SIEMENS

Data sheet 3RN2012-1BW30

Figure similar

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) galvanic isolation Test/reset button Wire break monitoring Short circuit monitoring non-volatile

Article number

Product brand name		SIRIUS
Product category		SIRIUS 3RN2 thermistor motor protection
Product designation		Thermistor motor protection relay
Product type designation		3RN2

General technical data

Display version LED		Yes
Power loss [W] for rated value of the current		
• at AC in hot operating state	W	1.7
• at DC in hot operating state	W	1.7
Insulation voltage		
• for overvoltage category III according to IEC 60664		
— with degree of pollution 3 rated value	V	300
Degree of pollution		3
Surge voltage resistance rated value	kV	4
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	A	5
Reference indentifier acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K
Control circuit/ Control		
Type of voltage of the control supply voltage		AC/DC
Control supply voltage at AC		
• at 50 Hz rated value	V	24 ... 240
• at 60 Hz rated value	V	24 ... 240
Control supply voltage at DC		
• rated value	V	24 ... 240
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	A	0.7
• at 240 V	A	12
Duration of inrush current peak		
• at 24 V	ms	0.25
• at 240 V	ms	0.2
Measuring circuit		
Buffering time in the event of power failure minimum	ms	40
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
Operating current of auxiliary contacts at DC-13		
• at 24 V	A	1
• at 125 V	A	0.2
• at 250 V	A	0.1

Main circuit

Operating frequency rated value	Hz	50 ... 60

Outputs

Ampacity of the output relay at AC-15		
• at 250 V at 50/60 Hz	A	3
Ampacity of the output relay at DC-13		
• at 24 V	A	1
• at 125 V	A	0.2
Continuous current of the DIAZED fuse link of the output relay	A	6

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

Galvanic isolation

Design of the electrical isolation		galvanic
Galvanic isolation		
• between entrance and outlet		Yes
• between the outputs		Yes
• between the voltage supply and other circuits		Yes

Safety related data

Safety Integrity Level (SIL) acc. to IEC 61508		1
Performance level (PL) acc. to EN ISO 13849-1		c
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)	1/h	0.000000068
• at rate of non-recognizable hazardous failures (λdu)	1/h	0.00000031
PFHD with high demand rate acc. to EN 62061	1/h	0.00000038
PFDavg with low demand rate acc. to IEC 61508		0.0041
MTTFd	y	303
Hardware fault tolerance acc. to IEC 61508		0
T1 value for proof test interval or service life acc. to IEC 61508	y	3

Connections/Terminals

Product function		
• removable terminal for auxiliary and control circuit		Yes
Type of electrical connection		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	mm²	0.5 ... 4
• finely stranded with core end processing	mm²	0.5 ... 4
AWG number as coded connectable conductor cross section		
• solid		20 ... 12
• stranded		20 ... 12
Tightening torque		
• with screw-type terminals	N·m	0.6 ... 0.8

Installation/ mounting/ dimensions

Mounting position		any
Mounting type		screw and snap-on mounting onto 35 mm standard mounting rail
Height	mm	100
Width	mm	22.5
Depth	mm	90
Required spacing		
• with side-by-side mounting		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	0

• for grounded parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— at the side	mm	0
— downwards	mm	0
• for live parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	0

Ambient conditions

Installation altitude at height above sea level		
• maximum	m	2 000
Ambient temperature		
• during operation	°C	-25 ... +60
• during storage	°C	-40 ... +85
• during transport	°C	-40 ... +85
Relative humidity		
• during operation	%	70
Explosion protection category for dust		[Ex t] [Ex p]

Certificates/approvals

General Product Approval				EMC	For use in hazardous locations
CCC	CSA	UL		C-Tick	ATEX

Declaration of Conformity	Test Certificates	Marine / Shipping			other
EG-Konf.	Type Test Certificates/Test Report	LRS	PRS		Confirmation

