

# 22C, 22CX, 22CX5, 26LC Series

ON/OFF electrothermic actuators

## Technical Data Sheet



## Description

The electrothermic actuators **22C**, **22CX**, **22CX5** and **26LC Series** are ON/OFF devices used for automatic actuation of the valves on thermostatic adaptable valves, fan coil valves, manifolds. The electrothermic actuators are available in the following versions:

- NO (normally open), NC (normally closed)
- 2-wire or 4-wire (with auxiliary microswitch), both easy to fix on the valve body with a M30x1,5 threaded ring nut.



### 22C

Electrothermic actuator compact design with on/off action compatible with thermostatic adaptable valves, fan coil valves, manifolds. Cap made of flame retardant plastic. Nickel-plated brass threaded ring nut M30x1.5. Normally Close (NC) and Normally Open (NO). Stroke: 3,5 mm. Nominal closing force: 100N (NC) – 80N (NO). Operating temperature range 0÷50°C. 4 poles cable version complete of auxiliary microswitch (NO4 – NC4). Auxiliary microswitch not energized, inductive load: maximum 700 mA. IP44 in vertical position. **Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.**

#### Cable $\phi=7,2$ mm

Type	Part no.	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

#### Cable $\phi=5,5$ mm

Type	Part no.	Power supply	Weight [g]
22C	22C230NC2-5	230V	150
22C	22C24NC2-5	24V	150
22C	22C230NA2-5	230V	150
22C	22C24NA2-5	24V	150



### 22CX

Electrothermic actuator compact design with on/off action compatible with thermostatic adaptable valves, fan coil valves, manifolds. Cap made of flame retardant plastic. Nickel-plated brass threaded ring nut M30x1.5. Normally Close (NC) and Normally Open (NO). Stroke: 3,5 mm. Nominal closing force: 100N (NC) – 80N (NO). Operating temperature range 0÷50°C. 4 poles cable version complete of auxiliary microswitch (NO4 – NC4). Auxiliary microswitch not energized, inductive load: maximum 700 mA. IP54. **Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.**

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



## 22CX5

Electrothermic actuator compact design with on/off action compatible with thermostatic adaptable valves, fan coil valves, manifolds. Cap made of flame retardant plastic. Nickel-plated brass threaded ring nut M30x1.5. Normally Close (NC). **Stroke: 5mm.** Nominal closing force: 110N (NC). Operating temperature range 0÷50°C. 4 poles cable version complete of auxiliary microswitch (NC4). Auxiliary microswitch not energized, inductive load: maximum 700 mA. IP54.

Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

Type	Part no.	Power supply	Weight [g]
22CX5	22CX5230NC2	230V	150
22CX5	22CX5230NC4	230V	150
22CX5	22CX524NC2	24V	200
22CX5	22CX524NC4	24V	200

Type	Part no.	Power supply	Weight [g]
22CX5	22CX5230NC2-2	230V-Cable 2m	150
22CX5	22CX5230NC4-2	230V-Cable 2m	150
22CX5	22CX524NC2-2	24V-Cable 2m	200
22CX5	22CX524NC4-2	24V-Cable 2m	200



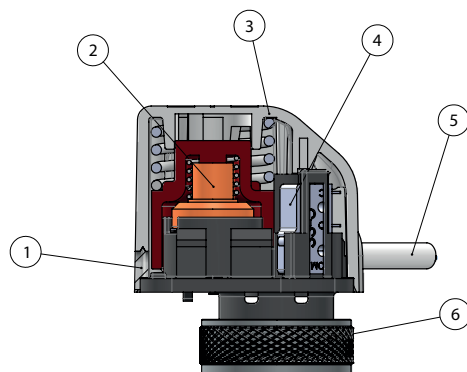
## 26LC

Electrothermic actuator compact design with on/off action compatible with thermostatic adaptable valves, fan coil valves, manifolds. Cap made of flame retardant plastic. Nickel-plated brass threaded ring nut M30x1.5. Normally Close (NC) 230 Vac and 24 Vac. Stroke: 3,5mm. Easily removable electrical cable with safety latch connector. LED check for the status (ON/OFF) of the actuator. 4 poles cable version complete of auxiliary microswitch (NC4). Auxiliary microswitch not energized, inductive load: max 700 mA. IP64.

Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

Type	Part no.	Power supply	Weight [g]
26LC	26LC230NC2	230V	140
26LC	26LC24NC2	24V	140
26LC	26LC230NC4	230V + microswitch	155
26LC	26LC24NC4	24V + microswitch	155

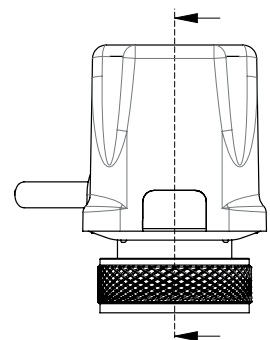
## 22C



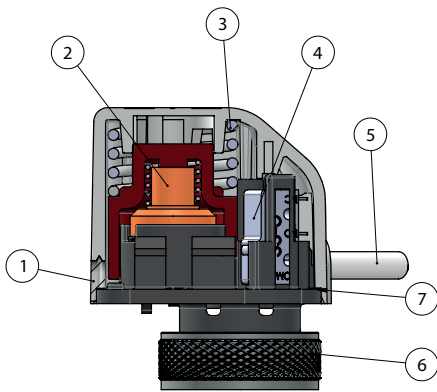
Normally closed

### Features

1. Transparent zone
2. Wax thermostatic element
3. Opposing spring
4. Electrical microswitch (4 wire)
5. Electrical wiring
6. Ring Nut M30x1,5



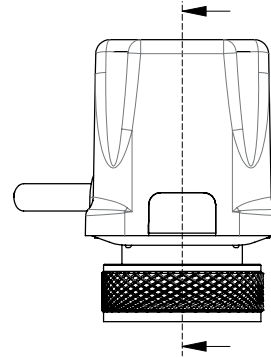
## 22CX



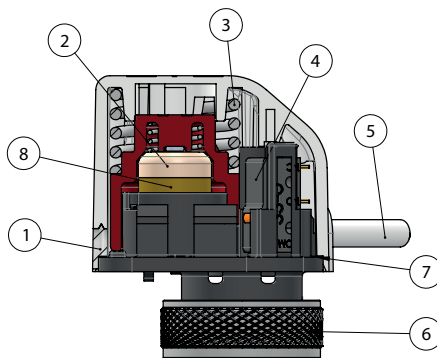
Normally closed

### Features

1. Transparent zone
2. Wax thermostatic element
3. Opposing spring
4. Electrical microswitch (4 wire)
5. Electrical wiring
6. Ring Nut M30x1,5
7. O-Ring



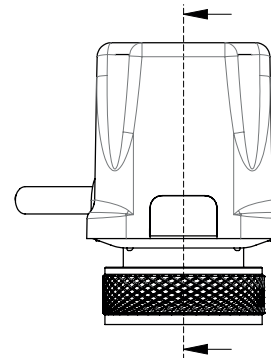
## 22CX5



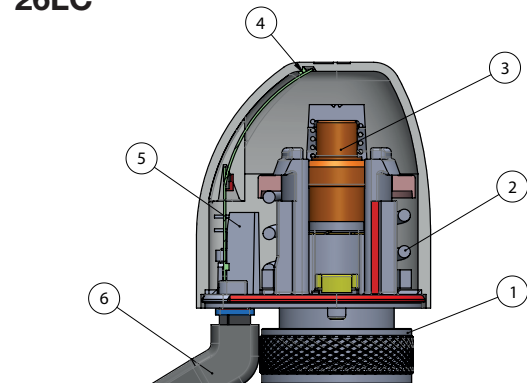
Normally closed

### Features

1. Transparent zone
2. Wax thermostatic element
3. Opposing spring
4. Electrical microswitch (4 wire)
5. Electrical wiring
6. Ring Nut M30x1,5
7. O-Ring
8. Spacer



