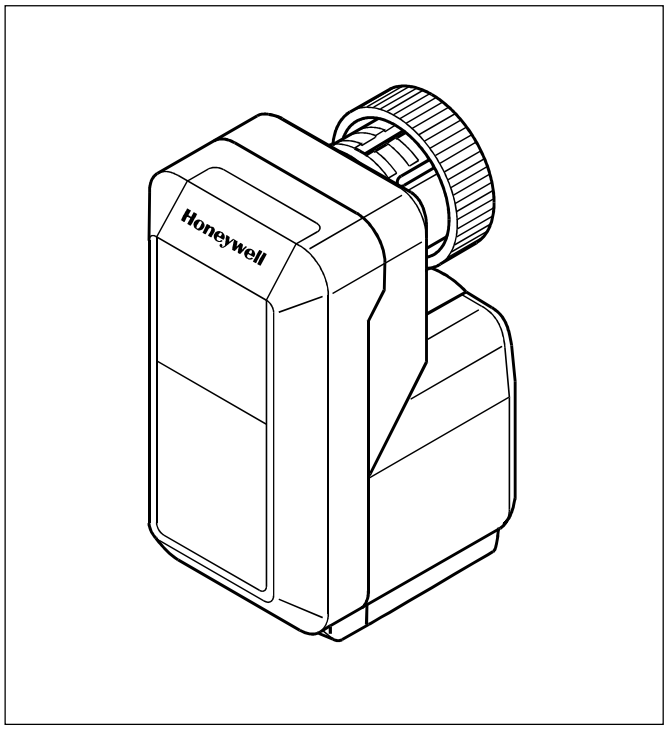
Honeywell

M7410 A/C/E
Small Linear Actuators

FOR FLOATING/MODULATING CONTROL

PRODUCT DATA



Features

- **M7410 A and C suitable for three-position modulating control without proportional feedback**
- **M7410 E suitable for 0...10V and 2...10V controller output signal (adjustable on site)**
- **Small size allows installation where space is limited**
- **Low power consumption**
- **Reliable longtime operation because mechanical feedback potentionmeters and mechanical endswitches are not required**
- **Magnetic coupling for stem force limitation and self-adjustment of the close-off point**
- **Supplied with pre-wired connection cable**
- **Simple, standardized M30 x 1,5 valve/actuator coupling – no tools required for mounting**
- **Visual valve position indicator furnished with actuators**

Application

The Honeywell actuators M7410 A, M7410 C and M7410 E provide floating or modulating control of specified Honeywell V9xxx Series small linear valves.

They are used in fan coil units, induction units, small re-heaters and recoolers and for zone control applications. They are employed in electronic temperature control systems using hot and/or cold water as controlled medium.

M7410 actuators are suitable for Honeywell Excel Series controllers as well as for Honeywell individual room temperature controllers. These controllers track the precise valve position by counting the number of individual control pulses which move the valve from one position to another. For this reason, the actuators do not need endswitches or a feedback potentiometer. The absence of these mechanical components ensures longtime reliability.

M7410 A and M7410 C actuators are also compatible with any controller providing intelligent position control and having a built-in shut-off function.

The **M7410 E** actuator is fully compatible with all controllers providing 0...10V or 2...10V output signals. A microprocessor-based high-performance positioner guarantees accurate control. Due to an automatic synchronization function the close-off point is self-adjusting. Based on a running time of 150 s, valve positioning and flow adjustment is very exact. The M7410 E also has no mechanical feedback potentiometer or mechanical endswitches

M7410 Series actuators are well suited for applications where space is limited and minimum power consumption is required. The actuators are both attractive and robust in design.

M7410 E additional features

- **Microprocessor based positioner ensures precise stem positioning**
- **Easy-to-operate direct /reverse acting switch**
- **Simple input signal override (e.g. for frost-protection function)**
- **0...10V or 2...10V signal selection by switch**

(EN0H-0218GE25 R0501)

Specifications

Type	M7410 A	M7410 C	M7410 E
Control type	floating (3-pt)	floating (3-pt)	modulating
Input voltage	24 Vac; +10%...-30%; 50/60 Hz	24 Vac; +10%...-30%; 50/60 Hz	24 Vac; +15%...-15%; 50/60 Hz
Power consumption	0,7 VA	0,7 VA	1,4 VA
Stroke	2,5 mm	6,5 mm	6,5 mm
Running time	60 s at 50 Hz 50 s at 60 Hz	150 s at 50 Hz 125 s at 60 Hz	150 s at 50 Hz 120 s at 60 Hz
Stem force	90 N	180 N	180 N
Protection standard	IP43 in accordance with EN 60529	IP43 in accordance with EN 60529	IP42 in accordance with EN 60529
Insulation class	III in accordance with EN 60730	III in accordance with EN 60730	III in accordance with EN 60730
Connection cables	0,9 or 3,0 m (3,0 or 9,8 ft)	1,5 m (4,9 ft)	1,5 m (4,9 ft)
Ambient operating temperature	0...60°C (32...140°F)	0...60°C (32...140°F)	0...55°C (32...131°F)
Housing type	A	A	B
Weight	0,4 kg	0,4 kg	0,4 kg
Suitable valves		– see table on page 44 –	
Manual operation	by valve protection cap only	by valve protection cap only	by valve protection cap only

