

Overview



SIRIUS 3RN2 thermistor motor protection

More information

Homepage, see www.siemens.com/sirius-monitoring-relays

Industry Mall, see www.siemens.com/product?3RN2

TIA Selection Tool Cloud (TST Cloud), see

www.siemens.com/tstcloud/?node=SIRIUSRelais

Conversion tool, see www.siemens.com/conversion-tool



Video: SIRIUS 3RN2 thermistor motor protection relays

Thermistor motor protection devices are used for direct monitoring of the motor winding temperature. For this purpose, the motors are equipped with temperature-dependent resistors (PTC) that are directly installed in the motor winding and abruptly change their resistance at their temperature limit.

Versions

SIRIUS 3RN2 thermistor motor protection relays are available in the following versions:

- 3RN2000 compact evaluation unit
- 3RN2010 compact/standard evaluation unit
- 3RN2012-.BW31 bistable evaluation unit
- 3RN2011, 3RN2012-...30, 3RN2013 standard evaluation unit with ATEX approval
- 3RN2023 evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection

They comply with

- IEC 60947-8 Low-voltage switchgear and controlgear - Part 8: "Control units for built-in thermal protection (PTC) for rotating electrical machines"
- IEC 61000-6-2, IEC 61000-6-4. "Electromagnetic compatibility for industrial-process measurement and control equipment"

The 3RN2 thermistor motor protection relays with ATEX approval fulfill SIL 1 in compliance with EN 50495.

The terminals of the auxiliary contacts are designated in accordance with EN 60947-1.

3RN2 evaluation units are suitable for snap-on mounting on TH 35 DIN rails according to IEC 60715 or for screw fixing using an adapter (accessory).

Article number scheme

Product versions		Article number								
Thermistor motor protection relay with PTC sensor, type A		3RN20	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number and version of the sensor circuits	1 sensor circuit, supply voltage = root voltage	0								
	1 sensor circuit	1								
	2 sensor circuits for warning and disconnection	2								
RESET	Auto RESET	0								
	Manual RESET, with open-circuit and short-circuit detection	1								
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection	2								
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection, with protective separation	3								
Connection method	Screw terminals					1				
	Spring-loaded terminals (push-in)					2				
Auxiliary switches	1 CO								A	
	2 CO								B	
	1 NO + 1 NC								C	
	1 NO + 1 CO								D	
	2 CO, hard gold-plated								G	
Rated control supply voltage	24 V AC/DC								A 3	
	24 ... 240 V AC/DC								W 3	
Response to failure	Monostable									0
	Bistable									1
Example		3RN20	0	0	-	1	A	A	3	0

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Monitoring and control devices

Relays

SIRIUS 3RN2 thermistor motor protection

General data

Benefits

- Thanks to direct motor protection, overdimensioning of the motors is not necessary
- No settings on the device are necessary
- Solid-state compatible output thanks to versions with hard gold-plated contacts
- Rapid error diagnostics thanks to versions that indicate open and short circuits in the sensor circuit
- All versions with removable terminals
- All versions with screw or spring-loaded terminals with push-in functionality

Application

Direct motor protection through temperature monitoring of the motor winding offers 100% motor protection even under the most difficult ambient conditions, without the need to make adjustments on the device. Versions with hard gold-plated contacts additionally ensure a switching reliability that is higher than that of an electronic control.

Direct motor protection

- At increased ambient temperatures
- When switching frequency is too high
- When startup and braking procedures are too long

ATEX approval for operation in hazardous areas

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013 and 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

Motor protection using current- and temperature-dependent protective devices

IEC 60204 stipulates that motors must be protected from overheating at a rating of 0.5 kW and higher. The protection can take the form of overload protection, overtemperature protection or current limiting.

For motors with frequent starting and braking and in environments where cooling may be impaired (e.g. by dust), it is recommended to use the overtemperature protection option in the form of a protective device coordinated with this mode of operation. A good choice in this case is the use of 3RN2 thermistor motor protection devices.

