



Description

In order to allow an optimal control of the room temperature, combining the energy saving with a high comfort, the use of electrical actuators on distribution manifolds, on radiator valves with thermostatic option, or on fancoil valves is advisable. The series of R478 and R473 electrical actuators is characterised by an absolute quiet operation, long lasting lifetime as it has no mechanism subjected to wear and a sufficiently slow closing to prevent from water hammer phenomenon. The operation mechanism is made of wax bulbs controlled by low consumption electrical PTC (Positive Temperature Coefficient).

Use



The actuators of the R478 series are normally open (NA). They allow the hydraulic supply of the circuits when there is no voltage and they have a cable with two conductor for the connection to room thermostats or adjustment regulators. The R478M version has a stroke end micro-switch for driving circulators or zone valves. The R478V version has varistor for installation on places where the network voltage undergoes sudden changes that could damage the electronic components. The R478MV version has either varistor or stroke end micro-switch. In radiant panel heating and cooling systems, the normally open electrical actuators are to be preferred as they are not supplied for most of the time involving a sensible electric energy saving.



The actuators of the R473 series are normally closed (NC); they allow the hydraulic supply of the circuits in presence of voltage and they have a cable with two conductors for the connection to room thermostats or adjustment regulators. The R473M version has a stroke end micro-switch for driving circulators or zone valves. The R473V version has varistor for installation on places where the network voltage undergoes sudden changes that could damage the electronic components. The R473MV version has either varistor or stroke end micro-switch. These models have a manual block mechanism in opening position to make the assembly on valves easier, and allow maintenance to the electric plant by maintaining the water circulation into the hydraulic system.

Technical data

R478

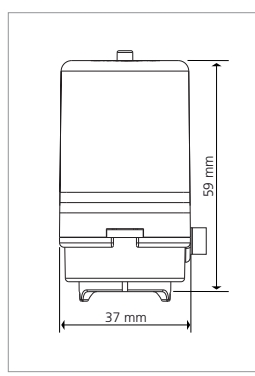
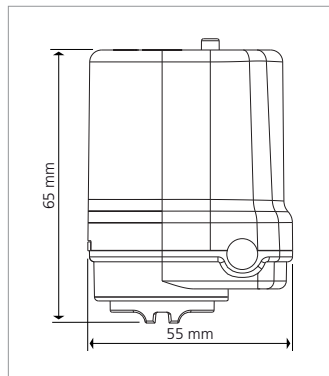
- Product in compliance with the Directives B.T. 73/23/CEE and 93/68/CEE and ENEC 03 Certificate
- Product category: "Electrical actuators for assembly on radiators or radiant panel systems"
- Condition in absence of voltage: Normally Open NO (R478), Normally closed (R473)
- Linear motion
- Valve working stroke 2,4m
- Dust protection class 2
- Electrical discharge voltage 4 kV
- Electrical enclosure to IP40
- Protection against direct contacts by means of double insulation (Class II)
- Supply cable type H05 VV-F, useful length 1,5 m
- Opening time at 25°C for 230V versions ≈ 2 minutes
- Opening time at 25°C for 24V versions ≈ 3 minutes
- Working room temperature: -5°C ÷ +50°C
- Storage room temperature: -20°C ÷ +65°C
- Fluid temperature : -5°C ÷ +90°C
- Casing material flame retardant PBT V0-UL94
- Vertical assembly above the valve, or horizontal
- Rapid connection for Giacomini standard
- Valve position mechanical indicator
- Micro-switch (where fitted) NC with open valve

