



# THERMO-ELECTRICALLY CONTROLLED ACTUATOR

## SPECIFICALLY FOR THERMOSTATIC VALVES AND DISTRIBUTION MANIFOLDS

CT0306.0\_04  
EN  
June 2015



- o Ease of installation in confined spaces;
- o Extremely silent operation;
- o Reduced energy consumption;
- o Waterproof body, suitable for installation in any position;
- o Small size.

### PRODUCTION RANGE

	WITHOUT Auxiliary micro switch		WITH Auxiliary micro switch	
<b>Code</b>	<b>306.00.02</b>	<b>306.00.12</b>	<b>306.00.42</b>	<b>306.00.52</b>
<b>Operation</b>	N.C.	N.C.	N.C.	N.C.
<b>Voltage</b>	230 Vac	24 Vac	230 Vac	24 Vac

### DESCRIPTION

The *thermo-electrically controlled actuator* is a device that makes it possible to automatically shut off a fluid in heating and cooling systems, on command of a room thermostat or programmable thermostat.

A specific version of the actuator is also available with an auxiliary micro switch with voltage-free contacts, to be used to give consent to another device connected to it, if the system logic so requires.

The actuator is fitted with a red mechanical indicator, visible through a transparent window on the front of the actuator cover, which shows the open or closed position of the valve on which it is installed.



Red indicator down indicates motor off/valve closed.  
Raised red indicator shows motor on/valve open.

#### USE

The small dimensions and the limited hydraulic through sections make it particularly suitable for direct connection to valves for supply terminals or at the service of small heating areas.

It is particularly indicated in the following cases:

- coupling with thermostatically controlled valves;
- coupling with distribution manifolds.

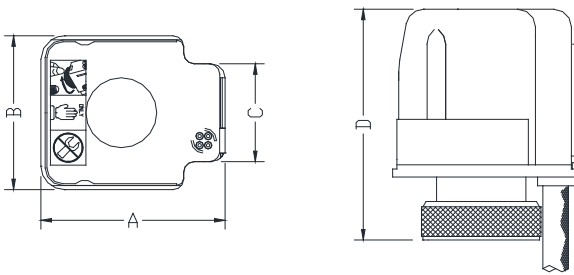
#### THE CHOICE

There are no particular prescriptions to be followed in the choice of *thermo-electrically controlled actuator with and without micro switch*. In particular:

- the decision to mount a actuator on a valve or manifold is mainly linked to the desire to make the valve or manifold itself automatic;
- the choice of a actuator with an auxiliary micro switch is linked to the fact that an additional device is to be controlled via the servomotor.

**Code 306.00.02/12 - Thermo-electrically controlled actuator, with auxiliary micro switch**

**DIMENSIONAL FEATURES**



A	52 mm
B	44 mm
C	28 mm
D	60 mm

**TECHNICAL FEATURES**

Code	306.00.02	306.00.12
Position indicator	YES <sup>(1)</sup>	
Connection	Threaded ring nut M30X1.5	
Connection cable	Wired cable Length 1 m	
Operation	N.C.	
Auxiliary switch	NO	
Voltage	230 Vac	24 Vac
Frequency	50/60 Hz	
Input power in normal conditions	2.5 W	
Protection class	IP 54 (assembly in all installation positions)	
Opening time <sup>(2)</sup>	approx. 3 min	approx. 5 min
Stroke	4 mm	
Nominal thrust	110 N	
Ambient temperature limit	max. 50 °C	
Valve fluid temperature	-5 °C ÷ 100 °C	
Certifications	CE	

<sup>(1)</sup> ) The position of the position indicator at the exit of the factory indicates no current in the actuator.  
Red indicator down indicates motor off/valve closed. Raised red indicator shows motor on/valve open.

<sup>(2)</sup> The opening and closing times vary depending on the ambient temperature.



