



thermistor motor protection relay compact evaluation unit, 17.5 mm enclosure, screw terminal, 1 change-over contact,  $U_s = 24\text{ V-240 V AC/DC}$ , Auto RESET, suitable for bimetallic temperature switches, supply=output voltage, 1 LED (tripped)

|                                                                                                               |                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 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 (terminal A1 jumpered with root of changeover contact)                          |
| product type designation                                                                                      | 3RN2                                                                                                                                    |
| <b>General technical data</b>                                                                                 |                                                                                                                                         |
| product function                                                                                              | thermistor motor protection                                                                                                             |
| 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                                                                                                                                    |
| shock resistance according to IEC 60068-2-27                                                                  | 11 g / 15 ms                                                                                                                            |
| vibration resistance according to IEC 60068-2-6                                                               | 10 ... 55 Hz: 0.35 mm                                                                                                                   |
| mechanical service life (operating cycles) typical                                                            | 10 000 000                                                                                                                              |
| electrical endurance (operating cycles) at AC-15                                                              |                                                                                                                                         |
| • at 24 V typical                                                                                             | 100 000                                                                                                                                 |
| • 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 (day/month/year)                                                                       | 05/28/2009                                                                                                                              |
| SVHC substance name                                                                                           | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 |
| Net Weight                                                                                                    | 0.133 kg                                                                                                                                |
| <b>Product Function</b>                                                                                       |                                                                                                                                         |
| product function                                                                                              |                                                                                                                                         |
| • error memory                                                                                                | No                                                                                                                                      |
| • dynamic open-circuit detection                                                                              | No                                                                                                                                      |
| • external reset                                                                                              | No                                                                                                                                      |
| • auto-RESET                                                                                                  | Yes                                                                                                                                     |
| • manual RESET                                                                                                | No                                                                                                                                      |
| <b>Control circuit/ Control</b>                                                                               |                                                                                                                                         |
| type of voltage of the control supply voltage                                                                 | AC/DC                                                                                                                                   |
| control supply voltage at AC                                                                                  |                                                                                                                                         |

|                                                                                                                 |                                             |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> </ul>                                        | 24 ... 240 V                                |
| <ul style="list-style-type: none"> <li>• at 60 Hz rated value</li> </ul>                                        | 24 ... 240 V                                |
| <b>control supply voltage at DC rated value</b>                                                                 | 24 ... 240 V                                |
| <b>operating range factor control supply voltage rated value at DC</b>                                          |                                             |
| <ul style="list-style-type: none"> <li>• initial value</li> </ul>                                               | 0.85                                        |
| <ul style="list-style-type: none"> <li>• full-scale value</li> </ul>                                            | 1.1                                         |
| <b>operating range factor control supply voltage rated value at AC at 50 Hz</b>                                 |                                             |
| <ul style="list-style-type: none"> <li>• initial value</li> </ul>                                               | 0.85                                        |
| <ul style="list-style-type: none"> <li>• full-scale value</li> </ul>                                            | 1.1                                         |
| <b>operating range factor control supply voltage rated value at AC at 60 Hz</b>                                 |                                             |
| <ul style="list-style-type: none"> <li>• initial value</li> </ul>                                               | 0.85                                        |
| <ul style="list-style-type: none"> <li>• full-scale value</li> </ul>                                            | 1.1                                         |
| <b>inrush current peak</b>                                                                                      |                                             |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                     | 0.3 A                                       |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                    | 8 A                                         |
| <b>duration of inrush current peak</b>                                                                          |                                             |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                     | 0.15 ms                                     |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                    | 0.15 ms                                     |
| <b>Measuring circuit</b>                                                                                        |                                             |
| <b>buffering time in the event of power failure minimum</b>                                                     | 40 ms                                       |
| <b>Precision</b>                                                                                                |                                             |
| <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>                                                             | 0                                           |
| <b>number of NO contacts for auxiliary contacts</b>                                                             | 0                                           |
| number of CO contacts for auxiliary contacts                                                                    | 1                                           |
| operational current of auxiliary contacts at AC-15 maximum                                                      | 3 A                                         |
| <b>operational current of auxiliary contacts at DC-13</b>                                                       |                                             |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                     | 1 A                                         |
| <ul style="list-style-type: none"> <li>• at 125 V</li> </ul>                                                    | 0.2 A                                       |
| <ul style="list-style-type: none"> <li>• at 250 V</li> </ul>                                                    | 0.1 A                                       |
| <b>Main circuit</b>                                                                                             |                                             |
| <b>operating frequency rated value</b>                                                                          | 50 ... 60 Hz                                |
| ampacity of the output relay at AC-15 at 250 V at 50/60 Hz                                                      | 3 A                                         |
| <b>ampacity of the output relay at DC-13</b>                                                                    |                                             |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                     | 1 A                                         |
| <ul style="list-style-type: none"> <li>• at 125 V</li> </ul>                                                    | 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>                                                                                   |                                             |
| <ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> </ul>                     | 2 kV (power ports) / 1 kV (signal ports)    |
| <ul style="list-style-type: none"> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> </ul>     | 2 kV (line to ground)                       |
| <ul style="list-style-type: none"> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> </ul> | 1 kV (line to line)                         |
| <b>electrostatic discharge according 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>                                                                                       |                                             |
| <ul style="list-style-type: none"> <li>• between input and output</li> </ul>                                    | Yes                                         |
| <ul style="list-style-type: none"> <li>• between the voltage supply and other circuits</li> </ul>               | No                                          |
| <b>Connections/ Terminals</b>                                                                                   |                                             |
| <b>product component removable terminal for auxiliary and control circuit</b>                                   | Yes                                         |
| <b>type of electrical connection</b>                                                                            | screw terminal                              |
| <ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>                           | screw-type terminals                        |

