6

ELECTRIC HEATING CONTROLLERS

Pulser, 1- or 2-phase

1- or 2-phase, 200...415 V

Controllers intended for control of radiators or electric heating coils. They can be mounted on a wall or in a cabinet. The 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	200...415 V AC, 50...60 Hz, 1- or 2-phase, automatic adaptation
Ambient temperature	Max. 30 °C (NOTE! Pulser generates 20 W heating at full load.)
P-band	20 K (rapid temperature changes) 1.5 K (slow temperature changes)
I-time	6 min (rapid temperature changes)
Pulse period	60 s
Protection class	IP20
Inputs/outputs (I/O:s)	
Sensor	One main sensor or two main sensors (only PULSER-M)
Setpoint	0...30 °C (the sensor determines the temperature range (NTC sensor))
Night setback	0...10 K
Output (load)	16 A (min. 1 A) 1-phase max. 3.6 kW, 2-phase max. 6.4 kW

Article	Description	Mounting	Number of modules	Note
PULSER	Electric heating controller	Wall	-	
PULSER/D	Electric heating controller	DIN-rail	6.6 (115 x 88 x 59)	
PULSER-ADD	Add-on unit	Wall	-	
PULSER-M	Electric heating controller with min./max. limitation	Wall	-	
PULSER-X/D	Electric heating controller for external 0...10 V DC control signal	DIN-rail	6.6 (115 x 88 x 59)	

1- or 2-phase, 230/400 V

Heating controller for controlling electric heating batteries, electric panels etc.The controller operates on an external control signal from an external controller.

Technical data	
Supply voltage	230 V AC, alternatively 400 V AC ±15 %, 50...60 Hz, 1-phase or 2-phase
Ambient temperature	0…30 °C (non-condensing)
Pulse period	6 / 60 / 120 s
Dimensions	93 x 153 x 40 mm
Mounting	Room
Protection class	IP20

Article	Description	Supply voltage	Load	Note
PULSER230X010	Electric heating controller for external 0...10 V DC control signal	230 V AC	Up to 16 A, min. 1 A. Max. output: 3.6 kW. Min. output: 230 W.	000
PULSER400X010	Electric heating controller for external 0...10 V DC control signal	400 V AC	Up to 16 A, min. 1 A. Max. output: 6.4 kW. Min. output: 400 W.	000

6

1-phase, 230 V and 24 V, LON communication

PULSER-HC-LON is a room controller based on LON technology. It has a triac output for control of electric heating and an extra output (cooling or heating) for 3-position or 24 V AC thermal actuators. The controller has a built-in sensor and a setpoint knob. An external sensor or setpoint device can also be used.

Technical data	
Supply voltage	1-phase, 230 V AC and 24 V AC
Output (load)	10 A
Setpoint	0...30 °C (the sensor determines the temperature range (Regin NTC sensor))
Setpoint adjustment	±3 °C
Load (extra output)	24 V AC, 3-point or one on/off, 0.5 A
Mounting	Room
Protection class	IP20

Article	Description	Note
PULSER-HC-LON	Room controller with LON communication, heating or cooling in sequence	

TTC, 3-phase

3-phase, 210...415 V, 25 A, wall mounting

TTC2000 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-S1 can easily be mounted into the unit.

210...415 V, 25 A, DIN mounting

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 controlled by an external 0...10 V DC signal.

Technical data	
Supply voltage	3-phase, 210...255 / 380...415 V AC, automatic adaptation
Ambient temperature	0...40 °C
Mounting	DIN-rail
Dimensions (WxHxD)	195 x 200 x 95 mm
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Pulse period	6...60 s
Load	25 A
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) Note: Does not apply to TTC25X.
Sensor inputs	Two, main and max./min. limiting sensors (NTC sensor). Note: Does not apply to TTC25X.
Control signal	0...10 V DC

Article	Description	For use with Regin NTC sensor	For external 0...10 V DC control signal only	External 0...10 V DC control signal option	Note
TTC25	Electric heating controller with temperature control	X	-	X	
TTC25X	Electric heating controller	-	X	-	

To control larger electrical loads, see the step controllers TT-S4/D and TT-S6/D.

