



Circuit breaker size S2 for motor protection, Class 20 A-release 49...59 A  
N-release 845 A screw terminal Standard switching capacity

|                                                                                            |                      |
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| <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                   |
| <b>product extension auxiliary switch</b>                                                  | Yes                  |
| <b>power loss [W] for rated value of the current</b>                                       |                      |
| • at AC in hot operating state                                                             | 26 W                 |
| • at AC in hot operating state per pole                                                    | 8.7 W                |
| <b>insulation voltage with degree of pollution 3 at AC rated value</b>                     | 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                |
| <b>shock resistance acc. to IEC 60068-2-27</b>                                             | 25g / 11 ms Sinus    |
| <b>mechanical service life (switching cycles)</b>                                          |                      |
| • of the main contacts typical                                                             | 20 000               |
| • of auxiliary contacts typical                                                            | 20 000               |
| <b>electrical endurance (switching cycles) typical</b>                                     | 20 000               |
| <b>reference code acc. to IEC 81346-2</b>                                                  | Q                    |
| <b>Substance Prohibitance (Date)</b>                                                       | 10.04.2015           |
| <b>Ambient conditions</b>                                                                  |                      |
| <b>installation altitude at height above sea level maximum</b>                             | 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       |
| <b>relative humidity during operation</b>                                                  | 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> | 49 ... 59 A          |
| <b>operating voltage</b>                                                                   |                      |
| • rated value                                                                              | 690 V                |
| • rated value                                                                              | 20 ... 690 V         |

|                                                                                                |                                                                                        |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| • at AC-3 rated value maximum                                                                  | 690 V                                                                                  |
| <b>operating frequency rated value</b>                                                         | 50 ... 60 Hz                                                                           |
| <b>operational current rated value</b>                                                         | 59 A                                                                                   |
| operational current at AC-3 at 400 V rated value                                               | 59 A                                                                                   |
| operating power at AC-3                                                                        |                                                                                        |
| • at 230 V rated value                                                                         | 15 kW                                                                                  |
| • at 400 V rated value                                                                         | 30 kW                                                                                  |
| • at 500 V rated value                                                                         | 37 kW                                                                                  |
| • at 690 V rated value                                                                         | 55 kW                                                                                  |
| operating frequency at AC-3 maximum                                                            | 15 1/h                                                                                 |
| <b>Protective and monitoring functions</b>                                                     |                                                                                        |
| <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>breaking capacity operating short-circuit current (Ics) at AC</b>                           |                                                                                        |
| • at 240 V rated value                                                                         | 100 kA                                                                                 |
| • at 400 V rated value                                                                         | 30 kA                                                                                  |
| • at 500 V rated value                                                                         | 4 kA                                                                                   |
| • at 690 V rated value                                                                         | 2 kA                                                                                   |
| <b>breaking capacity maximum short-circuit current (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                                                                                   |
| response value current of instantaneous short-circuit trip unit                                | 845 A                                                                                  |
| <b>UL/CSA ratings</b>                                                                          |                                                                                        |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                            |                                                                                        |
| • at 480 V rated value                                                                         | 59 A                                                                                   |
| • at 600 V rated value                                                                         | 59 A                                                                                   |
| <b>yielded mechanical performance [hp]</b>                                                     |                                                                                        |
| • for single-phase AC motor                                                                    |                                                                                        |
| — at 110/120 V rated value                                                                     | 5 hp                                                                                   |
| — at 230 V rated value                                                                         | 10 hp                                                                                  |
| • for 3-phase AC motor                                                                         |                                                                                        |
| — at 220/230 V rated value                                                                     | 20 hp                                                                                  |
| — at 460/480 V rated value                                                                     | 40 hp                                                                                  |
| — at 575/600 V rated value                                                                     | 50 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> |                                                                                        |
| • at 240 V                                                                                     | none required                                                                          |
| • at 400 V                                                                                     | 160                                                                                    |
| • at 500 V                                                                                     | 125                                                                                    |
| • at 690 V                                                                                     | 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>                                                                        |                                                                                        |
| • for grounded parts at 400 V                                                                  |                                                                                        |
| — downwards                                                                                    | 50 mm                                                                                  |