On rotor-critical motors, overtemperature detection in the stator windings can lead to delayed and hence inadequate protection. In this case the standards stipulate additional protection, e.g. by means of an overload relay.

This combination of thermistor motor protection and overload relay is recommended for full motor protection in case of frequent starting and braking of motors, irregular intermittent duty or excessive switching frequency. To prevent premature tripping of the overload relay in such operating conditions, a higher setting than that normally required for the operational current is chosen. The overload relay then performs stall protection, and the 3RN2 thermistor motor protection relay monitors the temperature of the motor windings.

Application	Motor protection		
	Current-dependent only, e.g. with overload relay	Temperature-dependent only, e.g. with thermistor motor protection relay	Current- and temperature-dependent
Motor protection in case of			
Overloading in uninterrupted duty	✓	✓	✓
Long startup and braking operations	○	✓	✓
Irregular intermittent duty	○	✓	✓
When switching frequency is too high	○	✓	✓
Single-phase operation and current asymmetry	✓	✓	✓
Voltage and frequency fluctuations	✓	✓	✓
Stalling of the rotor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	✓	✓
Switching on a stalled rotor of a rotor-critical motor	✓	○	✓
Elevated ambient temperature	--	✓	✓
Impeded cooling	--	✓	✓

- ✓ Full protection
- Conditional protection
- No protection

Technical specifications

More information

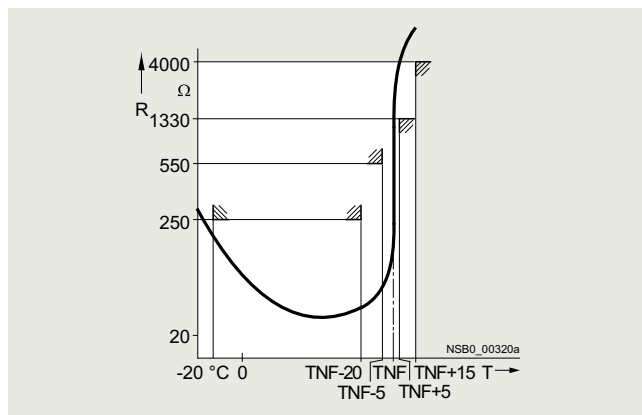
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/td>
 Operating Instructions and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/man>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/faq>
 For more information on explosion protection (ATEX), see www.siemens.com/sirius/atex

Type A PTC temperature sensor

If a Type A temperature sensor is connected to a Type A evaluation unit, compliance with the operating temperatures is assured (on pick-up and reset) according to IEC 60947-8.

The characteristic curves of the Type A temperature sensors are described in IEC 60947-8, DIN 44081 and DIN 44082 standards.



Characteristic curve of the 3RN2 evaluation unit

Bimetallic switch

In some applications, bimetallic switches (e.g. Klixon, Thermoclick) are used as sensors instead of PTC temperature sensors. Bimetallic switches are temperature- and current-dependent NC contacts and are available for different temperature ranges. Because bimetallic switches have practically no resistance below their opening temperature, short-circuit detection is not possible when using bimetallic switches. A bimetallic switch can be used for versions 3RN2000 and 3RN2010 on the SIRIUS thermistor motor protection relay.

Note:

Never use bimetallic switches in applications subject to an explosion hazard! Because of their non-standardized tripping characteristic, bimetallic switches must not be used in hazardous applications. Use Type A PTC sensors instead!

