

## MT4-024/MT4-230 MT8-024/MT8-230

### SMALL LINEAR THERMOELECTRIC ACTUATORS

Smart-T

PRODUCT DATA



#### FEATURES

- No mounting tools required (easily mounted using valve adapter)
- Water-protected housing design in all mounting positions
- Pluggable cable for easy installation and servicing
- Auxiliary switch models for driving pumps or fans
- Low power consumption models
- Normally-open and normally-closed models
- Compact design allows installation in limited space
- Visual indicator showing valve position and type of action (NO or NC)
- Noiseless operation
- Reliable long-term operation
- Overload protection (4 kV) for 230 V models

#### SPECIFICATIONS

<b>Max. stroke</b>	MT4: 4 mm MT8: 8 mm
<b>Power supply</b>	MTx-024: 24 Vac/dc $\pm$ 20% MTx-230: 230 Vac +10% ... -15%
<b>Stem force</b>	90 N
<b>Opening/closing time</b>	dependent on ambient temperature (see Table 3)
<b>Ambient temperature</b>	max. 50°C
<b>Electrical specifications</b>	See Table 3 on page 3.
<b>Protection standard</b>	IP44 in all mounting positions
<b>Cable length</b>	1 m, other cable lengths upon request
<b>Cable wires</b>	MTx-xxx: 2 x 0.5 mm <sup>2</sup> MTx-xxxS: 4 x 0.35 mm <sup>2</sup>
<b>Max. permissible auxiliary switch current</b>	MTx-xxxS: 5 (3) A
<b>Medium temperature</b>	max. 120 °C

#### APPLICATION

Smart-T small linear actuators are used in room and zone applications for time-controlled two-point and pulse-width-modulated (PWM\*) regulation of heating and cooling systems such as fan coil units, radiators, floor heating systems, chilled ceilings, and convectors.

- Fit on standard M30 x 1.5 heating/cooling valves, thermostatic radiator valves, and valve inserts for manifolds and compact radiators.
- Special valve adapters on request.

\*Recommended controllers: Excel 10 and Excel 12 controllers (use with other, non-Honeywell controllers may adversely influence PWM-operation).

## ORDERING INFORMATION

**Table 1. Actuators**

order number	action*	additional features	voltage	stroke
MT4-024-NC	normally closed		24 Vac/dc	4 mm
MT4-024-NO	normally open			
MT4-024-NC-2.5M	normally closed	2.5 m cable length		
MT4-024-NO-2.5M	normally open			
MT4-024LC-NC	normally closed	with low power consumption		
MT4-024LC-NO	normally open			
MT4-024S-NC	normally closed	with auxiliary switch		
MT4-024S-NO	normally open			
MT4-230-NC	normally closed		230 Vac/dc	4 mm
MT4-230-NO	normally open			
MT4-230-NC-2.5M	normally closed	2.5 m cable length		
MT4-230-NO-2.5M	normally open			
MT4-230LC-NC	normally closed	with low power consumption		
MT4-230LC-NO	normally open			
MT4-230S-NC	normally closed	with auxiliary switch		
MT4-230S-NO	normally open			
MT8-024-NC	normally closed		24 Vac/dc	8 mm
MT8-024-NO	normally open			
MT8-024-NC-2.5M	normally closed	2.5 m cable length		
MT8-024-NO-2.5M	normally open			
MT8-024LC-NC	normally closed	with low power consumption		
MT8-024LC-NO	normally open			
MT8-024S-NC	normally closed	with auxiliary switch		
MT8-024S-NO	normally open			
MT8-230-NC	normally closed		230 Vac/dc	8 mm
MT8-230-NO	normally open			
MT8-230-NC-2.5M	normally closed	2.5 m cable length		
MT8-230-NO-2.5M	normally open			
MT8-230LC-NC	normally closed	with low power consumption		
MT8-230LC-NO	normally open			
MT8-230S-NC	normally closed	with auxiliary switch		
MT8-230S-NO	normally open			

\*Without power, in combination with standard 2-way valve; "normally closed" = stem extends, "normally open" = stem retracts

**Table 2. Accessories**

order number	description
MT-CLIP	mounting clip, 10 units
MT-CLIP-ATP	mounting clip, with anti-theft protection feature, 10 units
MT-ADAPT-HW	mounting adapter M30 x 1.5, 10 units
MT-ADAPT-HP	mounting adapter for Herz/Polytherm valves, 10 units
MT-CABLE-1.5M	cable suitable for MT4-024/-230/-024LC/-0230LC and MT8-024/-230/-024LC/-0230LC, 10 units
MT-CABLE-2.5M	
MT-CABLE-5M	
MT-CABLE-10M	
EVA10RA	Danfoss-RA adapters, 10 units
HCA1VEL	Mounting adapter for Velta compact manifold

