



Circuit breaker size S2 for motor protection, CLASS 10 A-release 70...80 A  
N-release 1040 A screw terminal Standard switching capacity

|                                                                                            |                      |
|--------------------------------------------------------------------------------------------|----------------------|
| <b>product brand name</b>                                                                  | SIRIUS               |
| <b>product designation</b>                                                                 | Circuit breaker      |
| <b>design of the product</b>                                                               | For motor protection |
| <b>product type designation</b>                                                            | 3RV2                 |
| <b>General technical data</b>                                                              |                      |
| <b>size of the circuit-breaker</b>                                                         | S2                   |
| <b>size of contactor can be combined company-specific</b>                                  | S2                   |
| product extension auxiliary switch                                                         | Yes                  |
| <b>power loss [W] for rated value of the current</b>                                       |                      |
| • at AC in hot operating state                                                             | 29.5 W               |
| • at AC in hot operating state per pole                                                    | 9.8 W                |
| insulation voltage with degree of pollution 3 at AC rated value                            | 690 V                |
| <b>surge voltage resistance rated value</b>                                                | 6 kV                 |
| <b>maximum permissible voltage for safe isolation in networks with grounded star point</b> |                      |
| • between main and auxiliary circuit                                                       | 400 V                |
| • between main and auxiliary circuit                                                       | 400 V                |
| shock resistance acc. to IEC 60068-2-27                                                    | 25g / 11 ms Sinus    |
| <b>mechanical service life (switching cycles)</b>                                          |                      |
| • of the main contacts typical                                                             | 20 000               |
| • of auxiliary contacts typical                                                            | 20 000               |
| electrical endurance (switching cycles) typical                                            | 20 000               |
| <b>type of protection according to ATEX directive 2014/34/EU</b>                           | Ex II (2) GD         |
| certificate of suitability according to ATEX directive 2014/34/EU                          | DMT 02 ATEX F 001    |
| <b>reference code acc. to IEC 81346-2</b>                                                  | Q                    |
| Substance Prohibition (Date)                                                               | 10.04.2015 00:00:00  |
| <b>Ambient conditions</b>                                                                  |                      |
| installation altitude at height above sea level maximum                                    | 2 000 m              |
| • ambient temperature during operation                                                     | -20 ... +60 °C       |
| • ambient temperature during storage                                                       | -50 ... +80 °C       |
| • ambient temperature during transport                                                     | -50 ... +80 °C       |
| <b>temperature compensation</b>                                                            | -20 ... +60 °C       |
| relative humidity during operation                                                         | 10 ... 95 %          |
| <b>Main circuit</b>                                                                        |                      |
| <b>number of poles for main current circuit</b>                                            | 3                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>adjustable current response value current of the current-dependent overload release</b>                                                                                                                                                                                                                                                                                                                                                       | 70 ... 80 A                                                                            |
| <ul style="list-style-type: none"> <li>operating voltage rated value</li> <li>operating voltage at AC-3 rated value maximum</li> </ul>                                                                                                                                                                                                                                                                                                           | 690 V<br>690 V                                                                         |
| <b>operating frequency rated value</b>                                                                                                                                                                                                                                                                                                                                                                                                           | 50 ... 60 Hz                                                                           |
| <b>operational current rated value</b>                                                                                                                                                                                                                                                                                                                                                                                                           | 80 A                                                                                   |
| operational current at AC-3 at 400 V rated value                                                                                                                                                                                                                                                                                                                                                                                                 | 80 A                                                                                   |
| operating power 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>                                                                                                                                                                                                                                                         | 22 000 W<br>37 000 W<br>55 000 W<br>75 000 W                                           |
| operating frequency at AC-3 maximum                                                                                                                                                                                                                                                                                                                                                                                                              | 15 1/h                                                                                 |
| <b>Protective and monitoring functions</b>                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                        |
| <b>product function</b> <ul style="list-style-type: none"> <li>ground fault detection</li> <li>phase failure detection</li> </ul>                                                                                                                                                                                                                                                                                                                | No<br>Yes                                                                              |
| <b>trip class</b>                                                                                                                                                                                                                                                                                                                                                                                                                                | CLASS 10                                                                               |
| <b>design of the overload release</b>                                                                                                                                                                                                                                                                                                                                                                                                            | thermal                                                                                |
| <b>breaking capacity operating short-circuit current (Ics) at AC</b> <ul style="list-style-type: none"> <li>at 240 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>                                                                                                                                                                                                            | 65 kA<br>30 kA<br>5 kA<br>2 kA                                                         |
| <b>breaking capacity maximum short-circuit current (Icu)</b> <ul style="list-style-type: none"> <li>at AC at 240 V rated value</li> <li>at AC at 400 V rated value</li> <li>at AC at 500 V rated value</li> <li>at AC at 690 V rated value</li> </ul>                                                                                                                                                                                            | 65 kA<br>65 kA<br>8 kA<br>4 kA                                                         |
| response value current of instantaneous short-circuit trip unit                                                                                                                                                                                                                                                                                                                                                                                  | 1 040 A                                                                                |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                        |
| <b>full-load current (FLA) for 3-phase AC motor</b> <ul style="list-style-type: none"> <li>at 480 V rated value</li> <li>at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                         | 77 A<br>77 A                                                                           |
| <b>yielded mechanical performance [hp]</b> <ul style="list-style-type: none"> <li>for single-phase AC motor <ul style="list-style-type: none"> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> </ul> </li> <li>for 3-phase AC motor <ul style="list-style-type: none"> <li>at 200/208 V rated value</li> <li>at 220/230 V rated value</li> <li>at 460/480 V rated value</li> <li>at 575/600 V rated value</li> </ul> </li> </ul> | 7.5 hp<br>15 hp<br><br>25 hp<br>30 hp<br>60 hp<br>75 hp                                |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                        |
| <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> <ul style="list-style-type: none"> <li>at 240 V</li> <li>at 400 V</li> <li>at 500 V</li> <li>at 690 V</li> </ul>                                                                                                                                                                                                                                  | none required<br>160<br>125<br>100                                                     |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                        |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                         | any                                                                                    |
| <b>fastening method</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</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 400 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 500 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 500 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 690 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> <li>• for live parts at 690 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> </ul> | 50 mm<br>50 mm<br>10 mm<br><br>50 mm<br>50 mm<br>10 mm<br><br>50 mm<br>50 mm<br>10 mm<br><br>50 mm<br>50 mm<br>0 mm<br>10 mm<br>0 mm<br><br>50 mm<br>50 mm<br>0 mm<br>10 mm<br>0 mm |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                     |
| product function removable terminal for auxiliary and control circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 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>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables 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)                    |
| <ul style="list-style-type: none"> <li>• tightening torque 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                                                                                                                                                                                  |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                     |
| <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                                                                                                                                                                                |

