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	
Display version LED	Yes
Power loss [W] for rated value of the current	
at AC in hot operating state	1.8 W
 at DC in hot operating state 	1.8 W
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	

 between auxiliary and auxiliary circuit 	300 V
	300 V
 between control and auxiliary circuit 	300 V
Protection class IP	IP20
Shock resistance	
• acc. to IEC 60068-2-27	11g / 15 ms
Vibration resistance	
• acc. 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 acc. to DIN 40719 extended	К
according to IEC 204-2 acc. to IEC 750	
Reference code acc. to DIN EN 81346-2	К
Reference code acc. to DIN EN 61346-2	К
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	
	0.85
• initial value	1.1
Full-scale value 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	
	0.25 ms
● at 24 V	

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	
Operating current of auxiliary contacts at DC-13		
● at 24 V	1 A	
● at 125 V	0.2 A	
● at 250 V	0.1 A	
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Main circuit Operating frequency rated value	50 60 Hz	
Operating frequency fated value	30 00 112	
Outputs		
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	6 A	
output relay		
Electromagnetic compatibility		
Conducted interference		
due to burst acc. to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)	
 due to conductor-earth surge acc. to IEC 61000-4-5 	2 kV (line to ground)	
 due to conductor-conductor surge acc. to IEC 61000-4-5 	1 kV (line to line)	
Electrostatic discharge acc. to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge	
Electrostatio disoriarge acc. to IEO 01000-4-2		
Galvanic isolation		
<u> </u>	Protective separation	
Galvanic isolation	Protective separation	
Galvanic isolation Design of the electrical isolation	Protective separation Yes	
Galvanic isolation Design of the electrical isolation Galvanic isolation		
Galvanic isolation Design of the electrical isolation Galvanic isolation • between entrance and outlet	Yes	
Galvanic isolation Design of the electrical isolation Galvanic isolation • between entrance and outlet • between the outputs	Yes Yes	

Performance level (PL) acc. to EN ISO 13849-1	С
Category acc. to EN ISO 13849-1	1
Safe failure fraction (SFF)	74 %
Average diagnostic coverage level (DCavg)	18 %
Failure rate [FIT]	
 at rate of recognizable hazardous failures (λdd) 	0.000000068 1/h
 at rate of non-recognizable hazardous failures 	0.00000031 1/h
(λdu)	
PFHD with high demand rate acc. to EN 62061	0.00000038 1/h
PFDavg with low demand rate acc. to IEC 61508	0.0041
MTBF	97 y
MTTFd	303 y
Hardware fault tolerance acc. to IEC 61508	0
T1 value for proof test interval or service life acc. to IEC 61508	3 y

Connections/ Terminals		
Product function		
 removable terminal for auxiliary and control 	Yes	
circuit		
Type of electrical connection	screw-type terminals	
 for auxiliary and control current circuit 	screw-type terminals	
Type of connectable conductor cross-sections		
• solid	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)	
 finely stranded with core end processing 	1x (0.5 4 mm²), 2x (0.5 1.5 mm²)	
 at AWG conductors solid 	1x (20 12), 2x (20 14)	
Connectable conductor cross-section		
• solid	0.5 4 mm²	
 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	ation/ mounting/ dimensions	
Mounting position	any screw and snap-on mounting onto 35 mm standard mounting rail	
Mounting type		
Height	100 mm	
Width	22.5 mm	
Depth	90 mm	
Required spacing		
with side-by-side mounting		

0 mm
0 mm
0 mm
0 mm
0 mm
0 mm
0 mm

Ambient conditions	
Installation altitude at height above sea level	
• maximum	2 000 m
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

For use in hazardous locations













Declaration of Conformity	Test Certific-	Marine / Shipping
	ates	



Miscellaneous

Type Test Certificates/Test Report







other

Confirmation

Further information

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

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

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

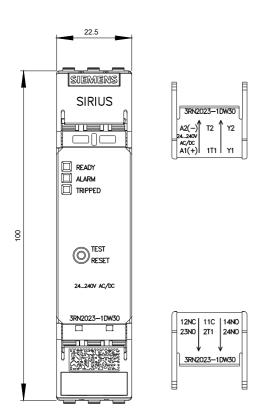
Cax online generator

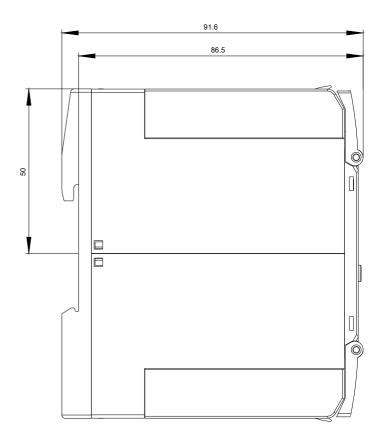
 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RN2023-1DW30}$

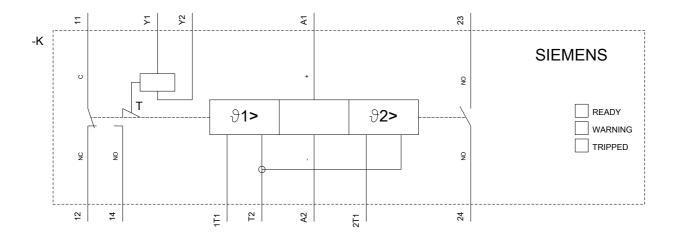
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

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







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