

# ON/OFF electrothermic actuators Series 22CX



## Main features

- 22Cx series available in the following versions :
  - NA (Normally open)
  - NC (Normally closed)
- 2-wire (Standard)
- 4-wire (With auxiliary contact)
- New compact design.
- Transparent window on the cover to check status of actuator (On/off)
- Compliant to the following directives:
  - 2006/95/EC (LVD)
  - 2004/108/EC (EMC)

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A Division of Watts Water Technologies Inc.

## Description

The electrothermic actuators **22CX 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, 130UM, 131UM, 102M, 100M, 120B**
- 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 or 4-wire (with auxiliary microswitch).

Both easy to fix on the valve body with a M30 x 1,5 threaded ring nut.

The thermostatic actuators are designed for on 24 V and 230V power supply (see below table)

## 22CX



Electrothermic actuator with wax thermostat element and auxiliary microswitch (version NC4 and NA4).

Compliant to the directives LVD 2006/95/EC, EMC 2004/108/EC  
According to EN 60730-1, EN 60730-2-14, EN 55014, EN 55104  
Approved TÜV SÜD "Safety tested and Production monitored".



Type	Part no.	Power Supply	Weight [g]
22CX	22CX230NC2	230V	150
22CX	22CX24NC2	24V	150
22CX	22CX230NC4	230V	200
22CX	22CX24NC4	24V	200
22CX	22CX230NA2	230V	150
22CX	22CX24NA2	24V	150
22CX	22CX230NA4	230V	200
22CX	22CX24NA4	24V	200

## Application

The electrothermic actuators **series 22CX** 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 thermostat.

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

## Operation

Operation of the electrothermic actuators **series 22CX** is powered by on a wax thermostatic element assembled into in the actuators and activated by a PTC thermistor against a signal sent by a room thermostat or timing thermostat.

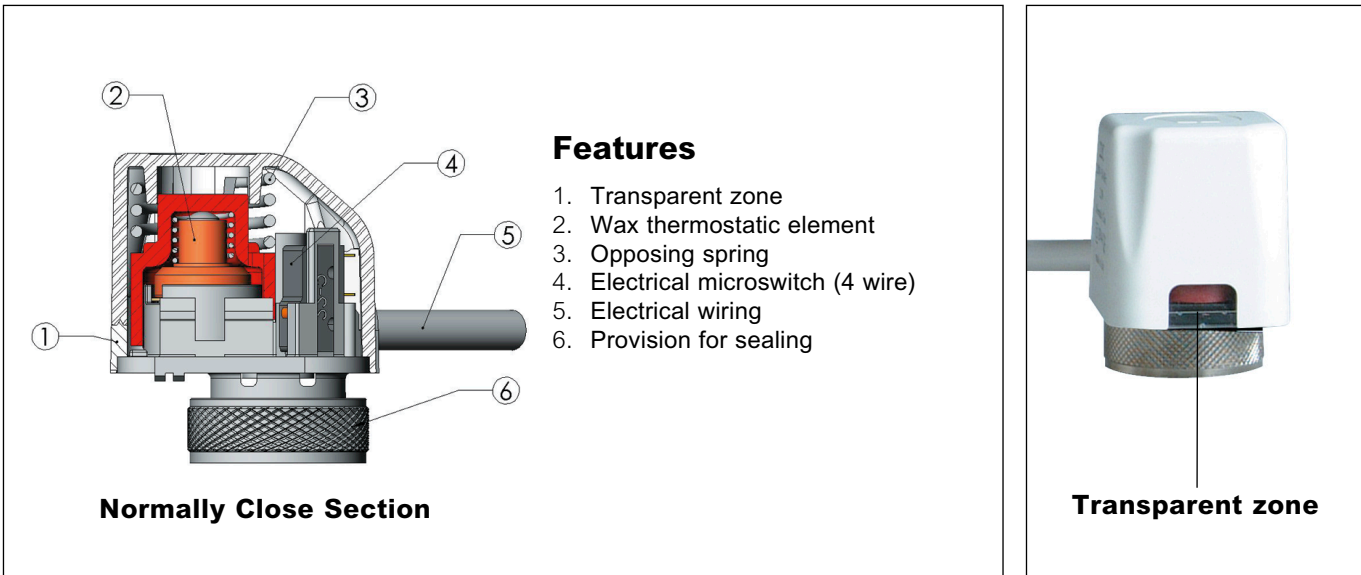
When the thermostatic element expands, it supplies the thrust required for the movement of the valve. The 4-wire version is provided with an **auxiliary contact** for additional features (metering, control of pump, fan or other equipment).

The actuator has a transparent zone that allows for checking the status of the actuator.

