PULSER/D

Triac controller for electric heating
Single phase or two phase

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

* PULSER/D is intended for DIN-rail mounting in a cabinet.
* For loads up to 3.6kW (230 V) or 6.4kW (400 V).
* Automatic adaption of control function, P or PI-control.
* Automatic adaption for supply voltage 200 - 415 V.
* Night set-back 5K.

Function

PULSER/D is an electric heating controller (triac control) for single phase or two phase (200 - 415 V) electric heating.
It is intended primarily for DIN-rail mounting in a cabinet and is connected in series between power supply and an electric heater, for example an electric heating battery or electric panel.

PULSER/D has a built-in temperature controller with input for a sensor placed in a supply-air duct or in a room, for example.

Function
The controller pulses the entire power output ON/OFF. The controller utilises time-proportional control, the ratio between On-time and Off-time is varied to fit the prevailing heating requirement e.g. ON = 30 s and OFF = 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 phase angle, to eliminate network disturbance.

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

Supply air temperature control
For rapid temperature changes, PULSER/D will work as a PI-controller with a fixed proportional band of 20K and a fixed reset time of 6 minutes.

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

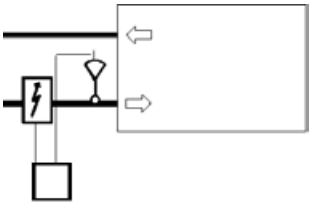
Night set-back
PULSER/D can provide night set-back via an external time switch. On closure of the time-switch contact the PULSER set-point is lowered by 5 K.

Controlling larger electric heaters
When the electric heater is larger than the capacity of PULSER/D the load can be split and controlled by PULSER/D in combination with the ancillary unit PULSER-ADD, see separate leaflet.

Minimum or maximum limit control
When minimum or maximum limiting of the supply air temperature is required use PULSER-M.

Application example

To control electric heaters in airconditioning or ventilation systems for individual room temperature control. A duct heater controlled by a PULSER/D with the sensor in the room or in the duct easily provides the exact temperature required.



Technical data

General

Supply voltage	200... 415 V AC 50-60 Hz, single or two phase. Automatic adaption
Power output	Maximum 16A, minimum 1A
Ambient temperature	Maximum 40°C with no condensation. N.B. Pulser generates 20W of heat
Storage temperature	-40 - +50°C
Ambient humidity	90% RH maximum
Dimension (w x h x d)	115 x 88 x 59 mm
Form of protection	IP20
CE	This product conforms with the requirements of European EMC standards CENELEC EN 50081-1 and EN 50082-1, European LVD standards IEC 669-1 and IEC 669-2-1 and carries the CE mark

Control unit parameters

Proportional band	20K, fixed (Rapid temperature changes i.e. supply air control)
Reset time	6 minutes, fixed (Rapid temperature changes i.e. supply air control)
Proportional band	2K, fixed (Slow temperature change i.e. room control)
Pulse period	60 seconds, fixed
Night set-back	5K
Indicator	LED that is lit when power is pulsed to the heater

Inputs

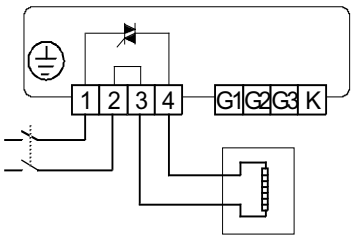
Sensor	One (1) input for main sensor. See Section 6-100 for choice of sensor
Setpoint	Selectable, either internal setpoint potentiometer or external setting device

Setting

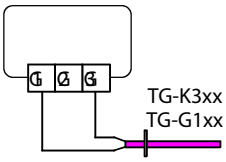
Setpoint	0...30°C. The choice of sensor determines the controller setpoint range

Dimension and wiring

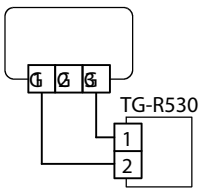
Supply voltage and load



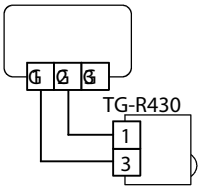
External sensor and internal setpoint



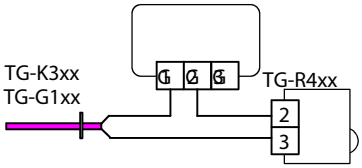
Room sensor and internal setpoint



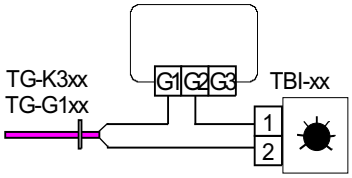
Room sensor using TG-R430 as external sensor and setpoint



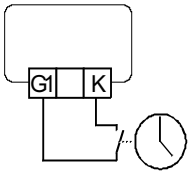
External separate sensor and TG-R4XX as setpoint



External separate sensor and potentiometer TBI-XX as setpoint



Night set-back 5K function



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