

Thermistor motor protection relay Standard evaluation unit 22.5 mm enclosure screw terminal 2 change-over contacts US = 24 V AC/DC Auto-reset suitable for bimetallic switch 2 LEDs (READY/TRIPPED) galvanic isolation



| | |
|--------------------------|--|
| Product brand name | SIRIUS |
| Product category | SIRIUS 3RN2 thermistor motor protection |
| Product designation | Thermistor motor protection relay |
| Design of the product | Standard evaluation unit, suitable for bimetallic switch |
| 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 | 0.6 W |
| • at DC in hot operating state | 0.6 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 | 4 kV |
| Protection class IP | IP20 |
| Shock resistance | |
| • acc. to IEC 60068-2-27 | 11g / 15 ms |

| | |
|---|-----------------------|
| Vibration resistance | |
| <ul style="list-style-type: none"> • acc. to IEC 60068-2-6 | 10 ... 55 Hz: 0.35 mm |
| Mechanical service life (switching cycles) | |
| <ul style="list-style-type: none"> • typical | 10 000 000 |
| Electrical endurance (switching cycles) | |
| <ul style="list-style-type: none"> • 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 EN 81346-2 | K |

Control circuit/ Control

| | |
|---|-------------|
| Type of voltage of the control supply voltage | AC/DC |
| Control supply voltage at AC | |
| <ul style="list-style-type: none"> • at 50 Hz rated value | 24 ... 24 V |
| <ul style="list-style-type: none"> • at 60 Hz rated value | 24 ... 24 V |
| Control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 24 ... 24 V |
| Operating range factor control supply voltage rated value at DC | |
| <ul style="list-style-type: none"> • initial value | 0.85 |
| <ul style="list-style-type: none"> • Full-scale value | 1.1 |
| Operating range factor control supply voltage rated value at AC at 50 Hz | |
| <ul style="list-style-type: none"> • initial value | 0.85 |
| <ul style="list-style-type: none"> • Full-scale value | 1.1 |
| Operating range factor control supply voltage rated value at AC at 60 Hz | |
| <ul style="list-style-type: none"> • initial value | 0.85 |
| <ul style="list-style-type: none"> • Full-scale value | 1.1 |
| Inrush current peak | |
| <ul style="list-style-type: none"> • at 24 V | 1.8 A |
| Duration of inrush current peak | |
| <ul style="list-style-type: none"> • at 24 V | 2 ms |

Measuring circuit

| | |
|---|-------|
| Buffering time in the event of power failure minimum | 40 ms |
|---|-------|

Precision

| | |
|------------------------------------|-----|
| Relative metering precision | 9 % |
|------------------------------------|-----|

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 | |

| | |
|--|-------|
| <ul style="list-style-type: none"> • for auxiliary contacts | 2 |
| Operating current of auxiliary contacts at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V | 1 A |
| <ul style="list-style-type: none"> • at 125 V | 0.2 A |
| <ul style="list-style-type: none"> • at 250 V | 0.1 A |

Main circuit

| | |
|--|--------------|
| Operating frequency rated value | 50 ... 60 Hz |
|--|--------------|

Outputs

| | |
|--|-------|
| Ampacity of the output relay at AC-15 | |
| <ul style="list-style-type: none"> • at 250 V at 50/60 Hz | 3 A |
| Ampacity of the output relay at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V | 1 A |
| <ul style="list-style-type: none"> • at 125 V | 0.2 A |
| Continuous current of the DIAZED fuse link of the output relay | 6 A |

Electromagnetic compatibility

| | |
|--|---|
| Conducted interference | |
| <ul style="list-style-type: none"> • due to burst acc. to IEC 61000-4-4 | 2 kV (power ports) / 1 kV (signal ports) |
| <ul style="list-style-type: none"> • due to conductor-earth surge acc. to IEC 61000-4-5 | 2 kV (line to ground) |
| <ul style="list-style-type: none"> • 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 isolation |
| Galvanic isolation | |
| <ul style="list-style-type: none"> • between entrance and outlet | Yes |
| <ul style="list-style-type: none"> • between the outputs | Yes |
| <ul style="list-style-type: none"> • between the voltage supply and other circuits | No |

