44 for a vertical mounting and IP42 for a horizontal mounting.

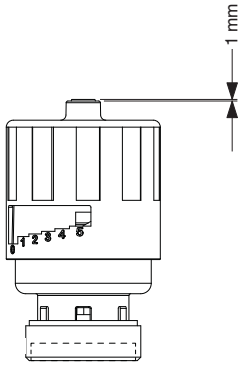
Good practice it to install the valve in the return loop from the heat exchanger to reduce excessive pipe fluid temperatures.

INSTALLATION

Normally open

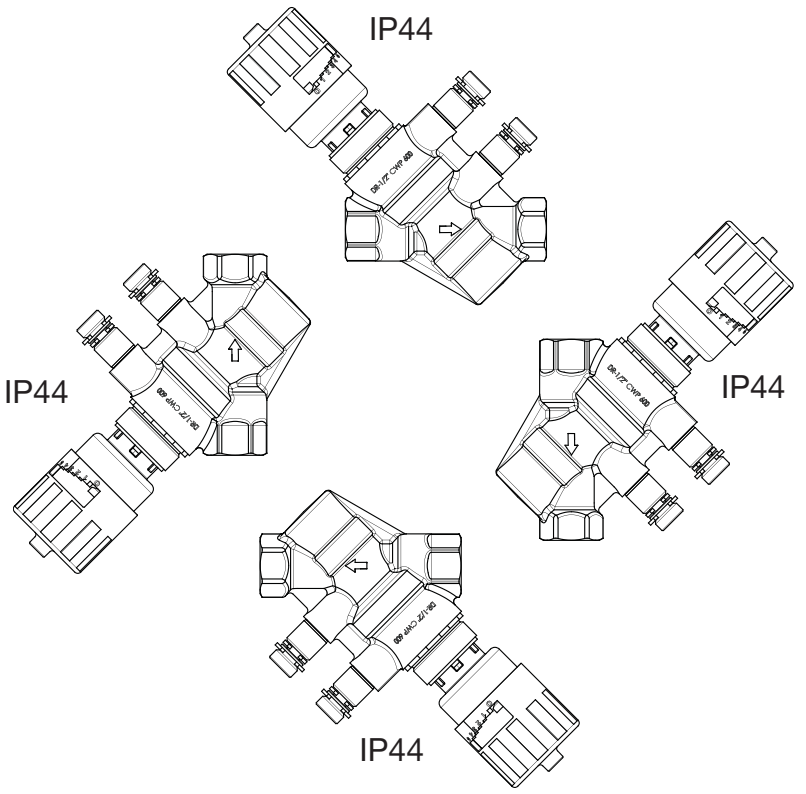
Normally closed

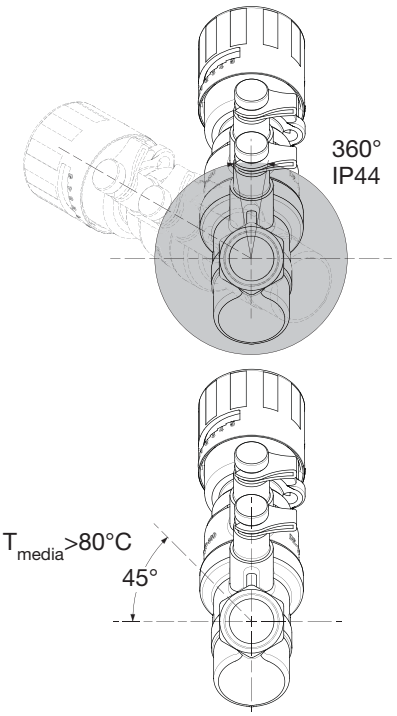
NORMALLY CLOSED POSITION SETTING



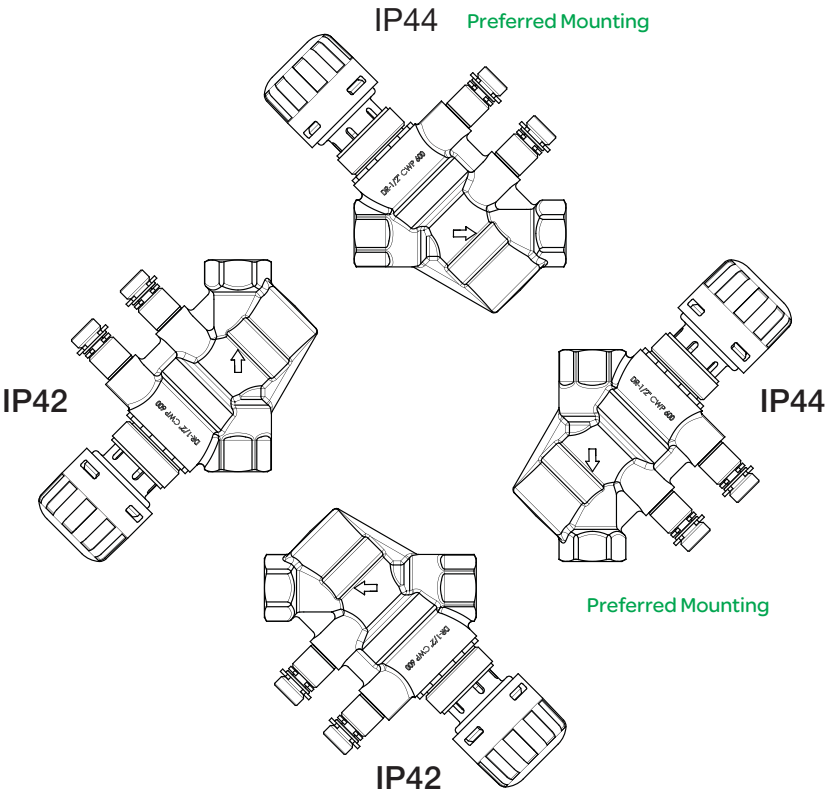
© 2014 Schneider Electric. All rights reserved.

