

Circuit breaker size S2 for transformer protection A-release 22...32 A  
N-release 640 A screw terminal Standard switching capacity



|                          |                            |
|--------------------------|----------------------------|
| Product brand name       | SIRIUS                     |
| Product designation      | Circuit breaker            |
| Design of the product    | For transformer protection |
| Product type designation | 3RV2                       |

### General technical data

|                                                                                                                                                                                                                                                           |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Size of the circuit-breaker                                                                                                                                                                                                                               | S2             |
| Size of contactor can be combined company-specific                                                                                                                                                                                                        | S2             |
| Product extension <ul style="list-style-type: none"> <li>Auxiliary switch</li> </ul>                                                                                                                                                                      | Yes            |
| Power loss [W] total typical                                                                                                                                                                                                                              | 14 W           |
| Insulation voltage with degree of pollution 3 rated value                                                                                                                                                                                                 | 690 V          |
| Surge voltage resistance rated value                                                                                                                                                                                                                      | 6 kV           |
| maximum permissible voltage for safe isolation <ul style="list-style-type: none"> <li>in networks with grounded star point between main and auxiliary circuit</li> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul> | 400 V<br>400 V |

|                                                   |                                                                  |
|---------------------------------------------------|------------------------------------------------------------------|
| <b>Protection class IP</b>                        |                                                                  |
| • on the front                                    | IP20                                                             |
| • of the terminal                                 | IP00                                                             |
| <b>Shock resistance</b>                           |                                                                  |
| • acc. to IEC 60068-2-27                          | 25g / 11 ms Sinus                                                |
| <b>Mechanical service life (switching cycles)</b> |                                                                  |
| • of the main contacts typical                    | 50 000                                                           |
| • of auxiliary contacts typical                   | 50 000                                                           |
| <b>Electrical endurance (switching cycles)</b>    |                                                                  |
| • typical                                         | 50 000                                                           |
| Certificate of suitability ATEX                   | No                                                               |
| <b>Protection against electrical shock</b>        | finger-safe when touched vertically from front acc. to IEC 60529 |
| <b>Reference code acc. to DIN EN 81346-2</b>      | Q                                                                |

#### Ambient conditions

|                                                        |                |
|--------------------------------------------------------|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • maximum                                              | 2 000 m        |
| <b>Ambient temperature</b>                             |                |
| • during operation                                     | -20 ... +60 °C |
| • during storage                                       | -50 ... +80 °C |
| • during transport                                     | -50 ... +80 °C |
| <b>Temperature compensation</b>                        | -20 ... +60 °C |
| Relative humidity during operation                     | 10 ... 95 %    |

#### Main circuit

|                                                                                   |              |
|-----------------------------------------------------------------------------------|--------------|
| <b>Number of poles for main current circuit</b>                                   | 3            |
| <b>Adjustable pick-up value current of the current-dependent overload release</b> | 22 ... 32 A  |
| <b>Operating voltage</b>                                                          |              |
| • rated value                                                                     | 690 V        |
| • at AC-3 rated value maximum                                                     | 690 V        |
| <b>Operating frequency rated value</b>                                            | 50 ... 60 Hz |
| <b>Operating current rated value</b>                                              | 32 A         |
| <b>Operating current</b>                                                          |              |
| • at AC-3                                                                         |              |
| — at 400 V rated value                                                            | 32 A         |
| <b>Operating power</b>                                                            |              |
| • at AC-3                                                                         |              |
| — at 230 V rated value                                                            | 7 500 W      |
| — at 400 V rated value                                                            | 15 000 W     |
| — at 500 V rated value                                                            | 18 500 W     |
| — at 690 V rated value                                                            | 30 000 W     |
| <b>Operating frequency</b>                                                        |              |
| • at AC-3 maximum                                                                 | 15 1/h       |