Connections/ Terminals

| | |
|--|--|
| Product function | |
| <ul style="list-style-type: none"> • removable terminal for auxiliary and control circuit | Yes |
| Type of electrical connection | screw-type terminals |
| <ul style="list-style-type: none"> • for auxiliary and control current circuit | screw-type terminals |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • solid | 1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) |
| <ul style="list-style-type: none"> • finely stranded with core end processing | 1x (0.5 ... 4 mm ²), 2x (0.5 ... 1.5 mm ²) |
| <ul style="list-style-type: none"> • at AWG conductors solid | 1x (20 ... 12), 2x (20 ... 14) |
| Connectable conductor cross-section | |
| <ul style="list-style-type: none"> • solid | 0.5 ... 4 mm ² |

| | |
|--|---------------------------|
| <ul style="list-style-type: none"> finely stranded with core end processing | 0.5 ... 4 mm ² |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> solid | 20 ... 12 |
| <ul style="list-style-type: none"> stranded | 20 ... 12 |
| Tightening torque | |
| <ul style="list-style-type: none"> with screw-type terminals | 0.6 ... 0.8 N·m |

Installation/ mounting/ dimensions

| | |
|--|--|
| Mounting position | any |
| Mounting type | screw and snap-on mounting onto 35 mm standard mounting rail |
| Height | 100 mm |
| Width | 22.5 mm |
| Depth | 90 mm |
| Required spacing | |
| <ul style="list-style-type: none"> with side-by-side mounting <ul style="list-style-type: none"> — forwards — Backwards — upwards — downwards — at the side for grounded parts <ul style="list-style-type: none"> — forwards — Backwards — upwards — at the side — downwards for live parts <ul style="list-style-type: none"> — forwards — Backwards — upwards — downwards — at the side | 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm |

Ambient conditions

| | |
|--|--|
| Installation altitude at height above sea level | |
| <ul style="list-style-type: none"> maximum | 2 000 m |
| Ambient temperature | |
| <ul style="list-style-type: none"> during operation during storage during transport | -25 ... +60 °C -40 ... +85 °C -40 ... +85 °C |
| Relative humidity | |
| <ul style="list-style-type: none"> during operation | 70 % |

Certificates/ approvals

| | | |
|--------------------------|-----|---------------------------|
| General Product Approval | EMC | Declaration of Conformity |
|--------------------------|-----|---------------------------|



CCC

CSA

UL

RCM

EG-Konf.

| | | | |
|---------------------------|-------------------|-------------------|-------|
| Declaration of Conformity | Test Certificates | Marine / Shipping | other |
|---------------------------|-------------------|-------------------|-------|

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



LRS



PRS



DNVGL.COM/AF

[Confirmation](#)

Railway

[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=3RN2010-1BA30>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RN2010-1BA30>

