



Circuit breaker size S2 for motor protection, Class 20 A-release 35...45 A N-release 650 A screw terminal Standard switching capacity

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| 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 auxiliary switch | Yes |
| power loss [W] for rated value of the current | |
| • at AC in hot operating state | 24.5 W |
| • at AC in hot operating state per pole | 8.2 W |
| insulation voltage with degree of pollution 3 at AC rated value | 690 V |
| surge voltage resistance rated value | 6 kV |
| shock resistance according to IEC 60068-2-27 | 25g / 11 ms Sinus |
| mechanical service life (switching cycles) | |
| • of the main contacts typical | 50 000 |
| • of auxiliary contacts typical | 50 000 |
| electrical endurance (switching cycles) typical | 50 000 |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitive (Date) | 10/15/2014 |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -20 ... +60 °C |
| • during storage | -50 ... +80 °C |
| • during transport | -50 ... +80 °C |
| relative humidity during operation | 10 ... 95 % |
| Main circuit | |
| number of poles for main current circuit | 3 |
| adjustable current response value current of the current-dependent overload release | 35 ... 45 A |
| operating voltage | |
| • rated value | 20 ... 690 V |
| • at AC-3 rated value maximum | 690 V |
| • at AC-3e rated value maximum | 690 V |
| operating frequency rated value | 50 ... 60 Hz |
| operational current rated value | 45 A |
| operational current | |
| • at AC-3 at 400 V rated value | 45 A |

| | |
|---|--|
| <ul style="list-style-type: none"> • at AC-3e at 400 V rated value | 45 A |
| operating power | |
| <ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value • at AC-3e <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value | 11 kW 22 kW 30 kW 37 kW 11 kW 22 kW 30 kW 37 kW |
| operating frequency | |
| <ul style="list-style-type: none"> • at AC-3 maximum • at AC-3e maximum | 15 1/h 15 1/h |
| Protective and monitoring functions | |
| product function | |
| <ul style="list-style-type: none"> • ground fault detection • phase failure detection | No Yes |
| trip class | CLASS 20 |
| design of the overload release | thermal |
| breaking capacity maximum short-circuit current (I_{cu}) | |
| <ul style="list-style-type: none"> • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 500 V rated value • at AC at 690 V rated value | 100 kA 65 kA 10 kA 4 kA |
| breaking capacity operating short-circuit current (I_{cs}) at AC | |
| <ul style="list-style-type: none"> • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value | 100 kA 30 kA 5 kA 2 kA |
| response value current of instantaneous short-circuit trip unit | 650 A |
| UL/CSA ratings | |
| full-load current (FLA) for 3-phase AC motor | |
| <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | 45 A 45 A |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value | 3 hp 10 hp 15 hp 15 hp 40 hp 50 hp |
| Short-circuit protection | |
| product function short circuit protection | Yes |
| design of the short-circuit trip | magnetic |
| design of the fuse link for IT network for short-circuit protection of the main circuit | |
| <ul style="list-style-type: none"> • at 240 V • at 400 V • at 500 V • at 690 V | none required 125 100 80 |
| Installation/ mounting/ dimensions | |
| mounting position | any |
| fastening method | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 |

