

## OEM-Actuator 5: 230 V Standard

The OEM-Actuator 5: 230 V Standard is a thermoelectric valve drive for opening and closing valves on heating circuit distributors of concealed floor heating and cooling systems. The main field of application is the energy-efficient individual room temperature control in the range of building management systems and home automation. The OEM-Actuator 230 V is controlled by a 230 V room thermostat with two point output or pulse-width modulation.

The OEM-Actuator of the fifth generation has been developed especially for customer-specific usage in the oem business. The modular design offers several possibilities for differentiations for tailor-made versions.



### 1.1 Features

- Modern OEM design
- Stroke variants 3.5 mm / 4.0 mm / 5.0 mm
- Available in normally closed (NC) or normally open (NO)
- Power consumption 1 watt
- Complete compatibility to Valve-Adapter-System
- Simple snap-on installation
- 360° installation position
- Patented 100% protection against leaky valves
- First-Open Function
- Adaptation check on valve
- Alignment aid on the valve
- Compact size, small dimensions
- All around function indicator
- Noiseless and maintenance-free
- High functional safety and long expected service life
- Overload guarantee
- Certified by TÜV
- From 12/2011 also available with plug-in cable

### 1.2 Versions

In the basic version the OEM-Actuator 5: 230 V Standard is delivered as a neutral version without logo, with fixed connecting cable, stroke indicator blue / gray, without valve adapter and laser marking. The following versions are available in the basic version

Versions 230 V:	stroke	actuating force	de-energised state	closing and opening time	First-Open Function	scope of supply
A 20305-00N	3.5 mm	100 N	NC	~ 3 min	yes	<ul style="list-style-type: none"> <li>• OEM-Actuator 230 V in single package</li> <li>• 1 meter connecting cable grey PVC H03VV 2x 0.75 mm</li> <li>• installation manual in 10 languages</li> </ul>
A 20305-10N	3.5 mm	100 N	NC	~ 3 min	no	
A 21305-10N	3.5 mm	100 N	NO	~ 3 min	no	
A 20405-00N	4.0 mm	100 N	NC	~ 3.5 min	yes	
A 20405-10N	4.0 mm	100 N	NC	~ 3.5 min	no	
A 21405-10N	4.0 mm	100 N	NO	~ 3.5 min	no	
A 20505-00N	5.0 mm	100 N	NC	~ 4 min	yes	
A 20505-10N	5.0 mm	100 N	NC	~ 4 min	no	
A 21505-10N	5.0 mm	100 N	NO	~ 4 min	no	

Optionally, the following extensions and differentiations of the basic version are available:

Cable length	2 m, 3 m, 5 m PVC H03VV, in grey – 2 x 0.75 mm <sup>2</sup>
Valve Adapter	Included in scope of supply (Adaptations are available for all standard valves and manifolds)
Packaging	Packaging can be printed or produced individually according to your requirements
Imprint on casing	Laser imprint of your company logo and of a individual type designation
Colour of casing and cable	Homogenous colouring, colour stroke indicator stroke cap, matching your product design or corporate design.
Non-halogen line	Compliance with fire protection and environmental regulations Available in white Hal F H03Z1Z1 - 2x 0.75: 1 m, 2 m, 3 m, 5 m
UL Certification	Certification according to UL specification
Further versions are possible on request.	

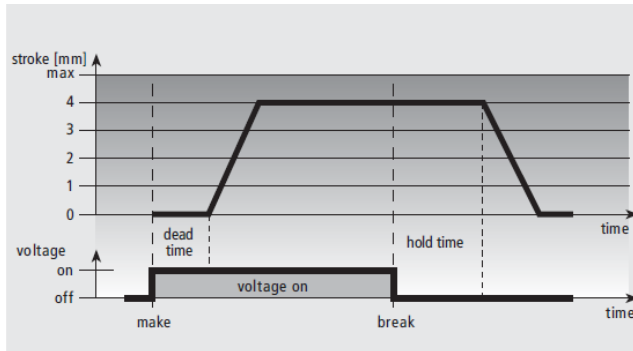
### Accessories

- Protection Cap SK 1004

## 2 Functions

The actuator mechanism of the OEM-Actuator uses a PTC resistor-heated wax 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.

### 2.1 Normally Closed (valve closed)

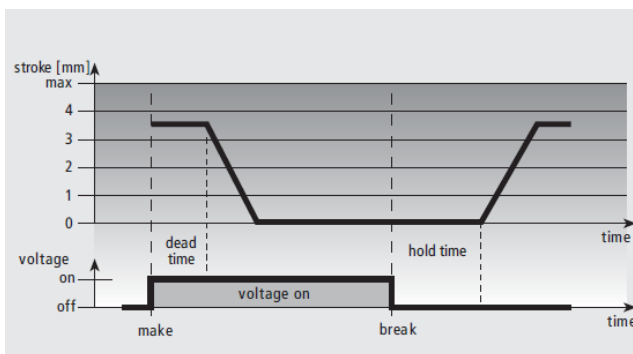


In case of the normally closed version, the valve is opened steadily by the ram motion upon switching on the operating voltage and after expiry of the dead time.

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.

Illustration: Example for 4 mm stroke. Characteristic lines for strokes 3,5 mm and 5 mm result analogous.

