

Thermistor motor protection relay Compact evaluation unit 17.5 mm enclosure Screw terminal 1 NO contact, 1 NC contact US = 24 V-240 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    | Compact 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                        | 0.9 W       |
| • at DC in hot operating state                        | 0.9 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 |

|                                                                                         |                       |
|-----------------------------------------------------------------------------------------|-----------------------|
| <b>Vibration resistance</b>                                                             |                       |
| • acc. to IEC 60068-2-6                                                                 | 10 ... 55 Hz: 0.35 mm |
| <b>Mechanical service life (switching cycles)</b>                                       |                       |
| • typical                                                                               | 10 000 000            |
| <b>Electrical endurance (switching cycles)</b>                                          |                       |
| • at AC-15 at 230 V typical                                                             | 100 000               |
| <b>Thermal current of the switching element with contacts maximum</b>                   | 5 A                   |
| <b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b> | K                     |
| <b>Reference code acc. to DIN EN 81346-2</b>                                            | K                     |
| <b>Reference code acc. to DIN EN 61346-2</b>                                            | K                     |

#### Control circuit/ Control

|                                                                                 |              |
|---------------------------------------------------------------------------------|--------------|
| <b>Type of voltage of the control supply voltage</b>                            | AC/DC        |
| <b>Control supply voltage at AC</b>                                             |              |
| • at 50 Hz rated value                                                          | 24 ... 240 V |
| • at 60 Hz rated value                                                          | 24 ... 240 V |
| <b>Control supply voltage at DC</b>                                             |              |
| • rated value                                                                   | 24 ... 240 V |
| <b>Operating range factor control supply voltage rated value at DC</b>          |              |
| • initial value                                                                 | 0.85         |
| • Full-scale value                                                              | 1.1          |
| <b>Operating range factor control supply voltage rated value at AC at 50 Hz</b> |              |
| • initial value                                                                 | 0.85         |
| • Full-scale value                                                              | 1.1          |
| <b>Operating range factor control supply voltage rated value at AC at 60 Hz</b> |              |
| • initial value                                                                 | 0.85         |
| • Full-scale value                                                              | 1.1          |
| <b>Inrush current peak</b>                                                      |              |
| • at 24 V                                                                       | 0.3 A        |
| • at 240 V                                                                      | 8 A          |
| <b>Duration of inrush current peak</b>                                          |              |
| • at 24 V                                                                       | 0.15 ms      |
| • at 240 V                                                                      | 0.15 ms      |

#### Measuring circuit

|                                                             |       |
|-------------------------------------------------------------|-------|
| <b>Buffering time in the event of power failure minimum</b> | 40 ms |
|-------------------------------------------------------------|-------|

#### Precision

|                                    |     |
|------------------------------------|-----|
| <b>Relative metering precision</b> | 9 % |
|------------------------------------|-----|

|                                                                       |                                             |
|-----------------------------------------------------------------------|---------------------------------------------|
| <b>Auxiliary circuit</b>                                              |                                             |
| <b>Material of switching contacts</b>                                 | AgSnO <sub>2</sub>                          |
| <b>Number of NC contacts for auxiliary contacts</b>                   | 1                                           |
| <b>Number of NO contacts for auxiliary contacts</b>                   | 1                                           |
| <b>Number of CO contacts</b>                                          |                                             |
| • for auxiliary contacts                                              | 0                                           |
| <b>Operating current of auxiliary contacts at DC-13</b>               |                                             |
| • at 24 V                                                             | 1 A                                         |
| • at 125 V                                                            | 0.2 A                                       |
| • at 250 V                                                            | 0.1 A                                       |
| <b>Main circuit</b>                                                   |                                             |
| <b>Operating frequency rated value</b>                                | 50 ... 60 Hz                                |
| <b>Outputs</b>                                                        |                                             |
| <b>Ampacity of the output relay at AC-15</b>                          |                                             |
| • at 250 V at 50/60 Hz                                                | 3 A                                         |
| <b>Ampacity of the output relay at DC-13</b>                          |                                             |
| • at 24 V                                                             | 1 A                                         |
| • at 125 V                                                            | 0.2 A                                       |
| <b>Continuous current of the DIAZED fuse link of the output relay</b> | 6 A                                         |
| <b>Electromagnetic compatibility</b>                                  |                                             |
| <b>Conducted interference</b>                                         |                                             |
| • 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)                         |
| <b>Electrostatic discharge acc. to IEC 61000-4-2</b>                  | 6 kV contact discharge / 8 kV air discharge |
| <b>Galvanic isolation</b>                                             |                                             |
| <b>Design of the electrical isolation</b>                             | galvanic isolation                          |
| <b>Galvanic isolation</b>                                             |                                             |
| • between entrance and outlet                                         | Yes                                         |
| • between the outputs                                                 | Yes                                         |
| • between the voltage supply and other circuits                       | Yes                                         |
| <b>Connections/ Terminals</b>                                         |                                             |
| <b>Product function</b>                                               |                                             |
| • removable terminal for auxiliary and control circuit                | Yes                                         |
| <b>Type of electrical connection</b>                                  | screw-type terminals                        |
| • for auxiliary and control current circuit                           | screw-type terminals                        |
| <b>Type of connectable conductor cross-sections</b>                   |                                             |

