

M400 AND M800 SERIES

Thermoelectric Linear Actuator

The M400 and M800 series thermoelectric linear actuators are designed for short stroke linear valves, such as actuated zone valves, and Pressure Independent Control Valves (PICVs).

The M400 and M800 actuators have built-in high-quality wax. When the units are powered, the sealed wax container is heated, and the wax expands. The expanded wax moves the pushrod to adjust the valve to its fully open or fully closed position, depending on the actuator model.

Normal Open (NO) and Normally Closed (NC) versions exist. Normal Open (NO) actuators move the valve stem up when power is removed. Normally Closed (NC) actuators move the valve stem down when power is removed. When power is removed, the heat source cools, which causes the wax to cool and shrink, returning the actuators to their normal position.

EASY TO INSTALL

M400 and M800 series actuators are very easy to install. Simply screw the actuator onto the 30 mm thread on the valve until fully seated. Models with 1 meter and 2.5 meter cables are available for convenient on-site connection.

WATER-PROTECTED HOUSING DESIGN

The M400 and M800 actuators comes with water-protected housing to provide protection in all mounting positions..



FEATURES AND BENEFITS



No mounting tools required



Visual indicator showing valve position



Compact, lightweight, and smart design allows installation in limited space



Actuators offer noiseless and reliable long term operation



Quick and cost-effective installation process

TECHNICAL SPECIFICATIONS

PARAMETER	SPECIFICATION
Thrust force	100 to 140 N
Power Supply	24 Vac/Vdc \pm 10% 230 Vac \pm 10%
IP rating	IP54
Wiring	Without auxiliary switch: 2 x 0.5 mm ² With auxiliary switch: 4 x 0.5 mm ²
Wire Length	1 m or 2.5 m (models ending with 2.5 m)
Valve Connection	M30 x 1.5
Operating environment	-5 to 60 °C, 0 to 90% RH
Housing material	PA66+15%GF

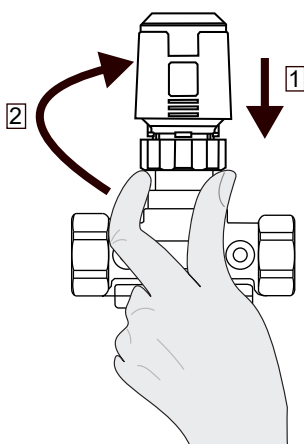
ORDER INFORMATION AND PARAMETERS

MODEL NUMBER	STROKE	ACTION	AUXILIARY SWITCH	POWER VOLTAGE	INITIAL CURRENT*	PERMANENT CURRENT*	POWER CONSUMPTION*	RUN TIME**
M400-AG M400-AG-2.5M	4.5 mm	NC	NO	24 Vac/dc	<100 mA	<100 mA	2 W	5 \pm 1.5 min
M400-BG M400-BG-2.5M	4.5 mm	NC	NO	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M400-AO M400-AO-2.5M	4.5 mm	NO	NO	24 Vac/dc	<250 mA	<100 mA	2 W	5 \pm 1.5 min
M400-BO M400-BO-2.5M	4.5 mm	NO	NO	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M400-AGE-2.5M	4.5 mm	NC	YES	24 Vac/dc	<250 mA	<100 mA	2 W	5 \pm 1.5 min
M400-BGE-2.5M	4.5 mm	NC	YES	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M400-AOE-2.5M	4.5 mm	NO	YES	24 Vac/dc	<250 mA	<100 mA	2 W	5 \pm 1.5 min
M400-BOE-2.5M	4.5 mm	NO	YES	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M800-AG M800-AG-2.5M	8.0 mm	NC	NO	24 Vac/dc	<300 mA	<100 mA	2 W	5 \pm 1.5 min
M800-BG M800-BG-2.5M	8.0 mm	NC	NO	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M800-AO M800-AO-2.5M	8.0 mm	NO	NO	24 Vac/dc	<300 mA	<100 mA	2 W	5 \pm 1.5 min
M800-BO M800-BO-2.5M	8.0mm	NO	NO	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M800-AGE-2.5M	8.0 mm	NC	YES	24 Vac/dc	<300 mA	<100 mA	2 W	5 \pm 1.5 min
M800-BGE-2.5M	8.0 mm	NC	YES	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min
M800-AOE-2.5M	8.0 mm	NO	YES	24 Vac/dc	<300 mA	<100 mA	2 W	5 \pm 1.5 min
M800-BOE-2.5M	8.0 mm	NO	YES	230 Vac	<250 mA	<10 mA	2 W	3.5 \pm 1.5 min

