

Monitoring relay STH - Thermistor protection relay with 1 Changeover

11.25mm housing



Application

Motor protection; for example, thermal overload, high ambient temperature, faulty cooling, switching frequency and phase failure.

Description

The **STH Thermistor protection relay** monitors temperatures of commercial thermistors according to DIN 44081. A maximum of 6 thermistors can be connected in series to the sensor terminals P1 and P2. The relay's power supply (12V AC/DC; 24V AC/DC; 230V AC) is connected to the terminals A1 and A2. The green LED indicates the connection of the power supply.

Function

Because the STH uses a closed-circuit principle, the output relay switches immediately into its working position as soon as the sensor resistance is less than 1.5k Ω . After the thermistor reaches its nominal shut off temperature (sensor resistance > 2.7k Ω), the relay switches into its rest position. This status is indicated by the red LED. The measuring circuit is electrically isolated from the power supply. The DIP switches on relay's front panel are used to select for short-circuit monitoring of the sensors and re-start inhibitors. The re-closing interlock is zero voltage protected.

Options

Other supply voltages available upon request.

Part number

015009	STH Thermistor relay	24V AC/DC
015010	STH Thermistor relay	230V AC

DIP switch adjustments



with re-start inhibitor
(memory incl. reset button)
with short-circuit monitoring



with re-start inhibitor
(memory incl. reset button)
without short-circuit monitoring



without re-start inhibitor
with short-circuit monitoring



without re-start inhibitor
without short-circuit monitoring

Approvals



Mounting

Snap-on mounting using a standard DIN rail EN 50022. The unit is designed to allow side-by-side mounting, with an ambient temperature of < 60°C.

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Technical data

Supply

Supply voltage Part No. 015009 : 24V AC/DC -15 / +10%
Part No. 015010 : 230V AC -15 / +10%

Frequency range: 50 ... 60 / 0Hz
Power consumption: 1 VA at 24V
6 VA at 230V

Operating mode: continuous
Insulation voltage: 1kV / DC

Measuring range

Temperature sensor: PTC – sensor according to DIN 44081/082
Number of sensors: 1 – 6 units in series
Operating value: 2.2 – 3.3kΩ
Disengaging value: approx. nominal shut-off temperature $\pm 5^{\circ}\text{C}$
Total PTC resistance: < 1.5kΩ
Sensor voltage: < 7.5V
Sensor current: approx. 1mA
Line resistance in sensor range: < 100Ω without short-circuit monitoring
< 10Ω with short-circuit monitoring

Operation indicators

Supply voltage: LED, green
Relay in rest position: LED, red

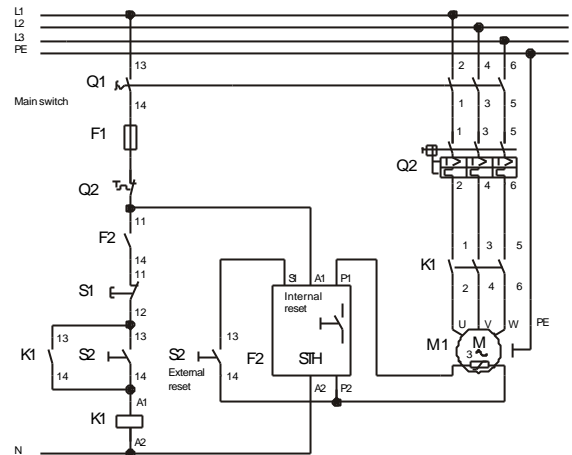
Contact
Number of changeovers: 1
Contact material: AgCdO
Contact material: AgSnO₂
Maximum switching voltage: 250 V AC
Maximum switching current: 4 A
Drop-off time of switching element: approx. 20ms
Mechanical life: 30 Mio.
Electrical (with rated load): 0.8 Mio.

General data

Ambient temperature: - 25 ... + 60°C
Climate resistance: VDE 0435T.2021
Mounting position: any
Vibration resistance: VDE 0435T.2021
Test voltage: 2.5kV
Isolation group: VDE 0110 Group C 250
Protection class: Terminals IP 20
Housing IP 40

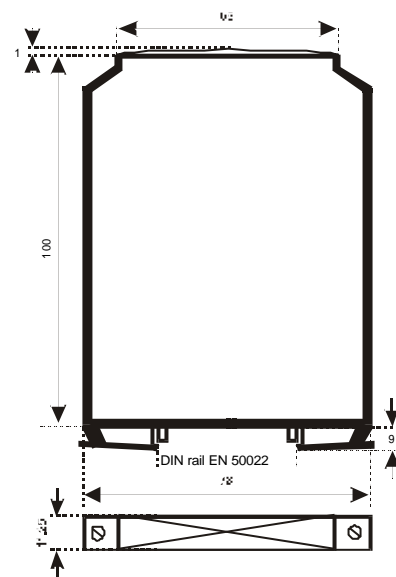
Connection terminals: Crosshead screws;
M3.5 self opening
Connection cross section: Multi-strand wire with wire sleeves 2 x 2.5mm²
single wire 2 x 2.5mm²
Finger touch proof: VDE 0106T.100 and VBG4
Mounting: Symmetrical DIN rail EN 50022
Dimensions l x w x h: 78mm x 11.25mm x 110mm
Weight: 70g

Example



Motor starts after actuation of sensor S2.
Motor stops after actuation of S1.

Dimensions



Connections

The terminal assignment for the connections is located on the front panel of the relay. **Reading the front panel from top to bottom**, the connections are as follows:

LED side: P1 – A1 – S1 – 11
Reset button side: P2 – A2 – 12 – 14