**Red** = valve closed - **Black** = valve open.

## Installation

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



## Technical features

Technical Features	
Action	ON/OFF
Power supply	24 - 130 Vac/DC (+10% - 15%)
Frequency	50 - 60 Hz
Power consumption (normal operation)	1,8 W
Peak starting current	0,20 A x 0,5 sec (230V) 0,20 A x 30 sec (24V)
Initial opening (NC) or closing (NO) time (power ON) 230V	75 s
Final opening (NC) or closing (NO) time (power ON)	3 min
Initial opening (NC) or closing (NO) time (power ON) 24V	3 min
Final opening (NC) or closing (NO) time (power ON)	5 min
Actuator stroke	max. 3,5 mm
Valve stroke	2,5 mm
Protection class	IP54 - EN60529
Electrical protection class	II
Safety (contamination level)	2
Cable length	1 m
	2 pole x 0,5 mm <sup>2</sup> 4 pole x 0,5 mm <sup>2</sup>
Operation temperature limit	0 - 50 °C
Storage temperature limit	-25 - 60 °C
Mean temperature limit	Max. 110 °C
Nominal closing force (power OFF) (NC)	100 N (±10%)
Nominal closing force (power OFF) (NO)	80N (±10%)
Auxiliary microswitch (4 pole model)	Max. 700 mA - 250 V ~ (c.a.)
Cover	RAL 9016 Polyamide +30 F.G. self extinguishing
Valve connection	Threaded ring nut M30x1,5

## Mounting

- 1) Remove handle or cap from the valve body.
- 2) Place the actuator and manually tighten 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

Do not remove the cable. Opening the **22CX series** actuator will cause irreparable damage to the device.  
Faulty actuators must be replaced as complete sets.

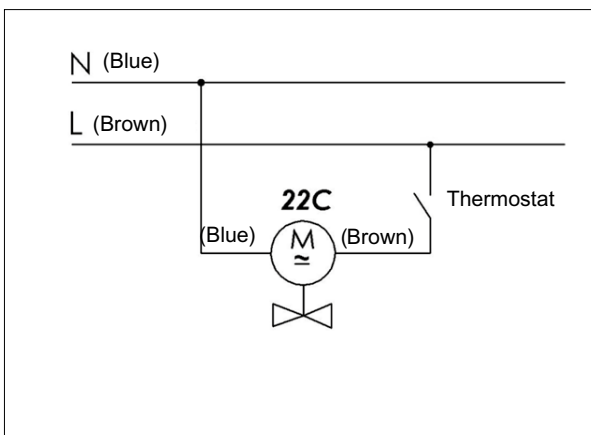
### Warning

*IP54 is for horizontally or vertically mounting.*

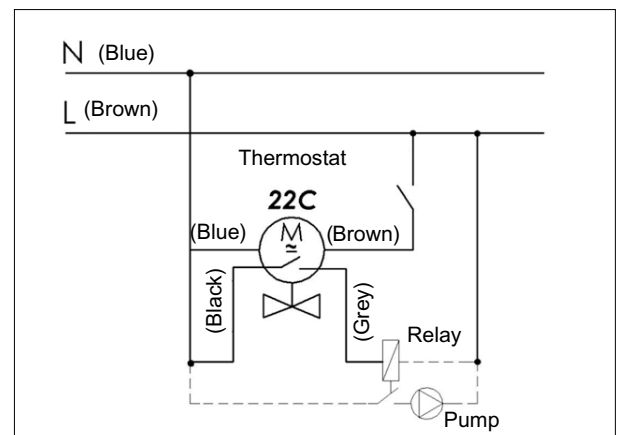


## Electrical wire connections

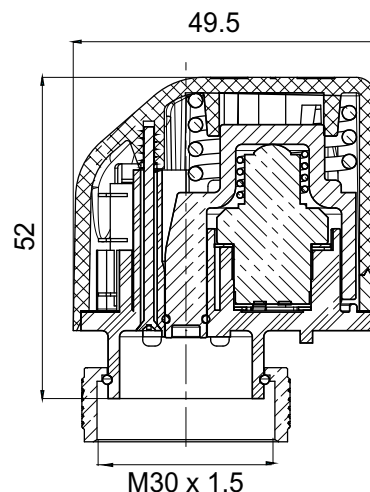
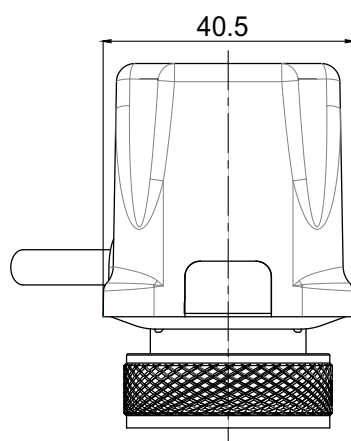
22CX 2-wires



22CX 4-wires



## Overall dimensions (mm)



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