PULSER-M

Controller with PI-control, 230...400 V AC, wall mounting

Wall mounted electric heating controller intended for control of radiators or electric heating coils. It is a complete controller with built-in sensor and setpoint adjustment. It pulses the whole load on/off and utilises time-proportional triac control. Both automatic control function adaptation, P- or PI-control, and supply voltage adaptation, 230 V / 400 V.

✓ Function for minimum / maximum limitation

✓ For loads up to 3.6 kW (230 V) or 6.4 kW (400 V)

✓ Automatic adaption of control function, P or PI-control

✓ Supports external temperature and limitation sensor

✓ Adjustable night set-back 0...10 K

Application

This is an electric heating controller (triac control) for single phase or two phase electric heating. It 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 electric heating controller 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 setpoint is then lowered by the set value.

Function

The controller pulses the entire output load ON/OFF. It utilises 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 gives 50% output power. 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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Installation

The electric heating controller is connected in series between power supply and an electric heater, for example an electric heating battery or electric panel. It is mounted on a wall. If the unit is to be used with the internal sensor, it should be mounted approximately 1.5 m above floor level at a location with a representative temperature and good air circulation.

When the electric heater is larger than the capacity of the controller the load can be split and controlled in combination with the ancillary unit PULSER-ADD.

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Technical data

Supply voltage	230...400 (210 - 415 V ~ 50/60 Hz 16 A)
Pulse period	60 s
Mounting	Wall
Power dissipation	20 W of heat at full load
Protection class	IP20
P-band	20 K (rapid temperature changes), 1.5 K (slow temperature changes)
I-time	6 min (rapid temperature changes)
Ambient temperature	0...30 °C
Ambient humidity	Max. 90 % RH, non-condensing
Storage temperature	-40...+50 °C
Dimensions, external (WxHxD)	95 x 153 x 41 mm
Cable connection	Cage clamp
Weight (incl. packaging)	0.33 kg

Output load	Resistive load, max 16 A, min 1 A
Sensor inputs	External main sensor and external sensor for temperature limitation
Sensor element	NTC Regin standard
Setpoint range	0...30 °C (the external sensor determines the temperature range)
Setpoint alternatives	Either internal setpoint potentiometer or external setting device
Night setback	0...10 K
Indication	Red LED that is lit when power is pulsed to the heater

CE

This product carries the CE-mark. More information is available at www.regincontrols.com.

Accessories

Article	Description
PULSER- ADD	Slave-controlled add-on unit for electric heating controller
TG-K3xx	Duct sensor, NTC Regin
TG-G1xx	Floor sensor, NTC Regin
TG-R4xx	Room sensor, NTC Regin
TRY-RATT-2271 / -1588 / -1589 / -1590	Setpoint knobs and scales for different setpoint ranges

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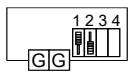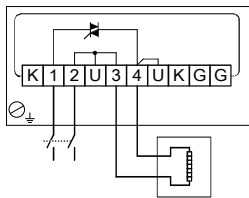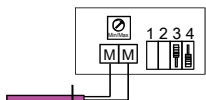REGIN
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Dimensions
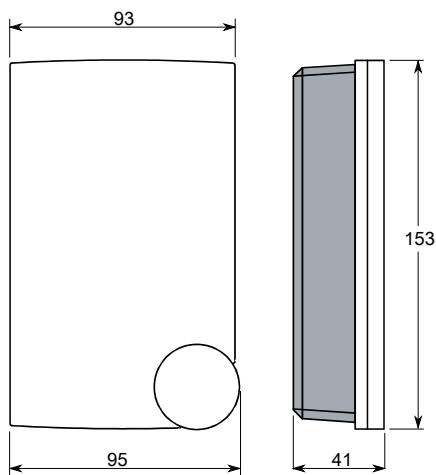
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Wiring

Fig. 1 Terminals for external sensor and setpoint and the corresponding DIP-switches 1 and 2

Fig. 2 Terminals for minimum/maximum limit sensor and the corresponding DIP-switches 3 and 4

Documentation

All documentation can be downloaded from www.regincontrols.com.

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