

PULSER, 1- OR 2-PHASE



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.



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	95 x 153 x 41 mm
Cable connection	Cage clamp
Inputs/outputs (I/Os)	
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

Article	Description	Mounting	Note
PULSER-M	Electric heating controller with min./max. limitation	Wall	
PULSER-ADD	Add-on unit		



Electric heating controller for external input signal 0-10 V, 230 V AC or 400 V AC, wall mounting

Electric heating controller for controlling electric heating batteries, electric panels etc. It operates on an input signal from an external controller.

Technical data	
Supply voltage	...230X...: 230 V ~ (207...253 V ~ 50/60 Hz 16 A) ...400X...: 400 V ~ (360...440 V ~ 50/60 Hz 16 A)
Ambient temperature	0...30 °C , non-condensing
Pulse period	6/60/120 s , adjustable
Dimensions, external (WxHxD)	93 x 153 x 40 mm
Mounting	Wall
Protection class	IP20
Input signal	0...10 V
Output load	Resistive load, max 16 A, min 1 A

Article	Description	Supply voltage	Note
PULSER230X010	Electric heating controller for external 0...10 V DC control signal	230 V AC	
PULSER400X010	Electric heating controller for external 0...10 V DC control signal	400 V AC	



Electric heating controller with PI-control, 230...400 V AC, DIN-rail mounting

Electric heating controllers intended for control of radiators or electric heating coils. They can be mounted on a DIN-rail in a cabinet. The electric heating controllers pulse the whole load on/off and utilise time-proportional triac control. Automatic control function adaptation, P- or PI-control.

Technical data	
Supply voltage	230...400 V (210 - 415 V ~ 50/60 Hz 16 A)
Pulse period	60 s
Mounting	DIN-rail
Power dissipation	20 W of heat at full load
Protection class	IP20
P-band	20 K (rapid temperature changes), 2 K (slow temperature changes)
I-time	6 min (rapid temperature changes)
Ambient temperature	0...40 °C
Ambient humidity	Max. 90 % RH, non-condensing
Storage temperature	-40...+50 °C
Dimensions (WxHxD)	115 x 88 x 59 mm
Number of modules	6.6
Inputs/outputs (I/O)	
Output load	Resistive load, max 16 A, min 1 A
Sensor inputs	One input for main sensor
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	5 K
Indication	Red LED that is lit when power is pulsed to the heater.

Article	Description	Note
PULSER/D	Electric heating controller	



Electric heating controller for external signal 0-10 V, 230/400 V AC, DIN-rail mounting

Electric heating controllers intended for control of radiators or electric heating coils. They can be mounted on a DIN-rail in a cabinet. The electric heating controllers utilise time-proportional triac control and operate on an external 0...10 V input signal.

Technical data	
Supply voltage	230 V ~ (207...253 V ~ 50/60 Hz 16 A) or 400 V ~ (360...440 V ~ 50/60 Hz), automatic adaption to supplied voltage
Pulse period	6/60/120 s, adjustable
Mounting	DIN-rail
Power dissipation	20 W of heat at full load
Protection class	IP20
Ambient temperature	0...40 °C °C
Ambient humidity	Max. 90 % RH, non-condensing
Storage temperature	-40...+50 °C
Dimensions (WxHxD)	115 x 88 x 59 mm
Number of modules	6.6
Inputs/outputs (I/O)	
Input signal	0...10 V DC
Output load	Resistive load, max 16 A, min 1 A

Article	Description	Note
PULSER-X/D	Electric heating controller for external 0...10 V DC control signal	

TTC, 3-PHASE



Electric heating controller for wall mounting, 3-phase, 210...415 V

The controller can be used with internal or external setpoint. Automatic control function adaptation, P- or PI-control. The controller can also be set to be controlled by an external 0...10 V DC signal.

Technical data	
Supply voltage	3-phase, 210...255 / 380...415 V AC, automatic adaptation
Setpoint	0...30 °C (the sensor determines the range)
Max. load	Max. 25 A, min. 3 A/phase
Sensor inputs	Two, main and min./max. limiting sensors (NTC sensor)
Control signal	0...10 V DC (external signal)
Mounting	Wall
Protection class	IP30
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time (supply air temperature control)	6 min, fixed
Pulse period	6...120 s

Article	Description	Note
TTC2000	Electric heating controller	



To control extra loads, the slave board TT-SI can easily be mounted into the unit.



Electric heating controller for DIN-rail mounting, 3-phase, 210...415 V, 40A

For control of electric heating coils or radiators. The controllers pulse the whole load on/off and utilise time-proportional triac control. Automatic control function adaptation, P- or PI-control. The controllers can also be set to be controlled by an external 0...10 V DC signal.

Technical data	
Ambient temperature	0...40 °C
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Output	25 A, 3 x 400 V AC, 17 kW (3 x 230 V, 10 kW)
Inputs	
Setpoint	0...30 °C (the sensor determines the range)
Sensor inputs	Two, main and max./min. limiting sensors (NTC sensor).
Control signal	0...10 V DC

Article	Load	Supply voltage	Pulse period	Dimensions (HxWxD)	Note
TTC25	25 A	3-phase, 210...255 / 380...415 V AC, automatic adaptation	6...60 s	200 x 195 x 95	
TTC40F	40 A	3-phase, 210...255 / 380...415 V AC, automatic adaptation	6...60 s	220 x 195 x 95	
TTC80F	80 A	3-phase, 400 V AC ±10%	6...120 s	220 x 195 x 105	

ACCESSORIES



TT-S1

Slave board for electric heating controllers

TT-S1 is intended for use together with the electric heating controller TTC2000, in order to control extra loads.

Article	Description	Note
TT-S1	Slave board for control of extra loads (+17 kW)	



TRY-RATT-2271

Knobs for Pulser

Alternative setpoint knobs, when using sensors with other temperature ranges.

KNOBS FOR PULSER

Article	Temperature range	Note
TRY-RATT-2271	0...30 °C	
TRY-RATT-1588	20...50 °C	



TRY-RATT-1588



Step controller; 4- or 6-stage

Controller intended for control of electric heating coils, four or six relays. It can be used with any controller with a 0...10 V DC or 10...2 V DC output signal. The step controller also have an analogue output (0...10 V) for control of an electric heating controller to give proportional heating between steps.

Technical data	
Supply voltage	24 V AC, 6 VA
Output	4 alt. 6 relays (closing), binary or sequential control
Input signal	0...10 V DC
Output signal	0...10 V DC
Mounting	DIN-rail
Number of modules	6
Protection class	IP20

Article	Description	Run-on time	Note
TT-S4/D	Step controller with 4 relays		
TT-S6/D	Step controller with 6 relays		