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

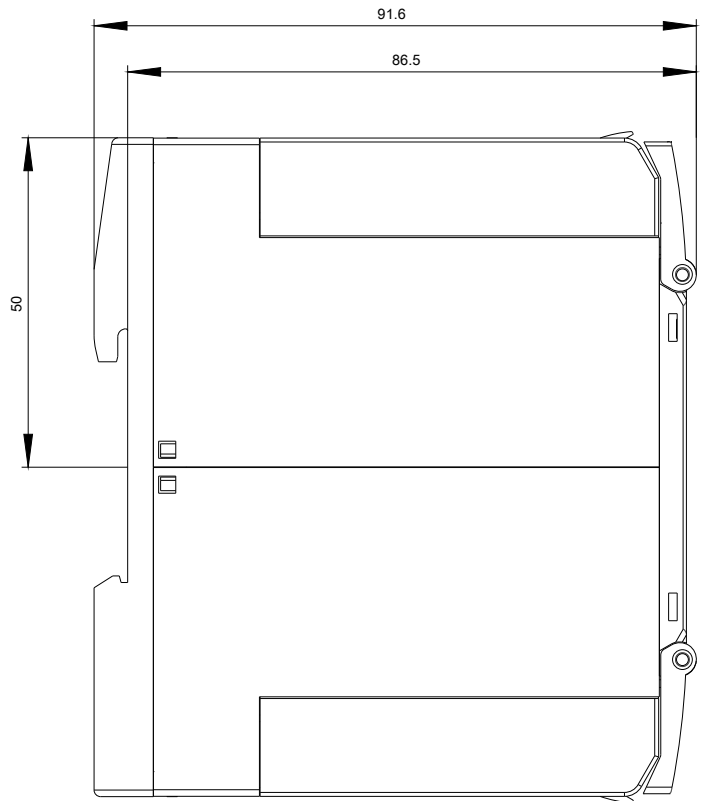
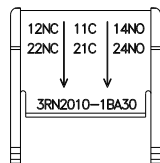
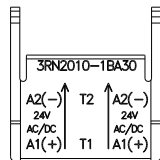
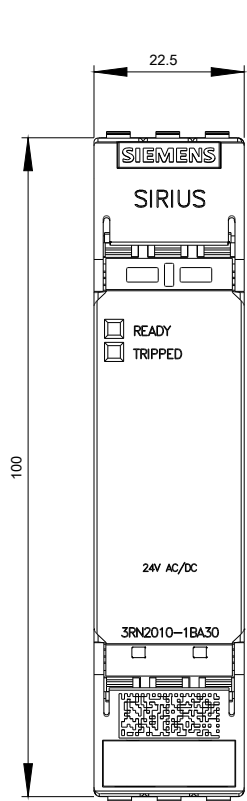
<https://support.industry.siemens.com/cs/ww/en/ps/3RN2010-1BA30>

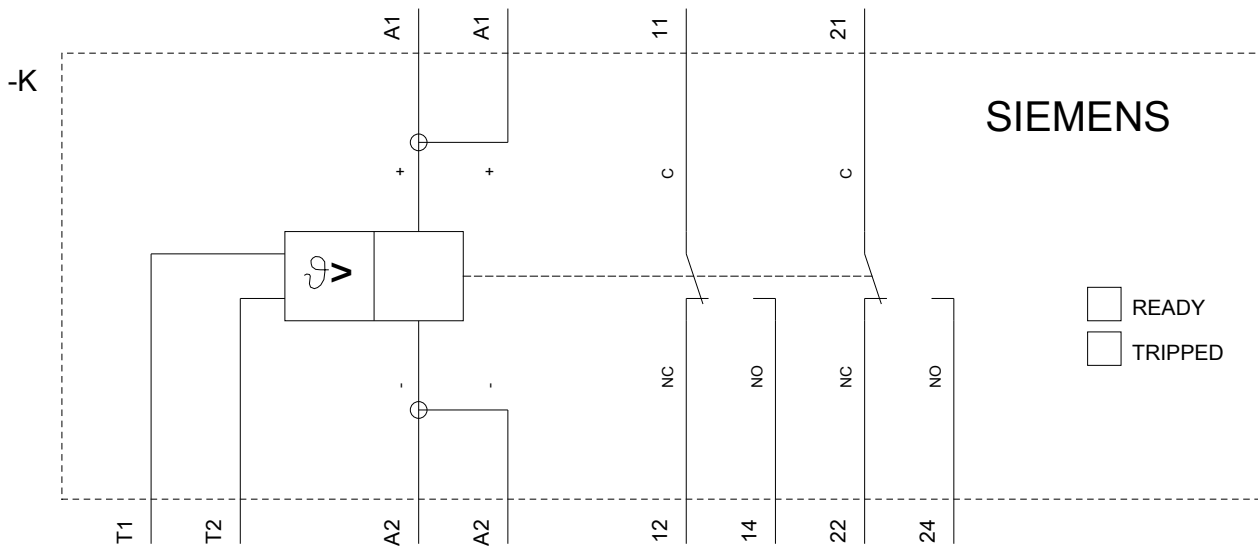
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RN2010-1BA30&lang=en

Characteristic: Derating

<https://support.industry.siemens.com/cs/ww/en/ps/3RN2010-1BA30/manual>





last modified:

08/11/2020