

ST 125
Two knobs adjustable

ST 125

- * Relay for standard Pt 100 temperature sensors.
- * Fail safe - the relay releases in case of sensor breakdown.
- * Metering range: - 50 to + 850°C, divided into 10 sub-ranges.
- * Separate adjustment of working temperature and hysteresis on two built-in potentiometers.
- * Connection for moving-coil instrument.
- * Inversion of relay function possible.
- * 10 A SPDT output relay.
- * LED-indication for relay on.
- * AC- or DC supply voltage.

SPECIFICATIONS

Common technical data and ordering key

Pages 10-12.

Temperature ranges (Δ -scale: 0-100°C)

- 50 to + 50°C
- 0 to + 100°C
- + 100 to + 200°C
- + 200 to + 300°C
- + 300 to + 400°C
- + 400 to + 500°C
- + 500 to + 600°C
- + 600 to + 700°C
- + 700 to + 800°C
- + 750 to + 850°C.

Hysteresis, Scale range

From 1 to 20°C in all temperature ranges mentioned above.

Setting of ST 125

Metering ranges:
Top knob.
Hysteresis:
Bottom knob.

Metering voltage

Pins 5 and 7: 9 VDC.
Pin 5 positive.

Connection cable

2-core, normally unscreened. Screen, if any, is connected to pin 7. The system is adapted to 3 metres, 2 x 0,75 mm² connection cable. Can be extended if necessary. Error per 0.3 Ω cable resistance: App. + 1°C.

Instrument connection

Max. 8.2 V is generated over pins 7 and 11 (pin 11 positive) across an internal resistance of 8.2 K Ω .

Applicable for moving-coil instruments with 1 mA full scale deflection and internal resistance 110 Ω , e.g. type ID 120.

Deviations from the ideal internal resistance is not critical as a deviation of $\pm 100 \Omega$ causes an error of only $\pm 1 \%$.

Inversion of relay function

Occurs by interconnecting pins 8 and 9.

Slave coupler

Up to 5 relays, type ST 125, can be slave coupled in conjunction with one standard Pt 100 sensor and one ST 125 (master) relay as shown below (example 3).

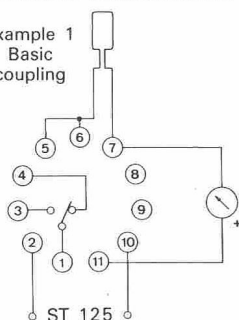
Moreover all coupling combinations are possible between ST 125, ST 020 and ST 199.

Accessories

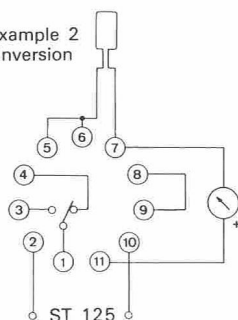
- Bases.
- Hold down spring.
- Mounting rack.
- Base cover.
- Front mounting bezel.
- Moving-coil instrument, type ID 120.
- Standard Pt 100 temperature sensors. (DIN 43760).

WIRING DIAGRAMS

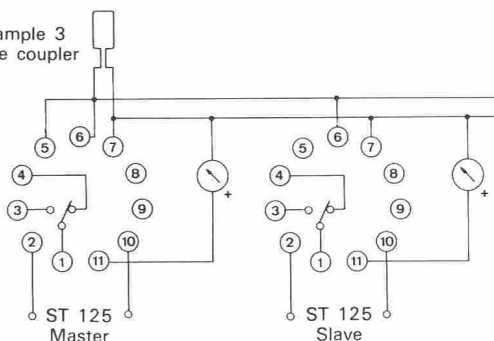
Example 1
Basic coupling



Example 2
Inversion



Example 3
Slave coupler



MODE OF OPERATION

In conjunction with a standard Pt 100 temperature sensor (DIN 43760) this S-system can perform the function of controlling the temperature of heaters or refrigerators. In the latter case inverted relay function should be employed as a precaution.

The variable hysteresis makes control by this S-system extra flexible. The supply voltage must continuously be connected to the S-system.

The temperature, at which the relay shall operate or release, is set on the top potentiometer.

(Δ -scale: 0-100°C).

The hysteresis in °C, i.e. the difference of temperature required for a change in position of the relay, is set on the bottom potentiometer. If the S-system is used to control a refrigerator pins 8 and 9 (example 2) are to be interconnected. However, in the case of controlling a heater these pins should not be connected (example 1).

As shown in the wiring diagrams (example 3) it is possible to slave couple up to 5 S-systems, type ST 125, to the one connected with the Pt 100 sensor. A stepwise coupling of heating elements or refrigerators is thus possible.

To each of the S-systems in use (with different scale ranges if wanted) a moving-coil instrument, e.g. type ID 120, can be connected.

$$^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32.$$

OPERATION DIAGRAM

Supply voltage

Set temperature

Hysteresis

Example 1
Relay on

Example 2
Relay on