|                                                                               |                                                                |
|-------------------------------------------------------------------------------|----------------------------------------------------------------|
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| • for live parts at 400 V                                                     |                                                                |
| — downwards                                                                   | 50 mm                                                          |
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| • for grounded parts at 500 V                                                 |                                                                |
| — downwards                                                                   | 50 mm                                                          |
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| • for live parts at 500 V                                                     |                                                                |
| — downwards                                                                   | 50 mm                                                          |
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| • for grounded parts at 690 V                                                 |                                                                |
| — downwards                                                                   | 50 mm                                                          |
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| • for live parts at 690 V                                                     |                                                                |
| — downwards                                                                   | 50 mm                                                          |
| — upwards                                                                     | 50 mm                                                          |
| — at the side                                                                 | 10 mm                                                          |
| <b>Connections/ Terminals</b>                                                 |                                                                |
| <b>product component removable terminal for auxiliary and control circuit</b> | No                                                             |
| <b>type of electrical connection</b>                                          |                                                                |
| • for main current circuit                                                    | screw-type terminals                                           |
| <b>arrangement of electrical connectors for main current circuit</b>          | Top and bottom                                                 |
| <b>type of connectable conductor cross-sections</b>                           |                                                                |
| • for main contacts                                                           |                                                                |
| — solid or stranded                                                           | 2x (1 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> ) |
| — finely stranded with core end processing                                    | 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> ) |
| • at AWG cables for main contacts                                             | 2x (18 ... 2), 1x (18 ... 1)                                   |
| <b>tightening torque</b>                                                      |                                                                |
| • for main contacts with screw-type terminals                                 | 3 ... 4.5 N·m                                                  |
| <b>design of screwdriver shaft</b>                                            | Diameter 5 to 6 mm                                             |
| <b>size of the screwdriver tip</b>                                            | Pozidriv size 2                                                |
| <b>design of the thread of the connection screw</b>                           |                                                                |
| • for main contacts                                                           | M6                                                             |
| <b>Safety related data</b>                                                    |                                                                |
| <b>B10 value</b>                                                              |                                                                |
| • with high demand rate acc. to SN 31920                                      | 5 000                                                          |
| <b>proportion of dangerous failures</b>                                       |                                                                |
| • with low demand rate acc. to SN 31920                                       | 50 %                                                           |
| • with high demand rate acc. to SN 31920                                      | 50 %                                                           |
| <b>failure rate [FIT]</b>                                                     |                                                                |
| • with low demand rate acc. to SN 31920                                       | 50 FIT                                                         |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>     | 10 y                                                           |
| <b>protection class IP on the front acc. to IEC 60529</b>                     | IP20                                                           |
| <b>touch protection on the front acc. to IEC 60529</b>                        | finger-safe, for vertical contact from the front               |
| display version for switching status                                          | Handle                                                         |
| <b>Certificates/ approvals</b>                                                |                                                                |
| <b>General Product Approval</b>                                               |                                                                |



[Confirmation](#)



[KC](#)



| Declaration of Conformity                                                                     |                                                                                          | Test Certificates                                                                        |                                                                                           | Marine / Shipping                                                                           |                                                                                                       |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <br>EG-Konf. | <a href="#">UK Declaration of Conformity</a>                                             | <a href="#">Special Test Certificate</a>                                                 | <a href="#">Type Test Certificates/Test Report</a>                                        | <br>ABS  | <br>BUREAU VERITAS |
| Marine / Shipping                                                                             |                                                                                          |                                                                                          |                                                                                           |                                                                                             | other                                                                                                 |
| <br>DNV      | <br>LRS | <br>PRS | <br>RINA | <br>RMRS | <a href="#">Confirmation</a>                                                                          |
| other                                                                                         |                                                                                          | Railway                                                                                  |                                                                                           |                                                                                             |                                                                                                       |
| <br>VDE      | <a href="#">Confirmation</a>                                                             | <a href="#">Vibration and Shock</a>                                                      |                                                                                           |                                                                                             |                                                                                                       |

#### 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=3RV2031-4XB10>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4XB10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4XB10>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4XB10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4XB10&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4XB10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4XB10&objecttype=14&gridview=view1>



