

Monitoring Relays

3RN1 Thermistor Motor Protection

For PTC sensors

Technical specifications

Type		Compact units	Standard devices			Multi-function units	Warning + tripping	Multiple motor protection
		3RN10 00	3RN10 10	3RN10 11	3RN10 12	3RN10 13	3RN10 22	3RN10 62
General data								
Width	mm	22.5						45
Number of connectable sensor circuits		1					2	6
Response in the event of control voltage failure		1)						
Manual RESET		No		Yes				
Automatic RESET		Yes		No	Yes			
Remote RESET		No		Yes ²⁾	Yes			
TEST pushbutton		No		Yes				
Short-circuit detection for sensor circuit		No		Yes (for 2 CO units)		Yes	No	
Short-circuit and open-circuit indication		No				Yes ³⁾	No	
Warning and disconnection in one unit		No					Yes	No
Tripping unit								
Rated insulation voltage U_i (degree of pollution 3)	V	300						
Permissible ambient temperature	°C	-25 ... +60						
Permissible storage temperature	°C	-40 ... +80						
EMC tests		EN 61000-6-2, EN 61000-6-4						
Degree of protection according to EN 60529 / VDE 0470-1		IP20						
Conductor cross-section								
• Screw terminals		M3						
- 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 terminals								
- Solid	mm ²	2 x (0.25 ...1.5)						
- Finely stranded, with end sleeve	mm ²	2 x (0.25 ...1.5)						
- Finely stranded, without end sleeves	mm ²	2 x (0.25 ...1.5)						
- AWG conductors, solid or stranded	AWG	2 x (24 ... 16)						
Sensor circuit								
Measuring circuit load at $R_F \leq 1.5 \text{ mW}$		≤ 5						
Voltage in sensor circuit at $R_F \leq 1.5 \text{ mW}$	V	≤ 2						
Response temperature (depends on sensor)	°C	60 ... 180						
Coupling time (depends on sensor)	s	About 5						
Summation PTC resistance R_F (per sensor loop)	kΩ	≤ 1.5						
Response value	kΩ	3.4 ... 3.8						
Return value	kΩ	1.5 ... 1.65						
Response tolerance	°C	± 6						

1) See Catalog LV 1, Selection and Ordering Data.

2) Remote RESET possible by disconnecting control voltage.

3) Open-circuits are only indicated by monostable versions (3RN10 13-...0).

4) See Catalog LV 1, Accessories, 3RP15 Solid-State Timing Relays.