

Triac Controller for electric heating
Single phase or two phase



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

- * PULSER-DSP has display, built-in sensor and setpoint adjustment
- * External sensor can be connected
- * The settings for setpoint, P-band etc. are made by means of buttons on the front
- * For loads up to 2.3kW (230 V) or 4kW (400 V)
- * Automatic adaption to connected supply voltage 200...415 V
- * Input for occupancy control (night setback)

Function

PULSER-DSP is an electric heating controller (triac control) for single phase or two phase electric heating. It is intended primarily for wall mounting and is connected in series between power supply and an electric heater, for example an electric heating battery or electric panel.

PULSER-DSP has a built-in temperature controller with input for an external sensor which is placed in a supply-air duct or in a room, for example. For controlling room temperature the built-in sensor in PULSER-DSP can be used.

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 approx 60s.

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.

Sensors

The controller has a built-in sensor. Alternatively an external sensor (Regin NTC 0...30°C) can be used. The controller will automatically use external sensor as input sensor if one is connected, otherwise the internal sensor is used.

Setpoint

Is set in the setting-level menu. The settings are factory set to 21°C.

Setpoint offset

By pressing [+] or [-] button on the front individual setpoint adjustments can easily be made, without entering the setting level of the menu system. Settable +/- 3K in 0.5 steps.

Occupancy control

The controller has an input for closing contact from the occupancy detector or similar device. When presence is determined the controller runs with comfort setpoint. If presence is not detected, the controller works in stand-by mode, with reduced setpoint for heating.

Display and menu system

The menu system of the controller has a level for setting that is accessed in the following way:

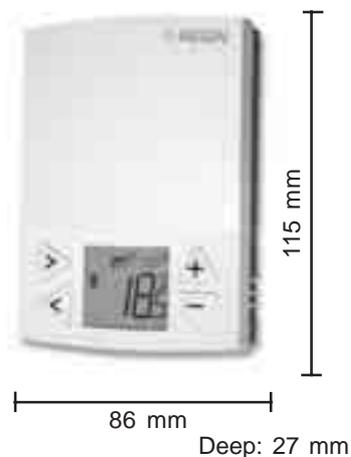
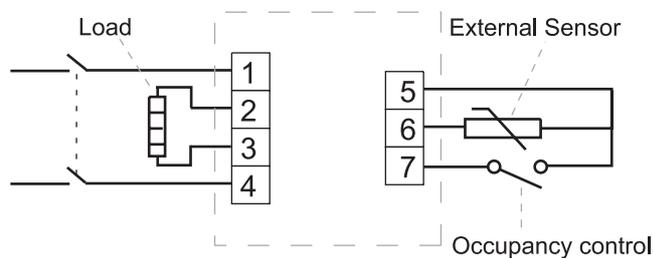
Both buttons [<] and [>] are pressed for five seconds. The display shows 000.

Then press button [-] three times, the controller enters setting level and gives access to setpoints, control parameters etc. See overleaf.

Technical data

Supply voltage	200... 415 V AC 50-60 Hz, single or two phase. Automatic adaption
Power output	Max. 10 A, min. 1 A. At 230 V the maximum load is 2.3 kW and the minimum load 230 W. At 400 V the maximum load is 4 kW and the minimum load 400 W
Power emission	The controller emits approx. 15 W of heat which must be dissipated
Ambient temperature	Maximum 30°C with no condensation. N.B. Pulser-DSP generates 20W
Storage temperature	-40 - +50°C.
Ambient humidity	90% RH maximum
Protection class	IP20
CE	This product conforms with the requirements of European EMC standards CENELEC EN 61000-6-3 and EN 6100-6-1, European LVD standards IEC 669-1 and IEC 669-2-1 and carries the CE mark
Pulse period	60 seconds, fixed
Indicator	LED that is lit when power is pulsed to the heater
Built-in sensor	Measuring range 0...30°C
Input external sensor/setpoint	Intended for NTC-sensor 0...30°C. For choice of sensor or setpoint device see leaflet
Occupancy control	Closing potential free contact. N.B. There is a line-potential (230 or 400 V AC) on all terminals.
Settings (menu)	Factory settings (rangeability 0...30°C)
Setpoint	21°C
Occupancy control	21°C (setpoint comfort) 17°C (setpoint stand-by)
P-band	0.5...99.9 K
I-time	1...999 sec.
Calibration (temp. sensor)	+/- 3 K
Occupancy function	Active or Unactive (factory setting: unactivated)

Wiring, display and dimensions



- Bar graph for heating output level
- Occupancy control,
 - Man in room (the frame) means occupied
 - Man out of room means unoccupied
- Actual temperature is displayed in 0.5°C

