

- ▶ 3-phase control
- ▶ Fully controlled
- ▶ Phase-angle and burst control (switchable)
- ▶ Multi control signal
- ▶ Industrial design



Technical data

1. Functions

Operation modes	
PH	Phase-angle
SP	Burst control

2. Indicators

LED 1 green	Ready for operation
LED 1 red:	General fault
LED 2 green:	Device activated
LED2 orange:	Device activated and working
LED 3 orange ON/OFF:	100% voltage output
LED 4 yellow:	Level of signal

3. Mechanical design

Aluminium housing, IP rating IP 20 mounted on mounting plate	
Mounting position:	any
Control circuit:	
Terminal capacity:	1 x 1.5mm ²
Initial torque:	0.5Nm
Power circuit:	
Shockproof terminal covers, IP rating IP 20	
Terminal capacity:	1 x 16mm ² with/without multicore cable end

4. Control circuit

Supply voltage:	230V AC (optional 110V, 400V, 500V AC or internal generated) terminals 22-24
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

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

7. Control contact 5-6

Function:	PTC-temperature monitoring
Initial resistance:	<1.0kΩ
Response value (relay in off-position):	≥2.0kΩ
Release value (relay in on-position):	≤1.0kΩ
Disconnection (short circuit thermistor):	no
Measuring voltage 5-6:	max. 18V DC

8a. Control contact 2-7-8

Function:	set point adjustment (direct proportional setting of firing angle)
Input impedance:	500Ω/50kΩ (switchable)
Actuation:	potentiometer 2.5 to 47kΩ (not included)
Line length:	max. 10m, twisted pair

8b. Control contact 7-8

Function:	set point adjustment (direct proportional setting of firing angle)
Input impedance:	500Ω/50kΩ (umschaltbar)
Actuation:	external signaling voltage 0 to 10V or signaling current 0 to 20mA
Line length:	max. 10m, twisted pair

8c. Control contact 8-11

Function:	inverted set point adjustment (indirect proportional setting of firing angle)
Input impedance:	5kΩ
Actuation:	external signaling voltage 0 to 10V
Line length:	max. 10m, twisted pair

8d. Control contact 8-12

Function:	set point adjustment (direct proportional setting of firing angle)
Input impedance:	10kΩ
Actuation:	puls-width-modulated signal
Line length:	max. 10m, twisted pair

9. Control contact 9-10

Function:	interlock of power circuit
Connection:	potential free
Loadable:	No
Line length:	max.10m, twisted pair

10. Signaling contact 13-14-15

1 potential free change-over contact	
Function:	general fault
Switching capacity:	3A/230V AC1

11. Signaling contact 16-17-18

1 potential free change-over contact	
Function:	indication 100% voltage output
Switching capacity:	3A/230V AC1

12. Signaling contact 19-20-21

1 potential free change-over contact	
Function:	indication normal operation / general fault
Switching capacity:	3A/230V AC1

Technical data

13. Power circuit

Supply voltage: 3~ 110 to 500V terminals L1-L2-L3
 Tolerance: 10%
 Rated frequency: 48 to 63Hz

14. Power classes

TST3 05	Rated current 3~ 5A
TST3 15	Rated current 3~ 15A
TST3 25	Rated current 3~ 25A
TST3 35	Rated current 3~ 35A
TST3 50	Rated current 3~ 50A

15. Ambient conditions

Ambient temperature: -25 to +55°C (according to IEC 68-1)
 Storage temperature: -25 to +75°C
 Transport temperature: -25 to +75°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

The TST3 offers five types of setpoint adjustment.

Potentiometer actuation

Direct or indirect (if inverse wired) setting of firing angle via potentiometer.

Signaling voltage 0-10V

Direct setting of firing angle proportional to value of applied signaling voltage 0-10V

Inverted signaling voltage 10-0V

Indirect setting or firing angle indirect proportional to value applied at signaling input.

Signaling current 0-20mA

Direct proportional setting of firing angle via 0-20mA signaling current.

Puls-width-modulated signal

Firing angle is set proportional to pulse-pause ratio of the applied signaling voltage (5V, 5-10kHz).

The control of the output power is achieved by reducing nominal voltage at the power output terminals T1 to T3. This can be provided by two different principles which can be preselected.