### 2.2 Normally Open (valve opened)



In case of the normally open version, the valve is closed evenly by the ram motion upon switching on the operating voltage and after expiry of the dead time.

After the operating voltage is cut and after expiry of the hold time, the valve is opened evenly by the closing force of the compression spring.

Illustration: Example for 4 mm stroke. Characteristic lines for strokes 3,5 mm and 5 mm result analogous.

### 2.3 Function Display

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

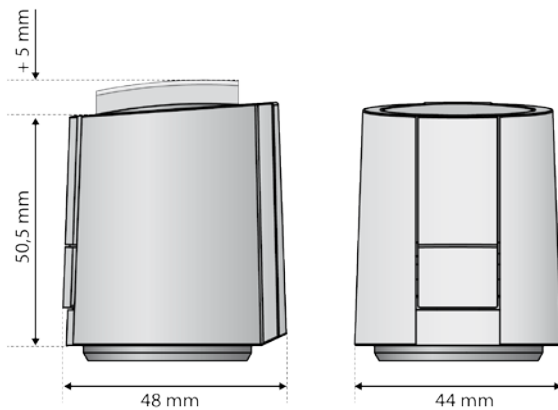
### 2.4 First-Open Function (for NC only)

In its delivery condition, the OEM-Actuator is kept open when de-energised 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 start-up, the First-Open function is unlocked by applying the operating voltage for more than 6 minutes. The OEM-Actuator will then be completely operable.

### 3 Technical Informations

Voltage	230 V AC, +10%...-10%, 50/60 Hz	
Max. inrush current	< 550 mA during 100 ms max.	
Operating power	1 watt	
Stroke (actuator travel)	3.5 / 4.0 / 5.0 mm	
Actuating force	100 N $\pm$ 5%	
Fluid temperature	0 bis +100 °C <sup>1)</sup>	
Storage temperature	-25°C bis +60°C	
Ambient temperature	0 bis +60°C	
Degree/class of protection	IP 54 <sup>2)</sup> / II	
CE conformity according to	EN 60730	
Housing material/housing colour	Polyamide / light grey (RAL 7035)	
Connecting cable /colour	2 x 0,75 mm <sup>2</sup> PVC / light grey (RAL 7035)	
Cable length	1 meter	
Weight with connecting cable (1 m)	100 g	1) in dependence of the adapter even higher
Overvoltage protection according to EN 60730-1	at least 2.5 kV	2) in all installation positions

#### 3.1 Dimensions



<b>Installation height</b>	
<b>with extended stroke indicator:</b>	<b>57.0 mm</b>
Height of basic body	50.5 mm
Extending height of stroke indicator	5 mm
Seat height referred to a standard valve	1.5 mm

#### 3.2 Certificates



The OEM Actuator 5 is certified by TÜV Süd.

## 4 Installation Notes

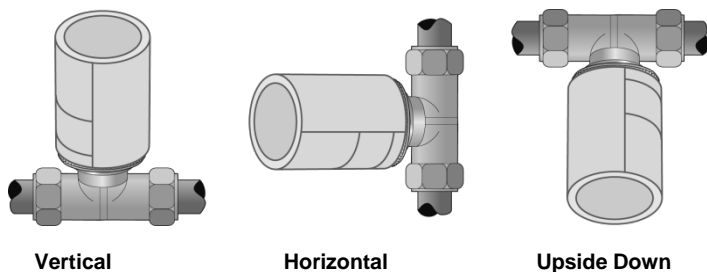
### 4.1 Installation with Valve Adapter

The wide selection of valve adapters guarantees a perfect match of the OEM-Actuator to almost any valve bottom or manifold available on the market. Simply snap-on the OEM-Actuator to the manually pre-installed valve adapter.



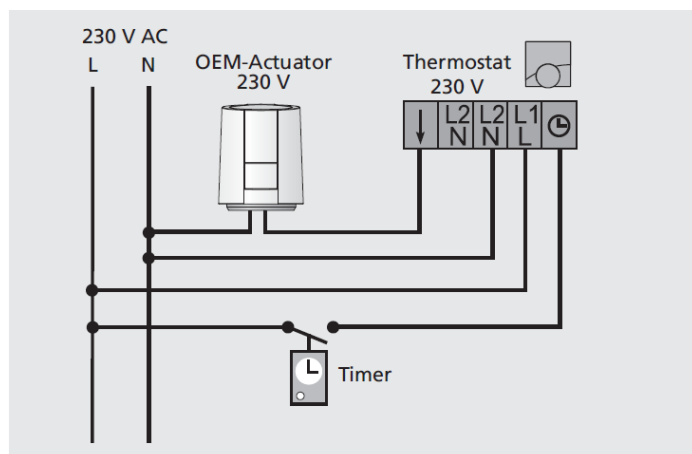
- First the valve adapter is screwed on the valve manually
- The OEM-Actuator is tilted towards the release push-button, while the bottom of the OEM-Actuator is seated in the titled position by slightly pressing on the rim of the adapter.
- By tilting movement with the supporting leverage the OEM-Actuator 5 clicks into place on the valve adapter.

### 4.2 Installation Positions



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

### 4.3 Electrical Installation



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>

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