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| <b>Auxiliary circuit</b>                                               |          |
| <b>Number of NC contacts for auxiliary contacts</b>                    | 0        |
| <b>Number of NO contacts for auxiliary contacts</b>                    | 0        |
| <b>Protective and monitoring functions</b>                             |          |
| <b>Product function</b>                                                |          |
| • Ground fault detection                                               | No       |
| • Phase failure detection                                              | Yes      |
| <b>Trip class</b>                                                      | CLASS 10 |
| <b>Design of the overload release</b>                                  | thermal  |
| <b>Operational short-circuit current breaking capacity (Ics) at AC</b> |          |
| • at 240 V rated value                                                 | 100 A    |
| • at 400 V rated value                                                 | 30 kA    |
| • at 500 V rated value                                                 | 5 kA     |
| • at 690 V rated value                                                 | 2 kA     |
| <b>Maximum short-circuit current breaking capacity (Icu)</b>           |          |
| • at AC at 240 V rated value                                           | 100 kA   |
| • at AC at 400 V rated value                                           | 65 kA    |
| • at AC at 500 V rated value                                           | 10 kA    |
| • at AC at 690 V rated value                                           | 4 kA     |
| <b>Response value current</b>                                          |          |
| • of instantaneous short-circuit trip unit                             | 656 A    |
| <b>UL/CSA ratings</b>                                                  |          |
| <b>Full-load current (FLA) for three-phase AC motor</b>                |          |
| • at 480 V rated value                                                 | 32 A     |
| • at 600 V rated value                                                 | 32 A     |
| <b>Yielded mechanical performance [hp]</b>                             |          |
| • for single-phase AC motor                                            |          |
| — at 110/120 V rated value                                             | 3 hp     |
| — at 230 V rated value                                                 | 5 hp     |
| • for three-phase AC motor                                             |          |
| — at 200/208 V rated value                                             | 10 hp    |
| — at 220/230 V rated value                                             | 10 hp    |
| — at 460/480 V rated value                                             | 25 hp    |
| — at 575/600 V rated value                                             | 30 hp    |
| <b>Short-circuit protection</b>                                        |          |
| <b>Product function Short circuit protection</b>                       | Yes      |
| <b>Design of the short-circuit trip</b>                                | magnetic |
| <b>Installation/ mounting/ dimensions</b>                              |          |
| <b>Mounting position</b>                                               | any      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mounting type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715                                               |
| <b>Height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 140 mm                                                                                                                               |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 55 mm                                                                                                                                |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 149 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>50 mm<br>50 mm<br>0 mm<br><br>0 mm<br>0 mm<br>50 mm<br>10 mm<br>50 mm<br><br>0 mm<br>0 mm<br>50 mm<br>50 mm<br>10 mm |

## Connections/Terminals

|                                                                                                                                                                                                                                                        |                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product function</b>                                                                                                                                                                                                                                |                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• removable terminal for auxiliary and control circuit</li> </ul>                                                                                                                                               | No                                                                                                                                                               |
| <b>Type of electrical connection</b>                                                                                                                                                                                                                   |                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>                                                                                                                                                                           | screw-type terminals                                                                                                                                             |
| <b>Arrangement of electrical connectors for main current circuit</b>                                                                                                                                                                                   | Top and bottom                                                                                                                                                   |
| <b>Type of connectable conductor cross-sections</b>                                                                                                                                                                                                    |                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul> | 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> )<br>2x (1 ... 16 mm <sup>2</sup> ), 1x (1 ... 25 mm <sup>2</sup> )<br>2x (18 ... 3), 1x (18 ... 2) |
| <b>Tightening torque</b>                                                                                                                                                                                                                               |                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>                                                                                                                                                        | 3 ... 4.5 N·m                                                                                                                                                    |
| <b>Design of screwdriver shaft</b>                                                                                                                                                                                                                     | Diameter 5 to 6 mm                                                                                                                                               |
| <b>Size of the screwdriver tip</b>                                                                                                                                                                                                                     | Pozidriv 2                                                                                                                                                       |
| <b>Design of the thread of the connection screw</b>                                                                                                                                                                                                    |                                                                                                                                                                  |

- for main contacts

M6

## Safety related data

|                                                                                            |        |
|--------------------------------------------------------------------------------------------|--------|
| <b>B10 value</b>                                                                           |        |
| <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul> | 5 000  |
| <b>Proportion of dangerous failures</b>                                                    |        |
| <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>  | 50 %   |
| <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul> | 50 %   |
| <b>Failure rate [FIT]</b>                                                                  |        |
| <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>  | 50 FIT |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                  | 10 y   |
| <b>Display version</b>                                                                     |        |
| <ul style="list-style-type: none"> <li>• for switching status</li> </ul>                   | Handle |

