

MT010-N, MT010-3MN

SMALL LINEAR THERMOELECTRIC ACTUATORS

PRODUCT DATA



Application

MT010-N and MT010-3MN Small Linear Thermoelectric Actuators are used with Honeywell room-temperature controllers for time-coupled modulating regulation of heating and cooling systems. A microprocessor-based positioner guarantees accurate control. The actuators are designed for applications where space is limited.

Suitable valves include:

- the 2-way and 3-way V58xxA/C series of small linear valves with 2.5-mm stroke;
- TRV's V300 and V2000;
- Therafix TRV V2464 and V2474 series with 2.5-3-mm stroke
- Thermostatic radiator V90 valves with connection size M30x1.5.

Features

- Small size allows limited space installation
- Function display
- Reliable long-term operation
- No mounting tools required
- Noiseless operation
- Ready-to-wire connection cable
- Visual valve position indicator furnished with actuator
- M30 x 1.5 connection (other connections available, upon request)
- Fits on specified Honeywell 2&3 valves and Heimeier thermostatic radiator and zone valves and valve inserts for manifolds and compact radiators
- 100% protection in case of leaky valves

Specifications

Average runtime	30 s/mm
Max. stroke	3.5 mm
Stem force	100 N \pm 5%
Ambient temperature	max. 60 °C
Power supply	24 Vac, -20%/+40%, 50...60 Hz
Control signal	modulating 0...10 Vdc
Input resistance	100 k Ω
Initial current	250 mA
Permanent current	83 mA
Power consumption	2 W
Protection standard	IP54
Cable length	1 m
Cable wires	3 x 0.22 mm ² PVC
Suitable valves	See section "Application"

NOTE: Opening and closing times depend upon ambient temperature.

Dimensions

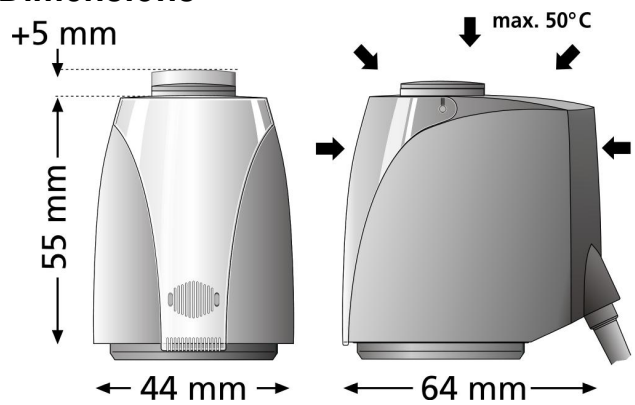


Fig. 1. Dimensions (in mm)

Characteristic

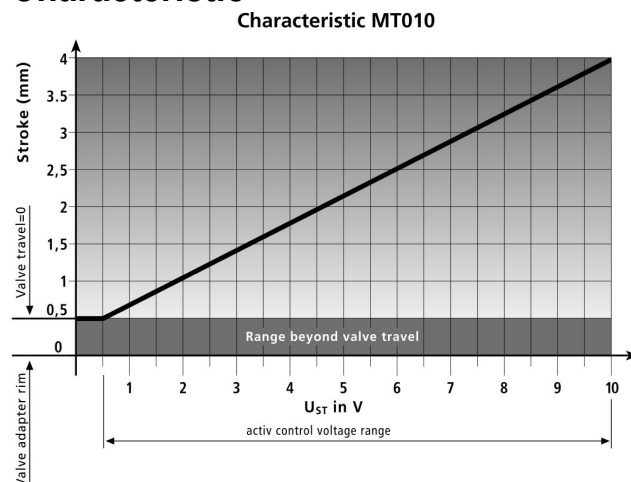


Fig. 2. Characteristic (stroke vs. voltage)

Ordering Information

order number	power supply	control signal	actuator action	cable length
MT010-N	24 V	0...10 Vdc	At 0 V and power loss, actuator extends (2-way valve closes and 3-way valve opens)	1 m
MT010-3MN				3 m

Installation Positions

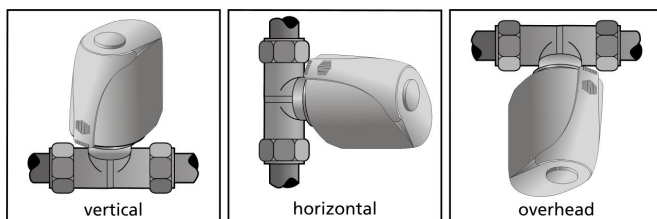


Fig. 3. Installation positions

NOTE: Connection leads must not touch the piping (heat transfer)!