|                                                                                                                                                  |                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> <li>• at AWG conductors solid</li> </ul> | 1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )<br>1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )<br>1x (20 ... 12), 2x (20 ... 14) |
| <b>Connectable conductor cross-section</b>                                                                                                       |                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> </ul>                                    | 0.5 ... 4 mm <sup>2</sup><br>0.5 ... 4 mm <sup>2</sup>                                                                                                                       |
| <b>AWG number as coded connectable conductor cross section</b>                                                                                   |                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>                                                                    | 20 ... 12<br>20 ... 12                                                                                                                                                       |
| <b>Tightening torque</b>                                                                                                                         |                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• with screw-type terminals</li> </ul>                                                                    | 0.6 ... 0.8 N·m                                                                                                                                                              |

| Installation/ mounting/ dimensions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | any                                                                                                                          |
| <b>Mounting type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | screw and snap-on mounting onto 35 mm standard mounting rail                                                                 |
| <b>Height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100 mm                                                                                                                       |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 17.5 mm                                                                                                                      |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 90 mm                                                                                                                        |
| <b>Required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                              |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br><br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br><br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm |

| Ambient conditions                                          |         |
|-------------------------------------------------------------|---------|
| <b>Installation altitude at height above sea level</b>      |         |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul> | 2 000 m |
| <b>Relative humidity</b>                                    |         |

- 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                                                                               |
| <a href="#">Miscellaneous</a>                                                     | <a href="#">Type Test Certificates/Test Report</a>                                |  |  |  | <a href="#">Confirmation</a>                                                        |
|                                                                                   |                                                                                   | LRS                                                                               | PRS                                                                               |                                                                                     |                                                                                     |

