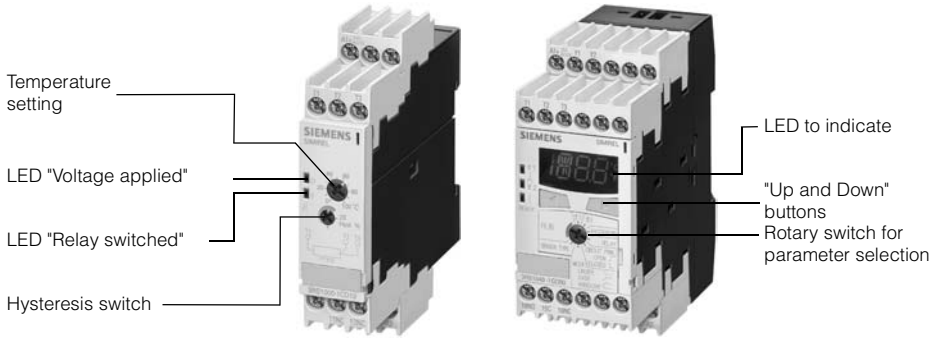
Temperature Monitoring Relays

SIMIREL

3RS10/3RS11

Overview

The 3RS10/11 SIMIREL temperature monitoring relays can be used for measuring temperatures in solid, liquid and gaseous media. The temperature is acquired by the sensor in the medium, evaluated by the device and monitored for overshoot, undershoot or within a range (window function). The family comprises analog adjustable devices with one or two threshold values and digital devices that represent an excellent alternative to thermostats in the low-end performance range. The output relay picks up and releases at the threshold values in accordance with the parameter settings.



Analog evaluation units

- Sensor types: PT100/Type J/ Type K.
- Measuring principle for 2- and 3-wire sensors.
- Electrical isolation between sensor and supply voltage (with the exception of AC/DC 24 V devices).
- Separate designs for overshoot and undershoot.
- Measuring range depending on the version for -50 °C to +50 °C, 0 °C to 100 °C, 0 °C to 200 °C, 0 °C to 600 °C or 500 °C to 1000 °C.
- Potentiometer for adjustable limit temperature and hysteresis of 2 to 20 %.
- Closed-circuit principle.
- Narrow 22.5 mm enclosure with 12 terminals.

With one threshold value

- Supply voltage for 24 V AC/DC or 110/230 V AC.
- Indication of supply voltage and relay status via LEDs.
- One NO and one NC contact.

With two threshold values

- Additional potentiometer for $\vartheta 2$ (hysteresis for second limit value is 5 % of the measuring range).
- Supply voltage for 24 V AC/DC or 24 to 240 V AC/DC.
- LED indication of supply voltage and both relay states.
- Open-circuit/closed-circuit principle switchover.
- One NO and one CO contact.

Digital evaluation units

- High-end evaluation unit for 1 or 1-3 sensor circuits.
- Multifunctional digital display and three LEDs (for threshold values and Ready).
- Adjustable sensor types.
- Adjustable overshoot, undershoot or window function.
- Switchable open-circuit or closed-circuit principle.
- Hysteresis for both threshold values (1 to 99 K).
- Memory function can be selected by means of an external control signal (Y1/Y2).
- One NO and two CO contacts.
- Adjustable time delay from 0 to 999 s.
- Wire-break and short-circuit detection with separate signalling contact (1 NO).
- Non-volatile storage of the set parameters.
- 45 mm housing with 24 supply terminals.
- Measuring principle for 2- and 3-wire sensors.
- Electrical isolation (with the exception of 24 V AC/DC devices).
- In the 3-sensor design, the status of the individual sensors is indicated on limit value overshoot/undershoot.

It is therefore immediately obvious which of the connected sensors has overshot or undershot one or both threshold values.

Advantages

- All devices are available as an alternative with Cage Clamp terminals.
- All devices with the exception of 24 V AC/DC devices are electrically isolated.
- Variants for the evaluation of 1 to 3 sensors in one unit, e.g. for multiple monitoring in a plant or for motor protection.
- Easy operation without complex menu systems.
- Graduated product range; the right device for every application.
- High-end evaluation units with digital display – can be used for a wide temperature range and for different sensor types.
- Adjustable hysteresis.
- Rapid fault diagnosis due to short-circuit monitoring and sensor wire-break detection.
- Power packs with wide range of input voltage reduce the number of variants.
- Easily parameterisable two-point or three-point closed-loop control.

Application

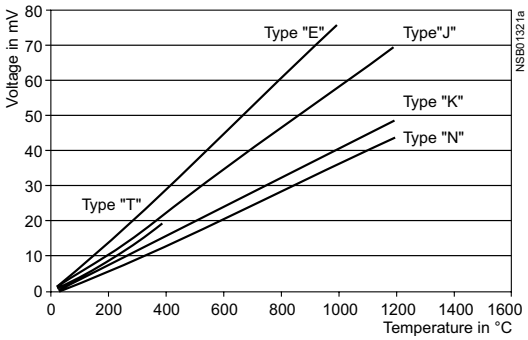
The 3RS10/11 SIMIREL temperature monitoring relays can be used in almost any application in which limit temperatures must not be overshot or undershot, e.g.:

Monitoring of set limit temperatures and output of alarm messages for:

- Motor and plant protection.
- Switchgear cabinet temperature monitoring.
- Frost monitoring.
- Temperature limits for process variables, e.g. in the packaging industry or galvanising equipment.
- Control of plants and machines such as heating, air-conditioning and ventilation systems, solar collectors, heat pumps or warm water supplies.
- Monitoring of servo motors with KTY sensors.
- Bearing and gearbox oil-level monitoring.
- Monitoring of cooling liquids.

Characteristics for thermocouples and resistance sensors

Thermocouples



Resistance sensors