POWER MODULE
CONTROL UNIT FOR RADIATOR INSTALLATIONS

PM100R

GIACOMINI
Technology in Comfort

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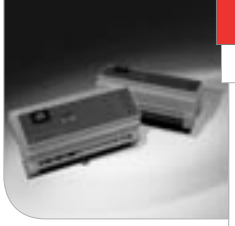

PM100R Power module
Control unit for radiator installations

Function

The **PM100R** control unit for radiator installations is designed to be used in radiator installations, where the control of the supply to radiators is obtained by means of electrical actuators, without end stroke micro switch, such as Giacomini products **R478** (N.O.) and **R473** (N.C.) (230~)
The principal function of the **PM100R** control unit for radiator installations is the automatic turning off (or the starting) of the circulation pump according to the condition of the electrical actuator (**R478** or **R473** 230V~) which is connected to it.
Moreover the **PM100R** ensures a rapid connection of actuators and to the thermostats, without using auxiliary devices such as distribution cabinets and/or interface relays.

PM100R

Features

- Supply 230V ~±10%.
- Possibility to manage independently up to 8 "free" contacts from ambient thermostats.
- Possibility to drive up to 16 electrical actuators R478 (N.O.) or R473 (N.C.) at 230V ~ (8 zones).
- Visualization of the control state of the actuators, by means of LED indicators.
- Delay in starting the circulator (- 4 minutes) with the opening of one of the hydraulic circuits, after the condition of complete closing.
- Connection for the chrono for activation of the circulator and the electrical actuators, with timer.
- Integrated line fuse: 6,3A delayed.
- Line switch with luminous indicator.
- Dimensions in accordance with DIN 43880 Standard .
- Suitable for installation on DIN EN 50022 bar.
- Input from thermostats: contacts without voltage (min.1A @ 230V ~).
- Chrono function input: contact without voltage (max. 8A @ 230V ~).
- Output for circulator: contact without voltage (10A res.5A ind. @ 230V ~).
- Connection binding-screws: screw terminal for wires of 1.5 mm2.
- Protection : IP20 (IEC44).
- Ambient working conditions: 0÷50°C; 10÷90% R.HU. without condensate.
- Ambient storage conditions : -20÷70°C; 10÷90% R.HU. without condensate.

Product in compliance with the European directives 73/23/CEE (low voltage directive) and 93/68/CEE (electromagnetic compatibility directive)

CE

Operation

The **PM100R** can drive actuators **R478** or **R473** 230V ~, according to the condition of the thermostat contacts connected to it.
Independently from their type (N.C. or N.O.), the electrical actuators will be open (from an hydraulic point of view) when the ambient thermostats associated to them, show that the temperatures desired by the user are not satisfied. In this case, the **PM100R** will start up the circulator and the relative led will light up . The circulator will disable itself automatically when the last actuator closes; consequently, when the first actuator opens , the circulator will be activated but only after a delay of about 4 minutes. In this way the actuator opens completely and it avoids the circulator working on circuits, which are hydraulically closed.
The **PM100R** control unit for radiator installations is designed for use with electrical actuators as **R478** (N.O.) by means of the W1 jumper (see fig.1)
If you use it with electrical actuators model **R473** (N.C.) you will need to move the jumper W1 to the right as represented in fig. 2