Use in hazardous areas

Increased danger in hazardous areas means it is necessary to observe the following notes and standards carefully:

- EN 60079-14/VDE 0165-1 for electrical apparatus for hazardous areas
- EN 60079-17 Explosive atmospheres - Electrical installations inspection and maintenance
- EN 50495 Safety devices required for the safe functioning of equipment with respect to explosion risks

The following SIRIUS 3RN2 thermistor motor protection relays with short-circuit detection are approved for Equipment Group II, Category (2) in Area "G" (areas in which potentially explosive gas, vapor, mist, or air mixtures are present) and are additionally approved for Area "D" (areas containing combustible dust):

- 3RN2011
- 3RN2012-...30
- 3RN2013
- 3RN2023

PTB 15 ATEX 3011 ex II (2) G (Ex e) (EX d) (Ex px)

PTB 15 ATEX 3011 ex II (2) D (Ex t) (Ex p)

For 3RN2 thermistor motor protection relays, the EC type-examination certificate is available for Group II, Category (2) G [Ex e] [Ex d] [Ex px] and D [Ex t] [Ex p]. The number is PTB 15 ATEX 3011.

SIRIUS 3RN2 thermistor motor protection relays are not intended for installation in hazardous areas. If they are installed in a hazardous area, the SIRIUS 3RN2 thermistor motor protection relays must be adapted to the applicable type of protection.

The machine or plant must shut down immediately if the SIRIUS 3RN2 thermistor motor protection relay is tripped, even if connected through a frequency converter. This must be implemented with circuitry.

SIRIUS 3RN2 thermistor motor protection relays with functional safety in accordance with EN 50495 are suitable for protecting explosion-proof motors/machines.

On evaluation units with a supply voltage of 24 V AC/DC, you must ensure electrical separation with a battery network or a power supply unit with electrical separation (e.g. isolating transformer) (does not apply to 3RN2013-.BA30).

A SIRIUS 3RN2 thermistor motor protection relay set to "Automatic RESET" mode will be reset automatically after the recovery time has elapsed, without the RESET button being pressed. An additional ON button has to be used to ensure that the motor does not start up automatically following tripping. "Automatic RESET" mode must not be used in applications where there is a risk of personal injury or damage to property if the motor restarts unexpectedly.

Monitoring and control devices

Relays

SIRIUS 3RN2 thermistor motor protection

General data

⚠ NOTICE!

When used in a hazardous area, the thermistor motor protection relay must not be operated with Auto RESET (terminals Y1 and Y2 permanently jumpered).

A risk analysis must be performed for the complete plant or machine. If this analysis yields a lower hazard potential (category 1), all SIRIUS 3RN2 thermistor motor protection relays can be used, provided the safety regulations are observed.

⚠ WARNING!

All work involved in connecting, commissioning and maintenance must be carried out by qualified, responsible personnel. Improper handling may result in serious personal injury and considerable damage to property.

Cable routing

The measuring circuit leads must be routed as separate control cables. It is not permitted to use cores from the supply line of the motor or any other main supply cables. If extreme inductive or capacitive interference is expected as a result of power lines routed in parallel, shielded control cables must be used.

Maximum length of sensor circuit cables for evaluation units without short-circuit detection in the sensor circuit:

Cable cross-section	3RN2000, 3RN2010
2.5 mm ²	2 x 2 800 m
1.5 mm ²	2 x 1 500 m
0.5 mm ²	2 x 500 m

Maximum length of sensor circuit cables for evaluation units with short-circuit detection¹⁾:

Cable cross-section	3RN2011, 3RN2012, 3RN2013, 3RN2023
2.5 mm ²	2 x 250 m
1.5 mm ²	2 x 150 m
0.5 mm ²	2 x 50 m

¹⁾ A short circuit in the sensor circuit will be detected up to this maximum cable length.

Principle of operation

SIRIUS 3RN2 thermistor motor protection relays are thermal protection devices that are suitable, in combination with Type A PTC thermistors, for monitoring temperatures of electrical drives, transformer windings, oils, bearings, air, etc.

The most frequent application is monitoring of three-phase motors in which the motor manufacturer has fitted a PTC sensor into every winding overhang and in which these PTC sensors are connected in series.

The SIRIUS 3RN2 thermistor motor protection relays operate in accordance with the closed-circuit principle and therefore monitor themselves for loss of supply voltage. The exceptions are the warning output on 3RN2023, which always works on the open-circuit principle and the bistable relays of the 3RN2012-BW31, which always retain the last switching state.

