## **SIEMENS**

Data sheet 3RN2023-1DW30



Thermistor motor protection relay Device for warning and switching-off 22.5 mm enclosure screw terminal 1 NO contact + 1 CO contact US = 24 V-240 V AC/DC Manual/Auto/Remote reset with ATEX approval 3 LEDs (READY/WARNING/TRIPPED) Safe galvanic isolation Test/reset button Wire break monitoring Short circuit monitoring non-volatile 2 separate PTC sensor circuits

product brand name	SIRIUS	
product category	SIRIUS 3RN2 thermistor motor protection	
product designation	Thermistor motor protection relay	
design of the product	Standard evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection, open-circuit and short-circuit detection in both sensor circuits, safe disconnection, non-volatile	
product type designation	3RN2	
eneral technical data		
product function	thermistor motor protection	
display version LED	Yes	
insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value	300 V	
degree of pollution	3	
surge voltage resistance rated value	6 kV	
maximum permissible voltage for safe isolation		
<ul> <li>between auxiliary and auxiliary circuit</li> </ul>	300 V	
<ul> <li>between control and auxiliary circuit</li> </ul>	300 V	
protection class 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	
mechanical service life (switching cycles) typical	10 000 000	
electrical endurance (switching cycles) at AC-15 at 230 V typical	100 000	
thermal current of the switching element with contacts maximum	5 A	
reference code according to IEC 81346-2	K	
Substance Prohibitance (Date)	05/28/2009	
roduct Function		
product function		
• error memory	Yes	
<ul> <li>dynamic open-circuit detection</li> </ul>	Yes	
<ul> <li>external reset</li> </ul>	Yes	
• auto-RESET	Yes	
manual RESET	Yes	
ontrol circuit/ Control		
type of voltage of the control supply voltage	AC/DC	
control supply voltage at AC		
	24 240 V	
<ul> <li>at 50 Hz rated value</li> </ul>	Z+ Z+0 V	

rated value	24 240 V
operating range factor control supply voltage rated	
value at DC	
• initial value	0.85
• full-scale value	1.1
operating range factor control supply voltage rated value at AC at 50 Hz	
• initial value	0.85
full-scale value	1.1
operating range factor control supply voltage rated	1.1
value at AC at 60 Hz	
initial value	0.85
• full-scale value	1.1
inrush current peak	
● at 24 V	0.7 A
● at 240 V	12 A
duration of inrush current peak	
• at 24 V	0.25 ms
● at 240 V	0.2 ms
Measuring circuit	
buffering time in the event of power failure minimum	30 ms
Precision	
relative metering precision	2 %
Auxiliary circuit	
material of switching contacts	AgSnO2
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	1
number of CO contacts for auxiliary contacts	1
operational current of auxiliary contacts at DC-13	
• at 24 V	1 A
• at 125 V	0.2 A
● at 250 V	0.1 A
Main circuit	
operating frequency rated value	50 60 Hz
ampacity of the output relay at AC-15 at 250 V at 50/60 Hz	3 A
ampacity of the output relay at DC-13	
• at 24 V	1 A
• at 125 V	0.2 A
continuous current of the DIAZED fuse link of the output relay	6 A
Electromagnetic compatibility	
conducted interference	
due to burst according to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
due to burst according to IEC 01000-4-4      due to conductor-earth surge according to IEC	2 kV (line to ground)
61000-4-5	- in (into to ground)
<ul> <li>due to conductor-conductor surge according to IEC</li> </ul>	1 kV (line to line)
61000-4-5	
electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
Galvanic isolation	
design of the electrical isolation	Protective separation
galvanic isolation	V
between input and output	Yes
between the outputs	Yes
between the voltage supply and other circuits	Yes
Safety related data	
Safety Integrity Level (SIL) according to IEC 61508	1
performance level (PL) according to EN ISO 13849-1	C
category according to EN ISO 13849-1	1
	74.0/
Safe failure fraction (SFF)	74 %
	74 % 18 %

	0.000000000.4#	
<ul> <li>at rate of recognizable hazardous failures (λdd)</li> </ul>	0.000000068 1/h	
at rate of non-recognizable hazardous failures (λdu)	0.00000031 1/h	
PFHD with high demand rate according to EN 62061	0.00000038 1/h	
PFDavg with low demand rate according to IEC 61508	0.0041	
MTBF	97 y	
MTTFd	303 y 0	
hardware fault tolerance according to IEC 61508	0	
Connections/ Terminals	V	
product component removable terminal for auxiliary and control circuit	Yes	
type of electrical connection	screw-type terminals	
for auxiliary and control circuit	screw-type terminals	
type of connectable conductor cross-sections		
• solid	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)	
<ul> <li>finely stranded with core end processing</li> </ul>	1x (0.5 4 mm²), 2x (0.5 1.5 mm²)	
at AWG cables solid	1x (20 12), 2x (20 14)	
connectable conductor cross-section	0.5	
• solid	0.5 4 mm <sup>2</sup>	
finely stranded with core end processing	0.5 4 mm²	
AWG number as coded connectable conductor cross section		
• solid	20 12	
• stranded	20 12	
tightening torque with screw-type terminals	0.6 0.8 N·m	
Installation/ mounting/ dimensions		
mounting position	any	
fastening method	screw and snap-on mounting onto 35 mm standard	I mounting rail
height	100 mm	3 .
width	22.5 mm	
depth	90 mm	
required spacing		
with side-by-side mounting		
— forwards	0 mm	
— backwards	0 mm	
— upwards	0 mm	
— downwards	0 mm	
— at the side	0 mm	
<ul> <li>for grounded parts</li> </ul>		
— forwards	0 mm	
— backwards	0 mm	
— upwards	0 mm	
— at the side	0 mm	
— downwards	0 mm	
<ul><li>for live parts</li></ul>		
— forwards	0 mm	
— backwards	0 mm	
— upwards	0 mm	
— downwards	0 mm	
— at the side	0 mm	
Ambient conditions		
installation altitude at height above sea level maximum	2 000 m	
ambient temperature		
during operation	-25 +60 °C	
during storage	-40 +85 °C	
during transport	-40 +85 °C	
relative humidity during operation	70 %	
explosion protection category for dust	[Ex t] [Ex p]	
explosion protection category for gas	[Ex e] [Ex d] [Ex px]	
Certificates/ approvals		
General Product Approval		EMC



Confirmation









For use in hazardous locations Declaration of Conformity

**Test Certificates** 

Marine / Shipping





Type Test Certificates/Test Report







other

Confirmation

## Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RN2023-1DW30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RN2023-1DW30

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

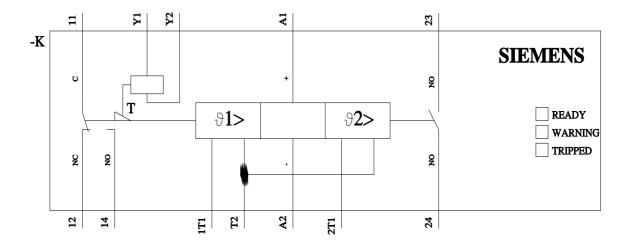
https://support.industry.siemens.com/cs/ww/en/ps/3RN2023-1DW30

 $Image\ database\ (product\ images,\ 2D\ dimension\ drawings,\ 3D\ models,\ device\ circuit\ diagrams,\ EPLAN\ macros,\ ...)$ 

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RN2023-1DW30&lang=en

**Characteristic: Derating** 

https://support.industry.siemens.com/cs/ww/en/ps/3RN2023-1DW30/manual



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