

REHAU Thermal Actuator UNI: 24 V

Mat. no.: 13992761001

1 Product description

The actuator controls water-carrying valves on heating and cooling circuit distributors in the field of domestic engineering and building automation. It is controlled by a control unit with 2-point control output. Alternatively, the UNI actuator can operate with pulse width modulation (PWM).

2 Features

- Power consumption 1 watt
- First Open function
- 360° installation position¹
- Function display Function display
- Adaptation check on the valve
- Compatibility with all valve adapters thanks to valve adapter system



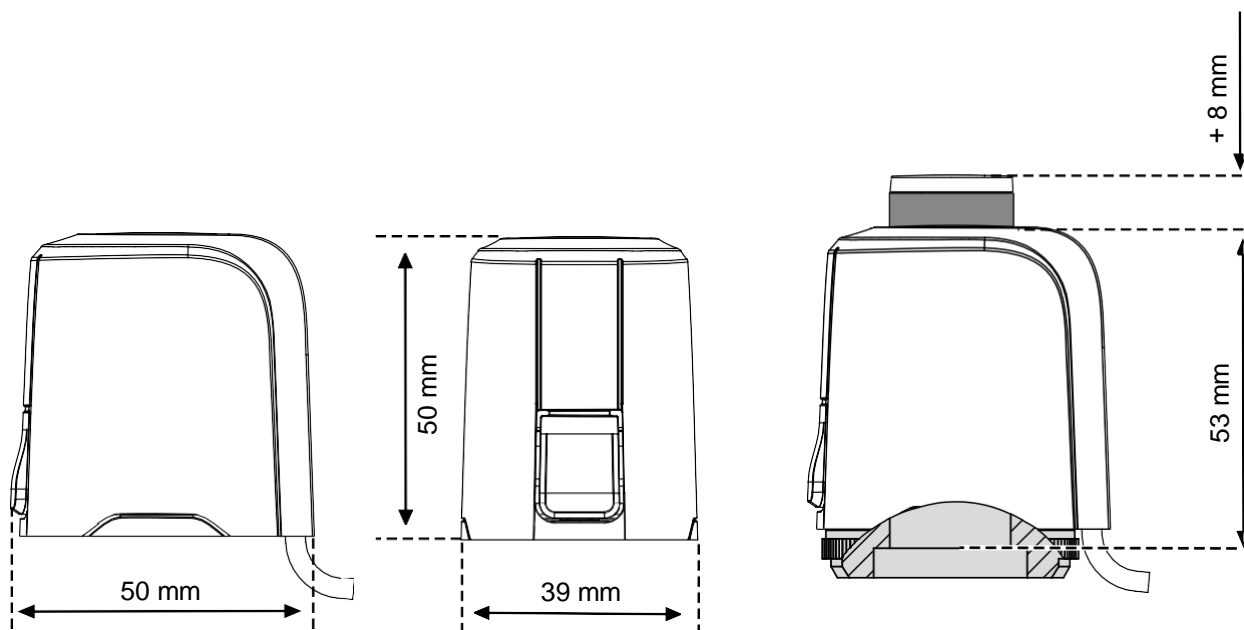
3 Technical data

Control direction	NC
Operating voltage	24 V
Operating voltage (voltage type)	AC/DC
Operating voltage (tolerance)	+20%...-10%
Operating voltage (frequency)	0-60 Hz
Power input	1 W
Stroke	5.0 mm
Actuation force	100 N +10 %
Actuation time	30 s/mm
Fluid temperature	0...100 °C
Storage temperature	-25...60 °C
Ambient temperature	0...60 °C
Protection class	III
Protection type	IP 54
Casing material	Polyamide
Weight	105 g
Overvoltage strength	1 kV
Contamination degree	2

¹ In case of "overhead" installation, special circumstances (e.g. drainwater) can reduce the lifetime of the actuator.

Type of fixing	Z
Function	TYP1.AA
Casing colour	Light grey
Function display (colour)	Sky blue
Connection line (colour)	Light grey
Connection cable (length)	1 m
Inrush peak current I_{max} @ t [ms]	$\leq 300 \text{ mA @ } 120 \text{ s}$
Inrush current (typical)	200 mA

3.1 Dimensions



3.2 Connection

Transformer/power supply unit (unknown supply)

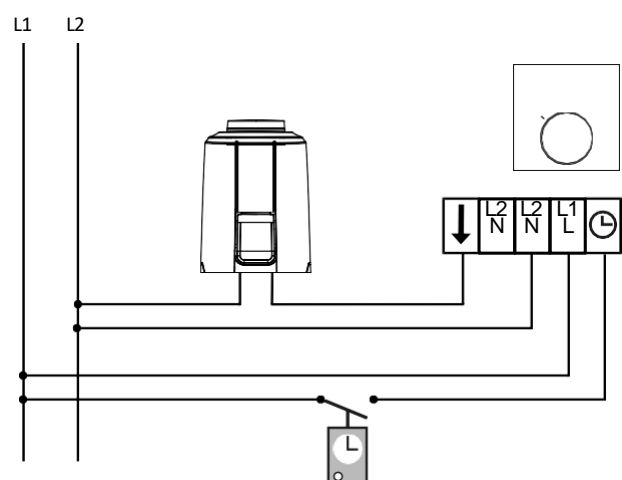
Use a safety transformer according to EN 61558-2-6 or a switching power supply according to EN 61558-2-16. The dimensioning of the safety isolating transformer or switching power supply results from the maximum making capacity of the actuators.