ELECTRICAL ACTUATORS SERIES
R473-R473M R478-R478M

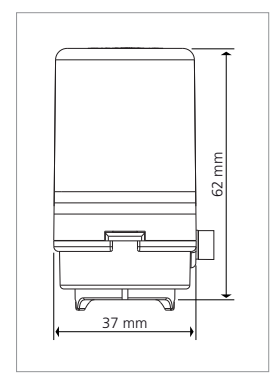
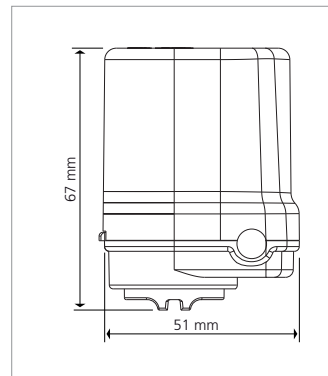
Part number	Power consumption	Supply voltage	Maximum starting current	Current consumption after 12 min	Resistance at 25°C	Supply cable section	Micro-switch NC	Varistore
R478X121	3,5 W	230V 50 Hz	≤1A	≤0,015A	1200Ω ± 35%	2 x 0,75mmq	-	-
R478X122	3 W	24V 50 Hz	≤0,8A	≤0,125A	40Ω ± 25%	2 x 0,75mmq	-	-
R478MX021	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	4 x 0,75mmq	1,5A 250Vac	-
R478MX022	3 W	24V 50Hz	≤0,8A	≤0,125A	40Ω ± 25%	4 x 0,75mmq	1,5A 250Vac	-
R478VX121	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	2 x 0,75mmq	-	S10K250
R478VX021	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	4 x 0,75mmq	1,5A 250Vac	S10K250
R473X121	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	2 x 0,75mmq	-	-
R473X122	3 W	24V 50Hz	≤0,8A	≤0,125A	40Ω ± 25%	2 x 0,75mmq	-	-
R473MX021	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	4 x 0,75mmq	1,5A 250Vac	-
R473MX022	3 W	24V 50Hz	≤0,8A	≤0,125A	40Ω ± 25%	4 x 0,75mmq	1,5A 250Vac	-
R473VX121	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	2 x 0,75mmq	-	S10K250
R473VX021	3,5 W	230V 50Hz	≤1A	≤0,015A	1200Ω ± 35%	4 x 0,75mmq	1,5A 250Vac	S10K250

