

# 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

			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 $I_e$ <ul style="list-style-type: none"><li>AC-15 at 230 V AC, 50 Hz</li><li>DC-13 at:<ul style="list-style-type: none"><li>24 V AC</li><li>240 V AC</li></ul></li></ul>	A		3
	A		1
	A		0.1
DIAZED fuse <ul style="list-style-type: none"><li>gl/Gg operational class</li></ul>	A		4
Electrical endurance AC-15 at 3 A	A		100000
Mechanical endurance Mechanical operating cycles			30 x 10 <sup>6</sup>
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 <ul style="list-style-type: none"><li>PT100</li><li>PT1000/KTY83/KTY84/NTC</li></ul>	mA		Typical 1
	mA		Typical 0.2
Open-circuit detection			Yes <sup>1)</sup>
Short-circuit detection			Yes
3-wire conductor connection			Yes <sup>2)</sup>
Enclosures			
Environmental influences	°C		-25 ... +60
	°C		-40 ... +80
			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 <ul style="list-style-type: none"><li>Solid</li><li>Finely stranded, with end sleeve</li><li>AWG conductors, solid or stranded</li><li>Tightening torque</li></ul>	mm <sup>2</sup>		M 3.5 (standard screwdriver, size 2 and Pozidriv 2)
	mm <sup>2</sup>		1 x (0.5 ... 4)/2 x (0.5 ... 2.5)
	mm <sup>2</sup>		1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)
	AWG		2 x (20 ... 14)
Spring-loaded terminal <ul style="list-style-type: none"><li>Solid</li><li>Finely stranded, with end sleeve</li><li>Finely stranded, without end sleeve</li><li>AWG conductors, solid or stranded</li><li>Corresponding opening tool</li></ul>	Nm		0.8 ... 1.2
	mm <sup>2</sup>		2 x (0.25 ... 1.5)
	mm <sup>2</sup>		2 x (0.25 ... 1)
	mm <sup>2</sup>		2 x (0.25 ... 1.5)
Vibration resistance IEC 68-2-6	mm <sup>2</sup>		2 x (24 ... 16)
	AWG		8WA2 807 <sup>3)</sup>
Shock resistance IEC 68-2-27			5 ... 26 Hz/0.75 mm
			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.