

The Actuator 24 V is a thermoelectric actuator for opening and dosing valves on heating circuit distributors of concealed floor heating and cooling systems.

The Actuator has been developed especially for customerspecific usage in the oem business. Features, as protection in case of leaky valves, compact and modern casing, versions in normally closed and normally open, valve adapter concept and an enhanced life time have been of particular importance. This allows to fulfill the requirements within the bounds of technical reliability, improved installation and customer-/service friendliness for manufacturer of concealed floor heating and cool ing systems.

The Actuator 24 V is controlled by a 24 V room thermostat with two-point output or pulse-width modulation.



FEATURES

- Compact size, small dimensions
- Available in normally closed (NC) or normally open (NO)
- All around function indicator
- Maintenance-free
- Noiseless
- High functional safety and long expected service life
- Low power consumption
- 360° installation position
- Snap-on installation
- Valve-adapter concept
- Adaptation check on valve

APPLICATION

The Actuator serves for optimum control of valves on heating circuit distributors. Control is done a room thermostat with two point output or pulse-width modulation.

GENERAL INFORMATION

Scope of Supply (standard)

- 1 x Actuator (Version: normally closed)
- 1 x cable 1 meter

Alternative Version:

- Version normally open

Type

MPA200: 24V 2 Wire Thermostatic Actuator for PEX
MPA400: 24V 4 Wire Thermostatic Actuator for PEX

FUNCTIONS

In General

The actuator mechanism of the Actuator uses a PTC resistorheated elastic element and a compression spring. The wax element is heated by applying the operating voltage and moves the integrated piston. The force generated by the movement is transferred on the piston lifter and thus opens and closes the valve.

Standard Version

Normally Closed (valve closed)

The valve is opened steadily by the piston motion upon switching on the operating voltage and after expiry of the dead time. The wax element cools down after the operating voltage is cut and after expiry of the hold time, the valve is dosed evenly by the dosing force of the compression spring.

The closing force of the compression spring is matched to the closing force of commercially available valves and keeps the valve normally closed.

Valve -Ad apter-Concept

A valve-adapter concept guarantees a perfect match of the actuator to almost any valve bottom or heating circuit distributor available on the market. Simply snap-on the Actuator to the pre-installed valve adapter.

Function Display

The function display of the Actuator (all-round display) allows identifying the operating condition (valve open or closed) at a glance.

Extended Version

First-Open function (for NC only)

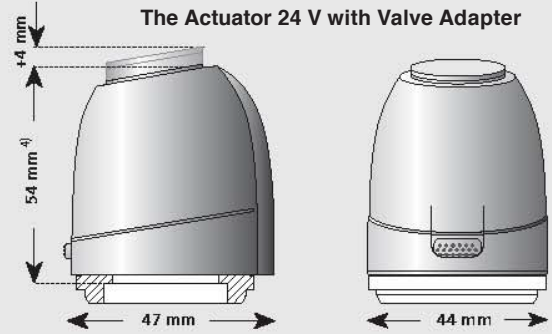
In its delivery condition, the Actuator is kept open when deenergised due to the First-Open function (filling). This enables heating operation during the carcass construction phase even when the electric wiring is not yet complete. During the later electrical startup, the First-Open function is unlocked by applying the operating voltage for more than 6 minutes. The Actuator will then be completely operable.

Alternative Version

Normally Open (valve open)

In case of the normally open version, ram motion is redirected by mechanical means, resulting in precisely opposite actuator function.