## Further information

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

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RN2010-1CW30>

**Cax online generator**

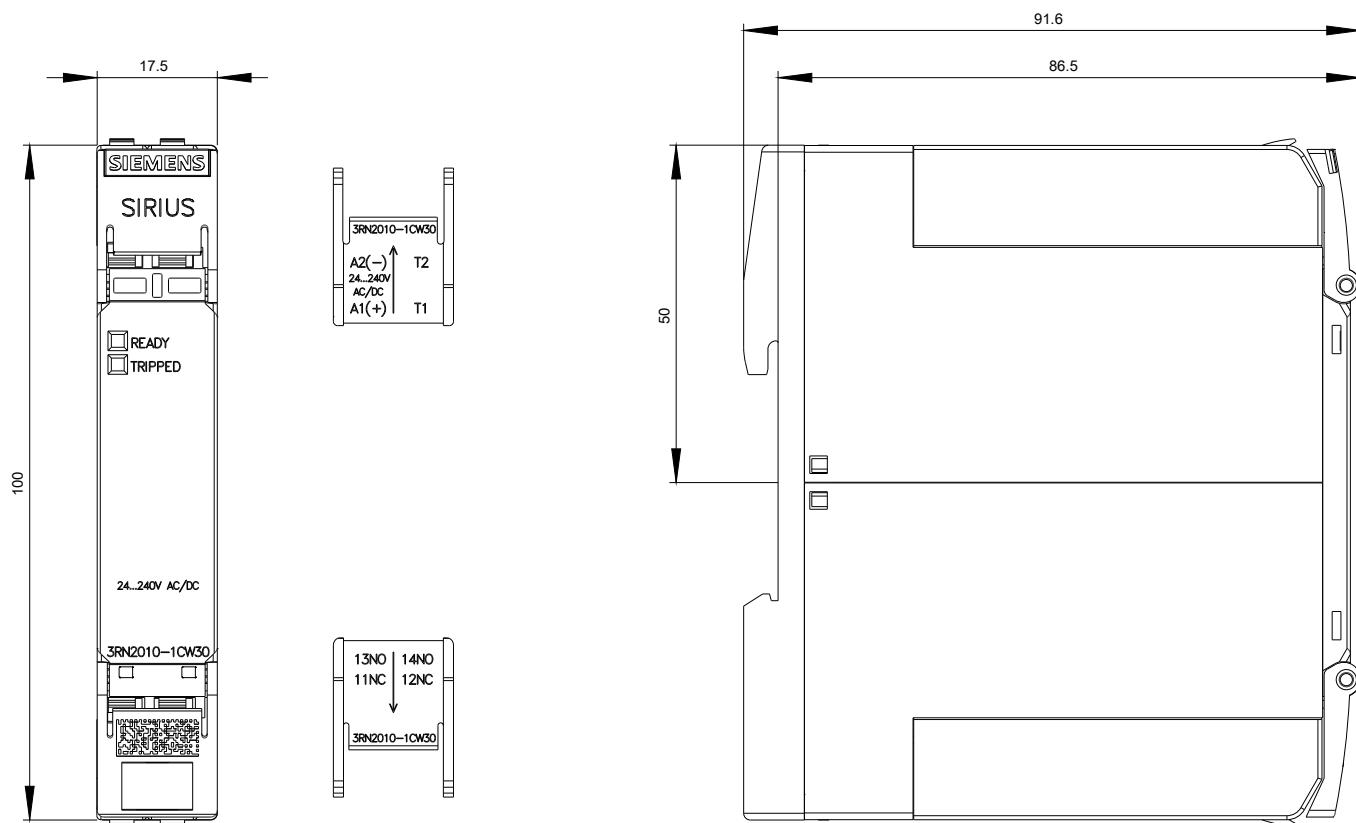
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RN2010-1CW30>

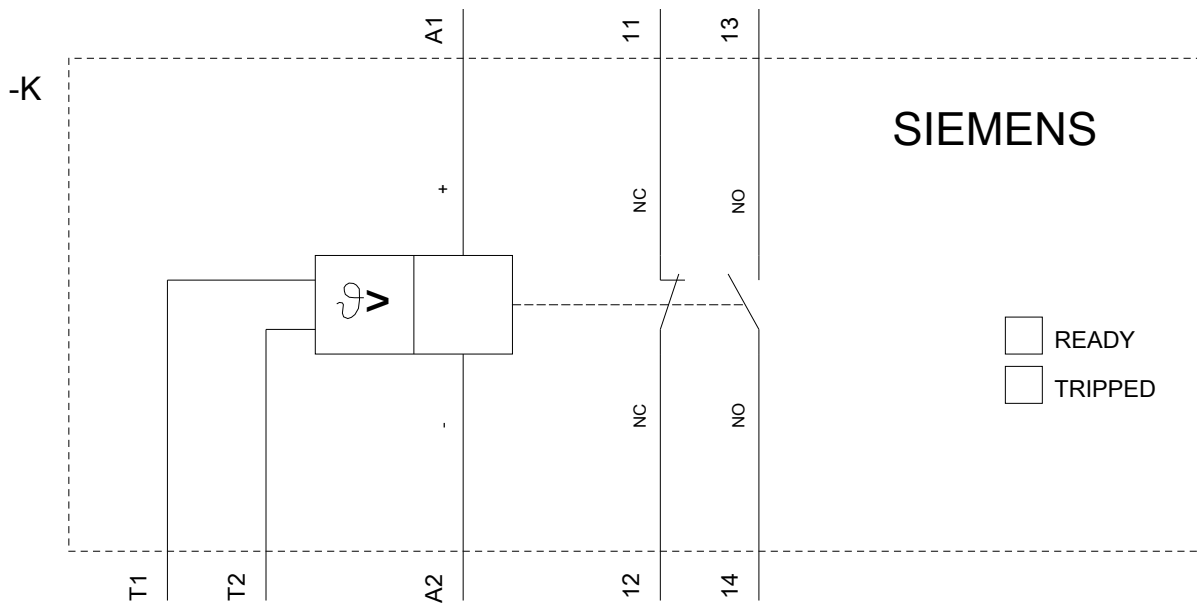
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RN2010-1CW30>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RN2010-1CW30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RN2010-1CW30&lang=en)





last modified:

11/20/2019