

EasyLogic™ MP525

Universal Control Signal, Non-Spring Return & Electronic Return Actuators

The MP525 is a high-accuracy universal control actuator designed specifically for the VP227R Pressure Independent Balancing and Control Valve (PIBCV), suitable for sizes DN40 and DN50. This actuator modulates flow through the valve to prevent overflow and enhance the efficiency of boilers and chillers. MP525E24MP offers 0(2)-10 V modulating, 3-point floating, and 2-position control signals, while MP525EER24MP offers 0(2)-10 V modulating and 2-position control signals.

Regulatory Compliance and Safety Information

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

Carefully read these instructions and all information relevant to this product before trying to install it.

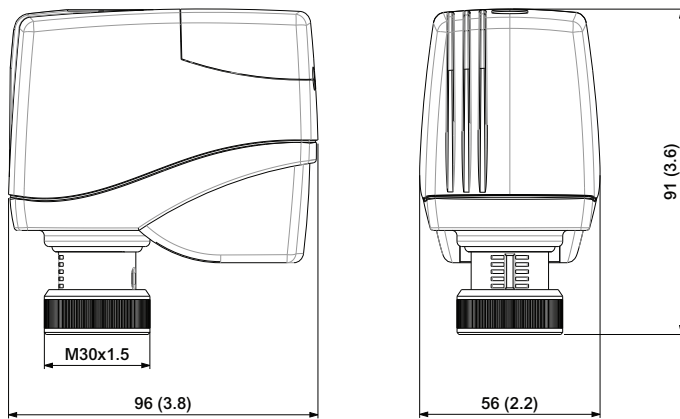
The technical literature and declarations of conformity can be accessed by searching for the part number on the Schneider Electric website, www.se.com. Contact your local Schneider Electric sales office for a hard copy of the documentation or for additional information.

Part Numbers

Product	Part Numbers
VP227R PIBCV Actuator	MP525E24MP
VP227R PIBCV Electronic Return Actuator	MP525EER24MP

Note: Electronic return is also known as fail safe in the industry.

Dimensions



Mounting and Installation

NOTICE
<p>RISK OF EQUIPMENT DAMAGE</p> <ul style="list-style-type: none"> Mount the actuator onto the valve before applying electric power. Do not remove the actuator from the valve without disconnecting the power. <p>Failure to follow these instructions can result in equipment damage.</p>

It is best to install the actuator once the flushing and dosing of the hydronic network have been completed.

Before the actuator is mounted upon the valve, the flow must be set to the design flow requirements. Please refer to the valve

documentation for information as to the flow rate at each of the valve settings.

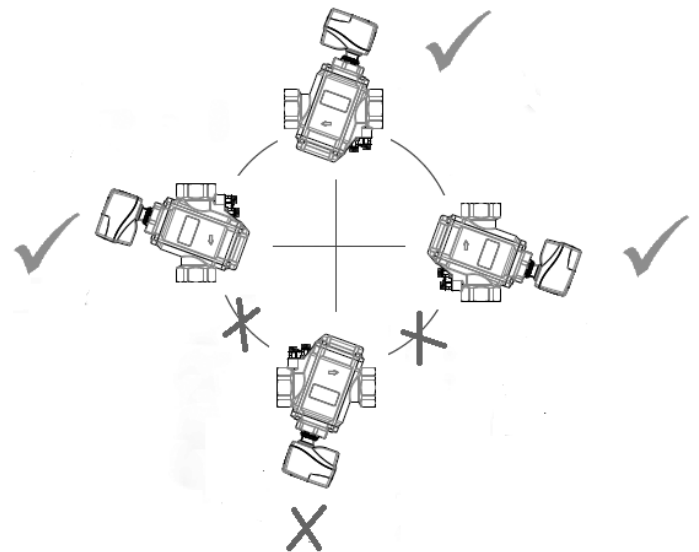
Procedure:

1. Set the flow rate on the valve.
2. Position the actuator over the neck of the valve and screw the mounting ring clockwise to secure.

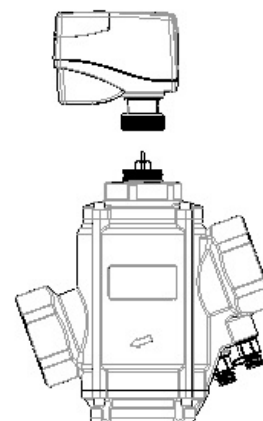
NOTICE
<p>RISK OF EQUIPMENT DAMAGE</p> <p>Tighten by hand only, do not use any tools.</p> <p>Failure to follow these instructions can result in equipment damage.</p>

3. Wire the actuator according to the wiring diagram.
4. Apply power and the actuator will automatically calibrate to determine the closing point. It will then proceed to normal operation mode (according to the control signal). For the electronic return version MP525EER24MP, capacitor charging will be prioritized (max. 215 sec., depending on capacitor energy level) during start-up and re-powering. The actuator will proceed to normal operation mode once the charging and calibration modes are completed.

Standard horizontal and vertical installations are allowed, but upside-down installations are not.



