## **SIEMENS**

Data sheet 3RN2013-1BW30



Thermistor motor protection relay Standard evaluation unit 22.5 mm enclosure screw terminal 2 change-over contacts US = 24 V-240 V AC/DC Manual/Auto/Remote reset with ATEX approval 2 LEDs (READY/TRIPPED) Safe 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, safe disconnection, 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	6 kV
maximum permissible voltage for protective separation	
<ul> <li>between auxiliary and auxiliary circuit</li> </ul>	300 V
between control and auxiliary circuit	300 V
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
external reset	Yes
• auto-RESET	Yes
manual RESET	Yes
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
• at 50 Hz rated value	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	40 ma
buffering time in the event of power failure minimum	40 ms
Precision	2.0/
relative metering precision	2 %
Auxiliary circuit	Ag2g02
material of switching contacts	AgSnO2
number of NO contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	2
number of CO contacts for auxiliary contacts operational current of auxiliary contacts at DC-13	2
• at 24 V	1 A
• at 125 V	0.2 A
• at 250 V	0.1 A
Main circuit	0.174
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	6 A
relay	
Electromagnetic compatibility	
conducted interference	
due to burst according to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
due to conductor-earth surge according to IEC 61000-4-5	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	Protective separation
galvanic isolation	
between input and output	Yes
<ul> <li>between the outputs</li> </ul>	Yes
<ul> <li>between the voltage supply and other circuits</li> </ul>	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
failure rate [FIT] at rate of non-recognizable hazardous	3.08E-7 1/h 18 %
failure rate [FIT] at rate of non-recognizable hazardous failures (λdu)	
failure rate [FIT] at rate of non-recognizable hazardous failures (λdu) average diagnostic coverage level (DCavg)	18 %
failure rate [FIT] at rate of non-recognizable hazardous failures (\(\lambda\du\)) average diagnostic coverage level (DCavg)  MTBF	18 % 97 a

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	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)
for AWG cables solid	1x (20 12), 2x (20 14)
connectable conductor cross-section	
• solid	0.5 4 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	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 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
<ul> <li>for grounded parts</li> </ul>	
— 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	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	0.00
during operation	-25 +60 °C
<ul><li>during operation</li><li>during storage</li></ul>	-40 +85 °C
<ul><li>during operation</li><li>during storage</li><li>during transport</li></ul>	-40 +85 °C -40 +85 °C
<ul> <li>during operation</li> <li>during storage</li> <li>during transport</li> <li>relative humidity during operation</li> </ul>	-40 +85 °C -40 +85 °C 70 %
during operation     during storage     during transport relative humidity during operation explosion protection category for dust	-40 +85 °C -40 +85 °C 70 % [Ex t] [Ex p]
during operation     during storage     during transport relative humidity during operation explosion protection category for dust explosion protection category for gas	-40 +85 °C -40 +85 °C 70 %
during operation     during storage     during transport relative humidity during operation explosion protection category for dust	-40 +85 °C -40 +85 °C 70 % [Ex t] [Ex p]







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=3RN2013-1BW30

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RN2013-1BW30}$ 

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

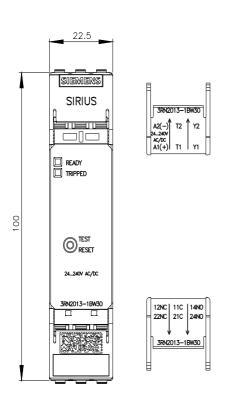
https://support.industry.siemens.com/cs/ww/en/ps/3RN2013-1BW30

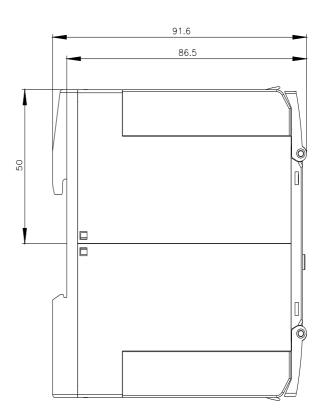
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

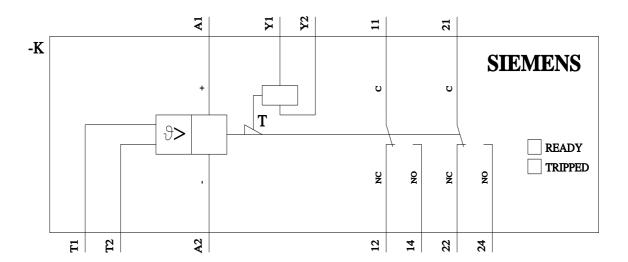
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RN2013-1BW30\&lang=en}}$ 

**Characteristic: Derating** 

https://support.industry.siemens.com/cs/ww/en/ps/3RN2013-1BW30/manual







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