



Operating instructions Elstein Thyristor Switching Units TSE

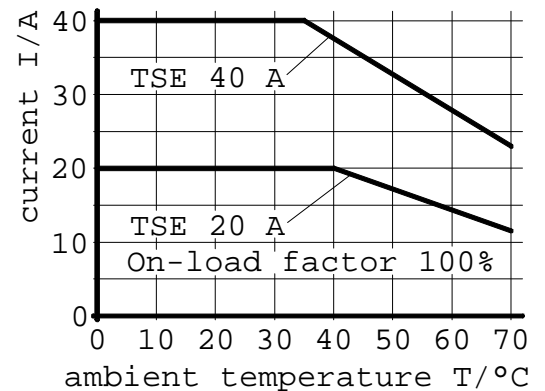
Connecting Thyristor Switching Units TSE

In order to switch the load circuits, the TRD1 control units must be followed by our Thyristor Switching Units TSE 20 A or TSE 40 A. They are rated for maximum currents of 20 A or 40 A. The control voltage is 4 - 32 V DC. In the case of polyphase connection one thyristor switching unit must be installed for each phase. Since one control unit can control up to 2 x 3 thyristor switching units - see Picture 2 - it is possible to control a total power of approx. 27 kW or 54 kW per control circuit at an operating voltage of 230 V.

The switching units switch the load on at voltage zero and switch it off at current zero. In this way mains perturbation is prevented. Due to the inrush peak current transformers can not be switched.

The thyristor switching units are mounted by clipping them on 35 mm standard mounting rails. In order to ensure optimal cooling, the units must be mounted horizontally and with distance to neighbouring units. The cooling ribs will then be vertical. For operation with the rated current the ambient temperature must not exceed 40°C resp. 50°C. In the case of higher ambient temperatures, the permissible current is reduced (see Picture 1). Overheating may cause the units to fail.

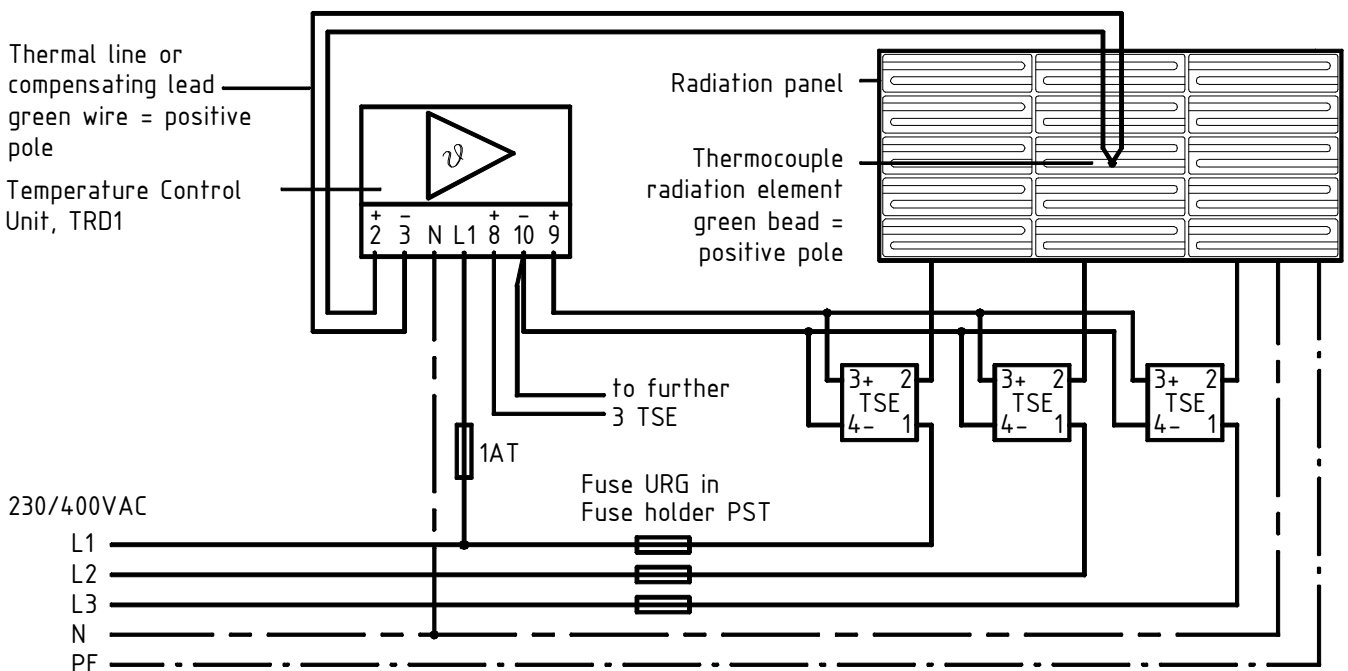
Picture 1:



Maximum operating voltage TSE 20 A = 265 V AC, TSE 40 A = 660 V AC.
 Maximum dissipation loss TSE 20 A = 20 W, TSE 40 A = 40 W.

Attention: Heat sink becomes hot during operation.

Picture 2:





Fuse

As protection against shorts, thyristor switching units must be protected by a high-speed fuse in the load circuit. We supply fuse holders for 35 mm standard mounting rails and special fuses.

Wiring

The circuit diagram (Picture 2) refers to connection to three-phase current. In the case of connection to single-phase AC proceed accordingly. The polarities in the control circuits must be observed (see also identification on unit Picture 2).

Safety instructions

Should difficulties arise when the equipment is put into operation we would ask you to refrain from unauthorized manipulations. This could make your warranty entitlement invalid. Please get in touch with us.

- During any kind of work the provisions of VDE 0100 or the respective regulations of the country or the power supply company must be observed.
- Electric connections must only be carried out by skilled personnel.
- Sensor and control wires must be installed separately from mains wires.
- Do not install the equipment in areas with explosion hazards.
- Do not connect other loads to the mains terminals of the units.
- Aggressive vapours have adverse effects on the service life of the control units.
- For temperature monitoring the corresponding safety regulations must be adhered to.
- Terminal PE must be earthed with the protective earthing conductor. Earthing conductors must not be looped through but must be led to a common earthing point.

Accessories

Fuse Holder PST 10 for our high-speed fuses URG 20 A to protect Thyristor Switching Units TSE 20 A.

Fuse Holder PST 14 for our high-speed fuses URG 50 A to protect Thyristor Switching Units TSE 40 A.

Thermal line for the connection between control unit and thermocouple radiation element, made of NiCr-Ni, for up to 400 °C, 2 x 1 mm² solid.

Compensating lead for NiCr-Ni thermocouples, for example for the connection between control unit and AKT Terminal Box in the cold zone up to 100 °C, 2 x 1.5 mm² stranded.