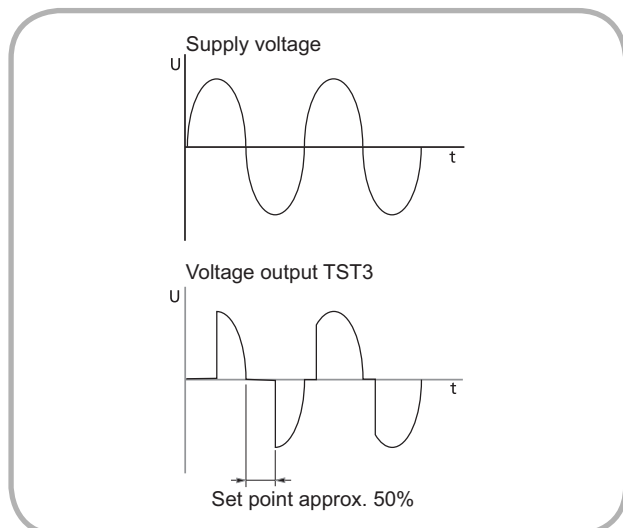
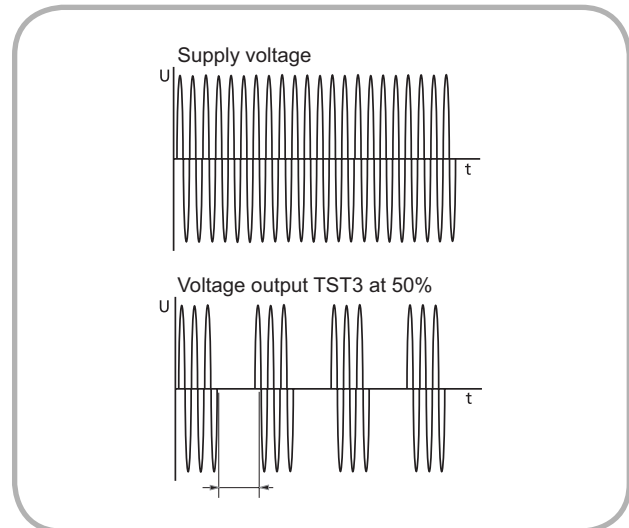
Phase-angle control:

A thyristor bridge is set by the remote control potentiometer so that the thyristor switches the connected loads to the supply network in every sinusoidal half-wave only when the selected voltage level is reached. This produces a reduced rms voltage and therefore a smaller power draw by the load. This type of power control is suitable for all types of ohmic and inductive loads.

In three-wire systems (without a neutral conductor) the output power can be infinitely regulated from around 20% to 100%; in four-wire systems (3~/N) it can be infinitely regulated from around 5% to 100%.

Burst control:

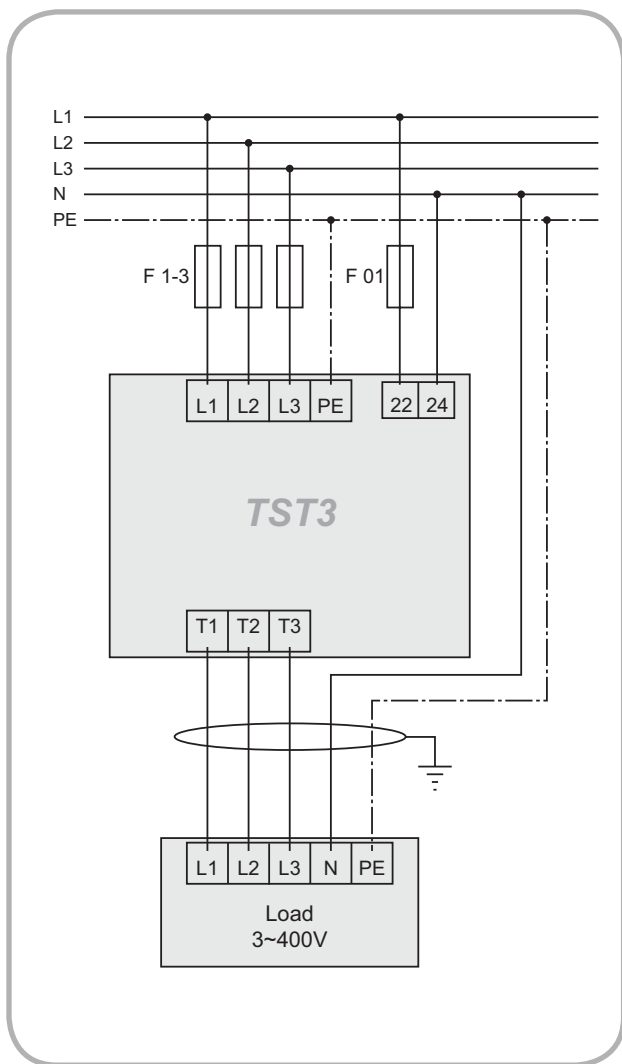
For power control the device clocks the output voltage. Depending on the setting of the remote control potentiometer, the output of the device is disconnected from the power supply for short periods. Over a control period therefore, the power draw of the connected load is reduced by the value set on the potentiometer. Since the load is switched on and off only at zero crossing, the supply system is not subjected to additional reactive power components or harmonics by the ESGT-SP(N). This power control can only be used for slow-acting loads (such as heating elements) as the operation of loads such as motors and lighting systems is disturbed by the off-times.



