

- ▶ 1-phase control
- ▶ Fully controlled
- ▶ Phase-angle or burst control (depends on selected device)
- ▶ Compact design
- ▶ Industrial design



Technical data

1. Functions

Operation mode depends on device type
 TST1 phase-angle control
 TST1-SP burst control

2. Indicators

Green LED RUN: normal operation
 Yellow LED Start: device activated
 Yellow LED 100% U_{load} : 100% voltage output
 Red LED Fault: general fault / over temperature

3. Mechanical design

Aluminium housing, IP rating IP 20
 Mounted on DIN-Rail TS 35
 Mounting position: any

Control circuit:

Terminal capacity: 1 x 2.5mm²
 Initial torque: 0.5Nm

Power circuit:

Shockproof terminal covers,
 IP rating IP 20
 Terminal capacity: 1 x 16mm² with/without multicore cable end

4. Control circuit

Supply voltage: 230V AC (optional 110V, 400V, 500V AC or internal generated)
 Tolerance: ±15%
 Rated frequency: 45 to 65Hz
 Duration of operation: 100%

5. Control contact 1-2

Function: activation
 Connection: potential free
 Loadable: No
 Line length: max. 10m, twisted pair

6. Control contact 3-4-5

Function: set point adjustment (direct proportional setting of firing angle)
 Input impedance: 500Ω/50kΩ (switchable)
 Actuation: potentiometer 2.5 to 47kΩ (not included), signaling voltage 0-10VDC or control current 0-20mA
 Line length: max. 10m, twisted pair

7. Signaling contact 6-7

1 potential free normally open contact
 Function: general fault
 Switching capacity: 2A/230V AC1

8. Power circuit

Supply voltage: terminals L1-L2
 1~ 110V to 500V AC
 Tolerance: ±15%
 max. current:

Type	max. current
TST1(SP) 05	5A
TST1(SP) 15	15A
TST1(SP) 25	25A
TST1(SP) 35	35A
TST1(SP) 50	50A

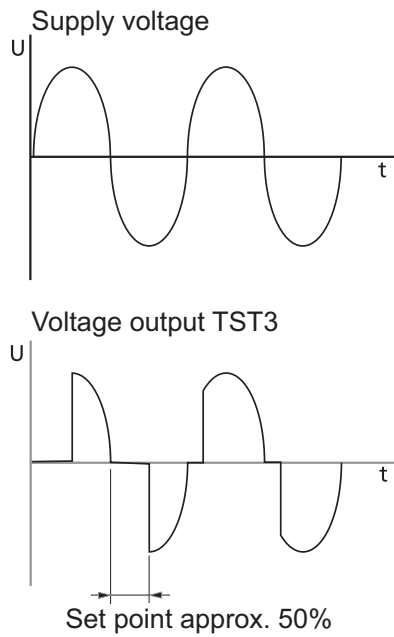
9. Ambient conditions

Ambient temperature: 0 to +45°C (according to IEC 68-1)
 Storage temperature: -10 to +70°C
 Transport temperature: -10 to +70°C
 Relative humidity: 5% to 95% not condensing (according to IEC 721-3-3 class 3K3)
 Pollution degree: 2 (according to IEC 664-1)

Functions

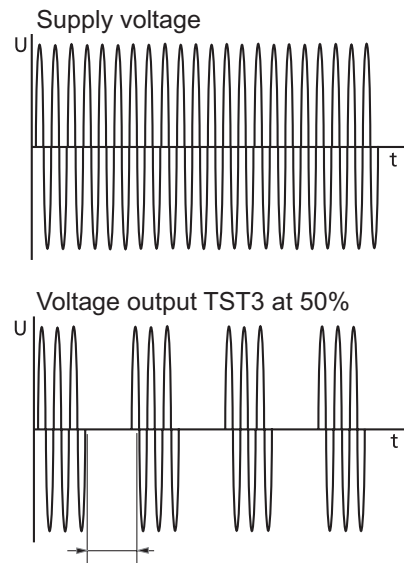
Phase-angle:

Phase-angle control is the most common method of steplessly controlling the power consumed by equipment. In this case the load connected to the unit is connected to the supply network via thyristors. These semiconductors are driven in such a way that they do not pass the supply voltage to the load as a full sinusoidal wave, but instead only conduct when a predetermined voltage level has been reached. Controlling the phase in this way reduces the RMS voltage but it does not reduce the peak voltage at the unit output. This control method, by providing a steady voltage supply, can be used for virtually all resistive and inductive loads. The only drawback to this control method is that it may cause harmonics in the supply network which would have to be suppressed by special power chokes on the primary side.