Further information

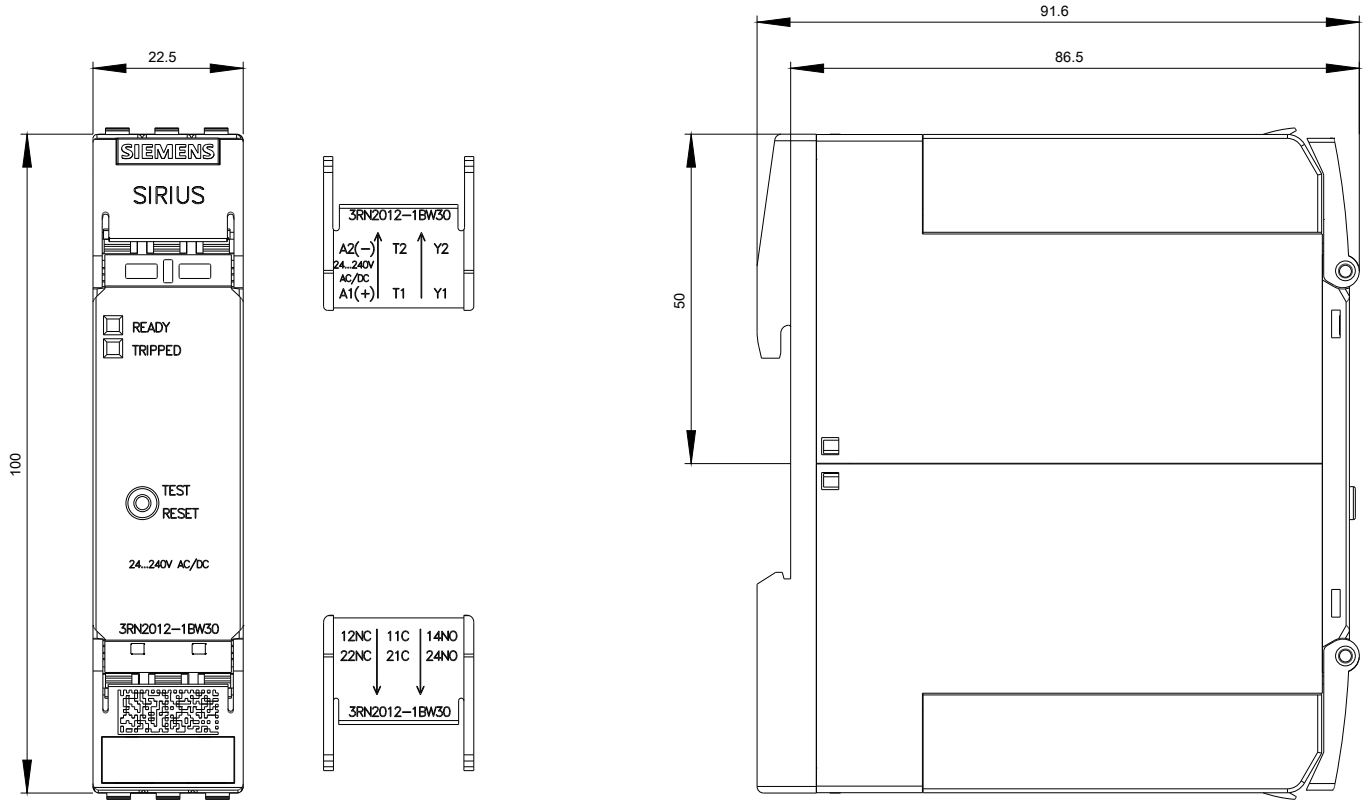
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

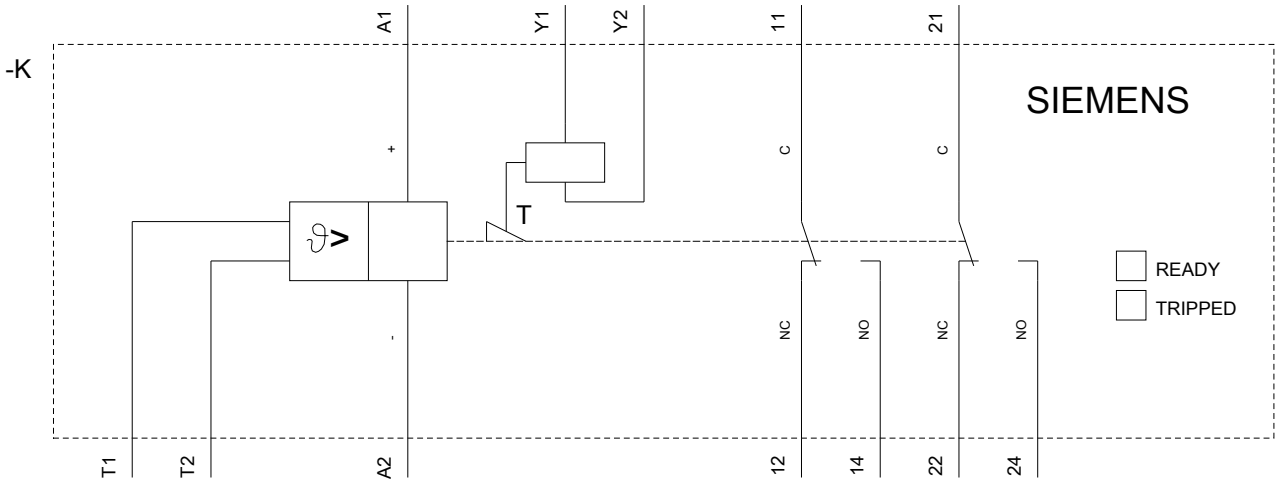
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RN2012-1BW30

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RN2012-1BW30

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RN2012-1BW30

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RN2012-1BW30&lang=en





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