210...415 V, 40 A, DIN mounting

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 controlled by an external 0...10 V DC signal.

Technical data	
Supply voltage	3-phase, 210...255 / 380...415 V AC, automatic adaptation
Ambient temperature	0...40 °C
Mounting	DIN-rail
Dimensions (WxHxD)	195 x 220 x 95 mm
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Pulse period	6...60 s
Load	40 A
Output	40 A, 3 x 400 V AC, 27 kW (3 x 230 V, 16 kW)
Inputs	
Setpoint	0...30 °C (the sensor determines the range) Note: Does not apply to TTC40FX.
Sensor inputs	Two, main and max./min. limiting sensors (NTC sensor). Note: Does not apply to TTC40FX.
Control signal	0...10 V DC

Article	Description	For use with Regin NTC sensor	For external 0...10 V DC control signal only	External 0...10 V DC control signal option	Note
TTC40F	Electric heating controller with temperature control	X	-	X	
TTC40FX	Electric heating controller	-	X	-	

To control larger electrical loads, see the step controllers TT-S4/D and TT-S6/D.

400 V AC, 63 A, DIN mounting

For control of electric heating coils or radiators. The controller pulses the whole load on/off through time-proportional triac control. 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, 400 V AC ±10%
Ambient temperature	0...40 °C
Mounting	DIN-rail
Dimensions (WxHxD)	195 x 220 x 105 mm
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Pulse period	6...120 s
Load	63 A
Output	63 A, 3 x 400 V AC, 43 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	Description	For use with Regin NTC sensor	For external 0...10 V DC control signal only	External 0...10 V DC control signal option	Note
TTC63F	Electric heating controller with temperature control	X	-	X	

To control larger electrical loads, see the step controllers TT-S4/D and TT-S6/D.

400 V AC, 80 A, DIN mounting

For control of electric heating coils or radiators. The controller pulses the whole load on/off through time-proportional triac control. 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, 400 V AC ±10%
Ambient temperature	0...40 °C
Mounting	DIN-rail
Dimensions (WxHxD)	195 x 220 x 105 mm
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Pulse period	6...120 s
Load	80 A
Output	80 A, 3 x 400 V AC, 55 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	Description	For use with Regin NTC sensor	For external 0...10 V DC control signal only	External 0...10 V DC control signal option	Note
TTC80F	Electric heating controller with temperature control	X	-	X	

To control larger electrical loads, see the step controllers TT-S4/D and TT-S6/D.

Accessories

Slave board for TTC2000

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)	

Scales and knobs for Pulser and TTC

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

Scales for TTC25/40 and Pulser/D

Article	Temperature range	Note
SKALA-3933	20...50 °C	
SKALA-3934	40...70 °C	
SKALA-3935	60...90 °C	

Knobs for TTC2000

Article	Temperature range	Note
TRY-RATT-3608	20...50 °C	
TRY-RATT-3609	40...70 °C	
TRY-RATT-3610	60...90 °C	

Knobs for Pulser

Article	Temperature range	Note
TRY-RATT-2271	0...30 °C	
TRY-RATT-1588	20...50 °C	
TRY-RATT-1589	40...70 °C	
TRY-RATT-1590	60...90 °C	

Step controller, 4- or 6-stage

Controllers intended for control of electric heating coils, four or six relays. They can be used with any controller with a 0...10 V DC or 10...2 V DC output signal. The step controllers also have an analogue output (0…10 V) for control of an electric heating controller (TTC or similar) 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		Note
TT-S4/D	Step controller with 4 relays	-	000
TT-S6/D	Step controller with 6 relays	3 min	000