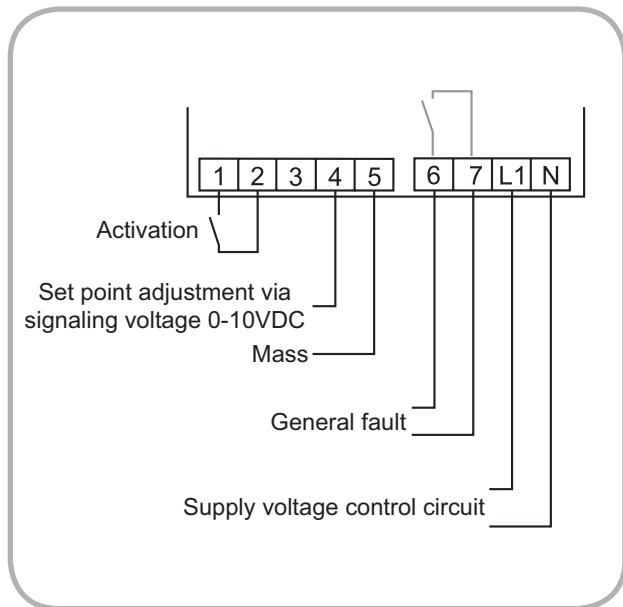
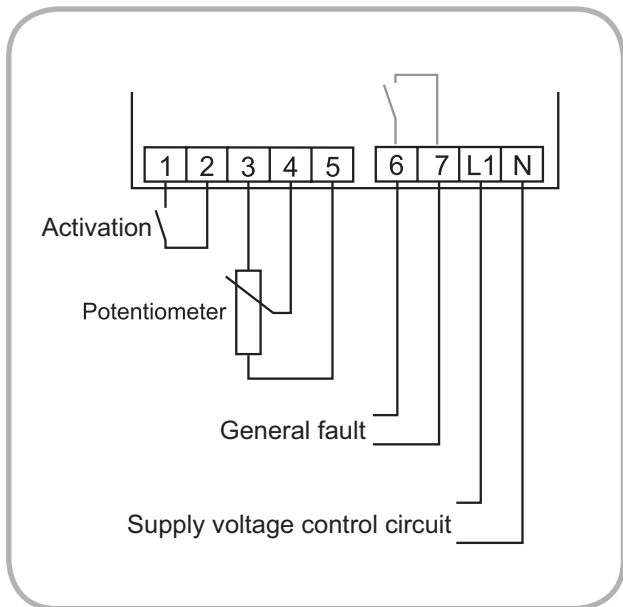
Burst control:

Burst control is employed wherever slow-responding loads such as heaters are to be controlled. In this case connected loads are applied by semiconductor modules to the supply network intermittently. Whereas phase control reduces each half wave of the sinusoidal voltage to the required value, burst control passes to the load just enough complete waves within a given time interval to produce as a mean value the preset power. With this method the load is turned on and off only at the zero crossing in the voltage waveform so there is no reaction back into the supply network. It is merely necessary to ensure that the network is sufficiently robust to prevent the constant, rapid changes in load from causing perceptible dips in the power source, otherwise it may produce a stroboscopic effect (flickering) on other loads in the network such as lighting.