A micro-interruption in the power supply of less than 30 ms does not change the status of the output relays.

For devices with the "Manual RESET" function, the test function can be activated and a trip simulated by pressing the blue Test/RESET button for > 2 seconds.

The 3RN2011, 3RN2012, 3RN2013 and 3RN2023 devices are additionally equipped with open-circuit and short-circuit detection in the sensor circuit. The unit will trip in the event of a short circuit (resistance in sensor circuit < 10 Ω) or open circuit in the sensor circuit (dynamic open-circuit detection). Tripping as the result of a short circuit in the sensor circuit is indicated by a flickering red LED (TRIPPED). In the event of a short circuit in the sensor circuit for warning on the 3RN2023, the yellow warning LED (WARNING) flickers. The devices with dynamic open-circuit detection evaluate the rise time of the sensor circuit resistance. If the sensor circuit resistance rises from 3 300 Ω to 12 kΩ within 200 ms, the unit will not only trip, but also indicate the open circuit via a flashing red LED (TRIPPED) (in the event of an open circuit in a sensor circuit, the yellow warning LED (WARNING) flashes for the 3RN2023).

All evaluation units (except for the 3RN2000 compact evaluation unit) feature electrical separation between the control circuit and the sensor circuit. The relay outputs are also electrically separated from all other circuits. The 3RN2013 and 3RN2023 evaluation units incorporate protective electrical separation between all circuits up to $U_i = 300$ V.

3RN2000 compact evaluation unit

The compact unit, which is only 17.5 mm wide, is equipped with a red LED (TRIPPED) for the tripped indicator and a changeover contact. After the unit has tripped, it is automatically reset once the thermistors have cooled down. The root of the changeover contact is connected to the control voltage (terminal 11 is connected to terminal A1). This unit is particularly suitable in circuits in which the control circuit and signaling circuit have the same potential, e.g. in local control boxes.

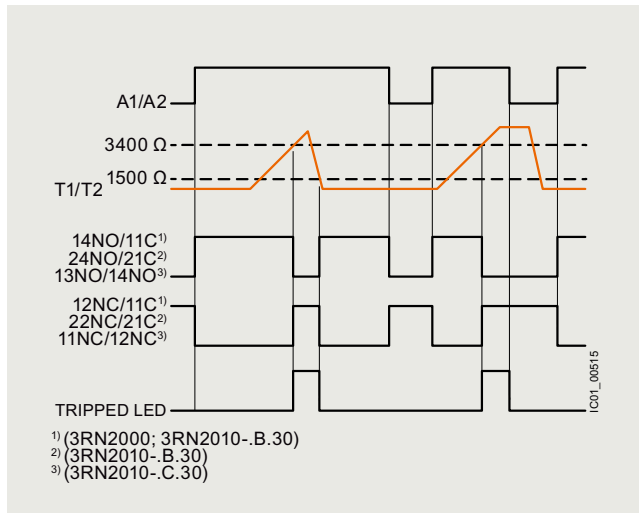
3RN2010, 3RN2011, 3RN2012, 3RN2013 compact/standard evaluation units

The units are equipped with two LEDs (READY and TRIPPED) for an operating and tripped display and are available with either 1 NO + 1 NC contacts (3RN2010, overall width 17.5 mm) or with 2 CO contacts. Depending on the version, they are available with Auto RESET (3RN2010), Manual/Remote RESET (3RN2011) or Manual/Auto and Remote RESET (3RN2012 and 3RN2013). Remote RESET can be achieved by connecting an external pushbutton with a normally-open function to terminals Y1 and Y2. If terminals Y1 and Y2 are jumpered, the unit is automatically reset once the thermistors have cooled down (Auto RESET). 3RN2012 and 3RN2013 are non-volatile. This means a previous trip remains stored in the event of a control supply voltage failure – the thermistor motor protection relay remains in the safe state with an opened output relay until it is intentionally reset by pressing the TEST/RESET button of the unit or an external pushbutton.