|                                                    |                                                  |
|----------------------------------------------------|--------------------------------------------------|
| protection class IP on the front acc. to IEC 60529 | IP20                                             |
| touch protection on the front acc. to IEC 60529    | finger-safe, for vertical contact from the front |
| display version for switching status               | Handle                                           |

#### Certificates/ approvals

|                          |                                |
|--------------------------|--------------------------------|
| General Product Approval | For use in hazardous locations |
|--------------------------|--------------------------------|



[KC](#)



|                                |                           |                   |                   |
|--------------------------------|---------------------------|-------------------|-------------------|
| For use in hazardous locations | Declaration of Conformity | Test Certificates | Marine / Shipping |
|--------------------------------|---------------------------|-------------------|-------------------|



[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



#### Marine / Shipping



|       |         |
|-------|---------|
| other | Railway |
|-------|---------|

[Confirmation](#)



[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=3RV2031-4RA10>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4RA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4RA10>

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

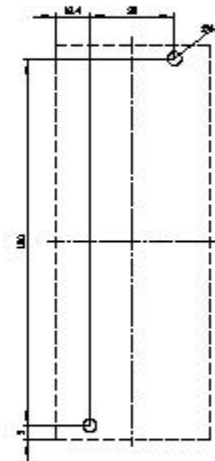
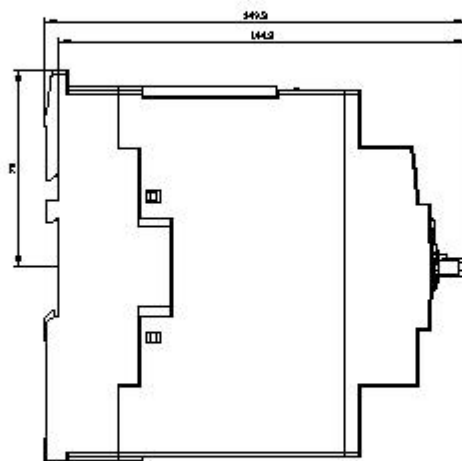
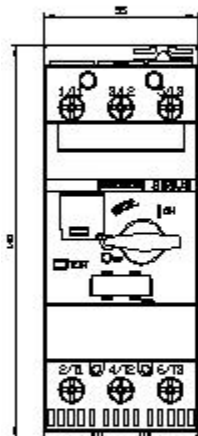
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4RA10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4RA10&lang=en)