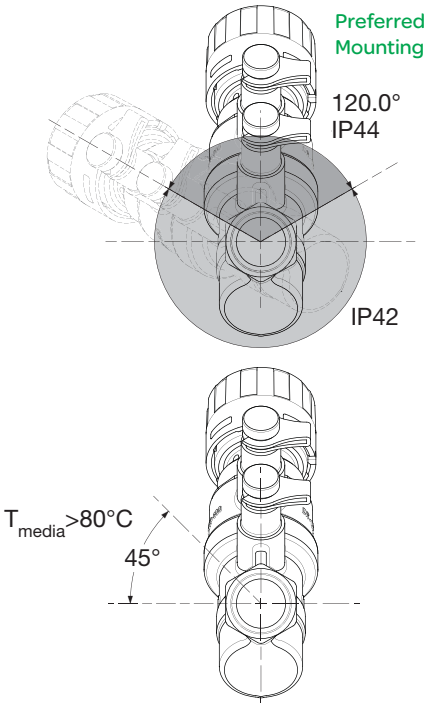
INSTALLATION - NORMALLY CLOSED, MP140NC





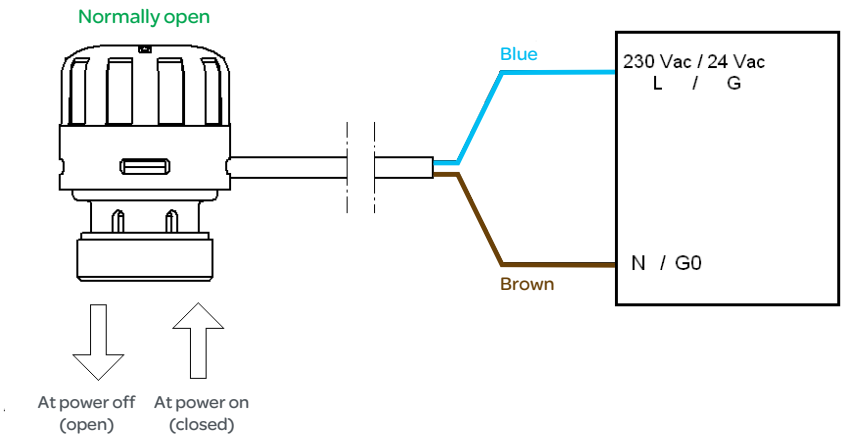
INSTALLATION - NORMALLY OPEN, MP140NO

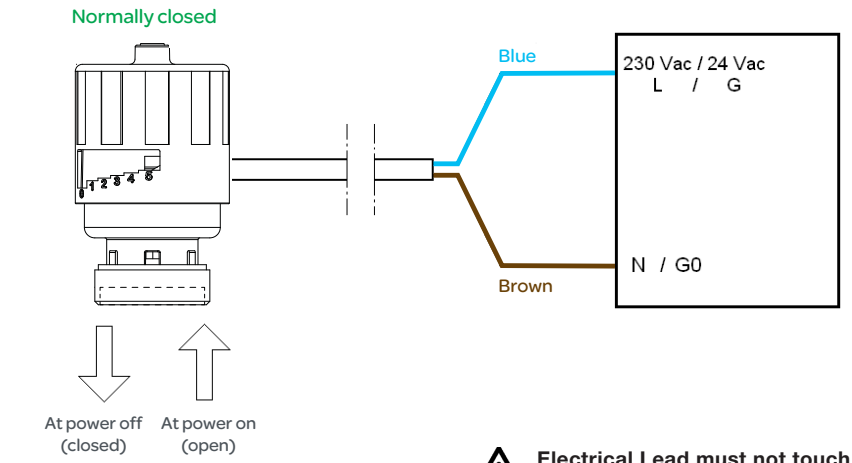




© 2014 Schneider Electric. All rights reserved.

ELECTRICAL CONNECTIONS





Electrical Lead must not touch pipe work or other hot surface

© 2014 Schneider Electric. All rights reserved.