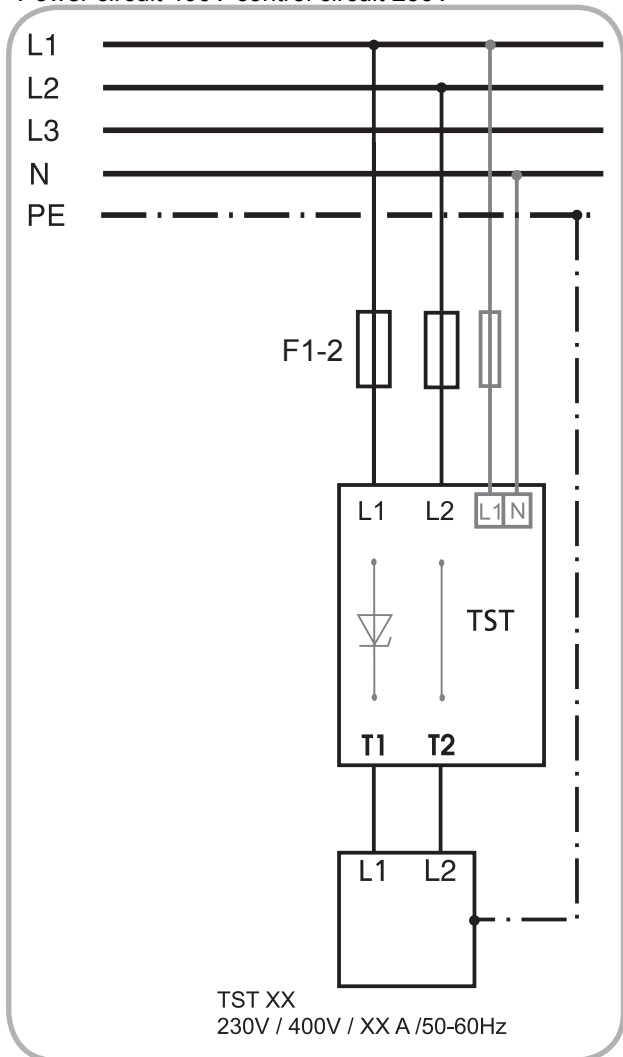
Connections

Control circuit

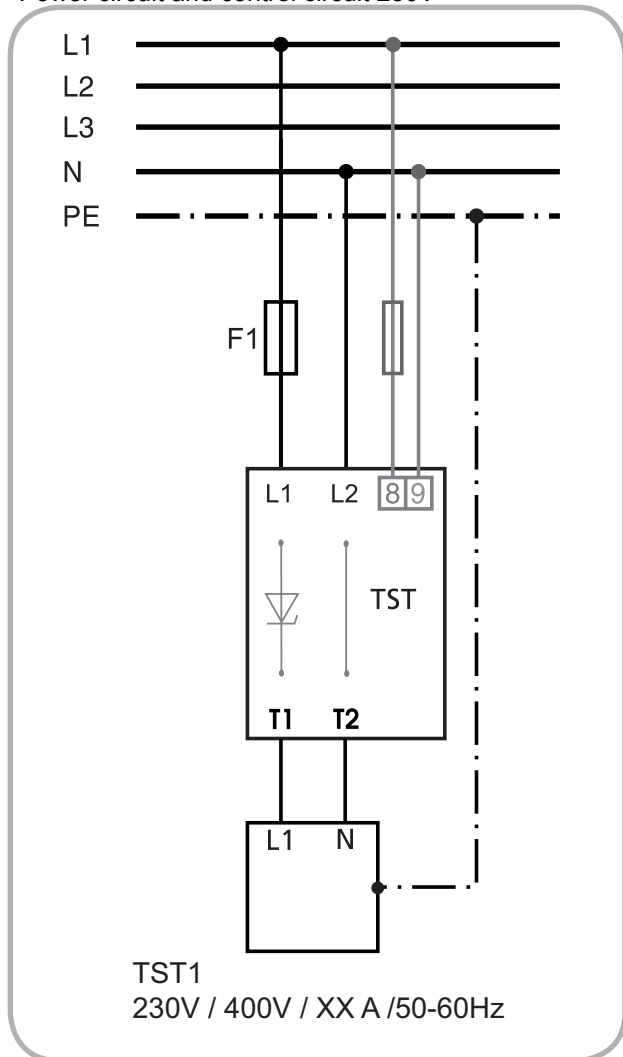


Connection examples for standard type:

Power circuit 400V control circuit 230V



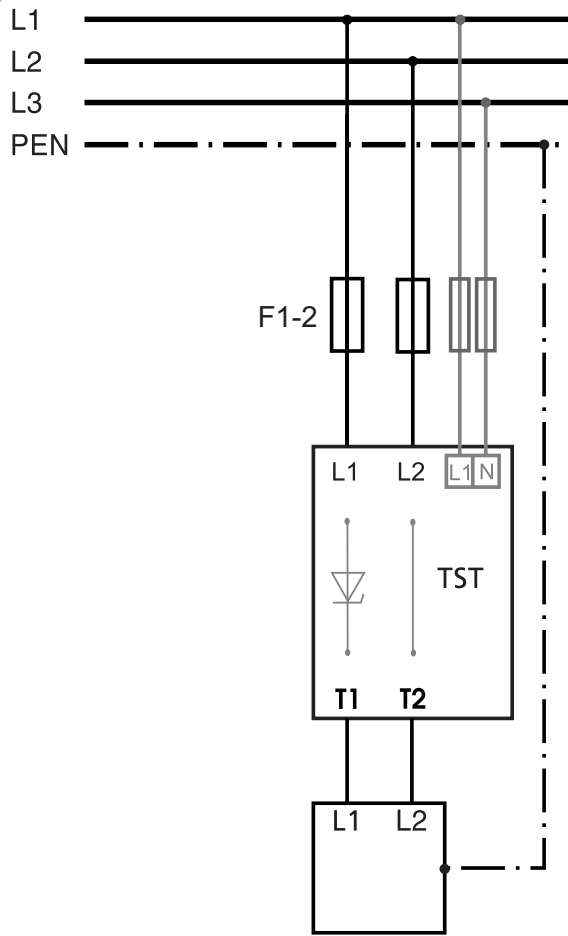
Power circuit and control circuit 230V



TST1

Special device types:

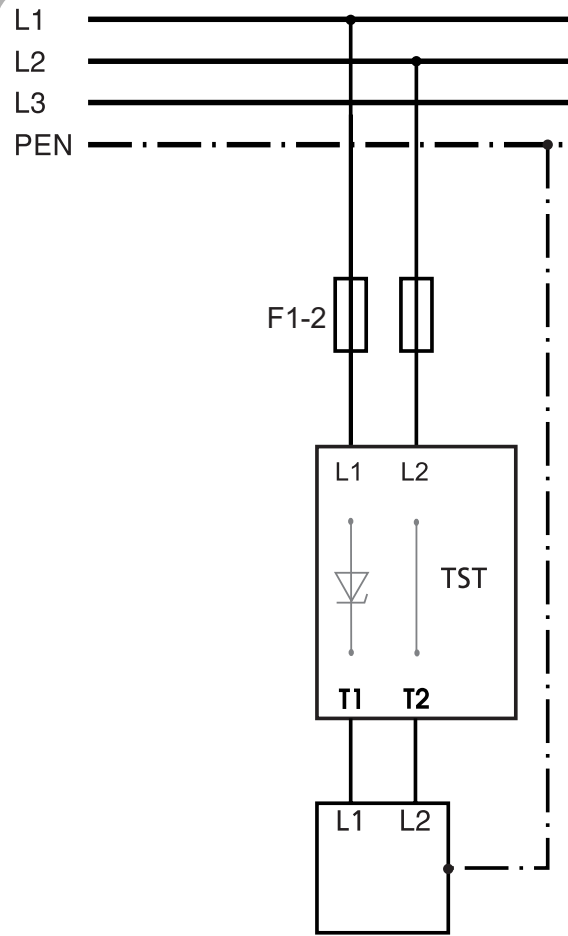
Power circuit and control circuit 400V



TST1 XX
400V / 400V XX A / 50-60HZ

Power circuit 400V,

Control circuit internal generated (400V)



TST1 XX
400V / IV / XX A / 50/60HZ

► Dimensions