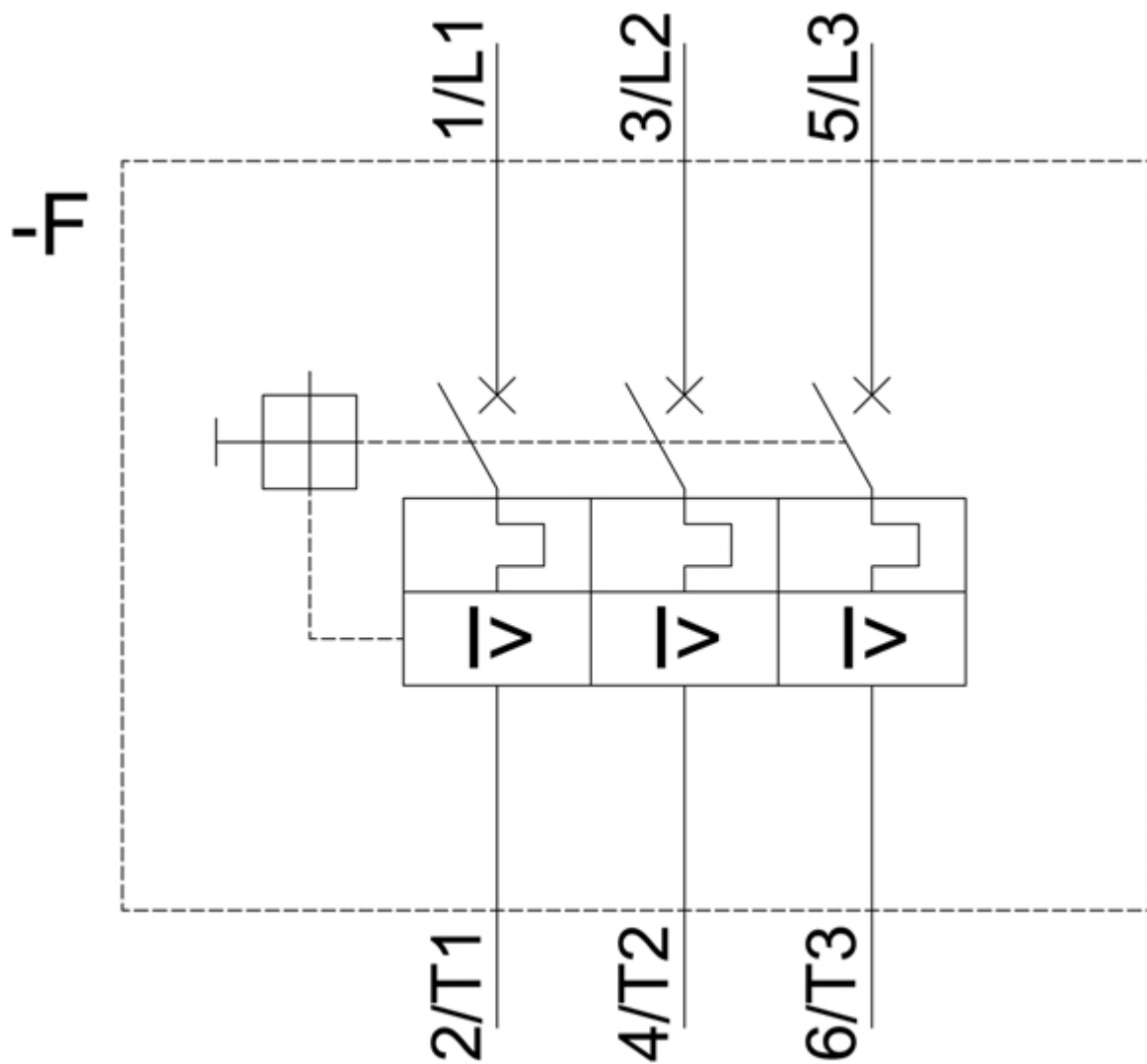
Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4RA10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4RA10&objecttype=14&gridview=view1>





last modified:

12/15/2020 [↗](#)