resideo

Linear Actuators
M5410 C1001/L1001

Small ON/OFF linear valve Actuator

APPLICATION

The Resideo M5410C1001 and M5410L1001 actuators are designed specifically to provide ON/OFF control in conjunction with the VDE, VXE, VYE small linear valves PN16.

The M5410C1001 and M5410L1001 actuators are suitable for use in all kinds of fast-acting ON/OFF control systems, including boiler and solar systems, fan coil units, induction units, small reheaters, and recoolers as well as for zone control applications. They are employed in electronic temperature control systems using hot and/or cold water as the controlled medium. They are operated by an SPST signal.

SPECIAL FEATURES

- Suitable for ON/OFF control without feedback.
- Short runtime.
- Electronic switch-off in the end position ensures longterm reliability and saves energy.
- Furnished with prewired connection cable.
- Simple, standardized valve/actuator coupling – thus, no tools required for mounting.
- Small size allows installation where space is limited.
- High resistance to glycol and other chemicals.

TECHNICAL DATA

Specifications	
Control mode:	ON/OFF
Stroke:	6.5 mm
Runtime (push/pull):	< 5 s in both directions under temperature and force variation
Stem force:	90 N (minimum)
Protection standard:	IP54
Protection class:	II
Connection cable:	1.5 m
Max. cable length:	See chapter “Wiring”
Weight:	0.2 kg

Electrical specifications	
Power supply:	M5410C1001: 24 V AC ±20 %, 50 Hz; 24 VDC +20 %...-10 % M5410L1001: 100-253 V AC 50Hz/60Hz M5410L1001-FP: 230 V AC +10 %...-15 %, 50 Hz
Power consumption:	M5410C1001: <8 W during operation <0.5 W in end position M5410L1001: <8.5 W during operation <0.5 W in end position
Input signal:	M5410C1001: <10 mA M5410L1001: 1 mA

METHOD OF OPERATION

The actuator movement is produced by a screw spindle driven in both directions through a set of gears by a d.c. motor. The motor is switched OFF electronically when the actuator has built up the closing force. The actuator is fixed to the valve body by means of a coupling ring requiring no tools for mounting. The actuator is maintenance-free and furnished complete with a ready-to-wire connecting cable.

Suitable Valves

- VDE (DN15/20/25), VXE (DN15/20) , VYE (DN15/20/25), PN16
- VXE (DN25), PN16, version with external thread and conical sealing

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Min. ambient temperature:	0 °C
Max. ambient temperature:	60 °C

INSTALLATION GUIDELINES

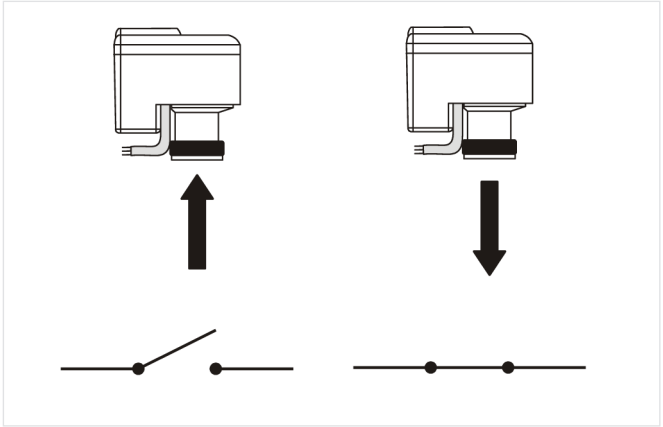
The actuator may be mounted only either beside or above the valve. Adjust the valve in the proper position before mounting the actuator.

Remove the adjustment cap before fixing the actuator to the valve. For easy mounting, ensure that the actuator is in the "retracted" (factory-supplied) position before fixing the actuator to the valve body.

The actuator must be mounted by hand. Do not use tools or additional force, as that could damage the actuator and valve.

Action

Closing the contact at the brown cable will drive the actuator to the "extended" position. Upon opening the contact, the actuator will drive back to the "retracted" position.



Wiring

M5410L1001

CAUTION!

Newer models (identified by the subscript "2" at the end of the model number appearing on the manufacturer's plate, e.g., "M5410L10012") are protected against miswiring. Incorrect wiring will damage older models (lacking the subscript "2" or later).

The electrical installation must comply with Figure Electrical wiring M5410L1001.

The maximum permissible cable length (use 3 x 1.5 mm^2) between the actuator and the controller is 40 m. If a suppression capacitor (max. 1.5 nF) has been installed in the line, the max. permissible cable length is 15 m. Exceeding this limit will result in actuator malfunction.

Older models (lacking the subscript "2" or later) should not be wired in parallel with newer models (e.g., "M5410L10012"), as the older models will then not function properly.