* All values at nominal voltage 24 Vac/dc, 230 Vac, 50 Hz, and ambient temperature: 30 °C

** Value at ambient temperature: 30 °C , the first full stroke has run time longer than normal.

MOUNTING



Tighten the connection union as shown below. Do not use additional tools as they may damage the actuator.

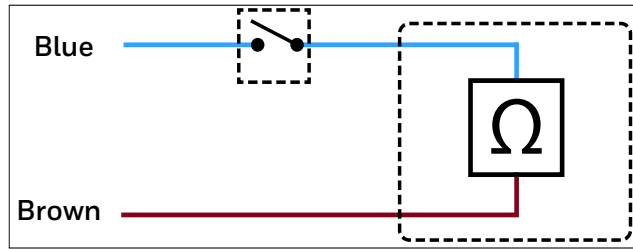
Note: Connection leads must not touch piping (heat transfer).

WIRING DIAGRAM

ACTUATORS WITHOUT AUXILIARY SWITCH (FOR BELOW LISTED MODELS)

MODEL NUMBER

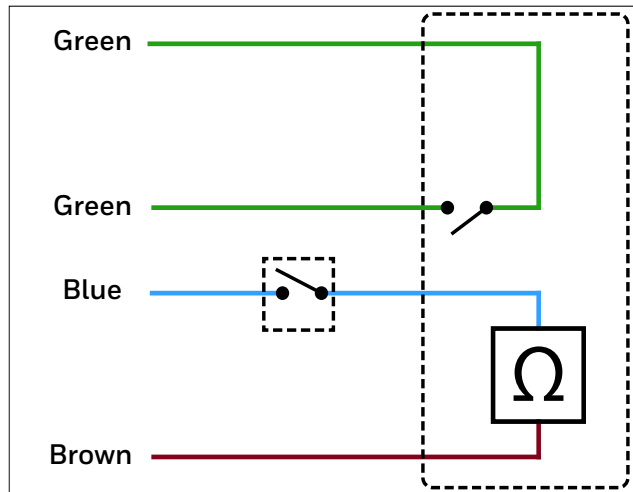
M400-AG	M400-AG-2.5M
M400-BG	M400-BG-2.5M
M400-AO	M400-AO-2.5M
M400-BO	M400-BO-2.5M
M800-AG	M800-AG-2.5M
M800-BG	M800-BG-2.5M
M800-AO	M800-AO-2.5M
M800-BO	M800-BO-2.5M



ACTUATORS WITH AUXILIARY SWITCH (FOR BELOW LISTED MODELS)

