

Monitoring Relays

3RS10, 3RS11 Temperature Monitoring Relays

Relays, analog adjustable

Overview

The 3RS10/3RS11 analog temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is sensed by the sensors in the medium, evaluated by the device and monitored for overshoot or undershoot. When the threshold values are reached, the output relay switches on or off depending on the setting.

Technical specifications

Type		3RS10 00	3RS10 10	3RS11 00	3RS11 01	3RS10 20	3RS10 30	3RS11 20	3RS11 21
General data									
Sensor type		PT100		TC type J	TC type K	PT100		TC type J	TC type K
Width	mm	22.5							
Operating range		0.85 ... 1.1 x U _s							
Rated power	W/VA	< 2/4							
Auxiliary circuits									
Contacts		1 NO + 1 NC				1 CO + 1 NO			
Rated operational currents I _e									
• AC-15 at 230 V, 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							
Short-circuit current (at 250 V)	kA	1							
Electrical endurance		100000							
AC-15 at 3 A									
Mechanical endurance		3 x 10 ⁶							
Mechanical operating cycles									
Tripping units									
• Measuring accuracy at 20 °C ambient temperature (T20)		Typical < ±5 % from upper limit of scale							
• Reference point accuracy		--		< ±5 K		--		< ±5 K	
• Deviations due to ambient temperature in % from measuring range		< 2		< 3		< 2		< 3	
• Hysteresis settings									
- For temperature 1		2 ... 20 % from upper limit of scale							
- For temperature 2		5 % from upper limit of scale							
Sensor circuits									
• Typical sensor circuits									
- PT100	mA	Typical 1		--		Typical 1		--	
- PT1000	mA	Typical 0.2		--		Typical 0.2		--	
• Open-circuit detection		No							
• Short-circuit detection		No							
• 3-wire conductor connection ¹⁾		Yes		--		Yes		--	
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	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							
Vibration resistance acc. to IEC 68-2-6	Hz/mm	5 ... 26/0.75							
Shock resistance to IEC 68-2-27	g/ms	15/11							

1) 2-wire connection of resistance sensors with wire jumper between T2 and T3.