

Circuit breaker size S2 for motor protection, Class 20 A-release  
54...65 A N-release 845 A screw terminal Standard switching  
capacity



|                          |                      |
|--------------------------|----------------------|
| Product brand name       | SIRIUS               |
| Product designation      | Circuit breaker      |
| Design of the product    | For motor 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                                                                                                         | Yes   |
| <ul style="list-style-type: none"> <li>Auxiliary switch</li> </ul>                                                        |       |
| Power loss [W] for rated value of the current                                                                             |       |
| <ul style="list-style-type: none"> <li>at AC in hot operating state</li> </ul>                                            | 26 W  |
| <ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>                                   | 8.7 W |
| Insulation voltage with degree of pollution 3 at AC 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> </ul> | 400 V |

|                                                                                                                             |                   |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------|
| <ul style="list-style-type: none"> <li>• in networks with grounded star point between main and auxiliary circuit</li> </ul> | 400 V             |
| <b>Protection class IP</b>                                                                                                  |                   |
| <ul style="list-style-type: none"> <li>• on the front</li> </ul>                                                            | IP20              |
| <ul style="list-style-type: none"> <li>• of the terminal</li> </ul>                                                         | IP00              |
| <b>Shock resistance</b>                                                                                                     |                   |
| <ul style="list-style-type: none"> <li>• acc. to IEC 60068-2-27</li> </ul>                                                  | 25g / 11 ms Sinus |
| <b>Mechanical service life (switching cycles)</b>                                                                           |                   |
| <ul style="list-style-type: none"> <li>• of the main contacts typical</li> </ul>                                            | 20 000            |
| <ul style="list-style-type: none"> <li>• of auxiliary contacts typical</li> </ul>                                           | 20 000            |
| <b>Electrical endurance (switching cycles)</b>                                                                              |                   |
| <ul style="list-style-type: none"> <li>• typical</li> </ul>                                                                 | 20 000            |
| <b>Reference code acc. to DIN EN 81346-2</b>                                                                                | Q                 |

#### 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>Ambient temperature</b>                                           |                |
| <ul style="list-style-type: none"> <li>• during operation</li> </ul> | -20 ... +60 °C |
| <ul style="list-style-type: none"> <li>• during storage</li> </ul>   | -50 ... +80 °C |
| <ul style="list-style-type: none"> <li>• during transport</li> </ul> | -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>                                                                                                                                                     | 54 ... 65 A                                  |
| <b>Operating voltage</b>                                                                                                                                                                                                              |                                              |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                                                                                                                                                                       | 690 V                                        |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>                                                                                                                                                       | 690 V                                        |
| <b>Operating frequency rated value</b>                                                                                                                                                                                                | 50 ... 60 Hz                                 |
| <b>Operating current rated value</b>                                                                                                                                                                                                  | 65 A                                         |
| <b>Operating current</b>                                                                                                                                                                                                              |                                              |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>                                                                                                 | 65 A                                         |
| <b>Operating power</b>                                                                                                                                                                                                                |                                              |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul> | 18 500 W<br>30 000 W<br>45 000 W<br>55 000 W |
| <b>Operating frequency</b>                                                                                                                                                                                                            |                                              |
| <ul style="list-style-type: none"> <li>• at AC-3 maximum</li> </ul>                                                                                                                                                                   | 15 1/h                                       |