Only a safety-isolating transformer in accordance with EN 60335 may be used. The rated capacity of the transformer must be based on the initial current of the actuators.

Rule of thumb: $P_{\text{TRANSFORMER}} = n \times 6 \text{ W}$ (where "n" = the number of drives)

Assembly

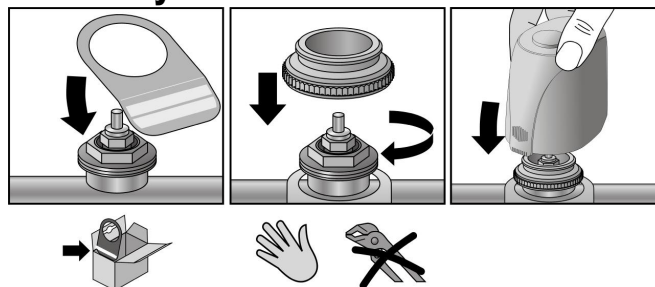


Fig. 4. Assembly

Screw the valve adapter onto the existing valve; hand-tighten. Plug the actuator into the valve adapter until it clicks into place.

Wiring Diagram

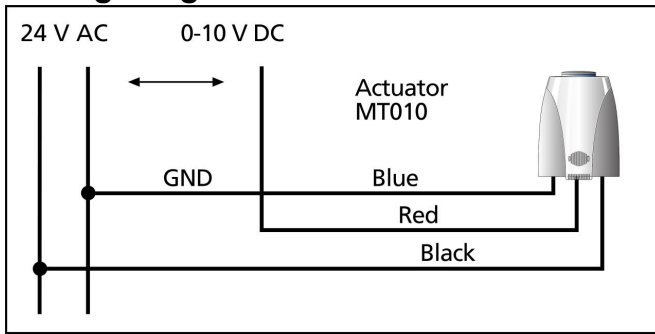


Fig. 5. Wiring diagram

"First Open" Function

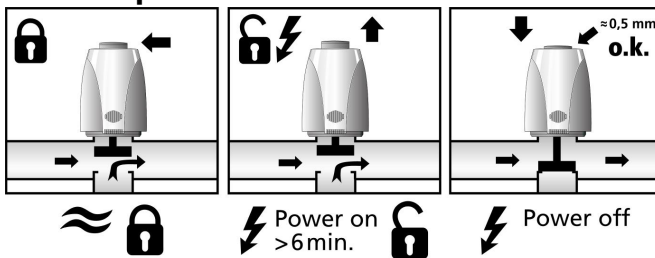


Fig. 6. "First open" function

A calibration process is carried out in order to optimally adjust the actuator to the existing valve each time the operating voltage is applied. During this process, the actuator completely opens and closes the valve, while prominent points are simultaneously stored. The control signal is ignored during this process. After the calibration process, the actuator is ready for use and converts the applied control signal into a proportional stroke.

Adaption Check

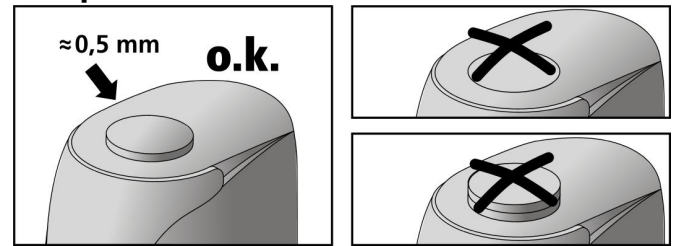


Fig. 7. Adaption check

After the calibration process (drive is stopped), and if no control signal is applied, you can check whether the correct valve adapter is mounted. The stroke cap must be slightly elevated, and you should not see any of the white area.

Auto-Calibration

The closing point (drive is closed) is checked twice daily in the active status ($U_{ST} > 0.5 \text{ V}$). If there is a deviation, then the calibration process is repeated.

Hash (Disturbing Signals)

The actuator reacts only to a control signal $> 0.5 \text{ V}$; this is in order to ignore interference voltage and hum voltage.

Disassembly

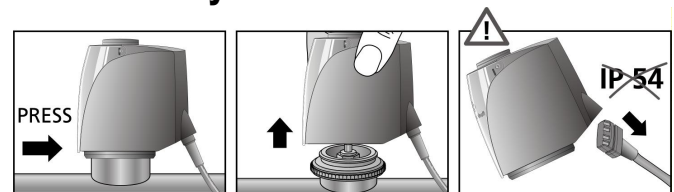


Fig. 8. Disassembly

Honeywell

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