



TTC80F is a 3-phase controller intended for time-proportional control of electric heaters, radiators, etc. The controller is capable of controlling both D- and Y-connected loads.

CSTTC80F

**3-phase controller for electric heating,
400V / 80 A**

CSTTC80F is a e3-phase controller intended for time-proportional control of electric heaters, radiators, etc.

The controller is capable of controlling both D-and Y-connected loads.

- 3-phase 400 V AC +/- 10%, max. 55 kW
- PI-control for supply air control and P-control for room control
- Can be controlled with external 0...10V control signal

- For DIN-rail mounting
- Settable min. and max. limitation
- Adjustable cycle time

CSTTC80F is a 3-phase triac controller for control of electric heaters. The device is connected in series between the power supply and an electric heater or radiator.

CSTTC80F has a temperature controller with inputs for sensors placed, for instance, in a supply air duct or room. It can also be controlled using an external control signal. The controller utilises stepless, time-proportional control. I.e.: the ratio between on-time and off-time is varied in order to fit the present heating requirement.

Example: A controller output of 50 % will equal an on-time of 30 s and an off-time of 30 s if the cycle time is 60 s. The cycle time is adjustable 6...120 s.

Triac control is considerably more accurate than on/off control, meaning increased heating comfort and lowered energy costs.

CSTTC80F has a built-in function for automatically adapting the control mode as needed:

Supply air control

For rapid temperature changes, the supply air controller will function as a PI-controller. The P-band will be 20K with an I-time of 6 minutes.

Room temperature control

For slower temperature changes, the room controller will function as a P-controller. The P-band will be 1.5K. The supply air controller will retain the same settings as before. During room temperature control, the supply air temperature can be provided with a min. or max. limitation.

Control of larger loads

In cases where the electric heater is larger than the capacity of CSTTC80F, the load can be divided and controlled by use of a CSTT-S4/D or CSTT-S6/D step controller in combination with the TTC80F. Slave control of one or more CSTTC25X / CSTTC40FX units via the CSTTC80F is also possible.

External control signal

CSTTC80F can also be run against a 0...10 V DC control signal from another controller. 0 V input signal will give 0 % output and 10 V input will give 100 % output.

Minimum and maximum limit functions are not active when using an external control signal.

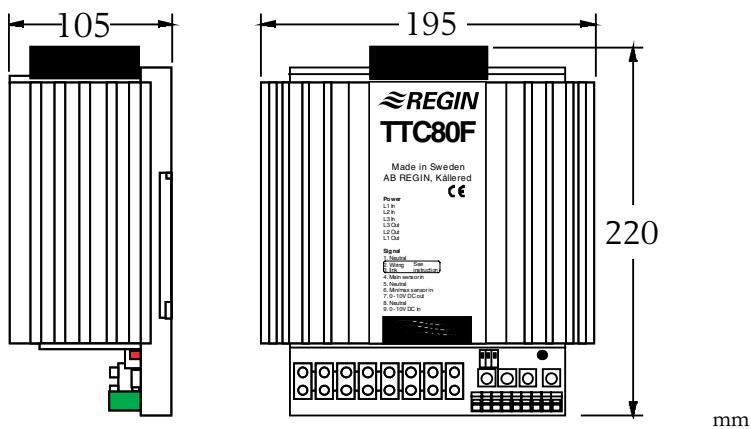
Technical data

| | |
|--------------------------------|--|
| Supply voltage | 3-phase, 400V AC. Automatic adaptation |
| Power output | Max. 80 A, min. 4 A/phase. At 400 V, max. effect will be 55 kW |
| Safety function | The feed to the TTC should be interlocked with a high temp. limit switch |
| Power emission | 150 W at full load |
| Cycle time | Factory setting 60 sec. Adjustable 6...120 sec |
| Indicator | Red LED, lit when power is pulsed to heater |
| Ambient temperature, operation | 0...40°C |
| Ambient humidity | Max 90 %rH |
| Storage temperature | -40...+50°C |
| Protection class | IP20 |
| CE | Low Voltage Directive (LVD) standards: This product conforms to the requirements of the European Low Voltage Directive (LVD) 2006/95/EC through product standard EN 60730-1. EMC emissions & immunity standards: This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61000-6-1 and EN 61000-6-3. RoHS: This product conforms with the Directive 2011/65/EU of the European Parliament and of the Council. |