|                                                                |                                                                    |
|----------------------------------------------------------------|--------------------------------------------------------------------|
| <b>type of connectable conductor cross-sections</b>            |                                                                    |
| • solid                                                        | 1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • finely stranded with core end processing                     | 1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| • for AWG cables solid                                         | 1x (20 ... 12), 2x (20 ... 14)                                     |
| <b>connectable conductor cross-section</b>                     |                                                                    |
| • solid                                                        | 0.5 ... 4 mm <sup>2</sup>                                          |
| • finely stranded with core end processing                     | 0.5 ... 4 mm <sup>2</sup>                                          |
| <b>AWG number as coded connectable conductor cross section</b> |                                                                    |
| • solid                                                        | 20 ... 12                                                          |
| • stranded                                                     | 20 ... 12                                                          |
| tightening torque with screw-type terminals                    | 0.6 ... 0.8 N·m                                                    |

#### Installation/ mounting/ dimensions

|                              |                                                |
|------------------------------|------------------------------------------------|
| <b>mounting position</b>     | any                                            |
| <b>fastening method</b>      | screw and snap-on mounting onto 35 mm DIN rail |
| <b>height</b>                | 100 mm                                         |
| <b>width</b>                 | 17.5 mm                                        |
| <b>depth</b>                 | 90 mm                                          |
| <b>required spacing</b>      |                                                |
| • with side-by-side mounting |                                                |
| — forwards                   | 0 mm                                           |
| — backwards                  | 0 mm                                           |
| — upwards                    | 0 mm                                           |
| — downwards                  | 0 mm                                           |
| — at the side                | 0 mm                                           |
| • for grounded parts         |                                                |
| — 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        |
| <b>ambient temperature</b>                              |                |
| • during operation                                      | -25 ... +60 °C |
| • during storage                                        | -40 ... +85 °C |
| • during transport                                      | -40 ... +85 °C |
| relative humidity during operation maximum              | 70 %           |

#### Approvals Certificates

|                    |                                 |
|--------------------|---------------------------------|
| <b>Environment</b> | <b>General Product Approval</b> |
|--------------------|---------------------------------|

[Environmental Con-  
firmations](#)



|            |                          |                             |
|------------|--------------------------|-----------------------------|
| <b>EMV</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|------------|--------------------------|-----------------------------|



[Type Test Certi-  
ficates/Test Report](#)



[Confirmation](#)



#### Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RN2000-1AW30>

Cax online generator

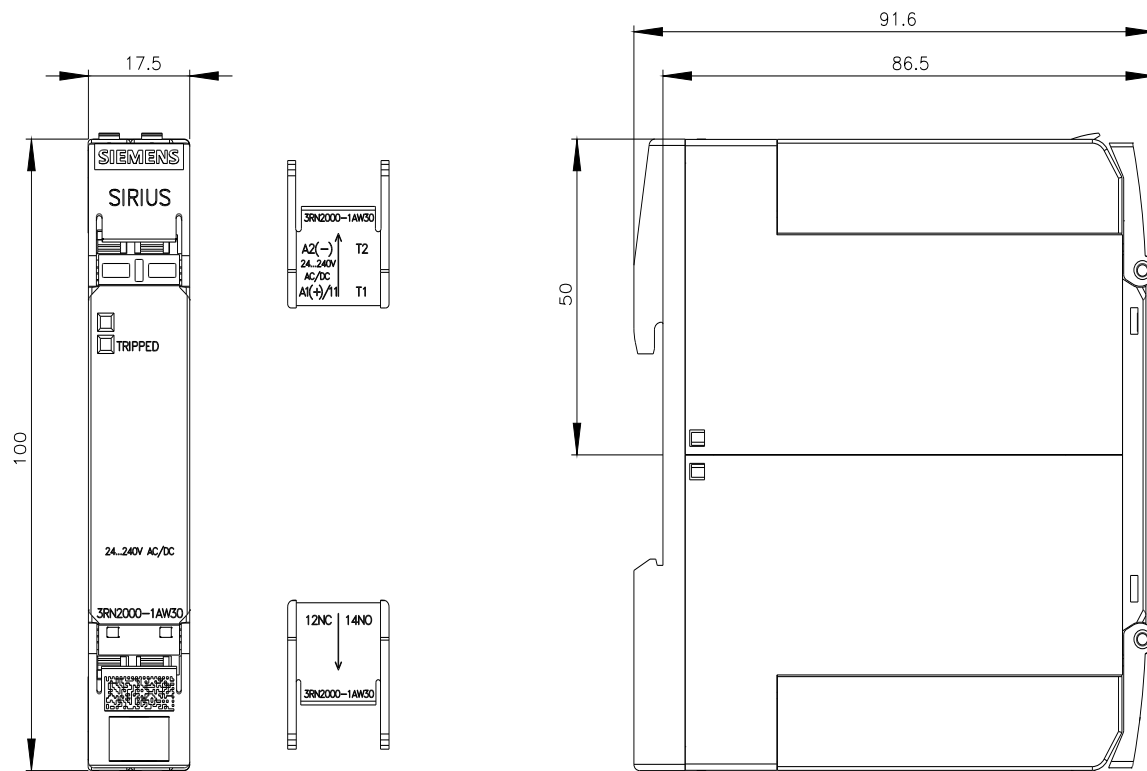
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RN2000-1AW30>

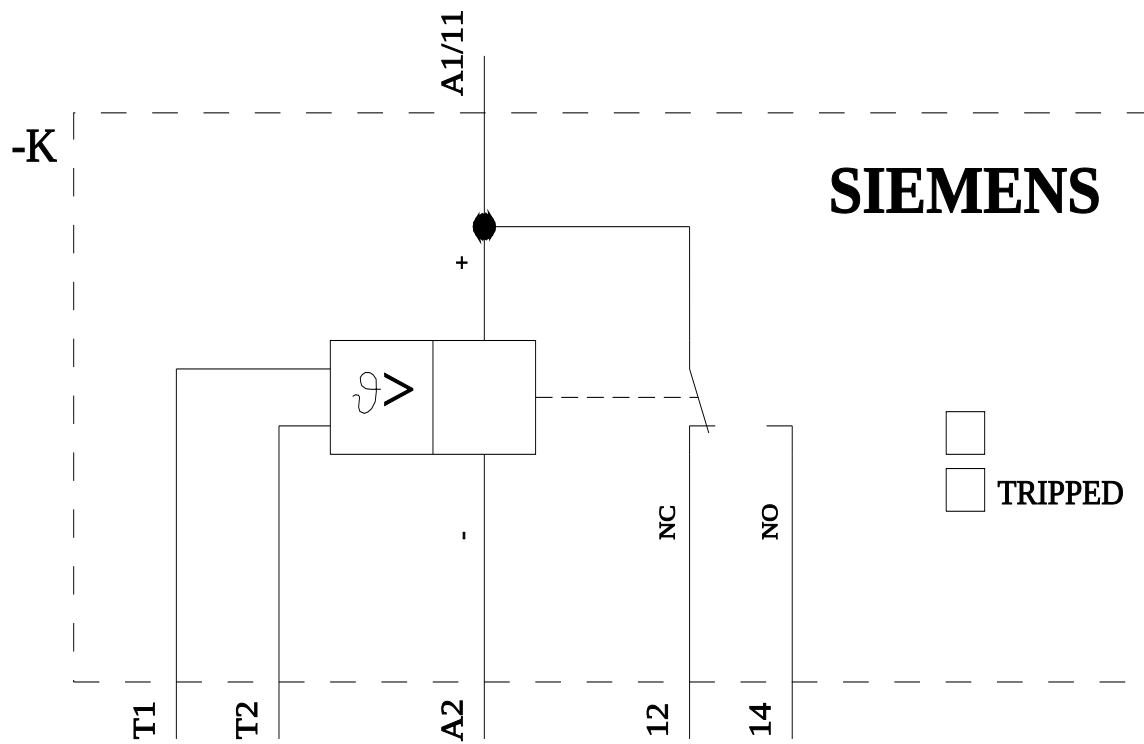
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RN2000-1AW30>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RN2000-1AW30&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RN2000-1AW30&lang=en)





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