## **SIEMENS**

Data sheet 3RN2012-2BW30



Thermistor motor protection relay Standard evaluation unit 22.5 mm enclosure Spring-type terminal 2 change-over contacts US = 24 V-240 V AC/DC Manual/Auto/Remote reset with ATEX approval 2 LEDs (READY/TRIPPED) galvanic isolation Test/reset button Wire break monitoring Short circuit monitoring non-volatile

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, open-circuit and short-circuit detection in the sensor circuit, non-volatile		
product type designation	3RN2		
General 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	4 kV		
protection class IP	IP20		
shock resistance according to IEC 60068-2-27	11g / 15 ms		
mechanical service life (operating cycles) typical	10 000 000		
electrical endurance (operating 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		
SVHC substance name	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 Dicyclohexylphthalat (DCHP) - 84-61-7		
Product 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		
Control circuit/ Control	Control circuit/ Control		
type of voltage of the control supply voltage	AC/DC		
control supply voltage at AC			
<ul> <li>at 50 Hz rated value</li> </ul>	24 240 V		
at 60 Hz rated value	24 240 V		
control supply voltage at DC			
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 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	40 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	0
number of CO contacts for auxiliary contacts	2
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)
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV (line to ground)
<ul> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV (line to line)
electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
Galvanic isolation	
design of the electrical isolation	galvanic isolation
galvanic isolation	
between input and output	Yes
between the outputs	Yes
between the voltage supply and other circuits	Yes
Safety related data	
failure rate [FIT] at rate of recognizable hazardous failures (λdd)	6.8E-8 1/h
failure rate [FIT] at rate of non-recognizable hazardous failures (λdu)	3.08E-7 1/h
average diagnostic coverage level (DCavg)	18 %
MTBF	97 a
MTTFd	303 a
PFHD with high demand rate according to EN 62061	3.76E-7 1/h
performance level (PL) according to EN ISO 13849-1	С
category according to EN ISO 13849-1	1
Safety Integrity Level (SIL) according to IEC 61508	1
PFDavg with low demand rate according to IEC 61508	0.0041

Safe failure fraction (SFF)	74 %
hardware fault tolerance according to IEC 61508	0
T1 value for proof test interval or service life according to IEC 61508	3 a
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	spring-loaded terminal (push-in)
<ul> <li>for auxiliary and control circuit</li> </ul>	spring-loaded terminals (push-in)
type of connectable conductor cross-sections	
• solid	0.5 4 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²
<ul> <li>finely stranded without core end processing</li> </ul>	0.5 4 mm²
<ul> <li>for AWG cables solid</li> </ul>	20 12
<ul> <li>for AWG cables stranded</li> </ul>	20 12
connectable conductor cross-section	
• solid	0.5 4 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²
finely stranded without core end processing	0.5 4 mm²
AWG number as coded connectable conductor cross section	
• solid	20 12
• stranded	20 12
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting onto 35 mm DIN rail
height	100 mm
width	22.5 mm
depth	90 mm
required spacing	
<ul> <li>with side-by-side mounting</li> </ul>	
— forwards	0 mm
— backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
for grounded parts	
— forwards	0 mm
— backwards	0 mm
— upwards	0 mm
— at the side	0 mm
— downwards	0 mm
• for live parts	*
— forwards	0 mm
— backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
Ambient conditions	O THILL
installation altitude at height above sea level maximum	2 000 m
ambient temperature	2 000 III
during operation	-25 +60 °C
	-40 +85 °C
during storage     during transport	
during transport  relative hymidity during exerction	-40 +85 °C 70 %
relative humidity during operation	
explosion protection category for dust	[Ex t] [Ex p]
explosion protection category for gas	[Ex e] [Ex d] [Ex px]
Approvals Certificates	
General Product Approval	





Confirmation







**EMC** 

For use in hazardous locations

**Test Certificates** 

Marine / Shipping





Type Test Certificates/Test Report







other

Confirmation

## Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RN2012-2BW30

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RN2012-2BW30}$ 

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

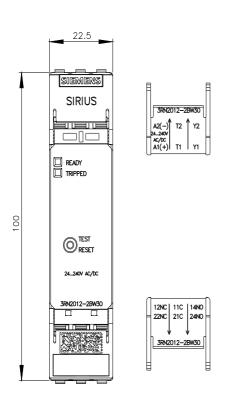
https://support.industry.siemens.com/cs/ww/en/ps/3RN2012-2BW30

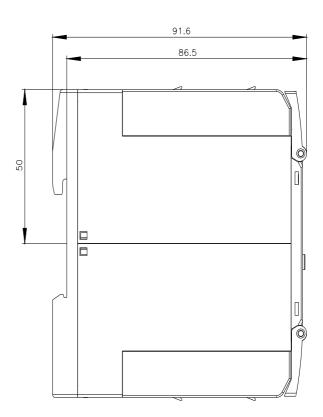
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

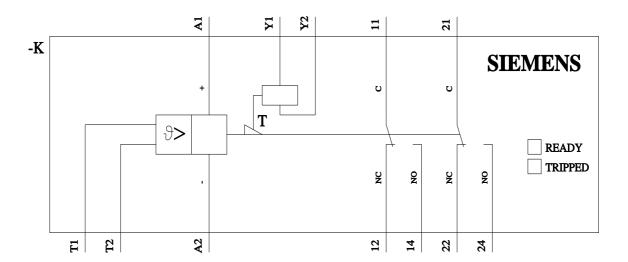
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RN2012-2BW30&lang=en

**Characteristic: Derating** 

https://support.industry.siemens.com/cs/ww/en/ps/3RN2012-2BW30/manual







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