

Areas of use

The Macon Motorized Actuator can be used on all Macon Valves (NT series 2-way valves, EDV 3-way mixing valves, EKV cooling valve and OPSK one pipe steam valve). For controllers with continuous output in conjunction with single-room control systems. Automatic valve adjustment and intelligent cut-off for maximum energy efficiency.



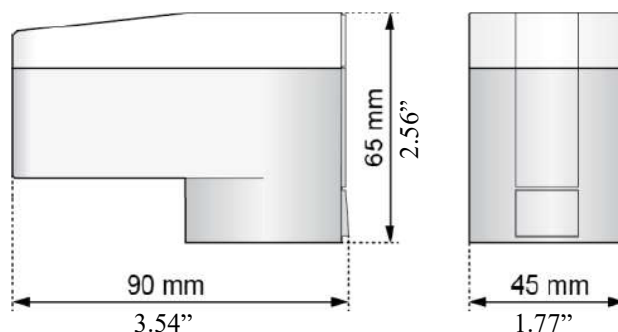
**ELECTRIC
OPERATORS**

Design Specifications	
Casing	Two-piece plastic housing, light grey RAL7035 Polyamide
Casing Cover	Transparent Polycarbonate
Cable	White, 1.0 m long, 3 x .22 mm ²
LCD (H x W)	10 x 20 mm
LED	Multicolored - LED
Fitting position vertically upright to horizontal, not upside down.	

Technical Data	
Operating Voltage	24V AC/DC, $\pm 20\%$, 50 - 60 Hz
Operating Power	2.6 VA / 1,4 W
Max Power Consumption	< 110 mA
Standby Power Consumption	< 10 mA
Feedback Signal	100 k Ω
Control Signal	0V - 10 V
Stroke	8.5 mm
Force	Standard 125 N $\pm 20\%$
Regulating Time	15 s/mm
Storage Temperature	-4°F - 158°F
Ambient Temperature	-32°F - 122°F
Weight	0.34 lb
Max operating temperature	212°F at the valve
Ingress protection	IP 54 (EN 60730)
Protection class	III



Measurements



Start-Up

When being put into service (with valve fitted), the actuator moves to both end positions and stores the associated increments. It finds the closing mode and then the maximum position, then the actuator increases and decreases quickly to find the valve spindle stroke. If it does not detect the stroke of the valve, the actuator will use a stroke of 8.5mm. If the actuator loses power or receives a reduced voltage, a new calibration will be made. The calibration is done in about 15 minutes.

LED Display

- The motorized actuator MOVE is equipped with a multi-colored LED for the signaling of operating statuses.
- Green and red are used as signal colors. Signaling is only performed if the valve drive is supplied with operating voltage.
- Error conditions are indicated with steady red light.

LC Display

- The motorized actuator MPV alternately shows the setting position and the applied control voltage. In case of a control requirement, the current driving direction is shown in the LC display by means of an arrow.
- In case of an error, the corresponding error code is shown and the error is indicated by a steadily lighted LED.

NOTE! The mechanical play between actuator and valve adapter and the gear in the actuator is recognized as valve travel. This affects the position indicator and the control bandwidth is minimally reduced. In contrast to the actual valve stroke, thus an approx. 1 mm higher valve stroke is shown in the display.

Error Codes

Queued errors are indicated by an error code. The subsequent table explains the different error codes and error corrections.

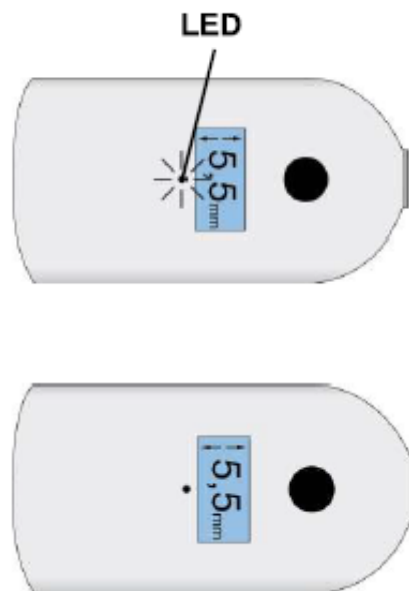
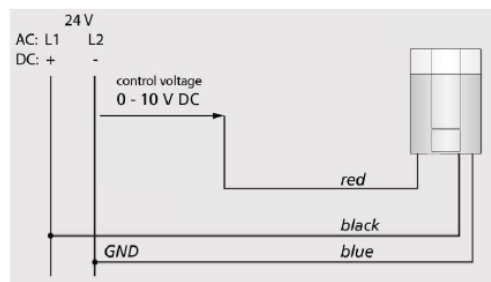
E6 - Irregular position is determined

The actuator has to be disconnected from the power supply and the control shaft must be moved with the manual setting from the end position. After the power resumes, the initialization starts again. If the error recurs, contact factory.

E8 - Indicates an internal error

The actuator will perform a re-initialization after 10 seconds. If the error cannot be corrected automatically after a maximum of three attempts, there is a permanent error displayed. Contact factory.

Connection line



Operation

The motorized actuator MPV is performed by a 0-10 V DC control signal from a room thermostat or a building management system. After switching on the power supply, the actuator initializes. The initialization of the actuator determines the mechanical stroke of the actuator. In this period the display alternately shows "In" (for initialization) and the control voltage applied to it.

First, the valves pressure plate is fully retracted, whereby the upper end-stop of the drive is determined. Following the valve plate extends fully and determined the bottom end stop. The closing point of the valve is detected.

Next, the valve stroke recognition will happen. The actuator moves with high speed to the upper position and back to the lower position slowly, in order to determine the valve stroke. In case of not sensing the valve, the actuator will work with the factory setting stroke (8,5 mm)

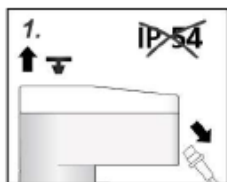
The stroke of the valve can be changed in practice by different conditions. The valve was adjusted, or the actuator was mounted to a new valve. In both cases, the data obtained at the initialization values has changed. Thus, the actuator adjusts to the new valve stroke, the power supply and the control voltage must be interrupted briefly. After the power has been switched on again, the actuator performs the re-initialization phase.

NOTE! For initialization MPV needs about 15 minutes.

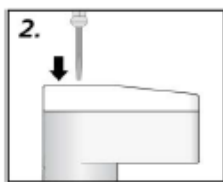
The motorized actuator MPV is performed by a 0-10 V DC control signal from a room thermostat or a building management system. The control signal allows a precise activation and positioning of the actuator. A 0-10 V or PWM signal can be applied to the control voltage input for control purposes.

Manual Valve Setting

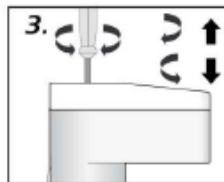
The manual valve setting allows to bring the valve pressure plate to the desired position in de-energized status. This facilitates maintenance and installation.



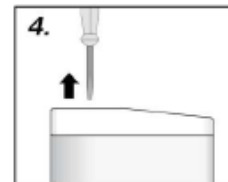
1. Remove the protective plug and the connection line, or switch off the voltage supply.



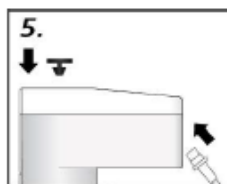
2. Insert a screwdriver (0,3 x 2 mm).



3. Turn to the right or left for extracting or retracting, respectively.



4. Remove the screwdriver after reaching the desired position.



5. Install the protective plug and connect the connection line.

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