## ELECTRICAL SPECIFICATIONS

Table 3. Electrical specifications

order number	initial current*	permanent current*	power consumption*	min. runtime for full nominal valve stroke	
				4 mm models	8 mm models
MTx-024-xx, MTx-024S-xx	~0.7 A	< 0.1 A	< 3 W	4.0 min	6.0 min
MTx-024LC-xx	~0.2 A	< 0.05 A	< 2 W	6.0 min	7.5 min
MTx-230-xx, MTx-230S-xx	~0.6 A**	0.014 A	3 W	2.5 min	3.5 min
MTx-230LC-xx	~0.4 A**	0.010 A	2 W	3.5 min	5.5 min

\*All values at nominal voltage. \*\*Average during first 500 msec.

## MOUNTING

**NOTE:** Connection leads must not touch piping (heat transfer).

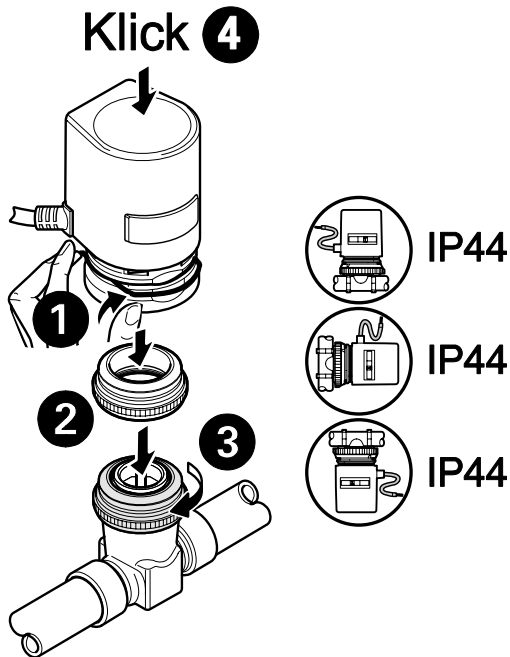


Fig. 1. Mounting / installation positions

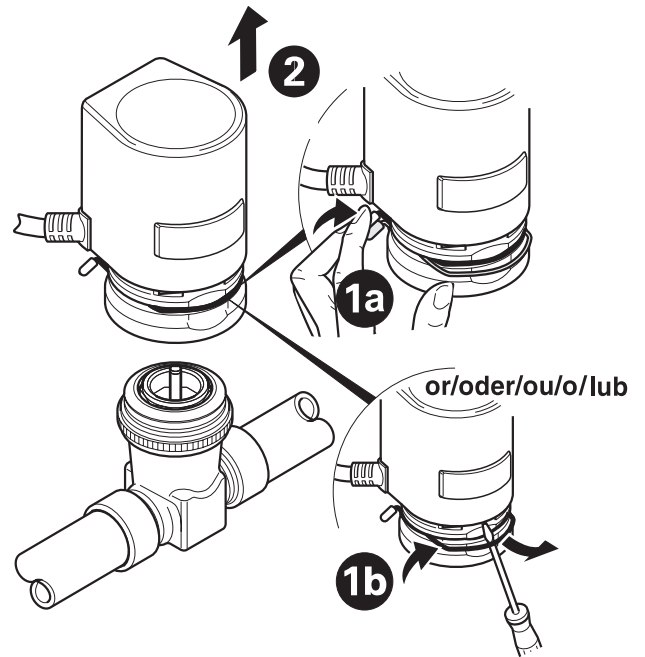


Fig. 2. Dismounting

## FUNCTION

When the operating current is applied, a PTC resistor heats up a wax element. After a delay, this wax element expands, causing stroke movement.

## Position Indicator

The position indicator (the red indicator behind the window on the face of the actuator) shows the model's type of action (NO or NC) as well as the current stroke position.