The actuator is factory-supplied in a retracted position to aid mounting.



NOTICE

RISK OF EQUIPMENT DAMAGE

- The actuator is intended to be installed indoors.
- Special care should be taken with chilled water systems in installations with a vertical pipe where the flow direction is upwards. It is important to monitor for condensation, as this may drip down onto the actuator, potentially causing issues.

Failure to follow these instructions can result in equipment damage.

Notes:

- The flow should be set on the valve before the actuator is mounted.
- Do not power the actuator until it is mounted on the valve.
- Hand tighten the M30 mounting nut; tools are not necessary and can cause damage when overtightened.
- Mount or dismount the actuator only when it is retracted.

Auto Cycle Sequence

Auto Cycle can be activated during commissioning. It prevents the valve from jamming when the valve is not moved for a longer period of inactivity. Auto Cycle is activated by moving DIP switch #1 from OFF to ON. The actuator will then perform 50% stroke cycle every 3 weeks if no stroke movement has occurred.

Calibration Process

Initially, the valve pressure plate is fully retracted, whereby the upper end-stop of the drive is determined. The valve plate then extends fully to determine the bottom end stop. The closing point of the valve is also detected.

Re-Calibration Process

Re-calibration can be achieved in one of 2 ways:

1. Forced individual actuator re-calibration can be performed by flipping DIP switch #6 from OFF to ON and back to OFF on the relevant actuator.
2. Forced concurrent re-calibration for all actuators is electrically possible. Within 60 sec. provide the following electrical control signal sequence to the grey wire: 10V-2V-10V-2V-10V-2V to achieve re-calibration.

After re-calibration the actuator will go into normal operation mode.

Note: The calibration process must be performed whenever the valve is mounted or replaced.

Override

For MP525E24MP, manual override is performed after power supply is turned off. Lift the silicone cap on the top of the actuator to get access to manual override. Manual override is performed by a 4 mm (~5/32") hex key. Clockwise turning will open the valve and counter-clockwise turning will close the valve.

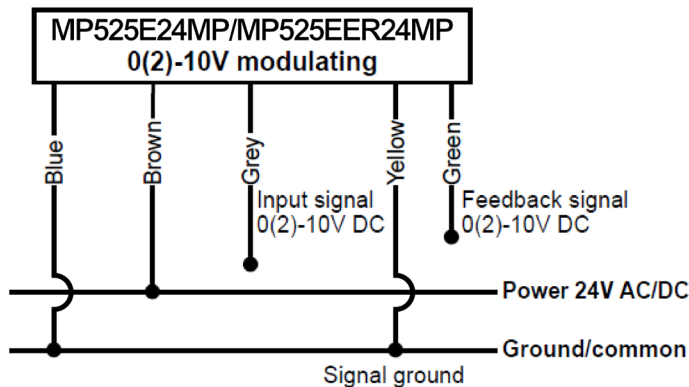
For MP525EER24MP, electrical override is activated by moving DIP switch #6 from OFF to ON. Then the valve will open fully. During override mode the LED indicator will blink red and green. When DIP switch #6 is moved back to OFF, the actuator will re-calibrate and thereafter go into normal operation mode. Electrical override is performed with power supply on.

Electronic Return (MP525EER24MP)

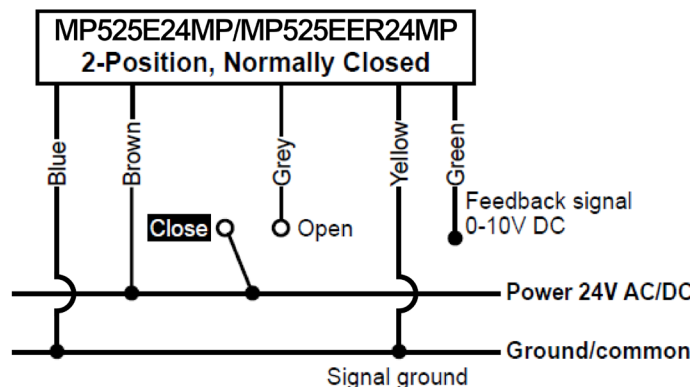
When power is lost, the actuator will go into electronic return mode after a few seconds, mandatory that capacitor charging and start-up sequence are completed. The actuator will perform electronic return action (open or close) and stay in electronic return final position until return of power. Upon power, the actuator remains in the final electronic return position until charging mode is reached (max. 215 sec). Hereafter the actuator will return to normal operation mode.