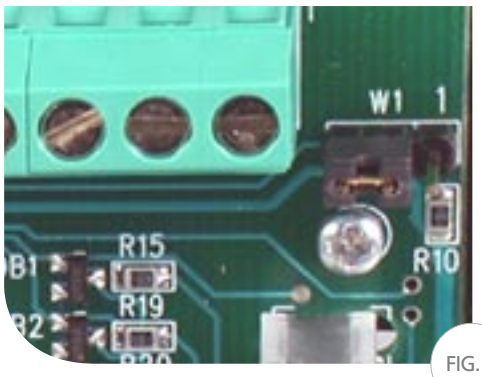

FIG. 1

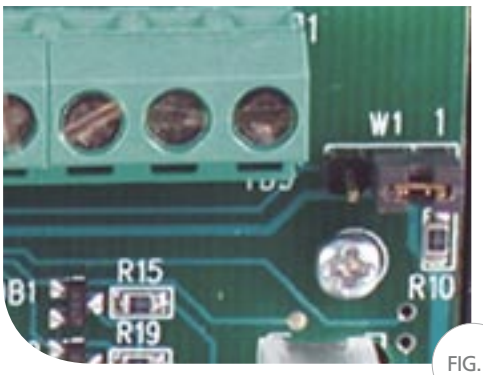

FIG. 2

The **PM100R** keeps 2 binding-screws (4-5) for an eventual connection to the chrono device (free contact).
This contact, when it is open, disables all functions of the **PM100R**. As a consequence, all supplies to the circulator and to the actuators are interrupted. If the chrono is not used, it is necessary to connect electrically the binding-screws.
A couple of binding-screws (7-8) are dedicated to a controlled line: the 230 V ~ supply will be present on it, only when the chrono contact is closed (or there is the bridge between 4 and 5).
In addition to the lighting indicators, which show the functional condition of the connected electrical actuators (8 LEDS numbered from 1 to 8, which lighten when the electrical actuators are in open position), the **PM100R** is endowed with a "green" LED (underlined by the symbol 🕓), which allows you to know when the chrono contact is closed.

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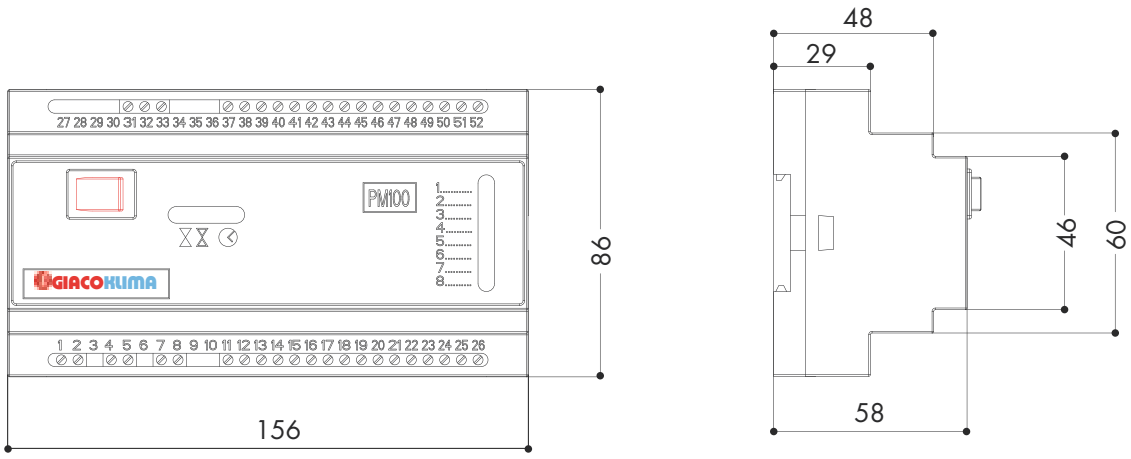
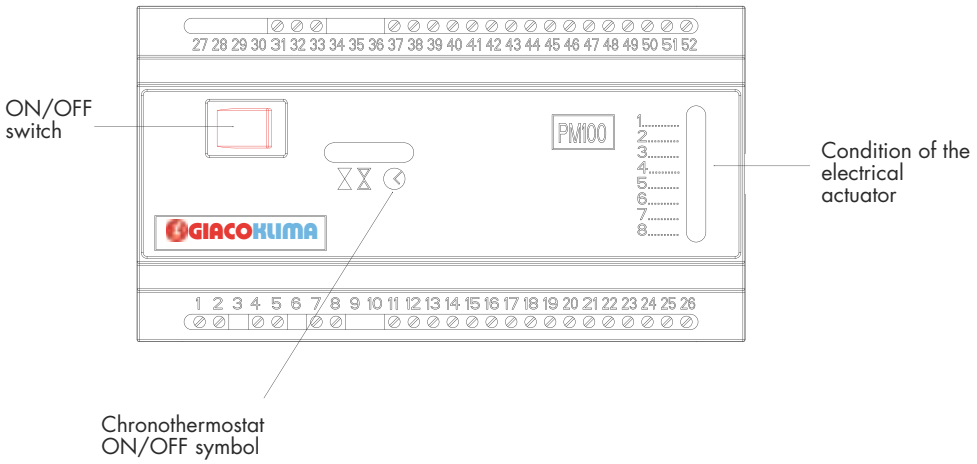
Dimensions



