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ELECTRIC HEATING CONTROLLERS



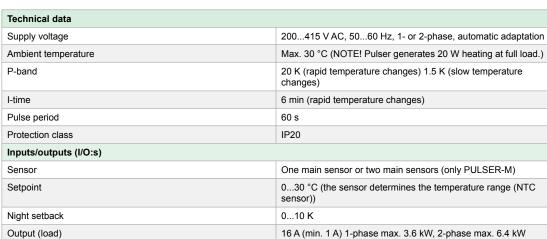




Pulser, I- or 2-phase

I- 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.



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 010 V DC control signal	DIN-rail	6.6 (115 x 88 x 59)	

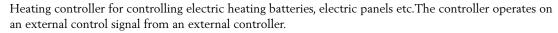






I- or 2-phase, 230/400 V







Technical data		
Supply voltage	230 V AC, alternatively 400 V AC ±15 %, 5060 Hz, 1-phase or 2-phase	
Ambient temperature	030 °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 010 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 010 V DC control signal	400 V AC	Up to 16 A, min. 1 A. Max. output: 6.4 kW. Min. output: 400 W.	000

I-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	$030\ ^{\circ}\text{C}$ (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

TTC2000

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 $0...10\,\mathrm{V}$ DC signal.

Technical data	
Supply voltage	3-phase, 210255 / 380415 V AC, automatic adaptation
Setpoint	030 °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	010 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	6120 s

Article	Description	
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 $0...10\,\mathrm{V}$ DC signal.

Technical data	
Supply voltage	3-phase, 210255 / 380415 V AC, automatic adaptation
Ambient temperature	040 °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	660 s
Load	25 A
Output	25 A, 3 x 400 V AC, 17 kW (3 x 230 V, 10 kW)
Inputs	
Setpoint	030 °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	010 V DC

Article	Description	For use with Regin NTC sensor	For external 010 V DC control signal only	External 010 V DC control signal option	Note
TTC25	Electric heating controller with temperature control	X	-	X	
TTC25X	Electric heating controller	-	Х	-	



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 $0...10\,\mathrm{V}$ DC signal.

Technical data	
Supply voltage	3-phase, 210255 / 380415 V AC, automatic adaptation
Ambient temperature	040 °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	660 s
Load	40 A
Output	40 A, 3 x 400 V AC, 27 kW (3 x 230 V, 16 kW)
Inputs	
Setpoint	030 °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	010 V DC

Article	Description	For use with Regin NTC sensor	For external 010 V DC control signal only	External 010 V DC control signal option	Note
TTC40F	Electric heating controller with temperature control	X	-	X	
TTC40FX	Electric heating controller	-	Х	-	



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 $0...10\,\mathrm{V}$ DC signal.

Technical data	
Supply voltage	3-phase, 400 V AC ±10%
Ambient temperature	040 °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	6120 s
Load	63 A
Output	63 A, 3 x 400 V AC, 43 kW
Inputs	
Setpoint	030 °C (the sensor determines the range)
Sensor inputs	Two, main and max./min. limiting sensors (NTC sensor).
Control signal	010 V DC

Article	Description	For use with Regin NTC sensor	For external 010 V DC control signal only	External 010 V DC control signal option	Note
TTC63F	Electric heating controller with temperature control	X	-	X	







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 $0...10\,\mathrm{V}$ DC signal.

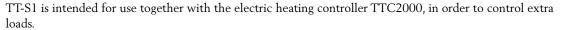
Technical data	
Supply voltage	3-phase, 400 V AC ±10%
Ambient temperature	040 °C
Mounting	DIN-rail
Dimensions (WxHxD)	195 x 220 x 105 mm
Protection class	IP20
P-band	Supply air temperature control: 20 K, fixed Room temperature control: 1.5 K, fixed
I-time	6 min, fixed
Pulse period	6120 s
Load	80 A
Output	80 A, 3 x 400 V AC, 55 kW
Inputs	
Setpoint	030 °C (the sensor determines the range)
Sensor inputs	Two, main and max./min. limiting sensors (NTC sensor).
Control signal	010 V DC

Article	Description	For use with Regin NTC sensor	For external 010 V DC control signal only	External 010 V DC control signal option	Note
TTC80F	Electric heating controller with temperature control	X	-	X	



Accessories

Slave board for TTC2000





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	2050 °C	
SKALA-3934	4070 °C	
SKALA-3935	6090 °C	

Knobs for TTC2000

Article	Temperature range	Note
TRY-RATT-3608	2050 °C	
TRY-RATT-3609	4070 °C	
TRY-RATT-3610	6090 °C	

Knobs for Pulser

Article	Temperature range	Note
TRY-RATT-2271	030 °C	
TRY-RATT-1588	2050 °C	
TRY-RATT-1589	4070 °C	
TRY-RATT-1590	6090 °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 $0...10\,\mathrm{V}$ DC or $10...2\,\mathrm{V}$ DC output signal. The step controllers also have an analogue output $(0...10\,\mathrm{V})$ 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	010 V DC	
Output signal	010 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