

# ON/OFF ELECTROTHERMIC ACTUATORS 22C SERIES



## MAIN FEATURES

- 22C series available in the following versions :
  - NA (Normally open)
  - NC (Normally closed)
  - 2-wire (Standard)
  - 4-wire (With auxiliary contact)
  - New compact design.
  - Availability to check status of actuator by transparent window on the cover
- CE Marked in accordance with the following standards :
  - EEC EMC (CEI-EN 55104/95 ; CEI-EN 55014/93)
  - EN 60730-1; EN 60730-2-14
  - Approval ENEC pending.

## 22C SERIES

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**22C**

Electrothermic actuator with wax thermostat element and auxiliary microswitch (only for versions NC4 and NA4).

**Cable Ø = 7,2 mm.**

**ENEC Marked**



Type	Code	Power Supply	Weight (g)
22C	22C230NC2	230V	150
22C	22C24NC2	24V	150
22C	22C230NC4	230V	200
22C	22C24NC4	24V	200
22C	22C230NA2	230V	150
22C	22C24NA2	24V	150
22C	22C230NA4	230V	200
22C	22C24NA4	24V	200

**22C**

Electrothermic actuator with wax thermostat element.

**Cable Ø = 5,5 mm.**

**CE Marked**



Type	Code	Power Supply	Weight (g)
22C	22C230NC2-5	230V	150
22C	22C24NC2-5	24V	150
22C	22C230NA2-5	230V	200
22C	22C24NA2-5	24V	200

## Description

The electrothermic actuators **22C series** are ON/OFF devices used for automatic actuation of the valves on:

- thermostatic adaptable valves **series 178UM, 1178UM, 179UM, 1179UM, 188UM, 1188UM, 189UM, 1189UM, 102M, 100M, 120B.**
- reverse body valves **series 180M**
- fan coil valves **series 2131, 3131, 4131**
- manifolds **series 822M**

The electrothermic actuators are available in the following versions:

- NA (normally open)
- NC (normally closed)
- 2-wire (Standard) or 4-wire (**with auxiliary contact**).

Both easy to fix on the valve body with a threaded ring nut.

The electrothermic actuators are designed to run on 24V and 230V.

## Application

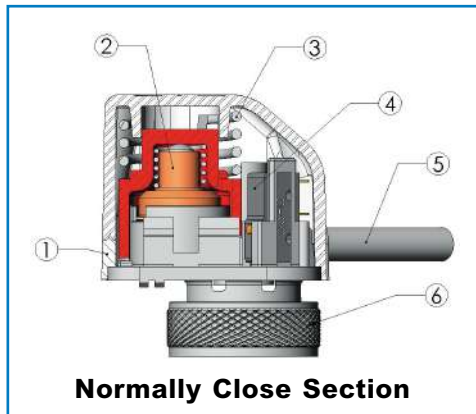
The electrothermic actuators **series 22C**, are used for ON/OFF control of the heat emission of terminal control units in heating and air conditioning systems, through an electric signal transmitted by a room or timing thermostat.

The use of electrothermic actuators instead of pure thermostatic actuators allows remote control. The room thermostat, timing thermostat, or control component controlling the system can be situated in the most suitable point of each room to provide regulation and wired back to the electrothermic control head.

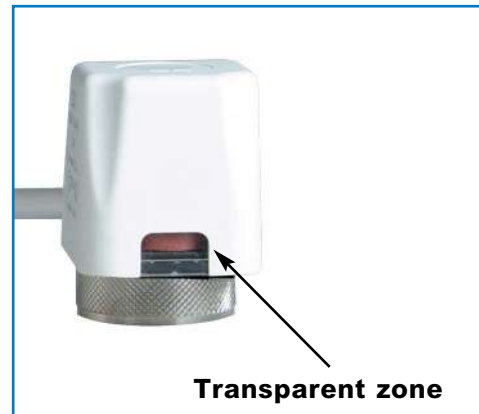
## Operation

Operation of the thermoelectric actuators **series 22C** depends on a wax thermostatic element mounted in the actuators and activated by a PTC thermistor against a signal sent by a room thermostat (or timing thermostat).

When the thermostatic element expands, it supplies the thrust required for automatic movement of the valve. The 4-wire version is provided with an **auxiliary contact** for additional commands (metering, control of pump, fan or other equipment). The actuator has a mechanical/visual zone that allows for the status of actuator to be seen by virtue of a transparent zone on the actuator cover. **Red** = plug valve closed - **Black** = plug valve open.