Dimensions

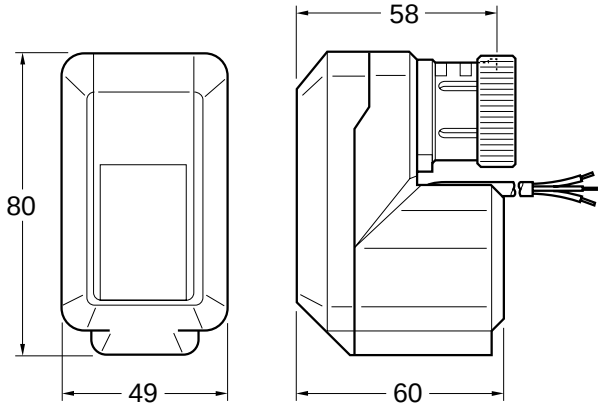


Fig. 1. Dimensions housing type A

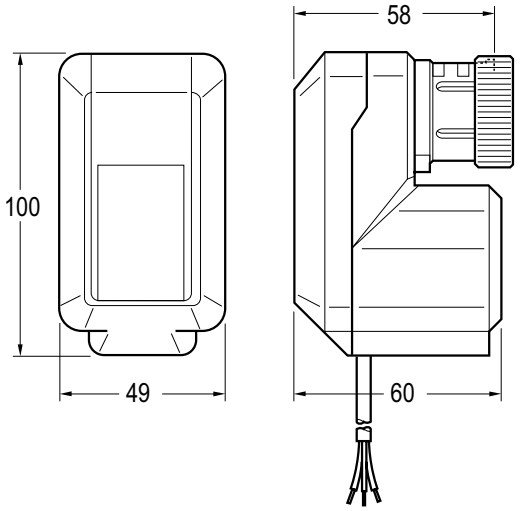


Fig. 2. Dimensions housing type B

NOTE: All dimensions in mm.

Ordering Information

Type	Control type	Stem force	Housing type	Cable length	OS-No.
M7410 A	floating	90 N	A	0,9 m (3,0 ft)	M7410A1001
	floating	90 N	A	3,0 m (9,8 ft)	M7410A-SL
M7410 C	floating	180 N	A	1,5 m (4,9 ft)	M7410C1007
M7410 E	modulating	180 N	B	1,5 m (4,9 ft)	M7410E1002

Function

M7410 A, C and E: The movement of the electric actuators is produced by a screw spindle which is driven in both directions by a synchronous motor through a set of gears. A magnetic clutch limits the torque of the gear assembly and the driving force of the actuators. The actuators are fixed to the valve body by means of a coupling ring requiring no tools for mounting. The actuators are maintenance-free and supplied completely with a ready-to-wire connecting cable

M7410 E only: A microprocessor-based high-performance positioner guarantees accurate control. The close-off position is self-adjusting by means of an automatic synchronization function. Synchronization is carried out each time the stem reaches 0% or 100% of its travel. For synchronization the Y input signal has to be set to 0/2V or 10V. Synchronization is not carried out after power failure as the actuator still has the same output signal after common short-period power failures.

For manual synchronization a switch for the signal input has to be shifted with a pause of 1...3 s or the Y input has to be overmodulated with 0 or 10V.

Mounting position

The actuator may only be mounted beside or above the valve. Adjust the valve in the right position before mounting the actuator.

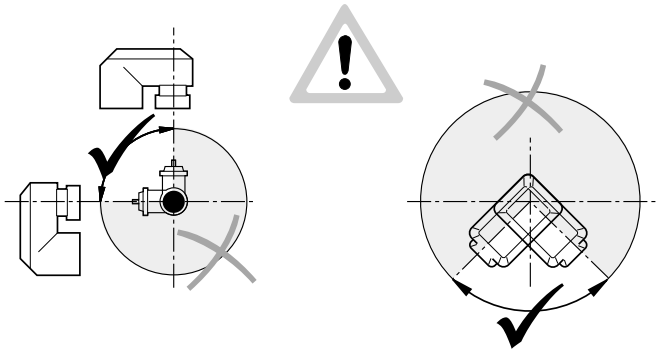


Fig. 3 Mounting positions

Mounting

Before the actuator is fixed to the valve, the protection cap must be removed (Fig. 4). Make sure that the actuator is in the retract position (factory supplied position) before fixing the actuator to the valve body.

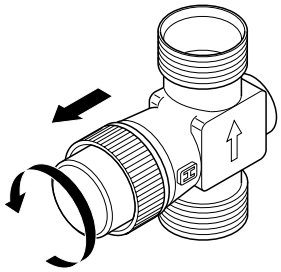


Fig. 4 Remove protection cap

The actuator must be mounted by hand. Don't use tools or additional force because actuator and valve may be damaged.