Dimensions

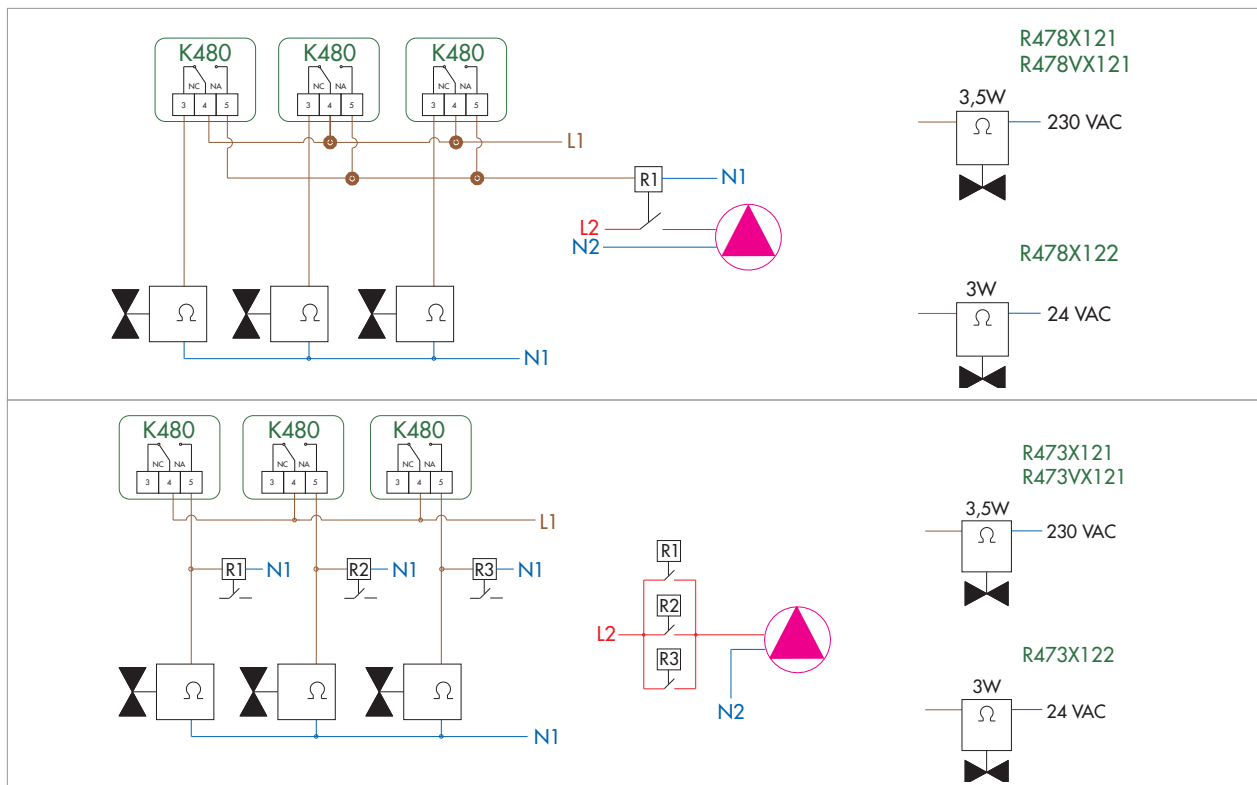
R478-R478M



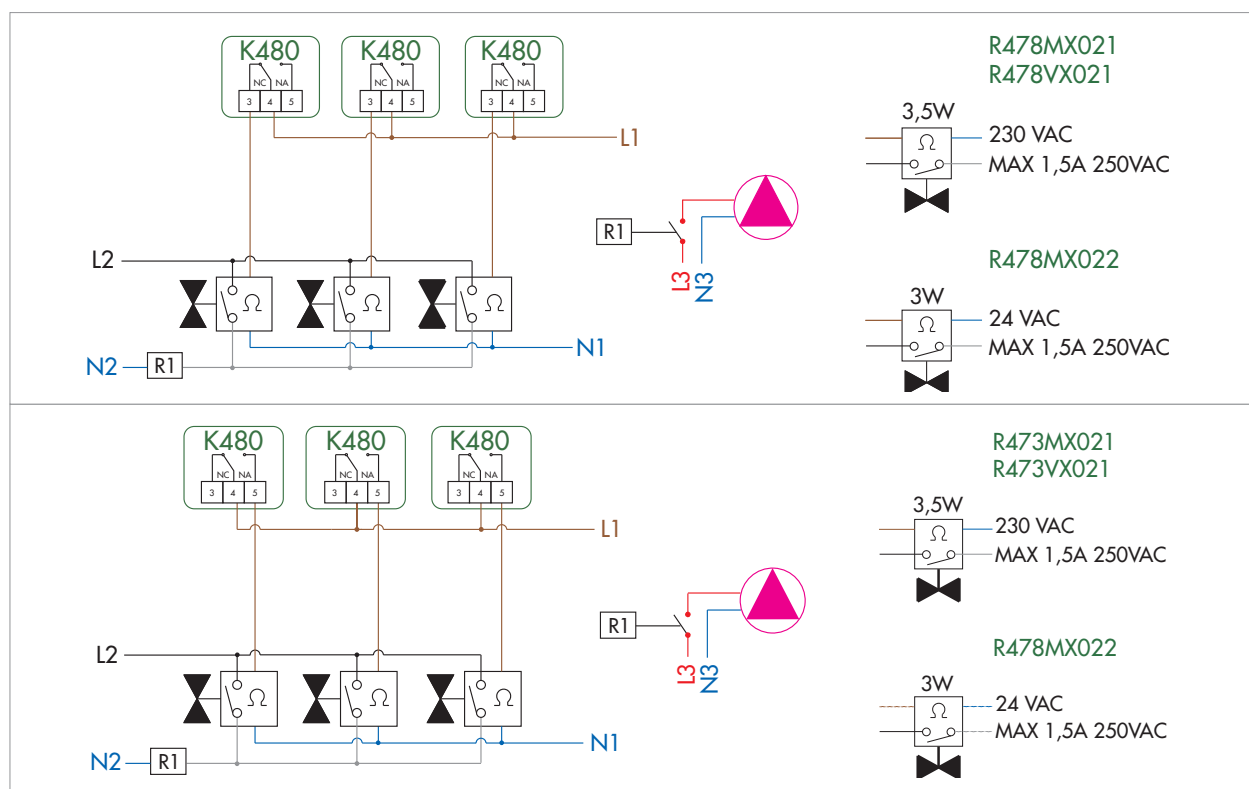
R473-R473M



Electrical connections



R478 and R473 actuators allow various connection options able to satisfy different plant engineering requirements. The most recurrent case studies require simple direct connections to room thermostats or relay interposition to drive circulators or zone valves.

ELECTRICAL ACTUATORS SERIES
R473-R473M R478-R478M

R478M and R473M actuators having a stroke end micro-switch, allow operating circulators or zone valves with extreme simplicity. They are usually connected to the room thermostats by considering that the R478M actuator is open in absence of voltage (while the micro-switch is electrically closed in this status) and the R473M actuator is instead closed in absence of voltage (while the micro-switch is electrically opened in this status). In order to drive significant power loads, it is recommended to interpose a relay so as to avoid the overload of the actuator micro-switches.

Cautions

The casing of the actuator is not removable and it must not be opened for any reason. Tampering with the actuator will cause the immediate loss of the guarantee. The supply cable of this device can not be replaced; if the cable is damaged the control device must be rejected. The guarantee is valid for one year from the installation date. The guarantee does not cover the replacement of products damaged through careless handling or lack of skill during installation. Claims must reach Giacomini S.p.A. through its authorized sales centres. Before installation the voltage must be carefully checked to ensure that the actuator and the proposed control voltage are compatible. The electrical connections to the actuator must be made only when the installation is isolated from the supply voltage. The connection to the electrical distribution network must be done in safe conditions, as prescribed by the Technical Standards in force in the Country where the actuators are used. Giacomini S.p.A. can not be held responsible for damage caused to persons or property resulting from an improper use of the product.

Product specification

R478 230V~

Electrical actuator normally open for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and

93/68/CEE and ENEC03 Certificate.

R478 24V~

Electrical actuator normally open for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 3 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R478M 230V~