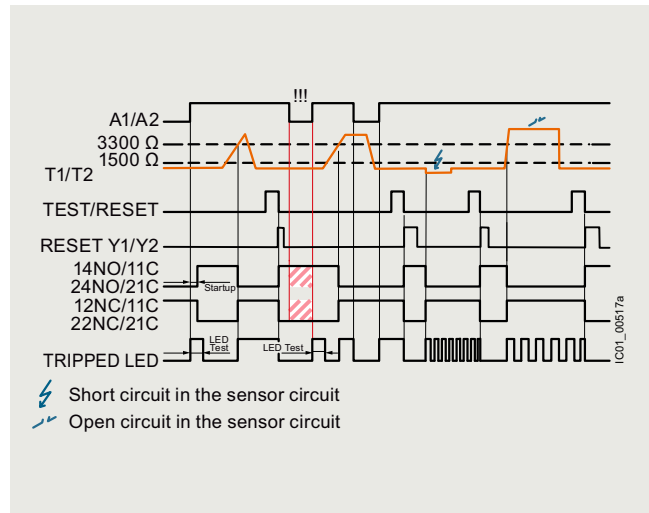
3RN2023 "warning and disconnection" evaluation units

Two sensor circuits can be connected to one 3RN2023 evaluation unit that act on two separate output relays with 1 NO contact for warning and 1 CO contact for disconnection. Thermistors with different rated response temperatures TNF are used to implement the "Warning" and "Disconnection" functions. When sensor circuit 2 for "Warning" responds, a yellow LED is lit and when the "Disconnection" circuit responds, a red LED is lit. The sensor circuits have a different reset response and operating behavior: The "Warning" thermistor sensor circuit 2 (terminals 2T1, T2) works only with Auto RESET and according to the open-circuit principle (output relay K2, NO contact). The "Disconnection" thermistor sensor circuit 1 (terminals 1T1, T2) can be changed from Manual RESET to Auto RESET by jumpering terminals Y1 and Y2. Remote RESET is implemented by connecting an external pushbutton with a normally-open function to these terminals.

