

## OEM-Actuator 230 V

The OEM-Actuator 230 V is a thermoelectric actuator for opening and closing valves on heating circuit distributors of concealed floor heating and cooling systems.

The OEM-Actuator has been developed especially for customer-specific usage in the oem business. Features, as protection in case of leaky valves, compact size, small dimensions, 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 cooling systems. Additional differentiations through customer specific versions are possible.

The OEM-Actuator 230V is controlled by a 230 V room thermostat with two-point output or pulse-width modulation.



### Features

- OEM design
- Compact size, small dimensions
- Available in normally closed (NC) or normally open (NO)
- Patented 100% protection against leaky valves
- All around function indicator
- Maintenance-free
- Noiseless
- High functional safety and long expected service life
- Enhanced over-voltage protection
- Low power consumption
- 360° installation position
- Snap-on installation
- Valve-adapter concept
- Adaptation check on valve

### Application

The OEM-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)

- 1x OEM-Actuator 230 V (normally closed)
- 1x cable 1 meter
- 1x installation manual in 9 languages

#### Alternative Version:

- Version normally open

#### Type

A 2004: Version 230 V – normally closed  
A 2104: Version 230 V – normally open

#### Optional available extensions:

- First-Open function (for NC only)
- non halogen connection cable
- Other cable length are available

#### Accessories

A valve adapter suiting your application can be enclosed in the actuator packing.

#### Customer-specific Version

Customer-specific versions are possible on request.

#### Ordering Information

Our staff will be glad to assist you in finding the actuator fitting your application. Call us at: +49 5341 - 84 75 - 0

### Functions

#### In General

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

#### Standard Version

##### Normally Closed (valve closed)

The valve is opened steadily by the ram motion upon switching on the operating voltage and after expiry of the dead time. The elastic element cools down after the operating voltage is cut and after expiry of the hold time, the valve is closed evenly by the closing 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-Adapter-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 OEM-Actuator to the pre-installed valve adapter.

#### Function Display

The function display of the OEM-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 OEM-Actuator is normally open due to the First-Open function. This enables heating operation during the carcass construction phase even when the electric wiring of the single room control is not yet complete. When commissioning the system at a later date, the First-Open function is automatically unlocked by applying the operating voltage (for more than 6 minutes) and the OEM-Actuator is fully operable.

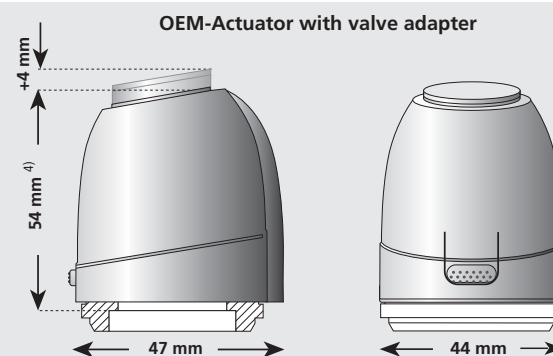
#### Alternative Version

##### Normally Open (valve open)

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

## Technical Data

| Type   | A 2004 / A 2104                          |
|--|--|
| Version  | normally closed / normally open          |
| Voltage  | 230 V AC, +10%...-10%, 50/60 Hz          |
| Max. inrush current                            | 300 mA during 200 ms. max.               |
| Operating current                              | 8 mA                                     |
| Operating power                                | 1.8 W                                    |
| Closing and opening times                      | approx. 3 min.                           |
| Actuator travel                                | 4 mm                                     |
| Actuating force                                | 100 N $\pm$ 5%                           |
| Fluid temperature                              | 0 - 100 °C <sup>1)</sup>                 |
| Storage temperature                            | -25 to +60°C                             |
| Ambient temperature                            | 0 to +60°C                               |
| Degree / class of protection                   | IP 54 <sup>2)</sup> / II                 |
| CE conformity according to                     | EN 60730                                 |
| Housing / housing colour                       | Polyamide / grey                         |
| Weight   | 100 g with a 1 m connecting cable        |
| Connecting cable / length <sup>3)</sup>        | 2 x 0.75 mm <sup>2</sup> PVC, grey / 1 m |
| Overvoltage protection according to EN 60730-1 | at least 2.5 kV                          |