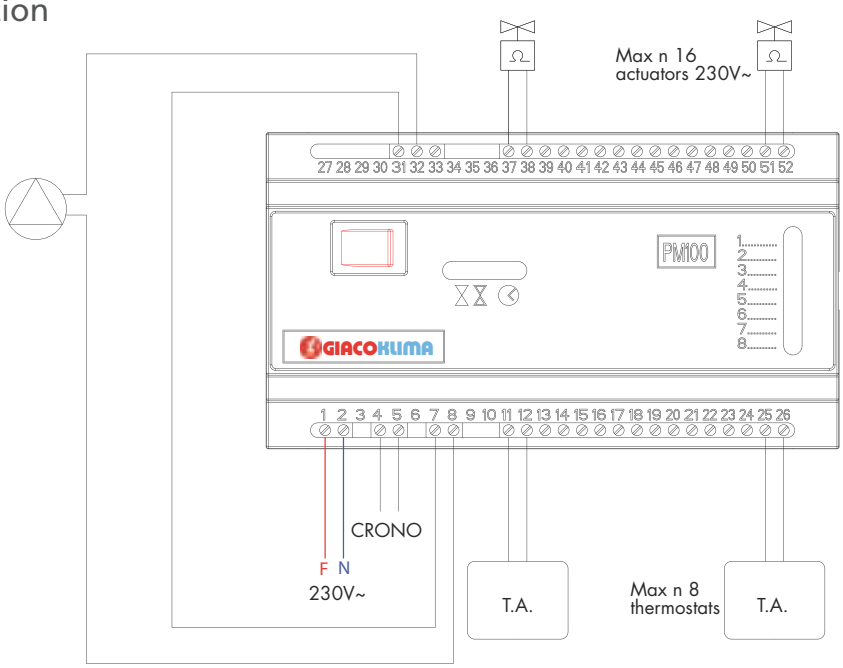


Legenda

BINDING-SCREWS	FUNCTION
1-2	Supply 230 V ~
4-5	Chrono input
7-8	Additional commanded output 230 V ~
11-12...25 26	Inputs for ambient thermostats (no.8)
31 32 (NO) 32 33 (NC)	Outlet free contacts for circulator connection
37-38... 51-52	Outputs of the electrical actuators

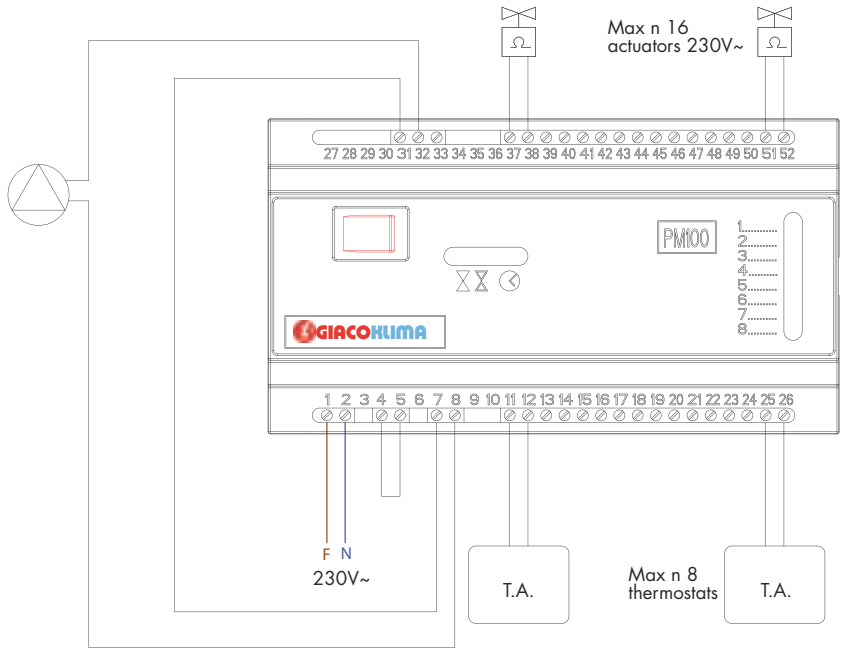
Connections

Chrono function



The **PM100R** has 2 binding-screws (4-5) for an eventual connection to the chrono device (free contact). This contact, when it is open, disables all functions of the **PM100R**. As a consequence, all supplies to the circulator and to the actuators are interrupted. If the chrono is not used, it is necessary to connect electrically the binding-screws.