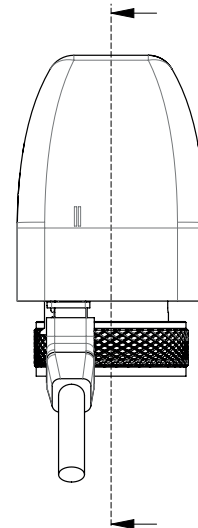
## 26LC



Normally closed

### Features

1. Ring Nut M30x1,5
2. Spring
3. Wax thermostatic element
4. LEDs
5. Microswitch (4-wire)
6. Cable connector



Technical features				
	22C	22CX	22CX5	26LC
Action	ON/OFF	ON/OFF	ON/OFF	ON/OFF
Type of movement	Linear	Linear	Linear	Linear
Power supply	230 V a.c. 24 V a.c./d.c. (+10%÷-15%)	230 V a.c. 24 V a.c./d.c. (+10%÷-15%)	230 V a.c. 24 V a.c./d.c. (+10%÷-15%)	24-230 V a.c. (+10%÷-15%)
Frequency	50 ÷ 60 Hz	50 ÷ 60 Hz	50 ÷ 60 Hz	50 ÷ 60 Hz
Power consumption (continuous duty)	1,8 W (230V) 1,6 W (24V)	1,8 W (230V) 1,6 W (24V)	1,8 W (230V-24V)	1,8 W (230V) 1,6 W (24V)
Initial opening time (NC) or closing time (NO) (230V) (Power on) 230V.	75 s.	75 s.	70 s.	75 s.
Final opening time (NC) or closing time (NO) (Power on) 230V.	3 min.	3 min.	5 min.	3 min.
Initial opening time (NC) or closing time (NO) (Power on) 24V.	3 min.	3 min.	95 s.	3 min.
Final opening time (NC) or closing time (NO) (Power on) 24V.	5 min.	5 min.	6 min.	5 min.
Actuator stroke	max 3,5mm	max 3,5mm	max 5mm	max 3,5mm
Auxiliary microswitch not energized (4-pole model)	max 700 (3A) mA - 250 V a.c.	max 700 (3A) mA - 250 V a.c.	max 700 (3A) mA - 250 V a.c.	max 700 (3A) mA - 250 V a.c.
Protection class	IP44 to EN60529	IP54 to EN60529	IP54 to EN60529	IP64 to EN60529
Electrical Protection class	Class II	Class II	Class II	Class II
Pollution rating	Grade 2	Grade 2	Grade 2	Grade 2
Nominal closing force (power OFF)	110 N (±10%) (NC) 80N (±10%) (NO)	110 N (±10%) (NC) 80N (±10%) (NO)	110 N (±10%) (NC)	110 N (±10%) (NC)
Operating temperature range	0÷50°C	0÷50°C	0÷50°C	0÷50°C
Storage temperature limit	-25÷60°C	-25÷60°C	-25÷60°C	-25÷60°C
Fluid temperature limit	110°C	110°C	110°C	110°C
Plastic cover	Polyamide +30F.V. flame retardant RAL 9016	Polyamide +30F.V. flame retardant RAL 9016	Polyamide +30F.V. flame retardant RAL 9016	ABS V0 flame retardant RAL 9016
Electrical cable	2-pole x 0,75mm <sup>2</sup> 1m length* 4-pole x 0,75 mm <sup>2</sup> 1 m length*	2-pole x 0,5mm <sup>2</sup> 1m length*4-pole x 0,5 mm <sup>2</sup> 1 m length*	2-pole x 0,5mm <sup>2</sup> 1m length*4-pole x 0,5 mm <sup>2</sup> 1 m length*	2-pole x 0,5mm <sup>2</sup> 1m length*4-pole x 0,5 mm <sup>2</sup> 1 m length*
Valve connection	Threaded ring nut M30x1,5	Threaded ring nut M30x1,5	Threaded ring nut M30x1,5	Threaded ring nut M30x1,5

\* Special cable length on request

Reliability of the electrothermic actuators **22C**, **22CX**, **22CX5** and **26LC Series** is guaranteed due to 100% testing of the production.

## Application

---

The electrothermic actuators **22C, 22CX, 22CX5, 26LC Series** 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 **22C, 22CX, 22CX5, 26LC Series** 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 (only for **22C, 22CX** and **22CX5 Series**)

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

About the 26LC Series, for using with devices that have an electrical consumption higher than microswitch limits, use an additional relay. Two LEDs (visible only when lighted) are positioned on top of the actuator: the green LED shows the power supply presence and the blue LED shows when the valve is open.

## Installation

---

Electrothermic actuators **22C, 22CX, 22CX5, 26LC 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.