Wiring

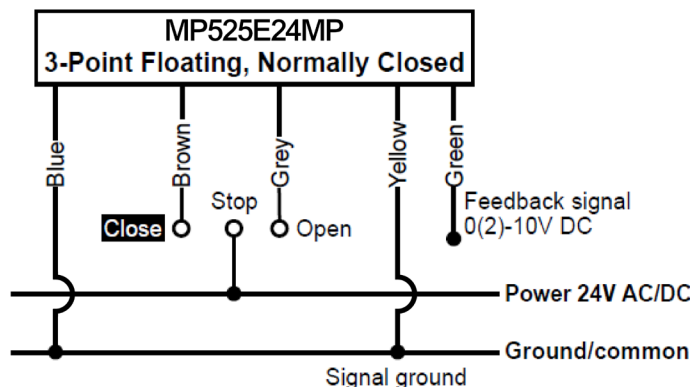
Electrical Modulating



Electrical 2-Position



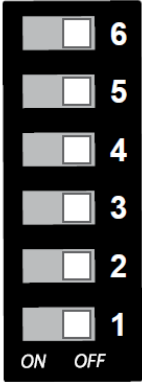










Electrical 3-Point Floating



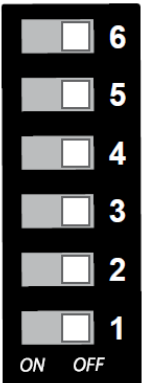












Dip Switch Settings

The valve functions are set on DIP switches found under the connection cover. PCB mounted electrical components will not be directly exposed when DIP switches are to be set. Factory setting for all switches is OFF.

MP525E24MP

DIP switch	Function ON		Function OFF
#6	 Re-calibration		 Re-calibration
#5	No function		No function
#4	 Equal percentage		 Linear
#3	 Reverse acting		 Direct acting
#2	 Control signal 2-10V		 Control signal 0-10V
#1	 Auto cycle ON		 Auto cycle OFF

MP525EER24MP

DIP switch	Function ON		Function OFF
#6	 Electrical override ON		 Electrical override OFF
#5	 Electronic return open		 Electronic return close
#4	 Equal percentage		 Linear
#3	 Reverse acting		 Direct acting
#2	 Control signal 2-10V		 Control signal 0-10V
#1	 Auto cycle ON		 Auto cycle OFF

LED Status

The LED indicator is visible through the dark colored transparent connection cover. The LED indication will give the following statuses.

Product	MP525E24MP	MP525EER24MP
Normal operation mode	Full on green	Full on green
Charging mode (200 sec)	n/a	Blinking red/green
Calibration mode (closing point adjustment)	Blinking green	Blinking green
Electrical override mode	n/a	Blinking red/green
Electronic return mode	n/a	OFF
Perpetual failure mode	Full on red	Full on red

General Specifications

MP525E24MP

Power supply	24 V AC/DC ± 10%
Frequency	50/60 Hz
Power consumption	
24 V AC	1.5 VA standby, 6 VA running, 8.5 VA max.
24 V DC	0.6 W standby, 2.6 W running, 4.1 W max.
Control signal input	Analog 0(2) - 10 V DC ¹ , 3-point floating or 2-position
Force	Minimum 350 N
Maximum stroke	7 mm (0.3 in)
Speed	22 s/mm
Relative humidity	max. 85 % (no condensation)
Max. medium temperature	120 °C (248 °F)
Ambient temperature	0 to 50 °C (32 to 122 °F)
Storage and transport temp.	0 to 50 °C (32 to 122 °F)
Protection class	III safety extra-low voltage
IP rating	IP54
Weight	0.3 kg (0.67 lb)
Cable	5 x 0.5 mm ² (20 AWG)
Sound power level	Max. 35 dB(A)
EMC Directives	2014/30/EU
LVD Directives	2014/35/EU EN 60730-1 & EN 60730-2-14
RoHS Directives	2011/65/EU
REACH & CE Directives	1907/2006

1. By default, 0 V DC will command the valve to close.

MP525EER24MP

Power supply	24 V AC/DC ± 10%
Frequency	50/60 Hz
Power consumption	
24 V AC	2.6 VA standby, 7.9 VA running, 9 VA max.
24 V DC	1.2 W standby, 3.7 W running, 4.5 W max.
Control signal input	Analog 0(2) - 10 V DC ¹ or 2-position
Force	Minimum 350 N
Maximum stroke	7 mm (0.3 in)
Speed	22 s/mm (electronic return: 5 s/mm)
Relative humidity	max. 85 % (no condensation)
Max. medium temperature	120 °C (248 °F)
Ambient temperature	0 to 50 °C (32 to 122 °F)
Storage and transport temp.	0 to 50 °C (32 to 122 °F)
Protection class	III safety extra-low voltage
IP rating	IP54
Weight	0.34 kg (0.75 lb)
Cable	5 x 0.5 mm ² (20 AWG)
Sound power level	Max. 35 dB(A)
EMC Directives	2014/30/EU
LVD Directives	2014/35/EU EN 60730-1 & EN 60730-2-14
RoHS Directives	2011/65/EU
REACH & CE Directives	1907/2006

1. By default, 0 V DC will command the valve to close.

部件名称 Part Name	有害物质 - Hazardous substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal parts	○	○	○	○	○	○
塑料部件 Plastic parts	○	○	○	○	○	○
电子件 Electronic	○	○	○	○	○	○
触点 Electrical contacts	○	○	○	○	○	○
线缆和线缆附件 Cables & cabling accessories	○	○	○	○	○	○

本表格依据SJ/T11364的规定编制。

○: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。

×: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