Without chrono function



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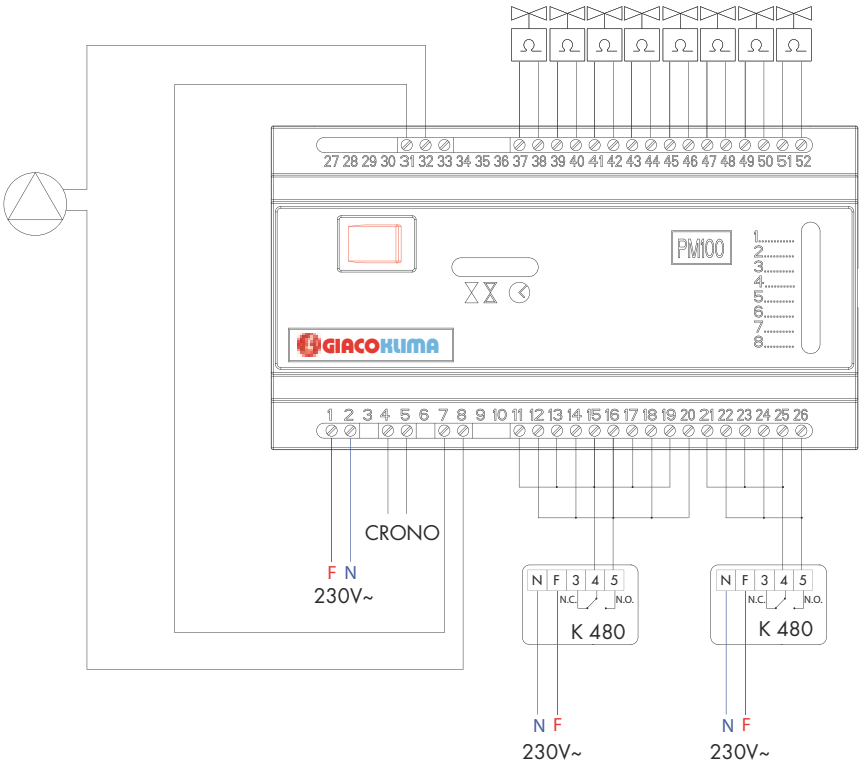
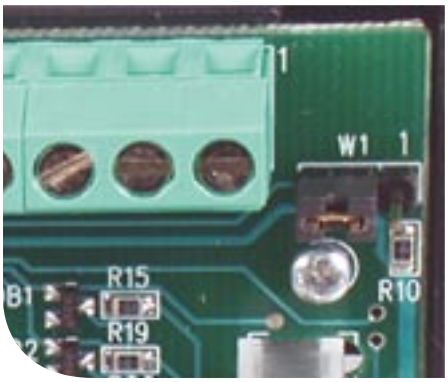
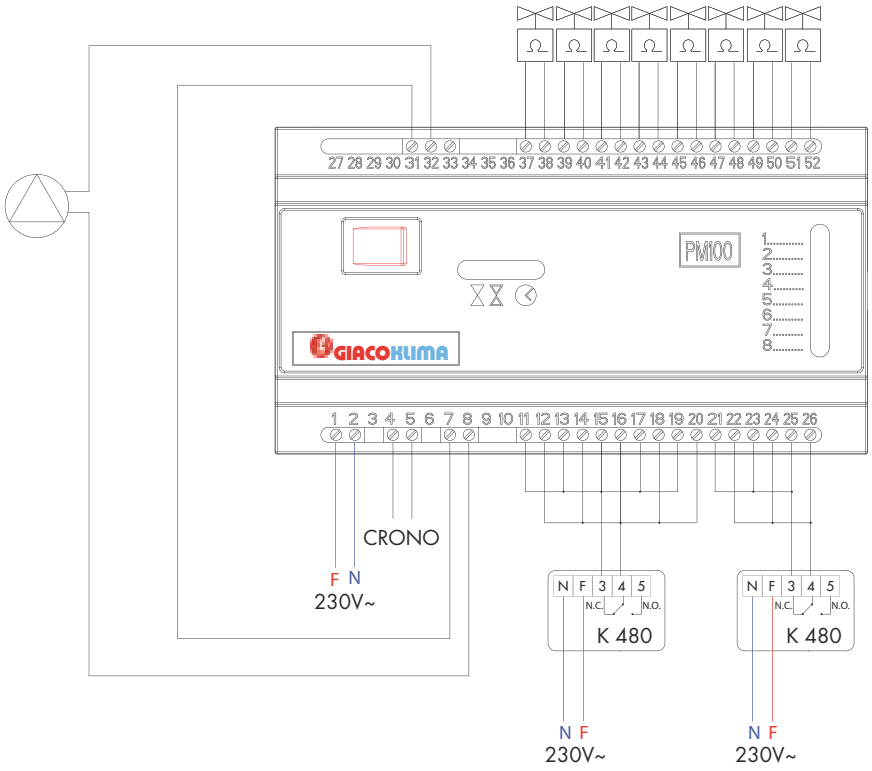
Use with electrical actuators R473 (N.C.)

