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Ingenuity for life

Reliable protection against overheating for your motors

SIRIUS 3RN2 thermistor motor protection relays: for atypical and hazardous operating conditions

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SIRIUS 3RN2 thermistor motor protection relays directly monitor a motor's winding temperature and thus ensure reliable protection against overheating. Under atypical conditions, such as heavy starting or inadequate cooling, a motor is at extreme risk of overheating, even if fitted with overload relays.

With SIRIUS 3RN2, you can rest assured that production systems will be monitored reliably, even under difficult conditions. SIRIUS 3RN2 thermistor motor protection relays are the ideal choice, even for hazardous areas, because they are also available with ATEX approval.

Reliable overheating protection for motors

- Direct measurement of motor winding temperature
- Trip threshold defined by motor manufacturer: no special motor knowledge (e.g. max. permissible temperature) required, tripping via standardized PTC sensor
- No need for parameterization
- No errors possible during commissioning

Also ideal for hazardous areas

- Meets SIL 1 in accordance with EN 50495
- Available with ATEX Ex II (2) G and D for environments with explosive gas or dust loads
- Permanent self-diagnostics and monitoring of sensor circuits

Space-saving, uniform enclosure concept

- New enclosure design in titanium gray
- Width of just 22.5 or 17.5 mm for more space in the control cabinet
- Wide-range supply voltage reduces device variance

Easy to handle

- Permanent wiring thanks to removable terminals
- Maintenance-free spring-type terminals, even with vibrations
- Alternatively: traditional screw terminals
- Easy bridging of ground potential from one unit to another (double A2 terminals)

Low-cost versions

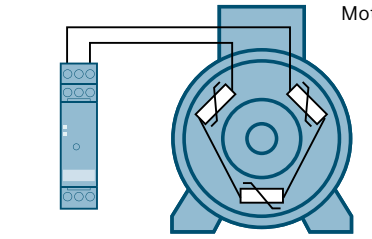
- Suitable for bimetallic sensors as an inexpensive alternative to high-cost units

Reliable protection: temperature measured directly in the motor winding

The temperature is monitored by means of thermistor sensors selected by the motor manufacturer as a function of the maximum permissible motor temperature. Sensors are installed directly in the motor winding.

If the selected PTC sensors' rated response temperature is reached, the resistance increases abruptly by several orders of magnitude and the thermistor motor protection relay switches its outputs off. This reliably protects the motor from overheating.

Thermistors (PTCs) in three-phase motors



Design	RESET option	Contacts	Rated control supply voltage Us	Article number
Compact signal evaluation units, width 17.5 mm, suitable for bimetallic switches				
Terminal A1 jumpered with root of CO contact	Auto	1 CO	24 V AC/DC 24–240 V AC/DC	3RN2000-☐AA30 3RN2000-☐AW30
	Auto	1 NO + 1 NC	24 V AC/DC 24–240 V AC/DC	3RN2010-☐CA30 3RN2010-☐CW30
Standard evaluation units, width 22.5 mm, suitable for bimetallic switches				
	Auto	2 CO	24 V AC/DC 24–240 V AC/DC	3RN2010-☐BA30 3RN2010-☐BW30
Bistable evaluation units, width 22.5 mm, wire break and short-circuit detection in the sensor circuit				
Does not trip if control supply voltage fails	Manual/Auto/Remote	2 CO	24–240 V AC/DC	3RN2012-☐BW31
Standard evaluation units with ATEX approval, width 22.5 mm, wire break and short-circuit detection in the sensor circuit				
	Manual/Remote[3)]	2 CO	24 V AC/DC 24–240 V AC/DC	3RN2011-☐BA30 3RN2011-☐BW30
Non-volatile[2)]	Manual/Auto/Remote	2 CO	24 V AC/DC 24–240 V AC/DC	3RN2012-☐BA30 3RN2012-☐BW30
Safe galvanic isolation of all circuits[1)], non-volatile[2)]	Manual/Auto/Remote	2 CO	24 V AC/DC 24–240 V AC/DC	3RN2013-☐BA30 3RN2013-☐BW30
Safe galvanic isolation of all circuits[1)], non-volatile[2)]	Manual/Auto/Remote	2 CO, hard gold-plated	24–240 V AC/DC	3RN2013-☐GW30
Standard evaluation units with ATEX approval and 2 sensor circuits for warning and disconnection, width 22.5 mm, wire break and short-circuit detection in both sensor circuits				
Safe galvanic isolation of all circuits[1)], non-volatile[2)]	Manual/Auto/Remote	1 NO + 1 CO	24–240 V AC/DC	3RN2023-☐DW30

[1)] Protective separation up to 300 V acc. to VDE 0106, IEC 60947-1
[2)] For notes regarding protection against voltage failure, see Catalog
[3)] Resetting via RESET button or by interrupting the control supply voltage

Screw terminals 1
Spring-type terminals 2

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Subject to change without prior notice.
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