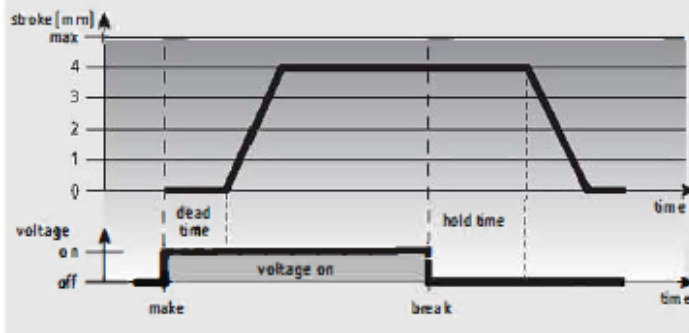
Type	MPA200 / MPA400
Version	Normally Closed / Normally Open
Voltage	24 V AC/DC, +20%... -10%, 0-60 Hz
Max. Inrush Current	250 mA during 2 min max.
Operating Current	75 mA
Operating Power	1.8 W
Closing and Opening Times	approx. 3 min.
Actuator Travel	4 mm
Actuating Force	100 N ± 5%
Fluid Temperature	0 - 100°C ¹⁾
Storage Temperature	-25 to + 60°C
Ambient Temperature	0 to + 60°C
Degree	IP 54 ²⁾
CE Conformity According to	EN 60730
Housing / Housing Color	Polyamide / Grey
Weight	100 g with a 1 m connecting cable
Connecting Cable / Length ³⁾	2 x 0.75 mm ² PVC, grey / 1 m



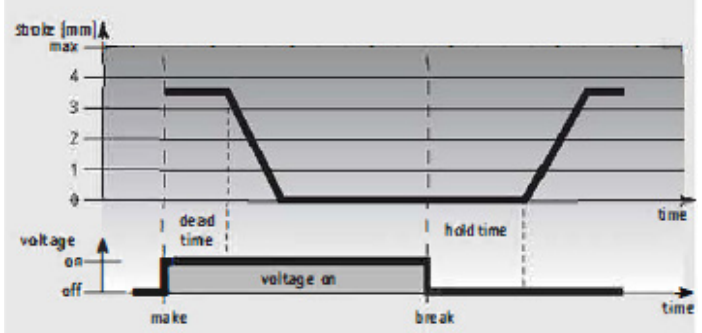
- 1) in dependence of the adapter even higher
- 2) in all installation positions
- 3) special length on demand, but < 5.0 m
- 4) referring to standard valves

CHARACTERISTIC CURVES

Normally Closed

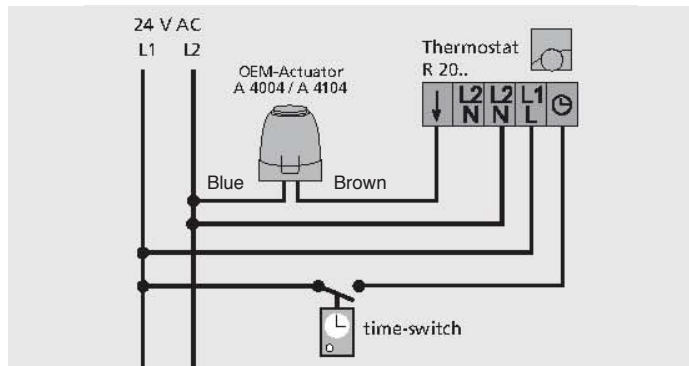


Normally Open



PLANNING & INSTALLATION NOTES

Connections Overview



* The blue line connects to the live wire and the brown line neutral wire

Calculation of maximum cable length (copper cable) for 24 V rated voltage

$$L = K \times A / n$$

A - Conductor cross-section in mm²
n - Number of Actuators K - Constant (269m/mm²)
L - Cable length in m

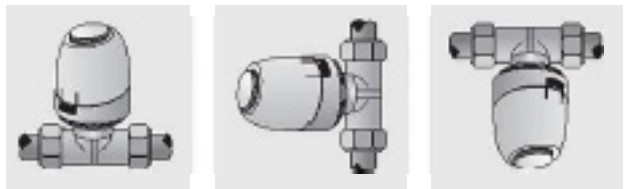
We recommend the following cables for installing a 24 V system:

Bell wire:	Y(R)	0,8 mm ²
Light plastic-sheathed cable:	NYM	1,5 mm ²
Flat webbed building wire:	NYIF	1,5 mm ²

Transformer: A safety isolating transformer according to EN 60335 must always be used.
Transformer dimensioning results from the making capacity of the Actuators.

Rule of thumb formula P Transformer = 6W x l n = number of Actuators

Installation Positions



Preferred installation positions of the Actuator are vertical and horizontal. An up-side down position may reduce product life through special circumstances (e.g. contaminated water).

Installation Positions



Valve adaptation is achieved by a valve adapter which is available in different versions to suit the most common valve bottoms and heating circuit distributors (please consider when ordering).