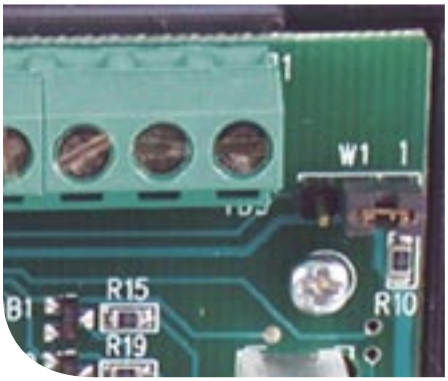




The scheme shows the connection of no. 2 thermostats, which drive no. 8 **R473** (effect the electrical connection in parallel as indicated); if you use more than one thermostat, connect them directly.
The thermostats used with **R473** actuators shall be connected according to the drawing, open contact for ambient temperature higher than the set temperature. The W1 jumper shall be positioned for use with **R473**.

Use with electrical actuators R478 (N.O.)





The scheme shows the connection of no.2 thermostats which drive no.8 **R478** (effect the electrical connection in parallel as indicated); if you use more than one thermostat, connect them directly. The thermostats used with actuators **R478** shall be connected as indicated in the drawing, closed contact for ambient temperature higher than the set temperature.
The jumper W1 shall be positioned for use with **R478**.

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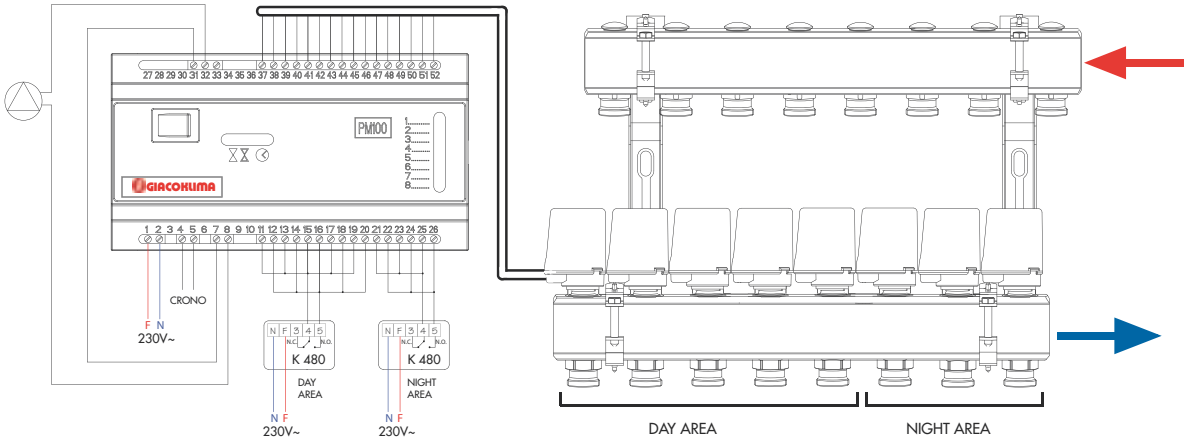
Application



In figure you will see the scheme of a radiator installation with single pipe distribution, using the **R553D** manifold and the electrical actuators model **R473** (N.C.).

Supply voltage	230V ~ ± 10%
Fuse	6.3 A delayed
Functioning condition	LED Lamp
Inlets from thermostats	Contacts free from voltage (min. 1A @230V ~) *
Inlet chrono function	Contacts free from voltage (max. 8A @230V ~)
Outlets for actuators (R478-473)	230V ~
Outlet for circulator	Contacts free from voltage
Driven outlet	Protected by a fuse and driven by the chrono function
Connection binding-screws	Terminali a vite per fili da 1.5 mm²
Protections	IP20 (IEC44)
Working ambient conditions	0 - 50 °C 10 - 90 % U.R. without condensate
Storage ambient conditions	-20 - 70 °C 10 - 90 % U.R. without condensate
Dimensions	157 x 88 x 60 mm - DIN43 880

* the load of 1.2 A is nearly the same as the take-off load of no. 2 electrical actuators R478/R473 230V in parallel.

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