## Mounting

---

To install the actuators follow these steps:

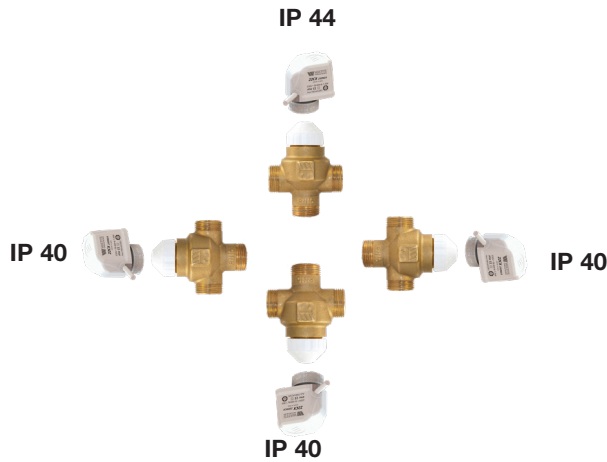
1. remove the protective cap, if present, or handwheel from the valve (or manifold outlet)
2. screw-in the actuator ring nut by hand on the threaded part of the valve body and lock it
3. connect the wires to the power supply
4. insert the plug in the actuator connector (only for **26LC Series**)

## Maintenance

Do not remove the cable. Opening the **22C, 22CX, 22CX5, 26LC Series** actuator will cause irreparable damage to the device. Faulty actuators must be replaced as complete sets.

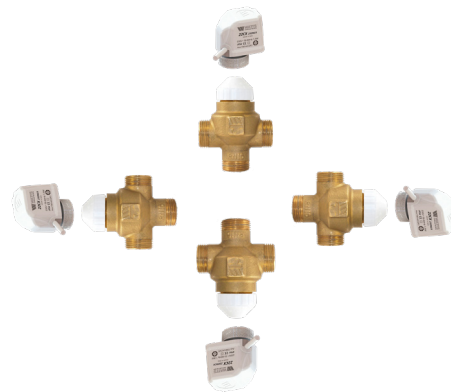
### **Warning 22C Series.**

The actuator has an degree of protection IP44 in vertical position.



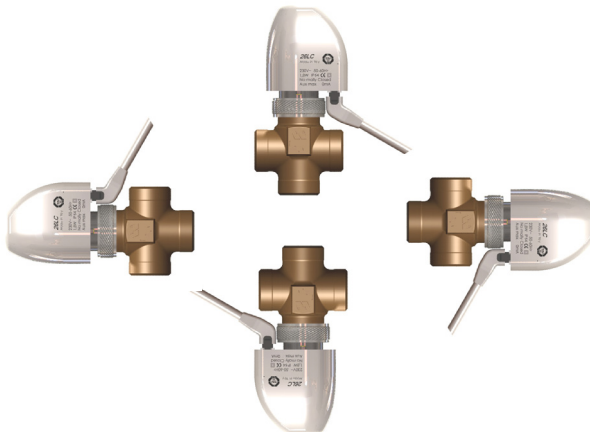
### **Warning 22CX, 22CX5 Series.**

IP54 is installed in any position respect to the valve body.

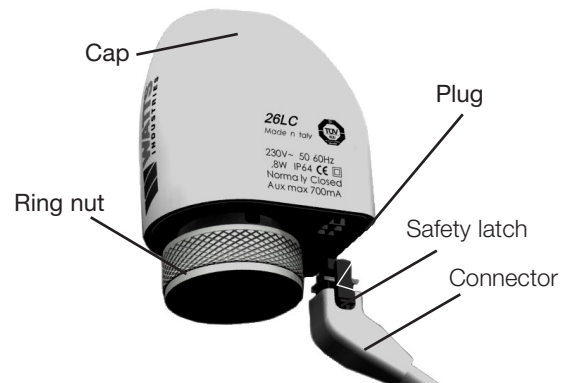


### **Warning 26LC Series.**

Protection class IP64 allows to install the 26LC in any position respect to the valve body.

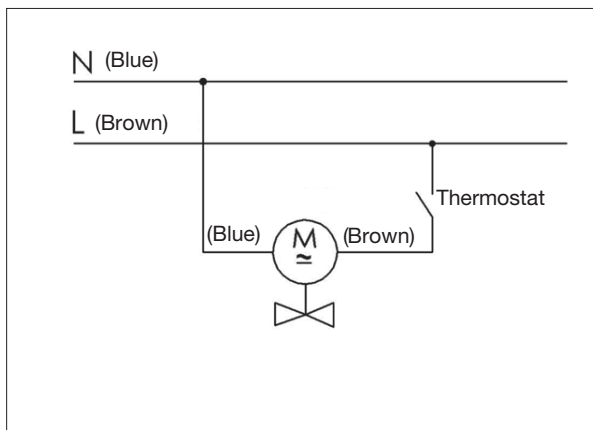


The removable cable allows easy mounting, maintenance and replacing. Pull the connector pressing the safety latch to take it out from the socket.