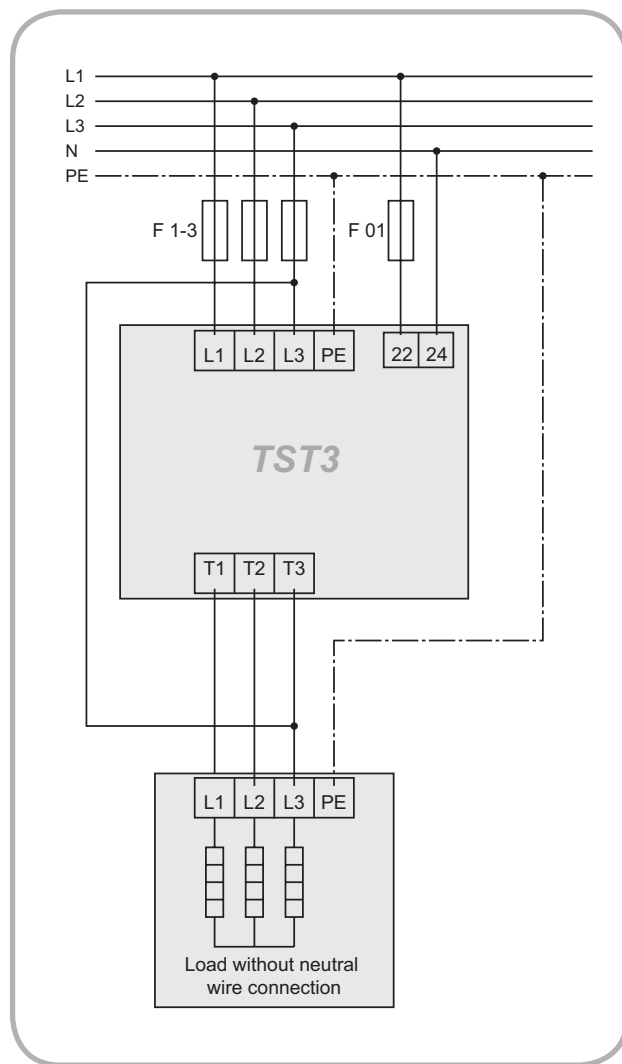
Connections

Power circuits:

Phase-angle or burst control connection in 4-wire supply systems



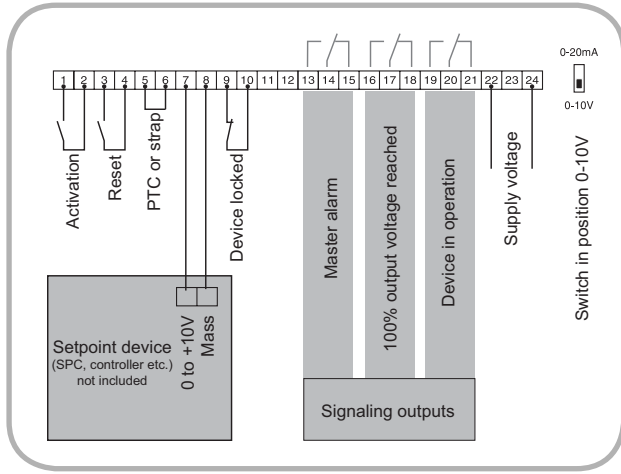
Burst control connection in 3-wire supply systems



