PULSER

Triac controller for electric heating
Single phase or two phase

PULSER® is an electric heating controller for controlling electric heating batteries, electric panels etc. The controller can be connected to single phase or two phase voltage, 210-415 V.

* PULSER is a complete controller with built-in sensor and setpoint adjustment.
* External sensor and external setpoint can be connected.
* Control function adapts automatically, using PI for supply air control and P for room control.
* For loads up to 3.6kW (230 V) or 6.4kW (400 V).
* Automatic adaption to connected supply voltage 210 - 415 V.
* Adjustable night set-back, 0...10K.

Function

PULSER is an electric heating controller (triac control) for single phase or two phase electric heating. Intended primarily for wall mounting, it is connected in series between a power supply and electric heater; such as an electric heating battery or electric panel.

PULSER has a built-in temperature controller featuring external sensor input, where the sensor can for instance be mounted in a room or a supply-air duct. For control of room temperature, the on-board sensor built into PULSER may be used.

The controller uses time-proportional control, where the On-time and Off-time ratio is varied to fit the prevailing heating requirement. E.g. ON = 30 s and OFF = 30 s gives 50% output power. The cycle-time (ie: combined on-/off-time) is fixed at approx. 60s.

This contributes to greater energy savings and to the increased comfort that an even temperature brings with it. Since the current is switched by semiconductor (triac), there are no moving parts that can wear out. Network disturbances are also eliminated, as the current is switched at a zero phase angle.

PULSER automatically adapts its control mode to suit the dynamics of the controlled object.

Supply air temperature control
For rapid temperature changes, PULSER will function as a PI controller. The P band is 20 K and the I-time 6 min.

Room temperature control
For slow temperature changes, PULSER will work as a P controller with a fixed proportional band of 2K.

Night set-back
Using an external time switch, PULSER can provide an adjustable night set-back. On closure of the time-switch contact the set-point is lowered by the set value, 0...10K.

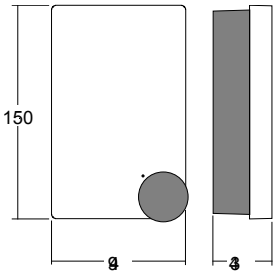
Controlling larger electrical outputs
When the electric battery or heater is larger than the capacity of PULSER, the load can be split and controlled by PULSER in combination with the ancillary unit PULSER-ADD (see separate leaflet.)

Min/max adjustment
When min/max limiting of supply air temp. is required, use PULSER-M.

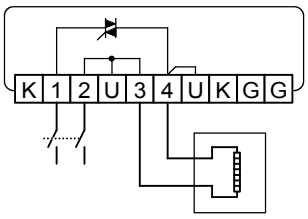
Technical data

Supply voltage	210...415 V AC. 1-phase or 2-phase. Automatic adaptation.
Power output	Up to 16 A, min. 1 A. At 230 V, max output is 3.6 kW and min. output 230 W. At 400 V max effect will be 6.4 kW and min. effect will be 400 W.
Power emission	20 W at full load.
Ambient temperature, running	0...30°C with no condensation
Ambient humidity	Max 90%rH
Storage temperature	-40...+50°C
Form of protection	IP20
Weight	0.3 kg
CE	This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61000-6-1, EN 61000-6-3 and to the directive 2006/95/EG LVD through product standards EN 60730-1, EN 60730-2-9.
Control unit parameters	Supply air control: PI function using P-band 20 K and I-tid 6 min. Room control: P function using P-band 1.5 K.
Pulse period	60 sek
Indicator	Red LED on side of PULSER, lights up when power is pulsed to the heater.
Built-in sensor	Measurement range 0...30°C
Input external sensor/setpoint	For Regin brand NTC sensors and setpoint devices. See product sheet 4-100 for selection of sensors and setpoint devices. Temperature range depends on measuring range of sensor. The sensor connection has high ground zero potential and the installation should therefore follow standard mains voltage installation procedures.
Settings	
Setpoint	0...30°C. Knob with scale for other temperature ranges can be ordered.
Night set-back	0...10 K

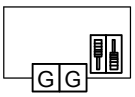
Dimensions and wiring



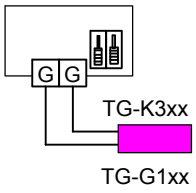
Supply voltage and load.



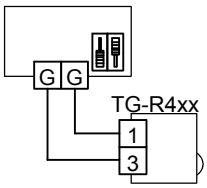
Internal setpoint and sensor.



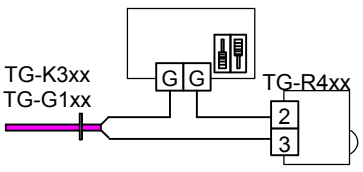
External sensor and internal setpoint.



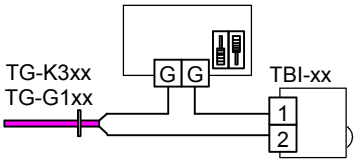
Room control using TG-R4xx as sensor and setpoint.



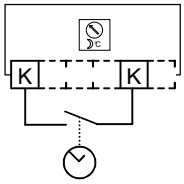
External separate sensor and TG-R4xx as setpoint.



External separate sensor and TBI-xx as setpoint



Night set-back function.



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