Electrical actuator normally open with end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R478M 24V~

Electrical actuator normally open with end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing

ELECTRICAL ACTUATORS SERIES R473-R473M R478-R478M

material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 cm useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 3 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R478V 230V~

Electrical actuator normally open with varistore for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R478MV 230V~

Electrical actuator normally open with varistore and end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473 230V~

Electrical actuator normally closed for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473 24V~

Electrical actuator normally closed for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 60cm useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 3 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473M 230V~

Electrical actuator normally closed with end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473M 24V~

Electrical actuator normally closed with end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 3 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473V 230V~

Electrical actuator normally closed with varistore for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

R473MV 230V~

Electrical actuator normally closed with varistore and end stroke micro-switch for use on radiators and radiant panel heating and cooling systems. Casing material flame retardant PBT V0-UL94, rapid connection, with valve position mechanical indicator, supply cable type H05 VV-F 1,5 m useful length. Linear motion, dust protection class 2, electrical enclosure to IP40, protection against direct contacts by means of double insulation (Class II). Valve working stroke: 2,4 mm. Electrical discharge voltage: 4 kV. Opening time at 25°C ≈ 2 minutes. Working room temperature: -5°C ÷ +50°C. Storage room temperature: -20°C ÷ +65°C. Fluid temperature: -5°C ÷ +90°C. Product in compliance with Directive B.T. 73/23/CEE and 93/68/CEE and ENEC03 Certificate.

Additional information

For additional information please check the Giacomini website at the following address: www.giacomini.com

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