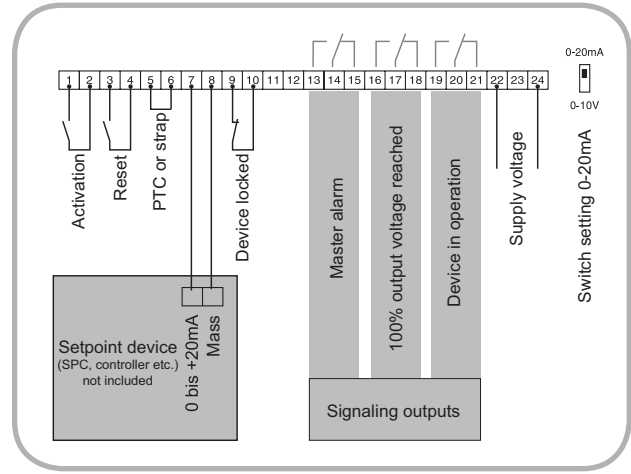
Connections

Control circuit:

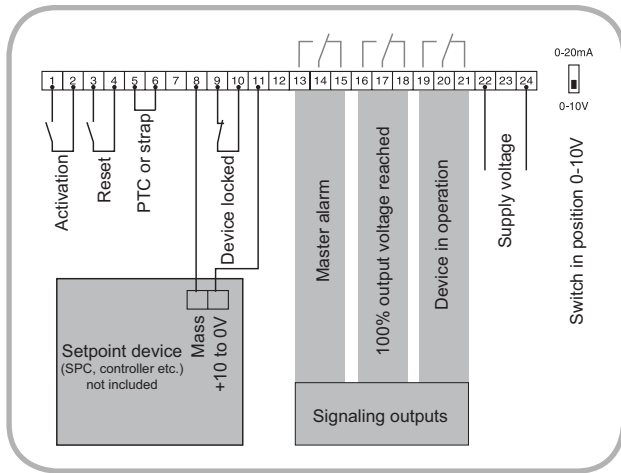
Actuation via signaling voltage 0-10VDC



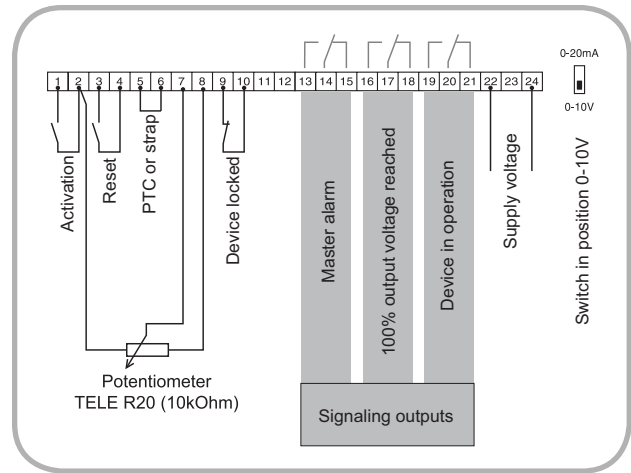
Actuation via signaling current 0-20mA



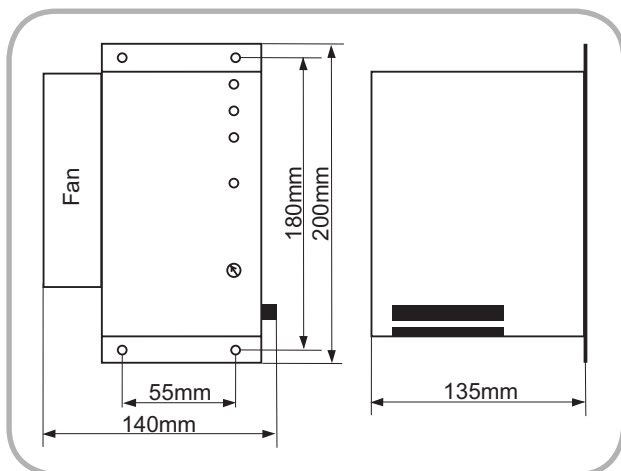
Inverted actuation 10-0VDC



Actuation via potentiometer TELE R20



Dimensions



Subject to alterations and errors