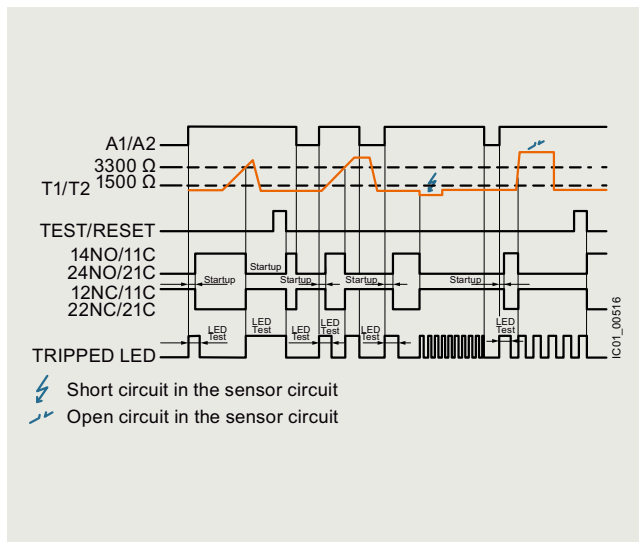
Function diagrams



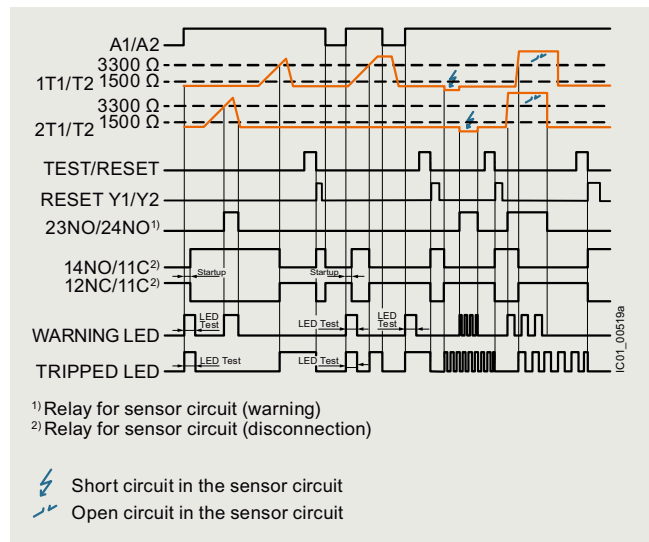
3RN2000, 3RN2010



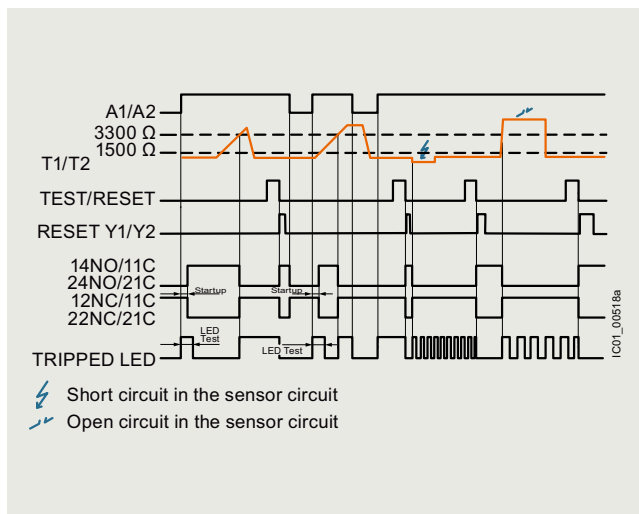
3RN2012-.BW31: resetting via the TEST/RESET button or external pushbutton



3RN2011: resetting via external pushbutton or interruption of the supply voltage



3RN2023: resetting via the TEST/RESET button or external pushbutton



3RN2012-.B.30, 3RN2013: resetting via the TEST/RESET button or external pushbutton

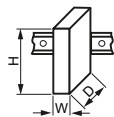
Monitoring and control devices

Relays

SIRIUS 3RN2 thermistor motor protection

General data

Article number	3RN2000-.A, 3RN2010-.C	3RN201-.B, 3RN2013-.G, 3RN2023-.D
Dimensions (W x H x D)	17.5 x 100 x 90	22.5 x 100 x 90



Article number	3RN2000-.AA30	3RN2000-.AW30, 3RN2010-.BW30, 3RN2010-.CW30	3RN2010-.BA30, 3RN2010-.CA30	3RN2011-.BA30, 3RN2012-.BA30	3RN2011-.BW30, 3RN2012-.BW30	3RN2012-.BW31	3RN2013-.BA30	3RN2013-.BW30, 3RN2013-.GW30	3RN2023-.DW30
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General technical specifications:

Type of electrical separation	Without electrical separation	Electrical separation	Protective separation
Electrical endurance (operating cycles) for AC-15 at 230 V	100 000		
Mechanical endurance (operating cycles)	10 000 000		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	300	
Impulse withstand voltage, rated value	kV	4	6
Minimum mains failure buffering time	ms	40	30
Pollution degree	3		
Degree of protection IP	IP20		
Shock resistance according to IEC 60068-2-27	11g/15 ms		
Vibration resistance according to IEC 60068-2-6	10 ... 55 Hz: 0.35 mm		
Type of mounting	Screw fixing and snap-on mounting on 35 mm DIN-rail		
• Mounting position	Any		
• Installation altitude at height above sea level, maximum	m	2 000	
Ambient temperature during operation	°C	-25 ... +60	
Relative humidity during operation, maximum	%	70	