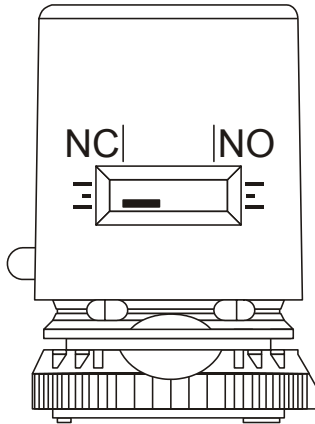


Fig. 3. Position indicator

## WIRING

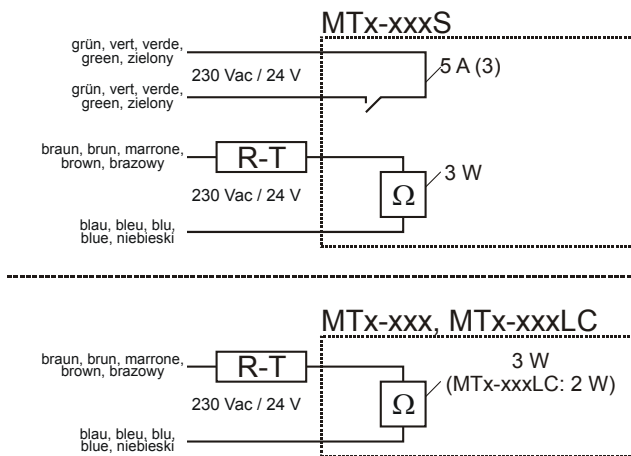


Fig. 4. Wiring diagrams

## Opening and Closing Time

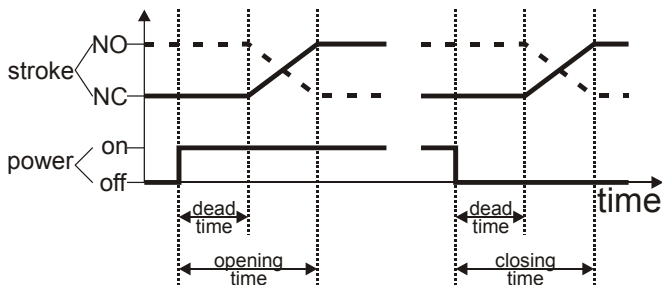
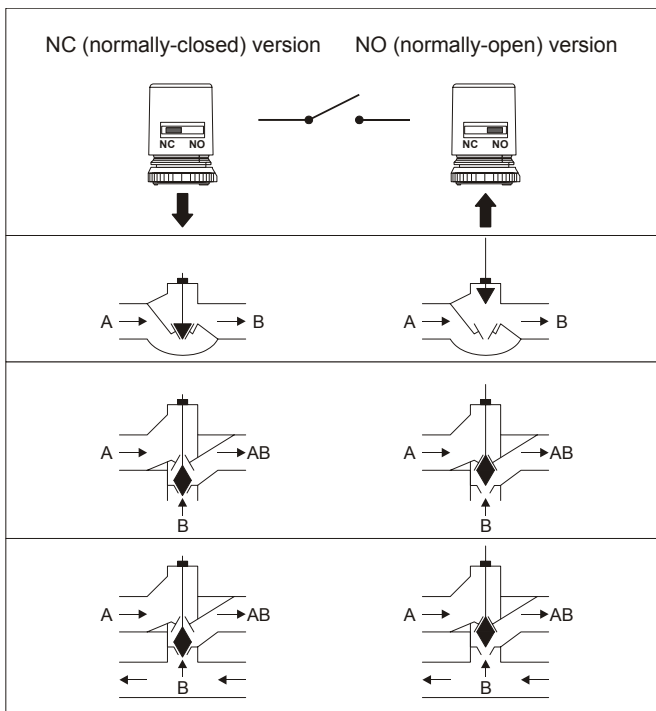


Fig. 5. Opening and closing time

**NOTE:** Opening and closing times depend upon ambient temperature and model.

**Valve Action**

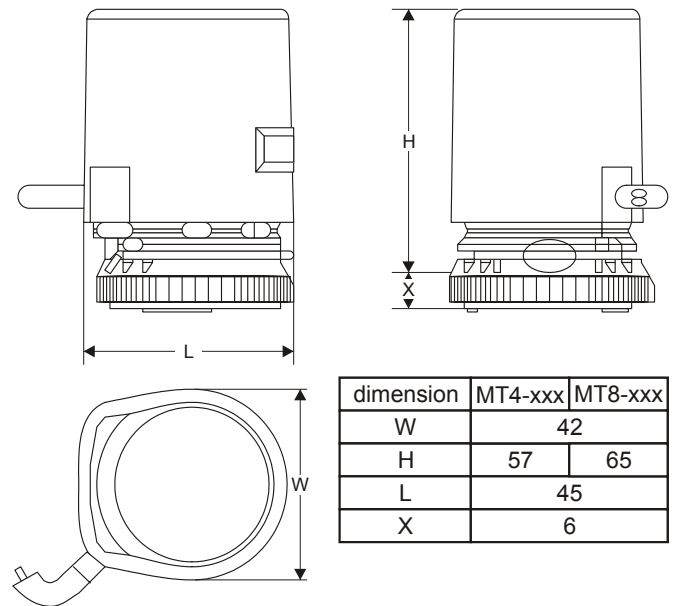


**Fig. 6. Valve action**

Normally open: 2-way valve, A-B open without power;  
 Normally closed: 2-way valve, A-B shut without power;

**NOTE:** Fig. 6 is a schematic diagram showing typical valve action. Actual function can vary depending upon the individual type of valve.

**DIMENSIONS**



**Fig. 7. Dimensions (in mm)**



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