**Actuator with electro-thermal control, without auxiliary micro switch (2 wires)**

Code 306.00.02  
230 Vac

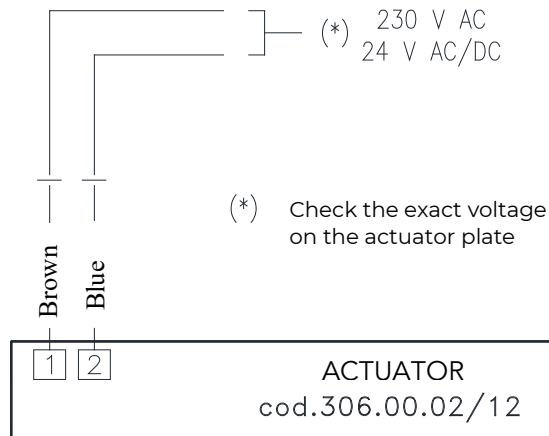
Code 306.00.12  
24 Vac

**Application**  
Shutter valves activation On-Off

**Operation**  
Thermal activation, Normally Closed, with two positions (open / close). By electrically powering the actuator, the thermostatic element is heated with wax expansion; after the heating period, the device on which the actuator is mounted opens, *quietly*, making the stroke. The position indicator will be at the end of its travel.  
By interrupting the electrical power supply the thermosensitive element is cooled with the consequent closure of the actuator and of the relative device coupled to it. In the event of a actuator failure, the actuator must be removed from the device to which it has been applied and the device must be operated manually.

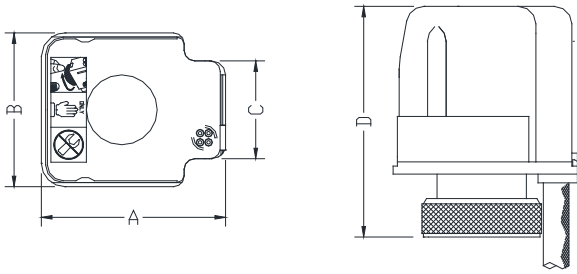
**Assembly**  
To mount the actuator on manifolds or valves, follow the operations described in the "installation advice" section of this data sheet.  
Do not use pliers, screwdrivers or other similar tools for this operation.

**TERMINAL BOARD DIAGRAM**



**Code 306.00.42/52 - Thermo-electrically controlled actuator, with auxiliary micro switch**

**DIMENSIONAL FEATURES**



A	52 mm
B	44 mm
C	28 mm
D	60 mm

**TECHNICAL FEATURES**

Code	306.00.42	306.00.52
Position indicator	YES <sup>(1)</sup>	
Connection	Threaded ring nut M30X1.5	
Connection cable	Wired cable Length 1 m	
Operation	N.C.	
Auxiliary switch	YES	
Voltage	230 Vac	24 Vc
Frequency	50/60 Hz	
Input power in normal conditions	2.5 W	
Switching current auxiliary switch	3 (1) A	
Protection class	IP 54 (assembly in all installation positions)	
Opening time <sup>(2)</sup>	approx. 3 min	approx. 5 min
Stroke	4 mm	
Nominal thrust	110 N	
Ambient temperature limit	max. 50 °C	
Valve fluid temperature	-5°C ÷ 100 °C	
Certifications	CE	

<sup>(1)</sup> ) The position of the position indicator at the exit of the factory indicates no current in the actuator. Red indicator down indicates motor off/valve closed. Raised red indicator shows motor on/valve open.

<sup>(2)</sup> The opening and closing times vary depending on the ambient temperature.



**Thermo-electrically controlled actuator, with auxiliary micro switch (4 wires)**

Code 306.00.42  
230 Vac

Code 306.00.52  
24 Vac

**Application**

Shutter valves activation On-Off

**Operation**

Thermal activation, Normally Closed, with two positions (open / close). By electrically powering the actuator, the thermostatic element is heated with wax expansion; after the heating period, the device on which the actuator is mounted opens, *quietly*, making the stroke. The position indicator will be at the end of its travel.

By interrupting the electrical power supply the thermosensitive element is cooled with the consequent closure of the actuator and of the relative device coupled to it.

In the event of a actuator failure, the actuator must be removed from the device to which it has been applied and the device must be operated manually.

**Assembly**

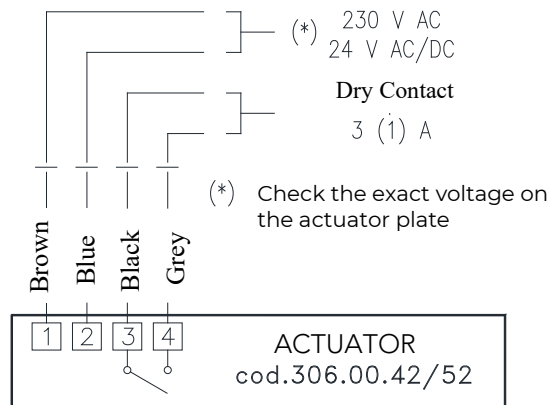
To mount the actuator on manifolds or valves, follow the operations described in the "installation advice" section of this data sheet.

