EnergoControl

Electric Heating Controller EVR-M

Short facts about EVR-M

- Complete electric heating controller with built-in sensor and set-point adjustment.
- Automatic adaption to connected supply voltage 210...415 V.
- For loads up to 3.6 kW (230 V) or 6.4 kW (400 V).
- Adjustable night set-back, 0...10 K.
- Function for min/max limitation.
- Supports external temperature and limitation sensor
- Automatic adaption of the control function, P- or PI-control.

Application
The EVR-M is an electric heating controller, with triac control, for single phase or two phase electric heating.

It is intended primarily for wall mounting, and connected in series between the power supply and electric heaters; such as radiant heating panels, heating coils or radiators.

The EVR-M has a built-in temperature controller with input for an external main sensor as well as for the sensor for minimum or maximum limitation. It also has a built-in sensor that can be used as main sensor for controlling room temperature.

The EVR-M has a minimum or maximum limitation function which is used when there is a need to regulate the maximum or minimum supply air temperature.

It can also provide an adjustable night set-back via an external time switch. The set-point is then lowered by the set value.

Controlling larger electrical outputs
In cases where the load is larger than the capacity of the EVR-M; the output can be divided and controlled in combination with the slave unit EVR-ADD, see separate brochure.

Function
The controller pulses the entire output load ON/OFF.

It utilizes time-proportional control, the ratio between On-time and Off-time is varied to fit the prevailing heating requirement, e.g. On-time = 30 s and Off-time = 30 s. The cycle-time (the sum of on-time and off-time) is fixed at approximately 60 seconds.

This control accuracy contributes to reduced energy costs and to the increased comfort of an even temperature.

Since the current is switched by a semiconductor, triac, there are no moving parts that can wear out. The current is switched at zero crossing, to eliminate network disturbance. It automatically adapts control mode to suit the dynamics of the controlled object.

For rapid temperature changes, the electric heating controller will work as a PI-controller with a fixed P-band and a fixed I-time. For slow temperature changes it will work as a P-controller with a fixed P-band.

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Technical Data

Supply voltage:	210...415 V AC, 50/60 Hz. 1- or 2-phase, automatic adaptation
Output load:	Resistive load, max 16 A, min 1 A *At 230 V, the max. output is 3600 W and the min. output 230 W* *At 400 V, the max. output is 6400 W and the min. output 400 W*
Power dissipation:	20 W of heat at full load
Ambient temperature:	0...30°C
Ambient humidity:	Max. 90 % RH, non-condensing
Storage temperature:	-40...+50°C
Protection class:	IP20
Weight:	0.3 kg

Settings

Set-point:	0...30°C. Knob with scale for other temperature ranges can be ordered
Night set-back:	0...10 K

Control Unit Parameters

Pulse period:	60 seconds
P-band	20 K (rapid temperature changes), 1.5 K (slow temperature changes)
I-time	6 min (rapid temperature changes)
Indication:	Red LED on the bottom of the unit that lights up when power is pulsed to a heater

Sensor

Built-in sensor:	Measurement range 0...30°C
Sensor inputs	External main sensor and external sensor for temperature limitation
Set-point range	0...30 °C (the external sensor determines the temperature range)
Set-point alternatives	Either internal set-point potentiometer or external setting device
Sensor element	NTC Energotech standard

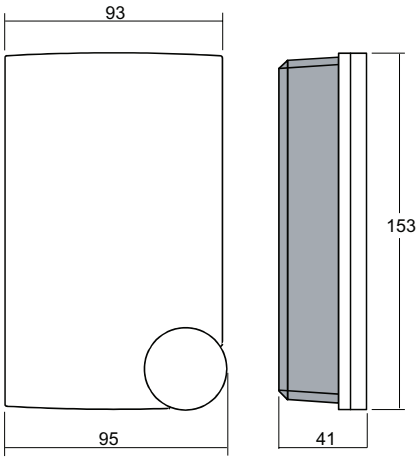
Accessories

EVR-ADD	Slave-controlled add-on unit for electric heating controller
TG-R4xx	Room sensor, external, NTC Energotech
TG-G1xx	Floor sensor, external, NTC Energotech
TG-K3xx	Duct sensor, external, NTC Energotech

CE

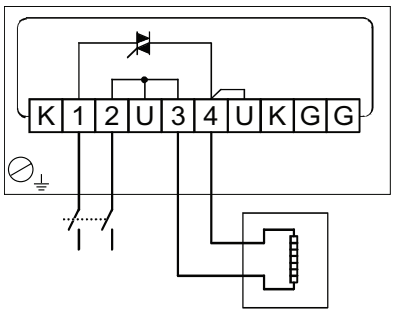
Low Voltage Directive (LVD) standards: This product conforms to the requirements of the European Low Voltage Directive (LVD) 2006/95/EC through product standards EN 60730-1 and EN 60730-2-9.
EMC emissions and immunity standards: This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61000-6-1 and EN 61000-6-3.
RoHS: This product conforms to the Directive 2011/65/EU of the European Parliament and of the Council.

Dimensions and Wiring



Millimeter

Supply voltage and load



Other connectivity options are described in the tech. manual

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