## Certificates/approvals

| General Product Approval                                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Declaration of Conformity                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| CCC                                                                               | CSA                                                                               | UL                                                                                |                                                                                   |                                                                                     | EG-Konf.                                                                            |

| Test Certificates                        | Marine / Shipping                                  |                                                                                     |                                                                                       |                                                                                       |
|------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <a href="#">Special Test Certificate</a> | <a href="#">Type Test Certificates/Test Report</a> |  |    |  |
|                                          |                                                    | ABS                                                                                 |                                                                                       | LRS                                                                                   |
|                                          |                                                    |                                                                                     |  | PRS                                                                                   |

| Marine / Shipping                                                                   | other                                                                               | Railway                                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| RINA                                                                                | DNV GL                                                                              | VDE                                                                                   |
|  | <a href="#">Confirmation</a>                                                        | <a href="#">Vibration and Shock</a>                                                   |
| RMRS                                                                                |                                                                                     |                                                                                       |

## 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=3RV2431-4EA10>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2431-4EA10>

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

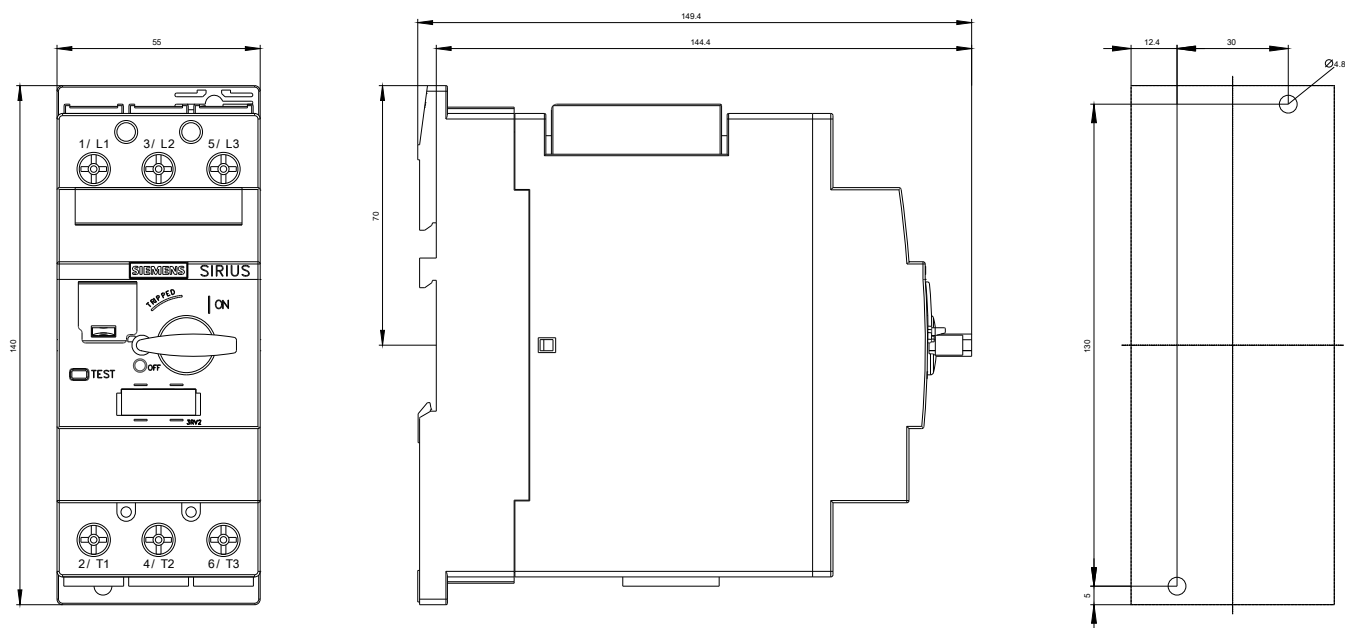
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4EA10>