Rule-of-thumb formula: $P_{\text{Transformer}} = 6 \text{ W} \times n$
 n = quantity of actuators

When used in a control system, the information in the specification of the connection unit applies to the maximum permissible number of actuators.

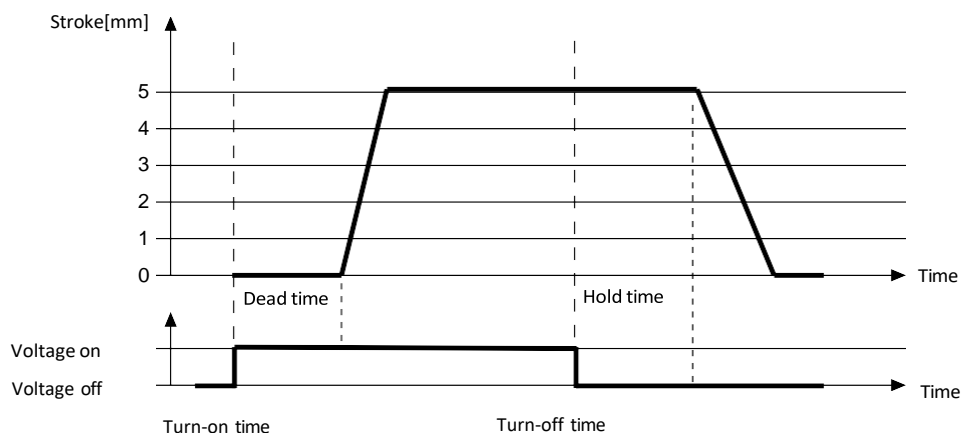
Connection line

The following sheathed cables are recommended for the installation of the system: NYM 1.5 mm²



4 Function

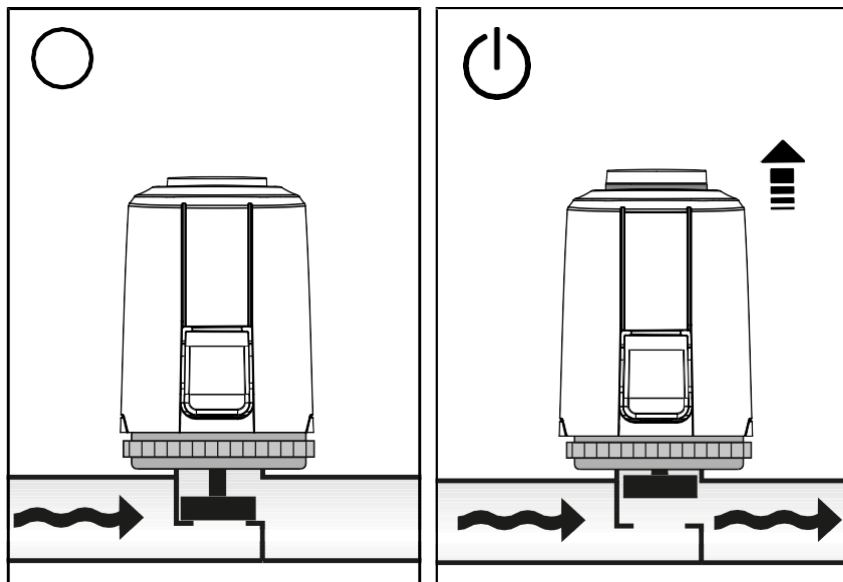
The actuator mechanism uses a PTC resistor-heated expansion unit and a compression spring. The expansion unit is heated by applying the operating voltage and moves the integrated plunger. The force generated by this movement is transferred to the plunger, thus opening the valve. The Function display shows whether the valve is open or closed; this can also be felt in the dark. The Function display extracts when the valve opens.



The valve is opened steadily by the plunger 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 actuating force of the compression spring is matched to the actuating force of commercially available valves and keeps the NO valves closed when de-energized.