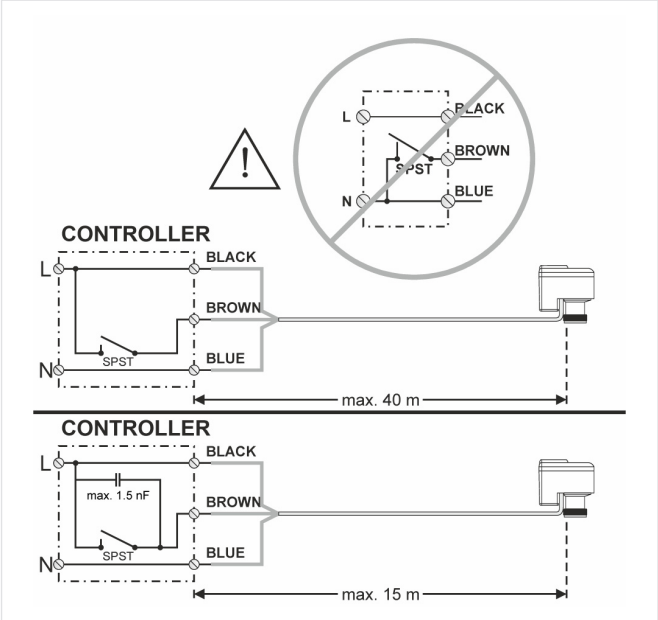


Fig. 1 Electrical wiring M5410L1001

M5410C1001

The electrical installation must comply with Figure Electrical wiring M5410C1001.

CAUTION!
In case of power failure, the actuator M5410C1001 will not necessarily stay at its current position. Rather, the actuator stem will retract to an extent depending upon the remaining charge in the actuator's capacitor. Thus, in the case of a "stem-up-to-open" valve, the valve may open slightly, allowing a minimum circulation of fluid in the system. Please NOTE that this is not a guaranteed safety function like that offered by a spring-return actuator!

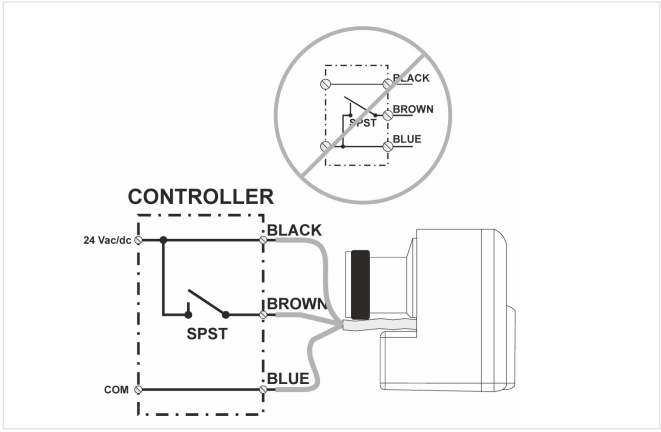


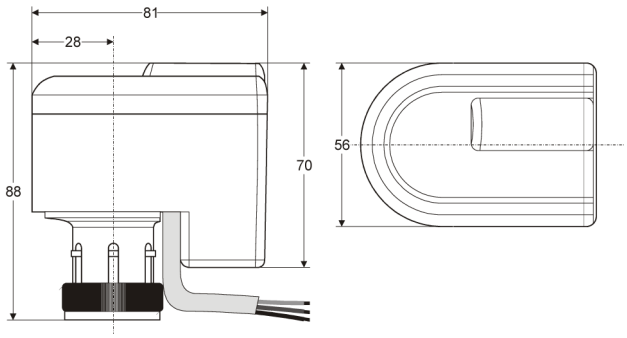
Fig. 2 Electrical wiring M5410C1001

M5410L1001-FP

CAUTION!
In case of power failure, the actuator M5410L1001-FP stem retracts. In case the actuator is in stem extend position the actuator shall move in direction retract to partly open valve to enable circulation of the water. This is applicable to actuator mounted on typical valve, spring load pushing valve cartridge to fully extended position (movement in the range 0.8 mm - 3 mm at room temperature). Please NOTE that this is not a guaranteed safety function like that offered by a spring-return actuator!

DIMENSIONS

Overview



Note: All dimensions in mm unless stated otherwise.

ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice.
When ordering, please always state the type, the ordering or the part number.

Options

Action at open contact	Power fail action	Power supply	Stroke	Stem force (min.)	Order number
Stem retracts	-	24 V AC	6.5 mm	90 N	M5410C1001
Stem retracts	-	100 - 253 V AC	6.5 mm	90 N	M5410L1001
Stem retracts	Stem retracts	230 V AC	6.5 mm	90 N	M5410L1001-FP

Manufactured for
and on behalf of

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