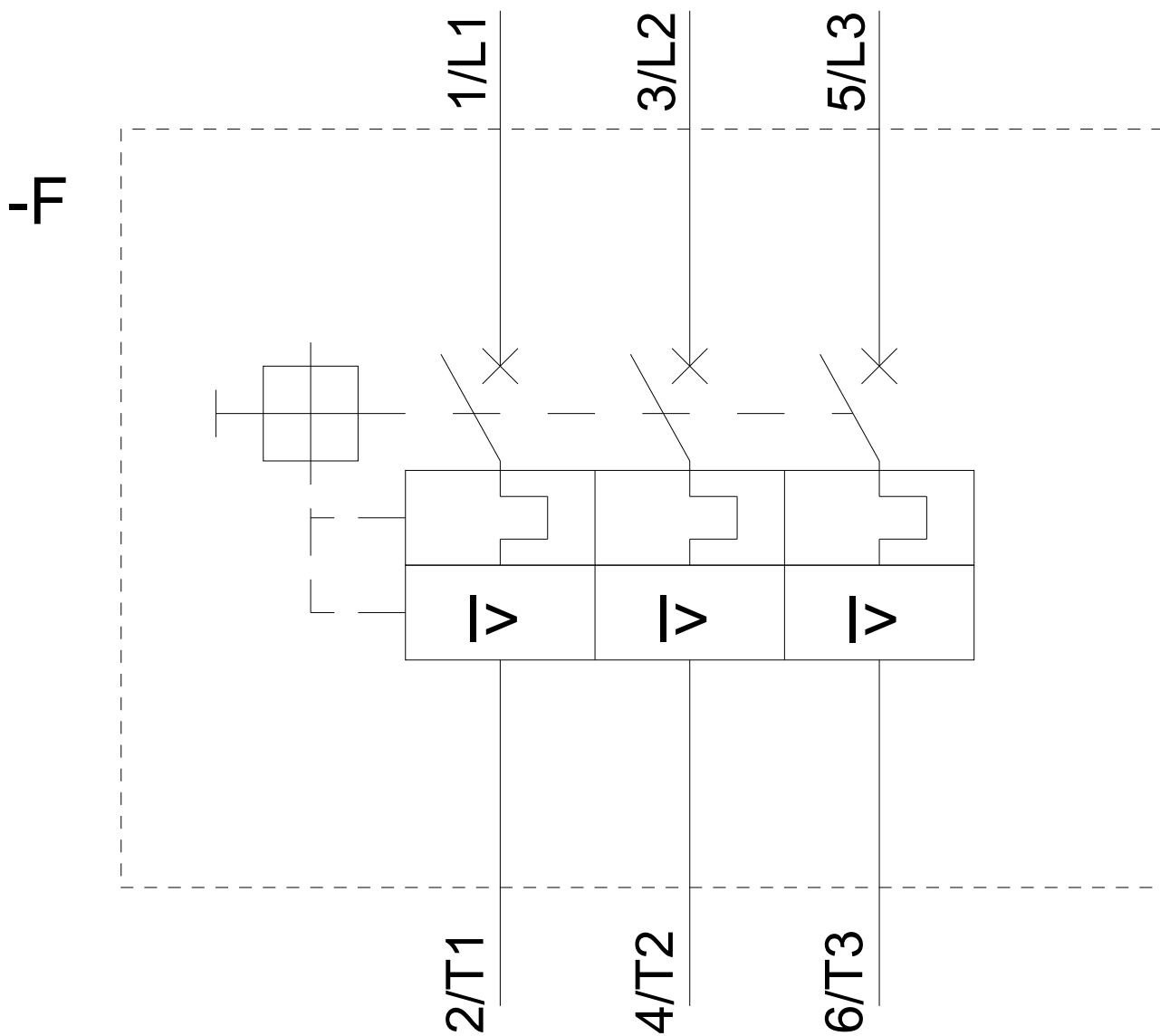
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2431-4EA10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2431-4EA10&lang=en)

Characteristic: Tripping characteristics,  $I^2t$ , Let-through current  
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4EA10/char>

Further characteristics (e.g. electrical endurance, switching frequency)  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2431-4EA10&objecttype=14&gridview=view1>





last modified:

01/12/2019