| Protective and monitoring functions                                                            |               |
|------------------------------------------------------------------------------------------------|---------------|
| <b>Product function</b>                                                                        |               |
| • Ground fault detection                                                                       | No            |
| • Phase failure detection                                                                      | Yes           |
| <b>Trip class</b>                                                                              | Class 20      |
| <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 kA        |
| • 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                                                                   | 65 kA         |
| • at AC at 400 V rated value                                                                   | 65 kA         |
| • at AC at 500 V rated value                                                                   | 8 kA          |
| • at AC at 690 V rated value                                                                   | 4 kA          |
| • at 480 AC Y/277 V acc. to UL 489 rated value                                                 | 30 A          |
| <b>Response value current</b>                                                                  |               |
| • of instantaneous short-circuit trip unit                                                     | 845 A         |
| UL/CSA ratings                                                                                 |               |
| <b>Full-load current (FLA) for three-phase AC motor</b>                                        |               |
| • at 480 V rated value                                                                         | 65 A          |
| • at 600 V rated value                                                                         | 62 A          |
| <b>Yielded mechanical performance [hp]</b>                                                     |               |
| • for three-phase AC motor                                                                     |               |
| — at 200/208 V rated value                                                                     | 20 hp         |
| — at 220/230 V rated value                                                                     | 25 hp         |
| — at 460/480 V rated value                                                                     | 50 hp         |
| — at 575/600 V rated value                                                                     | 60 hp         |
| Short-circuit protection                                                                       |               |
| <b>Product function Short circuit protection</b>                                               | Yes           |
| <b>Design of the short-circuit trip</b>                                                        | magnetic      |
| <b>Design of the fuse link for IT network for short-circuit protection of the main circuit</b> |               |
| • at 240 V                                                                                     | none required |
| • at 400 V                                                                                     | 160           |
| • at 500 V                                                                                     | 125           |
| • at 690 V                                                                                     | 100           |
| Installation/ mounting/ dimensions                                                             |               |
| <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>• for grounded parts at 400 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 400 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for grounded parts at 500 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 500 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for grounded parts at 690 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 690 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul> |                                                                                        |

## 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 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> )<br>2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> )<br>2x (18 ... 2), 1x (18 ... 1) |
| <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> <ul style="list-style-type: none"> <li>for main contacts</li> </ul>                                                                                                                                                                            | 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> <li>with high demand rate acc. to SN 31920</li> </ul> | 50 %<br>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 |
|--------------------------|---------------------------|
|--------------------------|---------------------------|



[KC](#)



EG-Konf.

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

[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

| Marine / Shipping | other |
|-------------------|-------|
|-------------------|-------|



PRS



RINA



RMRS



DNV-GL

[Confirmation](#)



VDE

| Railway |
|---------|
|---------|

[Vibration and Shock](#)

[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=3RV2031-4JB10>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4JB10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4JB10>

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

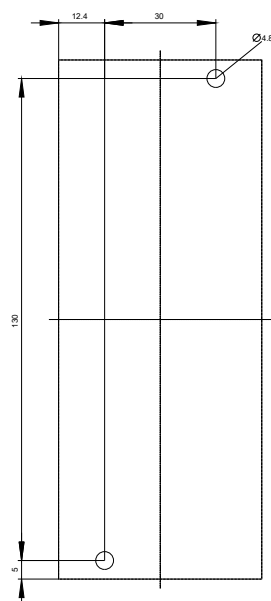
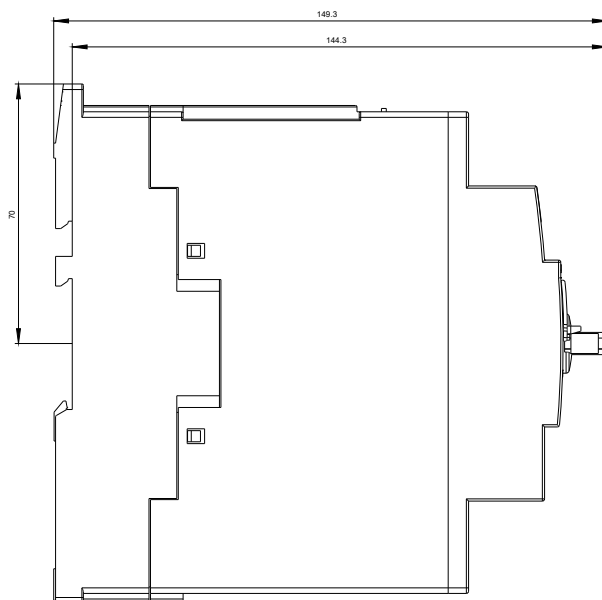
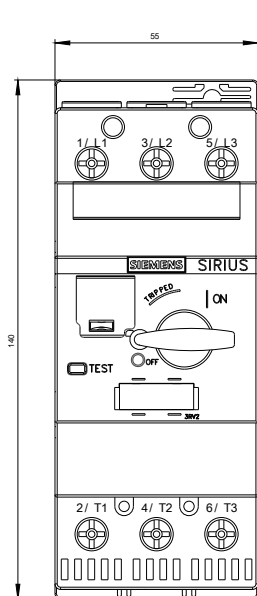
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4JB10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4JB10&lang=en)

**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4JB10/char>

**Further characteristics (e.g. electrical endurance, switching frequency)**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4JB10&objecttype=14&gridview=view1>





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