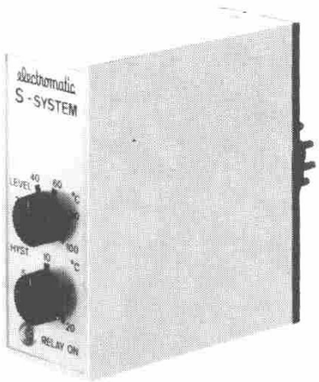


ST 115
Two knobs adjustable

ST 115

- **Temperature control relay for resistive temperature sensors, type ETR.**
- **Metering range: – 20°C to + 120°C, divided into 5 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 (Scale ranges)
– 20 to + 10°C (a)
0 to + 30°C (b)
+ 20 to + 80°C (c)
+ 60 to + 120°C (d)
0 to + 100°C (e).

Hysteresis (Scale ranges)
1°C to 5°C
for ranges a) and b).
1°C to 10°C
for ranges c) and d).
1°C to 20°C
for range e).

Setting of ST 115
Metering ranges:
Top knob.
Hysteresis:
Bottom knob.

Metering voltage
Pins 5 and 7: 2 VDC.
Pin 5 positive.

Connection cable
2-core, normally unscreened.
The screen, if any, to pin 7.
Length as desired. Error per 6 Ω cable resistance:
App. + 1°C.

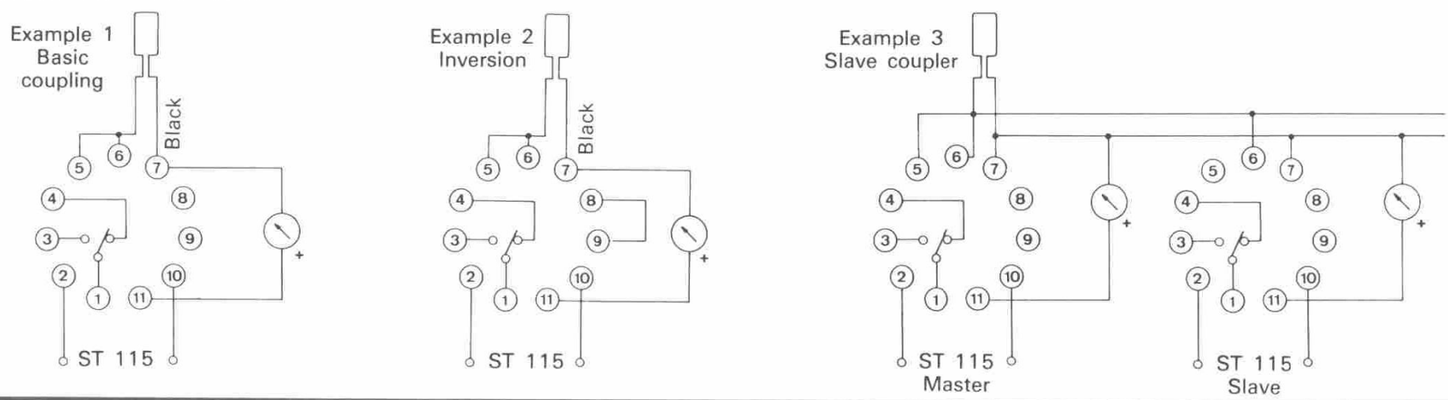
Instrument connection
Max. 8.2 V is generated over pins 7 and 11 (pin 11 positive) across an internal resistance of 8.2 KΩ.
Applicable for moving-coil instruments with 1 mA full scale deflection and internal resistance 110 Ω, e.g. type ID 120.
Deviations from the ideal internal resistance is not critical as a deviation of ± 100 Ω causes an error of only ± 1 %.

Inversion of relay function
Occurs by interconnecting pins 8 and 9.

Slave coupler
In conjunction with one ETR-sensor and one ST 115 (master) relay, up to 5 ST 115 relays can be slave coupled (example 3). Moreover all coupling combinations are possible between ST 115, ST 010 and ST 185.

Accessories
Bases. Hold down spring.
Mounting rack. Base covers.
Front mounting bezel.
Moving-coil instrument, type ID 120.
Temperature sensors, type ETR.
See catalogue on accessories.

WIRING DIAGRAMS



MODE OF OPERATION

In conjunction with a remote sensor, type ETR, this S-system can be used to control 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 in °C at which the relay shall operate or release is set on the top potentiometer.
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 115, to the one connected with the ETR-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.

°F = (°C × 1.8) + 32.

OPERATION DIAGRAM