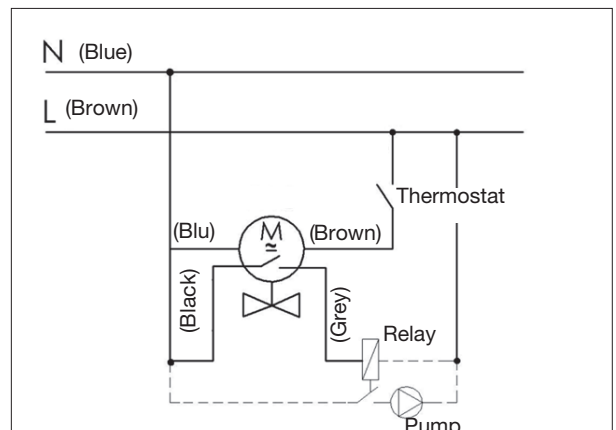


## Electrical wire connections

**22C-22CX-22CX5-26LC 2-wires**

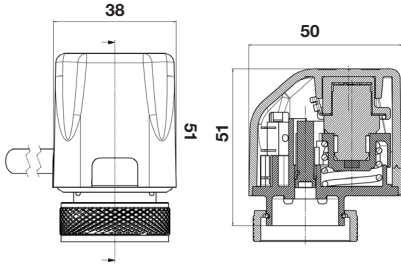


**22C-22CX-22CX5-26LC 4-wires**

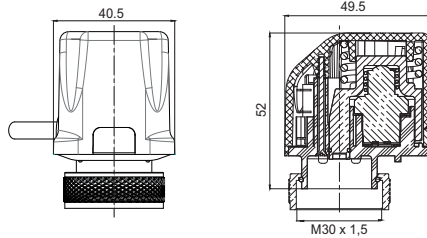


## Overall dimensions (mm)

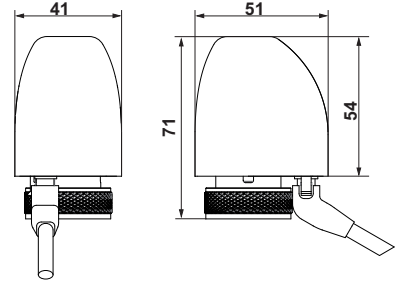
### 22C



### 22CX-22CX5



### 26LC



## Specification text

### 22C Series

Electrothermal actuator **22C Series** WATTS brand ON/OFF action, compatible with radiator valves, fan coil valves and manifolds. Hood in self-extinguishing polymeric material. Nickel-plated brass nut M30 x 1.5. Version NC or NO. Version with 230Vac or 24Vac/dc with 2 or 4 wires with auxiliary micro-switch. Stroke: 3.5 mm. Degree of protection IP44 in vertical position. Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

### 22CX Series

Electrothermal actuator **22CX Series** WATTS brand ON/OFF action, compatible with radiator valves, fan coil valves and manifolds. Hood in self-extinguishing polymeric material. Nickel-plated brass nut M30 x 1.5. Version NC or NO. Version with 230Vac or 24Vac/dc with 2 or 4 wires with auxiliary micro-switch. Stroke: 3.5 mm. Degree of protection IP54. Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

### 22CX5 Series

Electrothermal actuator **22CX5 Series** WATTS brand ON/OFF action, compatible with radiator valves, fan coil valves and manifolds. Hood in self-extinguishing polymeric material. Nickel-plated brass nut M30 x 1.5. Version NC. Version with 230Vac or 24Vac/dc with 2 or 4 wires with auxiliary micro-switch. Stroke: 5 mm. Degree of protection IP54. Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

### 26LC Series

Electrothermal actuator **26LC WATTS Series** WATTS brand ON/OFF action, compatible with radiator valves, fan coil valves and manifolds. Hood in self-extinguishing polymeric material. Nickel-plated brass nut M30 x 1.5. NC Version. Version 230 Vac or 24 Vac with 2 or 4 wire with an auxiliary microswitch. Stroke: 3.5 mm. Cable with anti-jamming system. Visual inspection of LED operating status. Degree of protection IP64. Compliant with LVD 2014/35/UE, EMC 2014/30/UE. Approved TÜV.

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.

Watts Industries reserves the right to carry out any technical and design improvements to its products without prior notice. Warranty: All sales and contracts for sale are expressly conditioned on the buyer's assent to Watts terms and conditions found on its website at [www.wattswater.eu](http://www.wattswater.eu). Watts hereby objects to any term, different from or additional to Watts terms, contained in any buyer communication in any form, unless agreed to in a writing signed by an officer of Watts.