

## 110-230-010

## 110-230-010-NO

## Thermoelectric Actuator

### Description

The 110-Actuator 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 110-Actuator 230 V is controlled by a 230 V room thermostat with two point output or pulse-width modulation.



### Features

#### General data

Modern design

Stroke variants 4.0 mm / 5.0 mm (other stroke variants on demand)

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 (NC type only, optional)

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

Surge protection guarantee

Certified by TÜV

### Variants

In the basic version the 110-Actuator 230 V Standard is delivered, with fixed connecting cable, function indicator blue / gray, without valve adapter and laser marking. The following versions are available in the basic version.

Types	Stroke Recognition	Actuating force	Control Direction	Closing and Opening time	"First-Open" function	Scope of supply
110-230-010	5.0 mm	100 N	NC	4 min	Yes	<ul style="list-style-type: none"> <li>110 Actuator in single package</li> <li>1 meter connecting cable, grey PVC H03VV 2 x 0.75 mm<sup>2</sup></li> <li>Installation manual in 12 languages</li> </ul>
110-230-010-NO	5.0 mm	100 N	NO	4 min	No	

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

<b>Cable length</b>	2 m, 3 m, 5 m, PVC H03VV in grey – 2 x 0.75 mm <sup>2</sup>
<b>Valve Adapter</b>	Adapters are available for all standard valves and manifolds
<b>Packaging</b>	Single packaging
<b>Colour of casing and cable</b>	White
<b>Non-halogen line</b>	1 m, 2 m, 3 m, 5 m, Hal F H03Z1Z1 in white – 2 x 0.75 mm <sup>2</sup> Compliance with fire protection and environmental regulations
<b>NRTL approval</b>	Approval according to UL specification
<b>Further versions available on request.</b>	

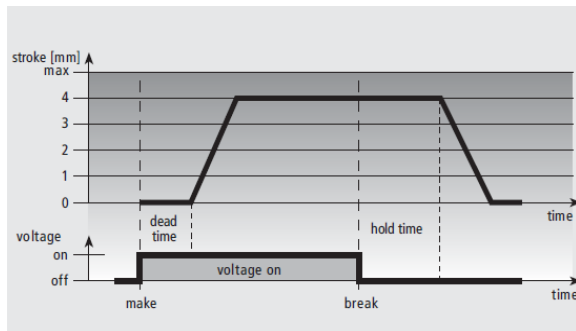
### Accessories

- Protection Cap SK 1004

**Function**

The actuator mechanism of the 110-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.

**Version NC : Normally-Closed (valve closed)**



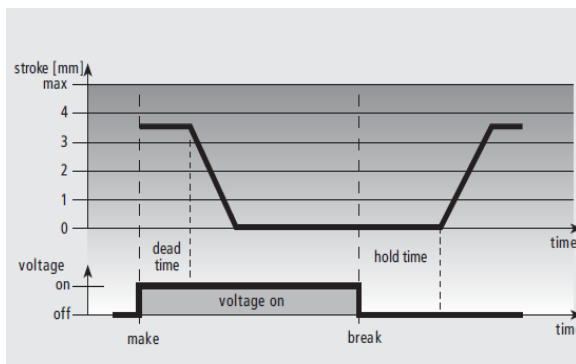
In case of the normally closed version, the valve is opened steadily by the ram motion upon switching on the operating voltage and after expiry of the dead time.

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.

Fig.: Example for 4 mm stroke. Characteristic line for stroke 5 mm results analogous.

**Version NO : 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.

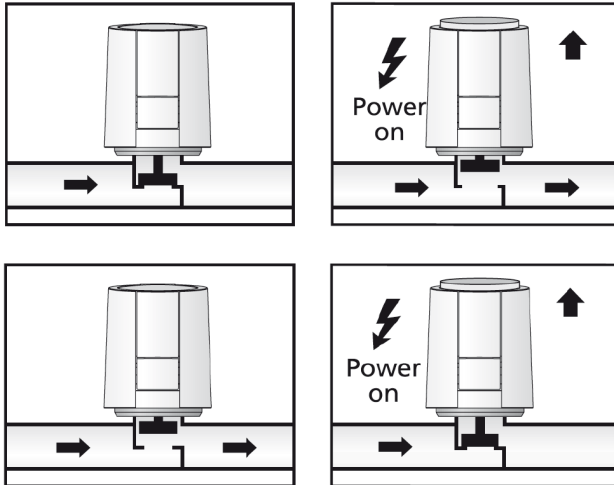
After the operating voltage is cut and after expiry of the hold time, the valve is opened evenly by the closing force of the compression spring.

Fig.: Example for 4 mm stroke. Characteristic line for stroke 5 mm results analogous.

Copyright by GRUNER AP @2025\_V1. Subject to change in technology and Design.

### Function Display

The function display of the 110-Actuator (all-around display) allows identifying the operating condition (valve open or closed) at a glance.



• In case of the **NC version**, an extended function display shows opening of the valve.

• In case of the **NO version**, an extended function display shows that the valve is closed.