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| height | 140 mm |
| width | 55 mm |
| depth | 149 mm |
| required spacing | |
| <ul style="list-style-type: none"> ● for grounded parts at 400 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 400 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for grounded parts at 500 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 500 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for grounded parts at 690 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 690 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm | |
| Connections/ Terminals | |
| type of electrical connection | |
| <ul style="list-style-type: none"> ● for main current circuit | screw-type terminals |
| arrangement of electrical connectors for main current circuit | Top and bottom |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — solid or stranded 2x (1 ... 25 mm²), 1x (1 ... 35 mm²) — finely stranded with core end processing 2x (1 ... 16 mm²), 1x (1 ... 25 mm²) ● at AWG cables for main contacts 2x (18 ... 3), 1x (18 ... 2) | |
| tightening torque | |
| <ul style="list-style-type: none"> ● for main contacts with screw-type terminals | 3 ... 4.5 N·m |
| design of screwdriver shaft | Diameter 5 to 6 mm |
| size of the screwdriver tip | Pozidriv size 2 |
| design of the thread of the connection screw | |
| <ul style="list-style-type: none"> ● for main contacts | M6 |
| Safety related data | |
| B10 value | |
| <ul style="list-style-type: none"> ● with high demand rate according to SN 31920 | 5 000 |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> ● with low demand rate according to SN 31920 ● with high demand rate according to SN 31920 | 50 % 50 % |
| failure rate [FIT] | |
| <ul style="list-style-type: none"> ● with low demand rate according to SN 31920 | 50 FIT |
| T1 value for proof test interval or service life according to IEC 61508 | 10 y |
| protection class IP on the front according to IEC 60529 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |
| display version for switching status | Handle |
| Certificates/ approvals | |
| General Product Approval | |



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Declaration of Conformity

Test Certificates

Marine / Shipping



EG-Konf.

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping

other



[Confirmation](#)

other

Railway



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[Vibration and Shock](#)

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=3RV2031-4VB10>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4VB10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4VB10>

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

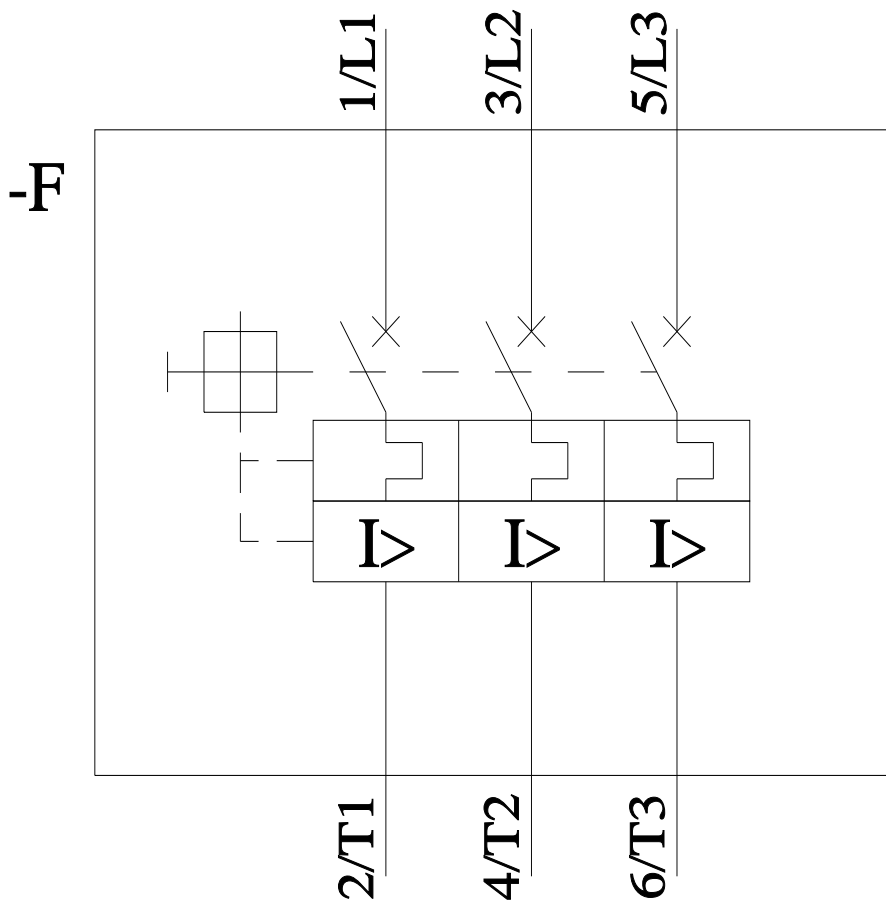
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4VB10&lang=en

Characteristic: Tripping characteristics, I^t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4VB10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4VB10&objecttype=14&gridview=view1>



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