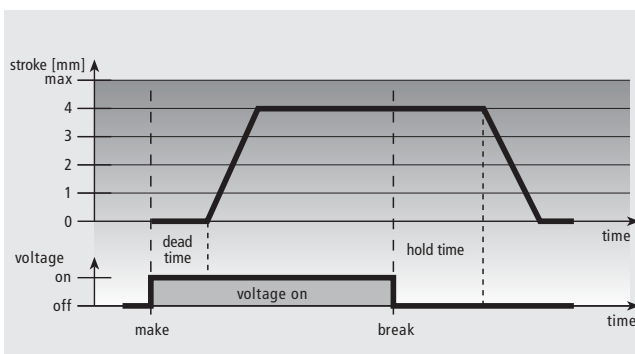


- 1) in dependence of the adapter even higher  
2) in all installation positions  
3) special length on demand, but < 5.0 m  
4) referring to standard valves

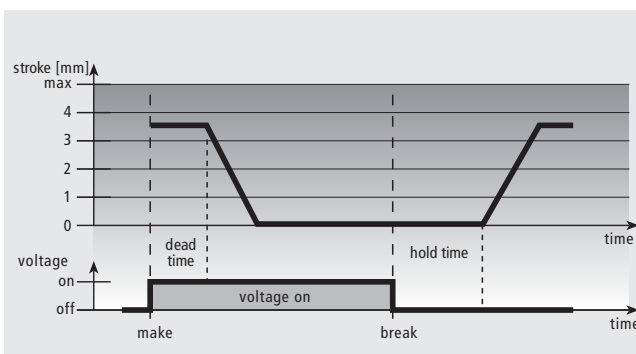


## Characteristic Curves

### Normally Closed (NC)

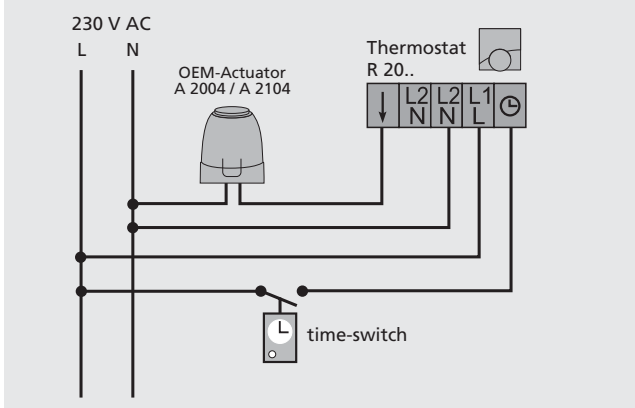


### Normally Open (NO)



## Planning and Installation Notes

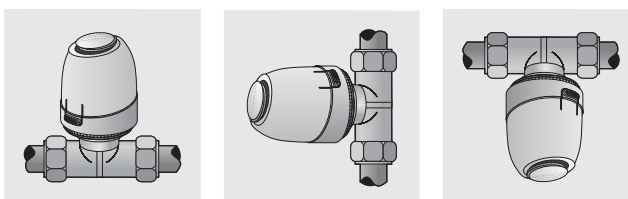
### Connections Overview



We recommend the following lines for installing a 230 V system:

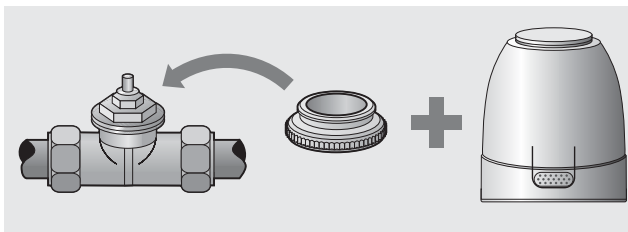
|                              |      |                     |
|------------------------------|------|---------------------|
| Light plastic-sheathed cable | NYM  | 1.5 mm <sup>2</sup> |
| Flat webbed building wire    | NYIF | 1.5 mm <sup>2</sup> |

### Installation Positions



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

### Valve Adaptation



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).