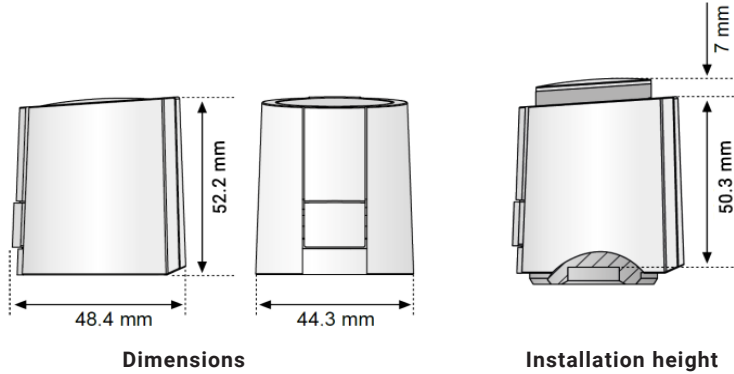
### First-Open Function (for NC only)

In its delivery condition, the 110-Actuator is kept open when de-energised due to the First-Open function. 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 110-Actuator will then be completely operable.

### Technical data

Operating voltage	230 V AC, +10%...-10%, 50/60 Hz	
Max. inrush current	< 550 mA during 100 ms max.	
Operating power	1W <sup>1)</sup>	
Stroke (actuator travel)	4.0 / 5.0 mm	
Actuating force	100 N +10 %	
Fluid temperature	0 to +100°C <sup>2)</sup>	
Storage temperature	-25°C to +60°C	
Ambient temperature	0 to +60°C	
Degree of protection	II	
Type of protection	IP 54 <sup>3)</sup>	
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)	1) measured with precision reference instrument LMG95
Cable length	1 m	2) in dependence of the adapter even higher
Weight with connecting cable (1 meter)	100 g	3) in all installation positions
Surge protection according to EN 60730-1	2.5 kV	

**Dimension**



**Certificates**



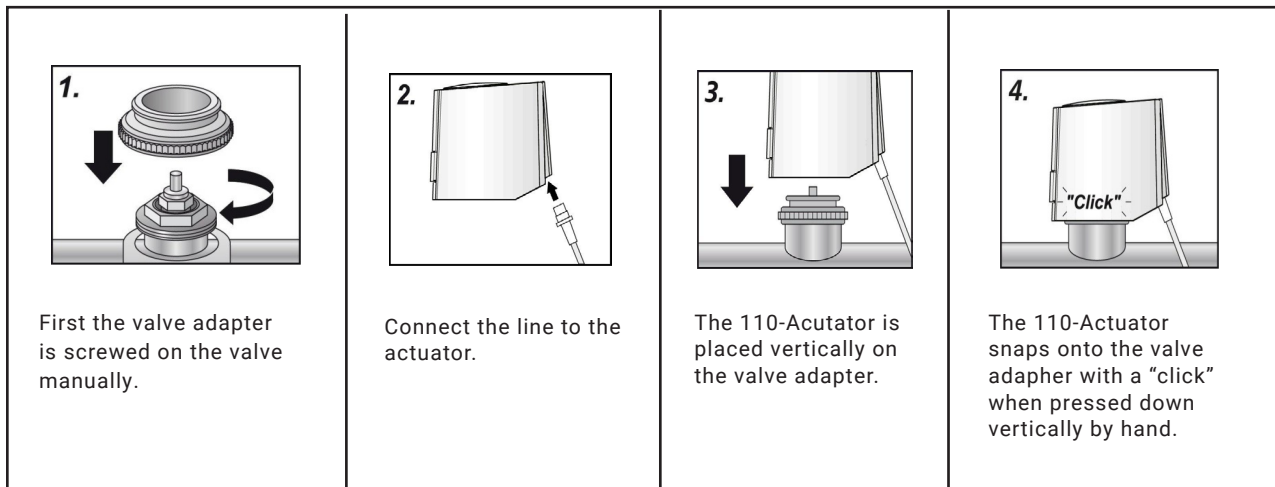
Certified by TÜV Süd.



**Installation notes**

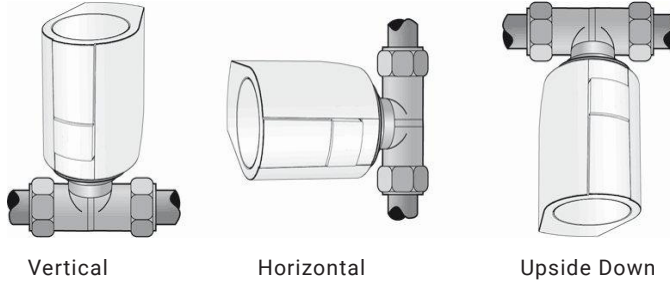
**Installation with valve adapter**

The wide selection of valve adapters guarantees a perfect match of the 110-Actuator to almost any valve bottom or manifold available on the market. Simply snap-on the 110-Actuator to the manually pre-installed valve adapter.



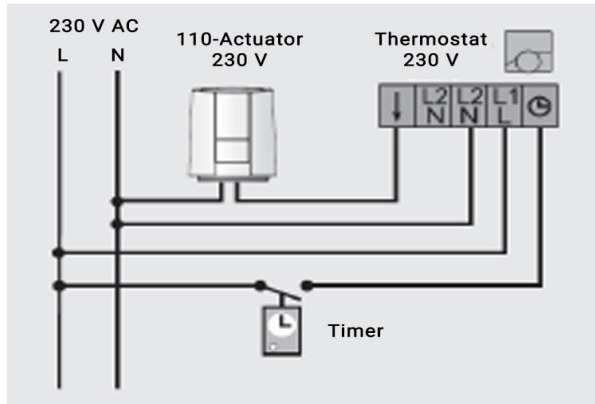
Copyright by GRUNER AP @2025\_V1. Subject to change in technology and Design.

**Installation Position**



Preferred installation position of the 110-Actuator is vertical or horizontal. An upside down position may reduce product life through special circumstances (e.g. contaminated water).

**Electrical Installation**



**We recommend usage of 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>