

Monitoring Relays

3RS10, 3RS11 Temperature Monitoring Relays

Relays, digitally adjustable for up to 3 sensors

Overview

The 3RS10 41 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is sensed by the sensor in the medium, evaluated by the device and monitored for overshoot or undershoot or for

staying within an operating range (window function). The signal evaluator can evaluate up to 3 resistance sensors at the same time and is specially designed for monitoring motor windings and bearings.

Technical specifications

| | | |
|---|-----------------|---|
| Type | | 3RS10 41 |
| General data | | |
| Width | mm | 45 |
| Operating range | V | 0.85 ... 1.1 x U_s |
| Rated power | W/VA | < 4/7 |
| Auxiliary circuits | | |
| Contacts | | 1 CO + 1 CO + 1 NO |
| Rated operational currents I_e | | |
| • AC-15 at 230 V AC, 50 Hz | A | 3 |
| • DC-13 at: | | |
| - 24 V AC | A | 1 |
| - 240 V AC | A | 0.1 |
| DIAZED fuse | | |
| • gl/Gg operational class | A | 4 |
| Electrical endurance AC-15 at 3 A | A | 100000 |
| Mechanical endurance Mechanical operating cycles | | 30 x 10 ⁶ |
| Tripping units | | |
| • Measuring accuracy at 20 °C ambient temperature (T20) | | < ±2 K, ±1 digit |
| • Deviations due to ambient temperature in % from measuring range | % | 0.05 per K deviation from T20 |
| • Measuring cycle | ms | 500 |
| • Hysteresis settings for temperature 1 | | 1 ... 99 K, for both values |
| • Adjustable delay time | s | 0 ... 999 |
| Sensor circuits | | |
| • Typical sensor circuits | | |
| - PT100 | mA | Typical 1 |
| - PT1000/KTY83/KTY84/NTC | mA | Typical 0.2 |
| • Open-circuit detection | | Yes ¹⁾ |
| • Short-circuit detection | | Yes |
| • 3-wire conductor connection | | Yes ²⁾ |
| Enclosures | | |
| Environmental influences | | |
| Permissible ambient temperature | °C | -25 ... +60 |
| Permissible storage temperature | °C | -40 ... +80 |
| Permissible mounting position | | any |
| Degree of protection acc. to EN 60529 | | Terminals: IP20; Cover: IP40 |
| Rated insulation voltage U_i (pollution degree 3) | V AC | 300 |
| Conductor cross-section | | |
| • Screw-type connection | | M 3.5 (standard screwdriver, size 2 and Pozidriv 2) |
| - Solid | mm ² | 1 x (0.5 ... 4)/2 x (0.5 ... 2.5) |
| - Finely stranded, with end sleeve | mm ² | 1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5) |
| - AWG conductors, solid or stranded | AWG | 2 x (20 ... 14) |
| - Tightening torque | Nm | 0.8 ... 1.2 |
| • Spring-loaded terminal | | |
| - Solid | mm ² | 2 x (0.25 ... 1.5) |
| - Finely stranded, with end sleeve | mm ² | 2 x (0.25 ... 1) |
| - Finely stranded, without end sleeve | mm ² | 2 x (0.25 ... 1.5) |
| - AWG conductors, solid or stranded | AWG | 2 x (24 ... 16) |
| - Corresponding opening tool | | 8WA2 807 ³⁾ |
| Vibration resistance IEC 68-2-6 | | 5 ... 26 Hz/0.75 mm |
| Shock resistance IEC 68-2-27 | | 15 g/11 ms |

1) Not for NTC B57227-K333-A1 (100 °C: 1.8 k; 25 °C: 32.762 k).

2) 2-wire connection of resistance sensors with wire jumper between T2 and T3.

3) See Catalog LV1, Accessories, 3RP15 Solid-State Timing Relays.