Do not use pliers, screwdrivers or other similar tools for this operation.

**Auxiliary contact**

If the logic of the system provides for the activation of another device (circulator or fan, for example) this is possible through the use of the actuator with auxiliary control.

## TERMINAL BOARD DIAGRAM



## EXAMPLES OF ELECTRICAL CONNECTIONS

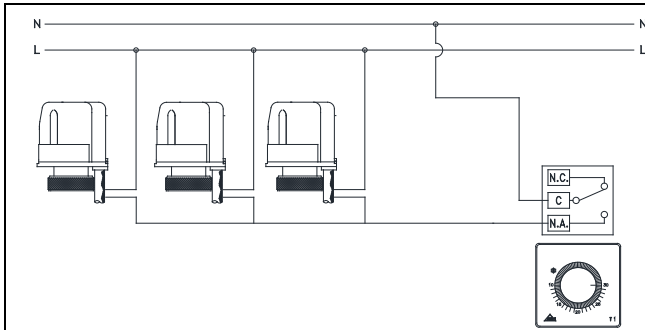


Fig.1: Electrical wiring of several electrothermal actuators, without auxiliary micro switch, installed in parallel.

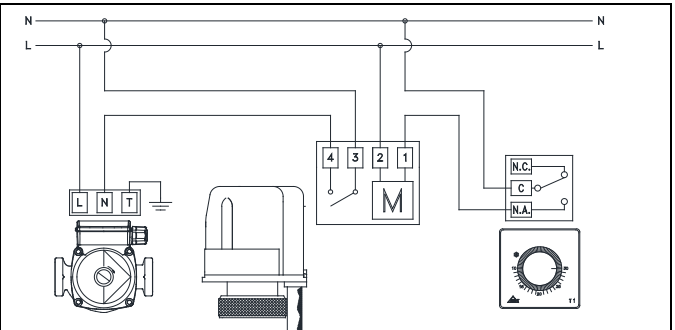
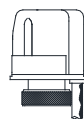


Fig.2: Electrical wiring of electrothermal actuator, equipped with auxiliary micro switch.

## INSTALLATION TIPS

It is advisable to comply with the following requirements when installing the thermo-electrically controlled actuator with and without an auxiliary micro switch:

- the control can be mounted in a horizontal, vertical or inverted position;



OK



OK






OK

**IP54 protection rating !**

- take care that the connecting cable does not come into contact with the pipes in hot water circuits;
- for correct operation of the control, the electrical system must be dimensioned according to the inrush current;
- if several zones are to be regulated with controls in parallel to the same thermostat, consider inserting an intermediate relay to avoid electrical overloads;
- if several zones are to be controlled with controls in parallel to the same thermostat, the total sum of the inrush current of each individual actuator must be equal to that of the thermostat to which they are connected;
- the electrothermal control must be tightened by hand without the use of tools (pliers, screwdrivers or other similar tools). Tighten/unscrew the ring nut while holding the actuator body / maximum tightening torque of the brass ring nut on the valve body is **3 Nm**.



	The operations described in this technical data sheet should only be carried out by specialised personnel or by the installer, strictly observing the safety regulations and laws in force.
	Turn off the power before connecting or disconnecting the electro-thermal actuator to the electrical circuit.
	The thermo-electrically controlled actuator cannot be dismantled for repair. Tampering with it causes permanent damage.

## SPECIFICATIONS

### **SERIES 306**

Thermo-electrically controlled actuator for valve with thermostatic option, complete with valve body clamping ring nut and electric power cable.

Normally closed valve position when power missing. Power supply 24 V (or 230 Vac), consumption 2.5 W, frequency 50/60 Hz, electrical protection IP54, operating temperature -5...+50 °C, stroke 4 mm.



RBM spa reserves the right to improve and change the described products and relative technical data at any moment and without prior notice: always refer to the instructions attached with the supplied components; this sheet is an aid, should the instructions be extremely schematic. Our technical department is always available for any doubts, problems or clarifications.

  
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