ATEX

Ex device group and Ex category according to ATEX Product Directive 2014/34/EU	--	II 2G, II 2D	--	II 2G, II 2D
Safety device type according to IEC 61508-2	--	Type B	--	Type B
Safety Integrity Level (SIL) according to IEC 61508	--	SIL 1	--	SIL 1
Performance Level (PL) according to ISO 13849-1	--	c	--	c
T1 value for proof test interval or service duration according to IEC 61508	y	3	--	3

Measuring circuit:

Number of measuring circuits	1	2	
Relative measuring accuracy	%	9	2
Maximum number of sensors in series	6		
Cable length of sensor, maximum	m	2 800	250
Thermistor resistance response value	Ω	1 500 ... 1 650	1 500 ... 1 550
Thermistor resistance return value	Ω	3 400 ... 3 600	3 300 ... 3 350



Monitoring and control devices

Relays

SIRIUS 3RN2 thermistor motor protection

General data

Article number	3RN2000- .AA30	3RN2000- .AW30, 3RN2010- .BW30, 3RN2010- .CW30	3RN2010- .BA30, 3RN2010- .CA30	3RN2011- .BA30, 3RN2012- .BA30	3RN2011- .BW30, 3RN2012- .BW30	3RN2012- .BW31	3RN2013- .BA30	3RN2013- .BW30, 3RN2013- .GW30	3RN2023- .DW30
Control circuit:									
Current-carrying capacity of the output relay									
• At AC-15 at 250 V at 50/60 Hz	A	3							
• At DC-13 at 24 V	A	1							
• At DC-13 at 125 V	A	0.2							
• At DC-13 at 250 V	A	0.1							
Thermal current of the non-solid-state contact blocks, maximum	A	5							
Uninterrupted current of the output relay's DIAZED fuse link	A	6							
Supply voltage:									
Control supply voltage									
• At AC									
- At 50 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 240	24 ... 240
- At 60 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 24	24 ... 240	24 ... 240
• At DC, rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 24	24 ... 240	24 ... 240
Operating range factor of the control supply voltage, rated value									
• At AC at 50 Hz		0.85 ... 1.1							
• At AC at 60 Hz		0.85 ... 1.1							
• At DC		0.85 ... 1.1							

Article number	3RN20..-1	3RN20..-2
Type of electrical connection	 Screw terminals	 Spring-loaded terminals (push-in)
Tightening torque	Nm 0.6 ... 0.8	--
Type of connectable conductor cross-sections	<ul style="list-style-type: none"> • Solid • Finely stranded/with end sleeve • For AWG cables <ul style="list-style-type: none"> - Solid - Stranded 	<ul style="list-style-type: none"> 1 x (0.5 ... 4 mm²) 1 x (0.5 ... 2.5 mm²)
	1 x (0.5 ... 4 mm ²), 2 x (0.5 ... 2.5 mm ²) 1 x (0.5 ... 4 mm ²), 2 x (0.5 ... 1.5 mm ²)	1 x (0.5 ... 4 mm ²) 1 x (0.5 ... 2.5 mm ²)
	1 x (20 ... 12), 2 x (20 ... 14) --	1 x (20 ... 12) 1 x (20 ... 12)

Monitoring and control devices

Relays

SIRIUS 3RN2 thermistor motor protection

Basic units

Selection and ordering data

Multi-unit packaging,
see page 16/7.