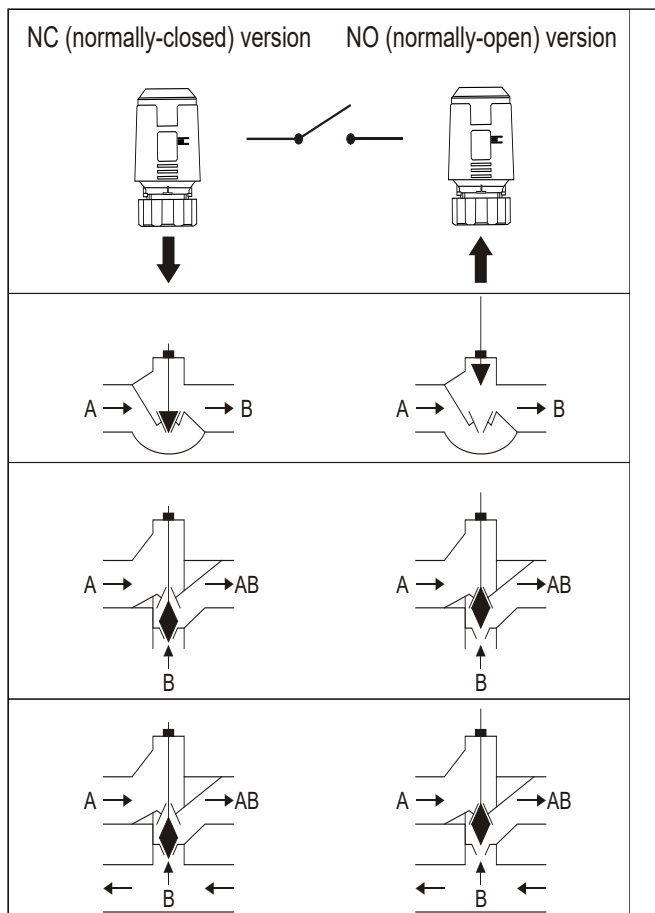
MODEL NUMBER

M400-AGE-2.5M	M800-AGE-2.5M
M400-BGE-2.5M	M800-BGE-2.5M
M400-AOE-2.5M	M800-AOE-2.5M
M400-BOE-2.5M	M800-BOE-2.5M

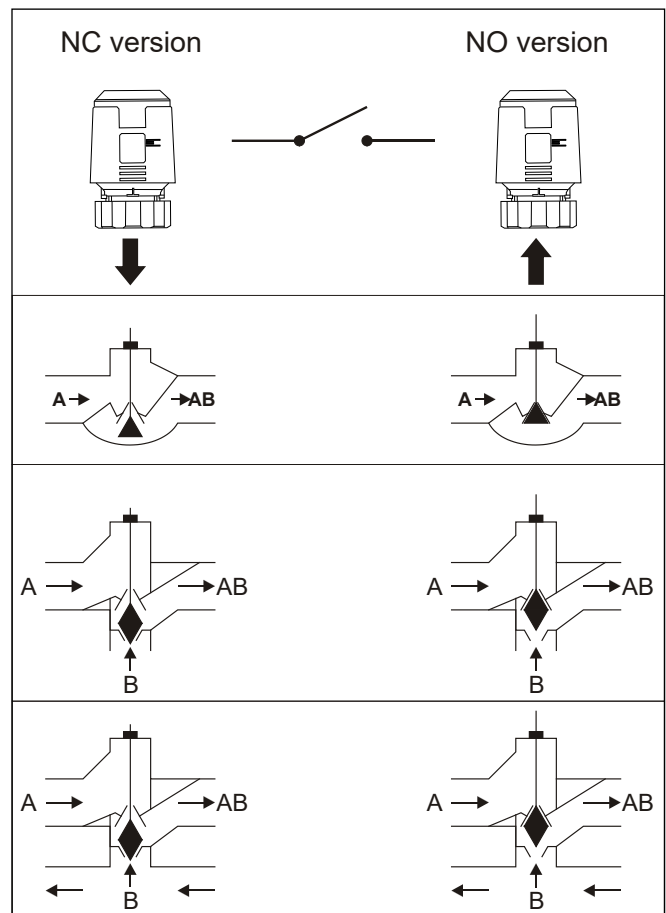


VALVE ACTION

Valve Action with "Typical" Valves

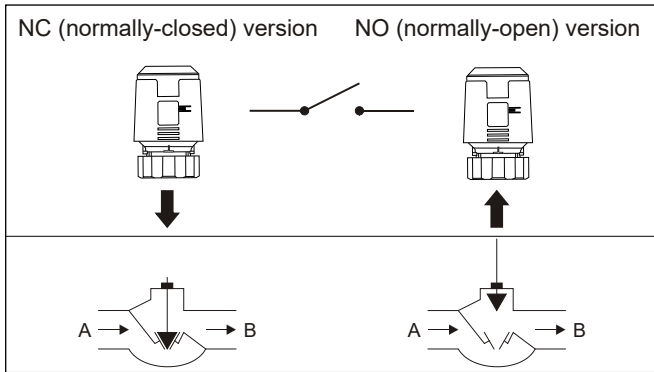


Valve Action with VSxx Valves

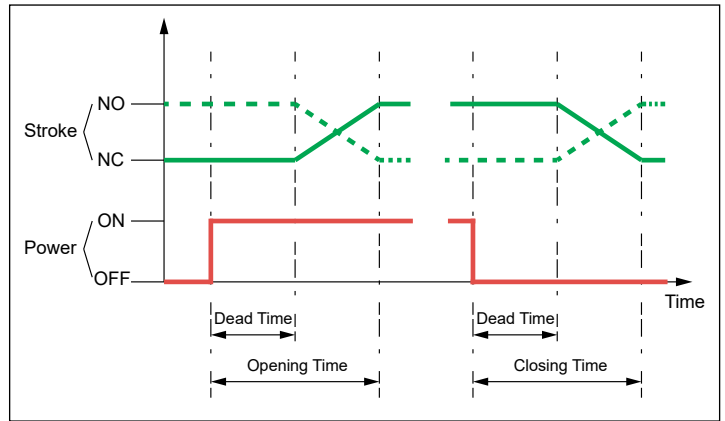


VALVE ACTION

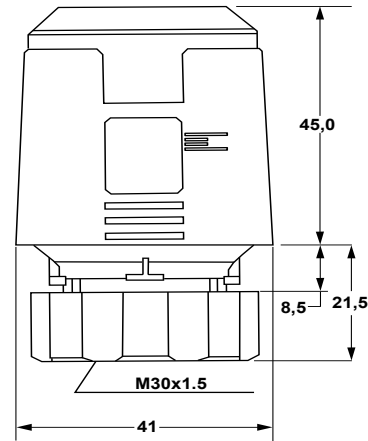
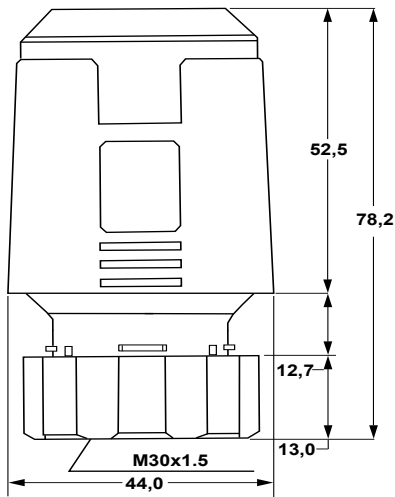
Valve Action for Pressure Independent Control Valves (PICVs)



OPEN AND CLOSE TIME



DIMENSIONS



MODEL NUMBER

M400-AGE-2.5M	M800-AG-2.5M	M800-AGE-2.5M	M800-AG
M400-BGE-2.5M	M800-BG-2.5M	M800-BGE-2.5M	M800-BG
M400-AOE-2.5M	M800-AO-2.5M	M800-AOE-2.5M	M800-AO
M400-BOE-2.5M	M800-BO-2.5M	M800-BOE-2.5M	M800-BO

MODEL NUMBER

M400-AG	M400-AG-2.5M
M400-BG	M400-BG-2.5M
M400-AO	M400-AO-2.5M
M400-BO	M400-BO-2.5M

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31-00546M-02 | 03/23

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