



**PULSER...X is an electric heating controller for controlling electric heating batteries, electric panels etc. The controller is controlled by an external signal from a DDC or other controller**

- \* A number of different models for different control signals.
- \* A model for manual setting of output 0... 100%.
- \* A model with a low voltage sensor input.
- \* For loads up to 3.6kW (230 V) or 6.4kW (400 V).

## Function

PULSER...X is an electric heating controller (triac control) for single phase (230V) or two phase (400V) 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.

### 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 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 .

### External signal

PULSER220/380X... is controlled by an external signal from a DDC or other controller.

PULSER220/380X... is controlled by an external control signal. Models are available for all commonly used signals. See model designations overleaf.

### Low voltage sensor input

PULSER220/380X1510 for sensor input is intended to be connected to a REGIN NTC-sensor and, contrast to standard Pulser models, has a low voltage sensor system.

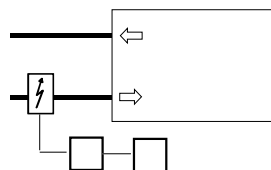
This means that all types of REGIN NTC-sensors as described in leaflet 6-100 can be used. PULSER220/380X1510 has a setpoint knob for setting the desired temperature. The knob has a standard range of 0...30°C but other ranges are available on request.

### Manual output setting

PULSER220/380X0100 has manual output setting of output signal 0...100%. The required signal can be set between zero and maximum on the setpoint knob. For slow temperature changes PULSER will work as a P controller with a fixed proportional band of 2K.

## Application example

To control an electric heater in e.g. a building automation system. The master controller will call upon the PULSER X when so required.



## Models

TYPE	Power supply	Control signal
PULSER220X1510	230 V	Regin NTC-sensor
PULSER220X0100	230 V	Manual output setting 0-100%.
PULSER220X010	230 V	0-10 V DC
PULSER220X210	230 V	2-10 V DC
PULSER220X102	230 V	10-2 V DC
PULSER220X020F	230 V	0-20 V phase cut
PULSER220X420	230 V	4-20 mA
PULSER380X1510	400 V	Regin NTC-sensors
PULSER380X0100	400 V	Manual output setting 0-10-100%.
PULSER380X010	400 V	0-10 V DC
PULSER220X210	400 V	2-10 V DC
PULSER220X102	400 V	10-2 V DC
PULSER220X020F	400 V	0-20 V phase cut
PULSER220X420	400 V	4-20 mA

## Technical data

### General

Supply voltage	230V AC single phase alt. 400 V AC 2-phase 50-60 Hz +/-15%.
Power output	Maximum 16A, minimum 1A
Ambient temperature	Maximum 30°C with no condensation. N.B. Pulser generates 20W.
Storage temperature	-40 - +50°C.
Ambient humidity	90% RH maximum.
Dimension (w x h x d)	94 x 150 x 43 mm.
Form of protection	IP20



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

Pulse period	60 seconds, fixed
Indicator	LED that is lit when power is pulsed to the heater.

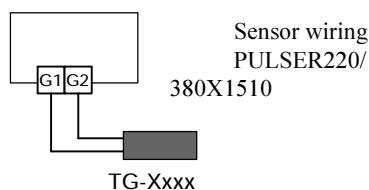
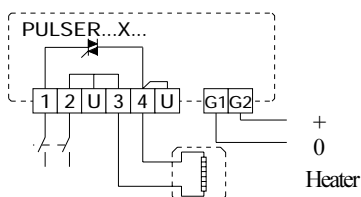
### Inputs

Control signal	PULSER220/380X1510	Only for Regin NTC-sensor. The choice of sensor determines the controller setpoint range
	PULSER220/380X...	For external control signal. See models above.

### Settings

Setpoint	PULSER220/380X1510	0...30°C. The choice of sensor determines the controller setpoint range.
	PULSER220/380X0100	Manual output setting of output signal 0...100%.

## Wiring



FOR INDOOR CLIMATE WITH OPTIMUM CONTROL

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