3RN2000-1AA30



3RN2010-1BA30



3RN2011-1BA30



3RN2012-1BW30



3RN2023-1DW30

Product function	Number of CO contacts for auxiliary contacts	Number of NO contacts for auxiliary contacts	Number of NC contacts for auxiliary contacts	Material of switching contacts	Control supply voltage at AC at 50 Hz, rated value	Control supply voltage at DC rated value	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					V	V					
Compact evaluation unit, suitable for bimetallic switch											
Terminal A1 jumpered with root of changeover contact											
Auto RESET	1	0	0	AgSnO2	24 ... 24	24 ... 24	3RN2000-□AA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2000-□AW30		1	1 unit	41H
	0	1	1	AgSnO2	24 ... 24	24 ... 24	3RN2010-□CA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2010-□CW30		1	1 unit	41H
Standard evaluation unit, suitable for bimetallic switch											
Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	3RN2010-□BA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2010-□BW30		1	1 unit	41H
Bistable evaluation unit, open-circuit and short-circuit detection in the sensor circuit											
Does not trigger in the event of control supply voltage failure											
Auto RESET, Manual RESET, External RESET, Fault storage	2	0	0	AgSnO2	24 ... 240	24 ... 240	3RN2012-□BW31		1	1 unit	41H
Standard evaluation unit with ATEX approval, open-circuit and short-circuit detection in the sensor circuit¹⁾											
Manual RESET, External RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	3RN2011-□BA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2011-□BW30		1	1 unit	41H
Non-volatile³⁾											
Auto RESET, Manual RESET, External RESET, Fault storage	2 ⁴⁾	0	0	AgSnO2	24 ... 24	24 ... 24	3RN2012-□BA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2012-□BW30		1	1 unit	41H
Protective separation, non-volatile²⁾³⁾											
Auto RESET, Manual RESET, External RESET, Fault storage	2	0	0	AgSnO2	24 ... 24	24 ... 24	3RN2013-□BA30		1	1 unit	41H
					24 ... 240	24 ... 240	3RN2013-□BW30		1	1 unit	41H
				AgSnO2 Hard gold- plated	24 ... 240	24 ... 240	3RN2013-□GW30		1	1 unit	41H
Evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection, open-circuit and short-circuit detection in both sensor circuits											
Protective separation, non-volatile²⁾³⁾											
Auto RESET, Manual RESET, External RESET, Fault storage	1	1	0	AgSnO2	24 ... 240	24 ... 240	3RN2023-□DW30		1	1 unit	41H








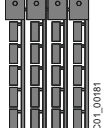


Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1) For 3RN2011: The unit can be reset with the RESET button or by disconnecting the control supply voltage.
 2) Protective separation up to 300 V according to DIN/VDE 0160, IEC 60947-1.
 3) Protection against voltage failure or non-volatile fault storage means that previous tripping due to a fault remains stored even if the control supply voltage fails. The monitoring device is not reset if the voltage fails. With an active fault, meaning a fault which has not been manually confirmed, an automatic restart of the plant upon recovery of the power is prevented therefore and plant safety increased as the result.

4) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure					
 3ZY1122-1BA00	Removable terminals <ul style="list-style-type: none"> • 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm² • 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve) 	Screw terminals  3ZY1122-1BA00	1	6 units	41L
		Spring-loaded terminals (push-in)  3ZY1122-2BA00	1	6 units	41L
Accessories for enclosures					
 3ZY1311-0AA00	Push-in lugs For wall mounting	3ZY1311-0AA00	1	10 units	41L
 3ZY1440-1AA00	Coding pins For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; enable the mechanical coding of terminals	3ZY1440-1AA00	1	12 units	41L
 3ZY1450-1AB00	Hinged cover Replacement cover, without terminal labeling, titanium gray <ul style="list-style-type: none"> • 17.5 mm wide • 22.5 mm wide 	3ZY1450-1AA00 3ZY1450-1AB00	1	5 units	41L
 3ZY1450-1AB00			1	5 units	41L
Blank labels					
 3RT2900-1SB20	Unit labeling plates¹⁾ For SIRIUS devices <ul style="list-style-type: none"> • 10 mm x 7 mm, titanium gray • 20 mm x 7 mm, titanium gray 	3RT2900-1SB10 3RT2900-1SB20	100	816 units	41B
			100	340 units	41B
Tools for opening spring-loaded terminals					
 3RA2908-1A	Screwdrivers For all SIRIUS devices with spring-loaded terminals <p>Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated</p>	Spring-loaded terminals (push-in)  3RA2908-1A	1	1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.