Control unit

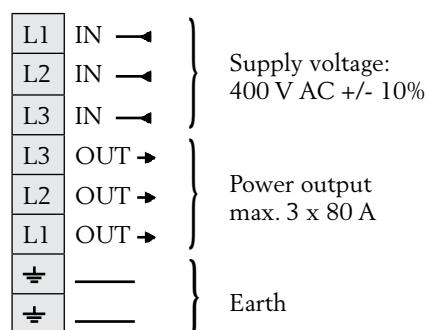
| | |
|-------------------------------------|--|
| Sensor inputs | Main and min./max. sensor. Min./max. sensor: working range 0...60°C 0...30°C. Other areas dependant on connected sensor. |
| Main setpoint | Includes external setpoint (e.g. TG-R430) |
| Control parameters, primary control | Rapid control circuits: PI-function with a P-band of 20K and I-time of 6 minutes. Slower control circuits: P-function with a P-band of 1.5 K |
| Setpoint, min. limitation | 0...30°C |
| Setpoint, max. limitation | 20...60°C |
| Control parameters, limitation | PI-function with a P-band of 20K and an I-time of 6 minutes |
| Output signal, controller | 0...10 V. Connected to control input of output unit by wire strap (terminal 7-9) |

Dimensions

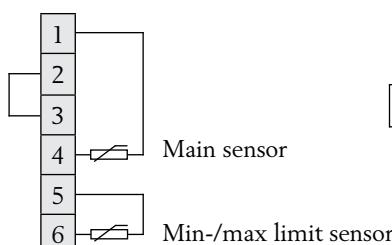


Wiring

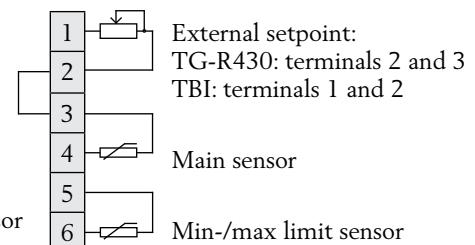
Power



Room temperature control

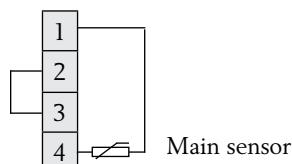


Room temperature control with external setpoint

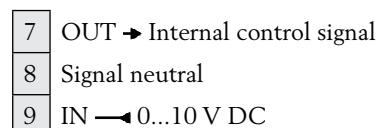


NOTE: When controlling Y-connected loads, the load must be symmetric and the signal neutral must not be connected!

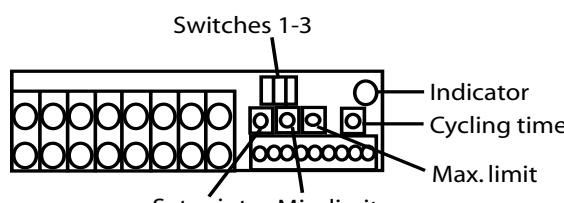
Constant supply air



External signal 0...10 V DC



Terminals 7 and 9 are connected by a factory-mounted wire strap. Remove the wire strap when using external control signal.



Operating switches:

- 1 - Setpoint:
Up: Built-in setpoint
Down: External setpoint
- 2 - Min. temp. limit.:
Up: Activated
Down: Deactivated
- 3 - Max. temp. limit.:
Up: Activated
Down: Deactivated
- Min. and max. limit. function can be active simultaneously

Product documentation

| Document | Type |
|----------------------|--------------------------|
| Instruction CSTTC80F | Instruction for CSTTC80F |