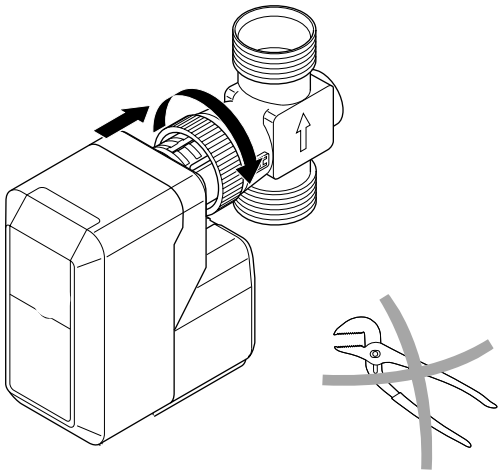


Fig. 5 Mounting the actuator

Switch selection (M7410 E only)

The built-in selector switches must be set according to the valve type (2-way or 3-way), valve size and the controller output signal (0...10V or 2...10V), see Fig. 6.

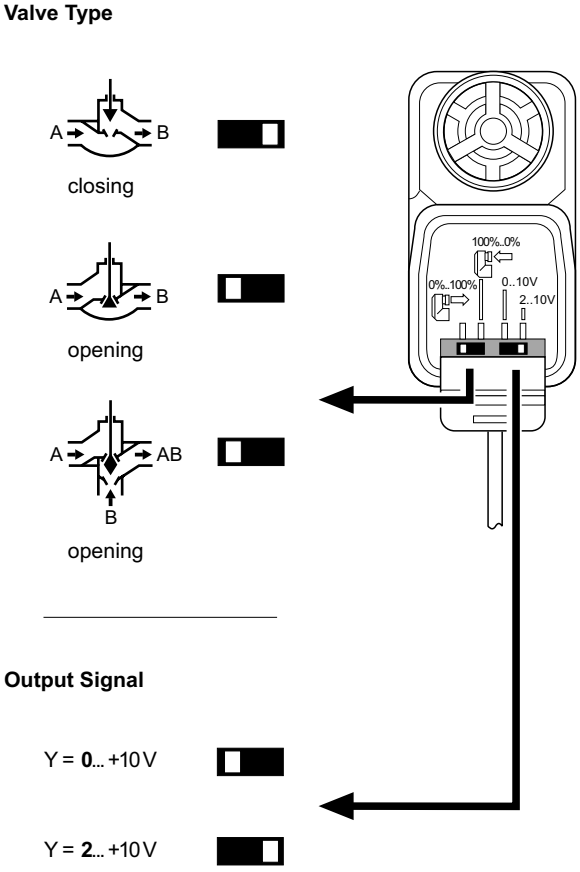


Fig. 6. Selecting valve type and output signal

Electric wiring

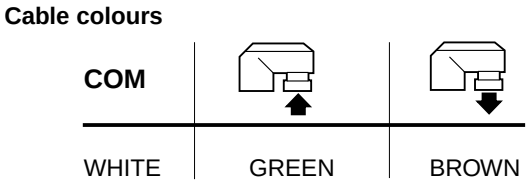


Fig. 7. Electric wiring of motor

Input signal override (M7410 E only)

To override the controller output signal, the input signal must be connected to COM (0%) or 24V (100%) using an external switch (see Fig. 8).

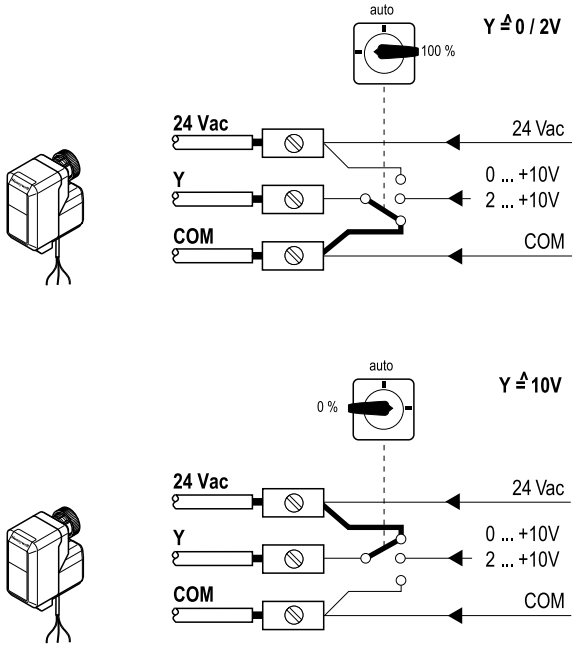


Fig. 8. Connection of input switch

Commissioning advice

A functional check of the M7410 A and C actuators can be carried out by changing the controller setpoint by 5°C or more (M7410 A and C) or by changing the Y input signal (M7410 E). The movement of the actuator stem (Fig. 9) indicates whether the valve is opening or closing.

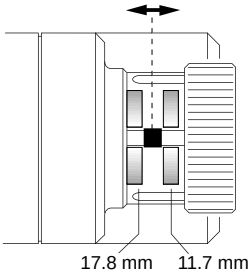


Fig. 9. Movement of actuator stem

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