4.1 Function display

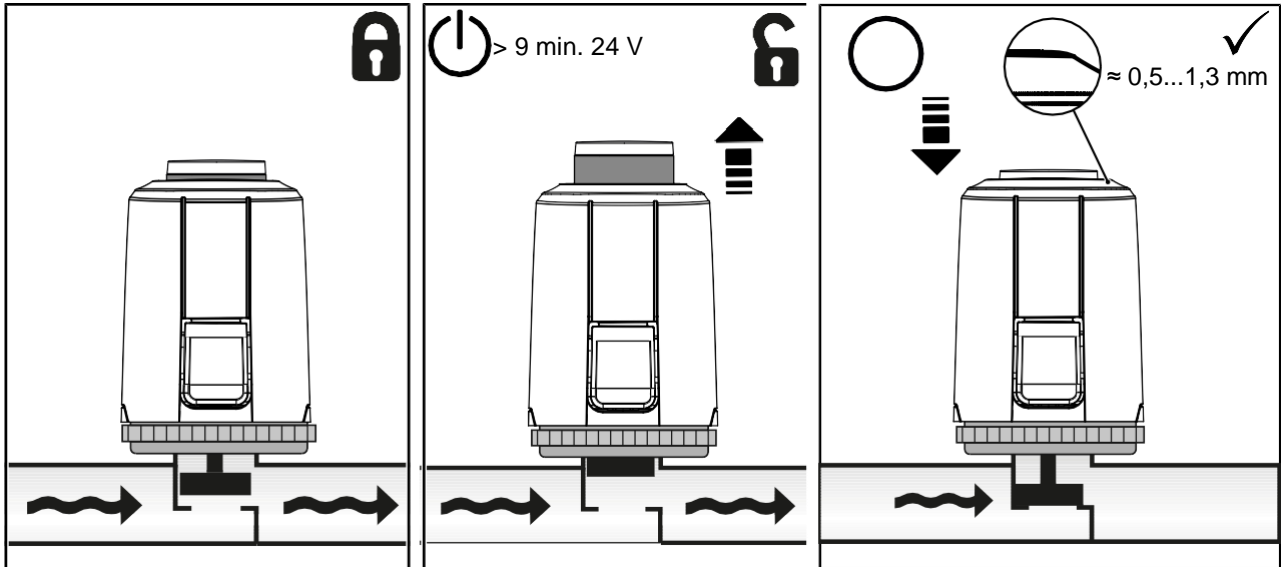
The Function display is directly visible and shows whether the valve is open or closed; this can also be felt in the dark.



- Normally closed (NC): The Function display extracts when the valve opens.

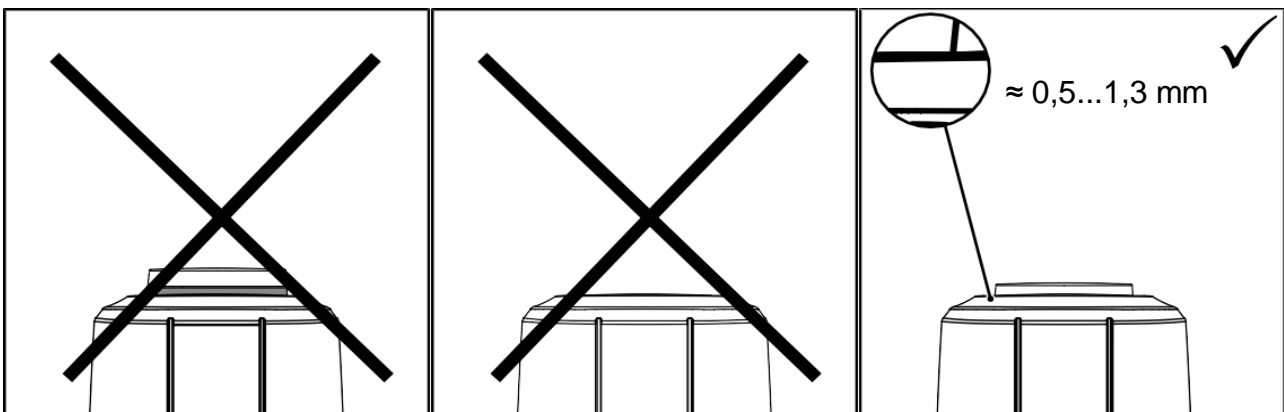
4.2 First Open function

In delivery status, the First Open function allows the actuator to keep the NO valve open without current. The position of the Function display of the actuator is approx. 3 mm in delivery status. This enables heating operation during the carcass construction phase even when the electric wiring of the room-by-room temperature control system is not yet complete. During subsequent commissioning, applying the operating voltage (> 9 min. at 24 V) automatically unlocks the First Open function and the actuator is fully functional.



4.3 Adaptation check

The adaptation of the actuator on the valve after mounting is displayed via the Function display. To do this, the drive plunger must move down to the closing point of the valve. In case of an actuator with First Open function, First-Open must be unlocked. The adjustment is visible depending on the position of the Function display.



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