- 1) Transparent zone
- 2) Wax thermostatic element
- 3) Opposing spring
- 4) Electrical microswitch (4 wire)
- 5) Electrical wiring
- 6) Provision for sealing



Technical Features	
Action	ON/OFF
Power supply	24 - 230 VAC/DC (+10% / -15%)
Frequency	0 ÷ 60 Hz
Power consumption (normal operation)	2,5 W
Peak starting current	0.25 A x 0.5 sec (230V) 0.35 A x 30 sec (24V)
Initial opening (NC) or closing (NA) time (power ON) 230V	90 s
Final opening (NC) or closing (NA) time (power ON)	3 min
Initial opening (NC) or closing (NA) time (power ON) 24V	3 min
Final opening (NC) or closing (NA) time (power ON)	5 min
Actuator stroke	max 3.5 mm
Valve stroke	2.5 mm
Protection class	IP44 to EN60529
Electrical Protection class	II
Safety (contamination level)	2
Cable length *	1 m 2-pole x 0.75 mm <sup>2</sup> 4-pole x 0.75 mm <sup>2</sup>
Operation temperature limit	0 to 50°C
Storage temperature limit	-25 to 60°C
Fluid temperature limit	Max 110 °C
Nominal closing force (power OFF) (Closed type)	140 N (±10%)
Nominal closing force (power OFF) (Open type)	80 N (±10%)
Auxiliary microswitch (4-pole model)	max 700 mA - 250 V ~ (a.c)
Cover	PA V0 Ral 9016 UL94-V0
Valve connection	Threaded ring nut M30x1.5

\* **Special Cable length on request**

Reliability of the electrothermic actuators **22C series** is guaranteed due to 100% testing of the production.

## Installation

The electrothermic actuators **22C series** can be selected according to the type of system, available space and type of power supply. In systems with 2-way control valves fitted with electrothermic actuators it is advisable to install by-pass valves in series (**466** or series **USVR**) to ensure a minimum recirculation of the fluid.

22C SERIES

**Mounting**

- 1) Remove handle or cap from the body valve.
- 2) Position the actuator and tighten manually the ring nut of the actuator onto the body valve.  
**Do NOT use pipe wrenches, spanners or similar.**
- 3) Connect electrical wiring.

**Important maintenance notes**

The connecting cable must never be replaced. Opening the 22C series actuator will cause irreparable damage to the device. Faulty actuators must be replaced as complete units.

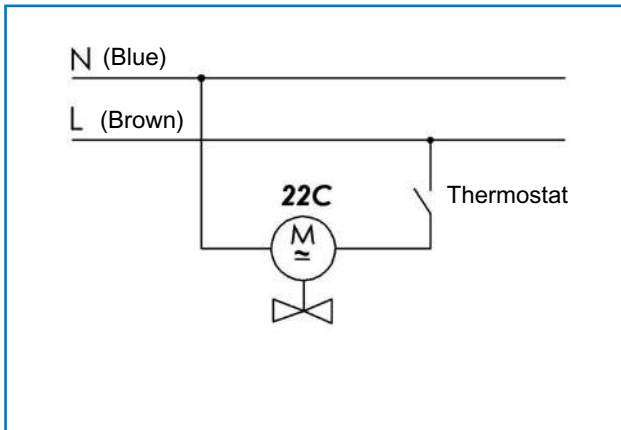
**Warning**

The actuator must not be installed below the body valve.

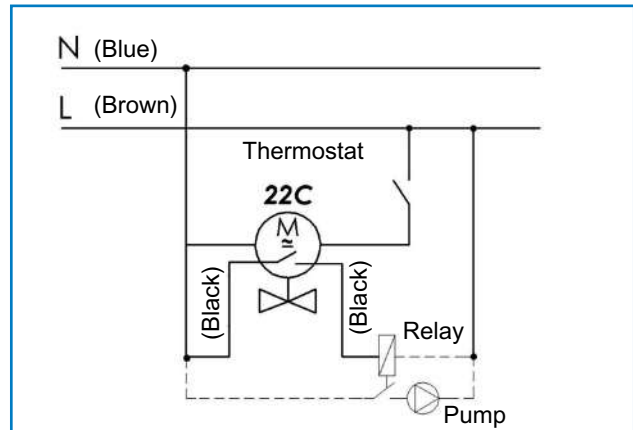


**Electrical wire connections**

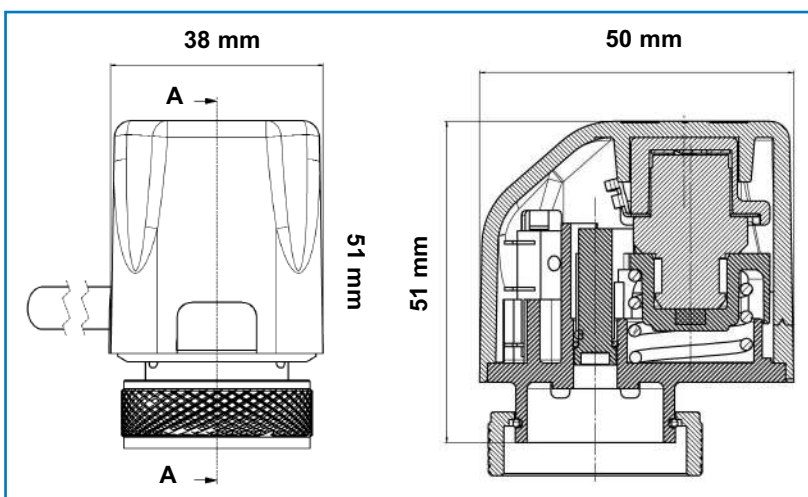
**22C 2-wire**



**22C 4-wire**



**Overall dimensions (mm)**



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