



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, U_c: 24 V DC x (0.7-1.25) PLC
input 24-110 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main
circuit: box terminal control and auxiliary circuit: spring-loaded terminal

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| product brand name | SIRIUS |
| product designation | Power contactor |
| design of the product | With extended operating range |
| product type designation | 3RT1 |
| General technical data | |
| size of contactor | S6 |
| product extension | |
| • function module for communication | No |
| • auxiliary switch | Yes |
| power loss [W] for rated value of the current | |
| • at AC in hot operating state | 21 W |
| • at AC in hot operating state per pole | 7 W |
| insulation voltage | |
| • of main circuit with degree of pollution 3 rated value | 1 000 V |
| • of auxiliary circuit with degree of pollution 3 rated value | 500 V |
| surge voltage resistance | |
| • of main circuit rated value | 8 kV |
| • of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 | 690 V |
| shock resistance for railway applications according to EN 61373 | Category 1, Class B |
| shock resistance at rectangular impulse | |
| • at DC | 8,5g / 5 ms, 4,2g / 10 ms |
| shock resistance with sine pulse | |
| • at DC | 13,4g / 5 ms, 6,5g / 10 ms |
| mechanical service life (operating cycles) | |
| • of contactor typical | 10 000 000 |
| • of the contactor with added electronically optimized auxiliary switch block typical | 5 000 000 |
| • of the contactor with added auxiliary switch block typical | 10 000 000 |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 09/06/2016 |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -40 ... +70 °C |
| • during storage | -55 ... +80 °C |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum | 95 % |
| Main circuit | |

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| number of poles for main current circuit | 3 |
| number of NO contacts for main contacts | 3 |
| number of NC contacts for main contacts | 0 |
| operating voltage | |
| • at AC-3 rated value maximum | 1 000 V |
| • at AC-3e rated value maximum | 1 000 V |
| operational current | |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value | 160 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 160 A |
| — up to 690 V at ambient temperature 60 °C rated value | 140 A |
| — up to 1000 V at ambient temperature 60 °C rated value | 80 A |
| • at AC-2 at 400 V rated value | 115 A |
| • at AC-3 | |
| — at 400 V rated value | 115 A |
| — at 500 V rated value | 115 A |
| — at 690 V rated value | 115 A |
| — at 1000 V rated value | 53 A |
| • at AC-3e | |
| — at 400 V rated value | 115 A |
| — at 500 V rated value | 115 A |
| — at 690 V rated value | 115 A |
| — at 1000 V rated value | 53 A |
| • at AC-4 at 400 V rated value | 97 A |
| minimum cross-section in main circuit | |
| • at maximum AC-1 rated value | 70 mm ² |
| • at maximum Ith rated value | 70 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 54 A |
| • at 690 V rated value | 48 A |
| operational current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 110 V rated value | 18 A |
| — at 220 V rated value | 3.4 A |
| — at 440 V rated value | 0.8 A |
| — at 600 V rated value | 0.5 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 20 A |
| — at 440 V rated value | 3.2 A |
| — at 600 V rated value | 1.6 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 160 A |
| — at 440 V rated value | 11.5 A |
| — at 600 V rated value | 4 A |
| • at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |
| — at 110 V rated value | 2.5 A |
| — at 220 V rated value | 0.6 A |
| — at 440 V rated value | 0.17 A |
| — at 600 V rated value | 0.12 A |
| • with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |

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| — at 110 V rated value | 160 A |
| — at 220 V rated value | 2.5 A |
| — at 440 V rated value | 0.65 A |
| — at 600 V rated value | 0.37 A |
| ● with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 160 A |
| — at 440 V rated value | 1.4 A |
| — at 600 V rated value | 0.75 A |
| operating power | |
| ● at AC-2 at 400 V rated value | 55 kW |
| ● at AC-3 | |
| — at 230 V rated value | 37 kW |
| — at 400 V rated value | 55 kW |
| — at 500 V rated value | 75 kW |
| — at 690 V rated value | 110 kW |
| — at 1000 V rated value | 75 kW |
| ● at AC-3e | |
| — at 230 V rated value | 37 kW |
| — at 400 V rated value | 55 kW |
| — at 500 V rated value | 75 kW |
| — at 690 V rated value | 110 kW |
| — at 1000 V rated value | 75 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 29 kW |
| ● at 690 V rated value | 48 kW |
| short-time withstand current in cold operating state up to 40 °C | |
| ● limited to 1 s switching at zero current maximum | 2 565 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum | 1 654 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 10 s switching at zero current maximum | 1 170 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 30 s switching at zero current maximum | 729 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 60 s switching at zero current maximum | 572 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| ● at DC | 1 000 1/h |
| operating frequency | |
| ● at AC-1 maximum | 800 1/h |
| ● at AC-2 maximum | 400 1/h |
| ● at AC-3 maximum | 1 000 1/h |
| ● at AC-3e maximum | 1 000 1/h |
| ● at AC-2 at AC-3e maximum | 400 1/h |
| ● at AC-4 maximum | 130 1/h |
| operating frequency | |
| ● at DC-1 maximum | 400 1/h |
| ● at DC-3 maximum | 500 1/h |
| ● at DC-5 maximum | 500 1/h |
| Ratings for railway applications | |
| thermal current (I_{th}) up to 690 V | |
| ● up to 40 °C according to IEC 60077 rated value | 160 A |
| ● up to 70 °C according to IEC 60077 rated value | 120 A |
| Control circuit/ Control | |
| type of voltage | DC |
| type of voltage of the control supply voltage | DC |
| control supply voltage at DC | |
| ● rated value | 24 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| ● initial value | 0.7 |
| ● full-scale value | 1.25 |

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| consumed current at PLC-control input according to IEC 60947-1 maximum | 2 mA |
| voltage at PLC-control input | 24 ... 110 V |
| design of the surge suppressor | with varistor |
| closing power of magnet coil at DC | 320 W |
| holding power of magnet coil at DC | 2.8 W |
| closing delay <ul style="list-style-type: none"> at DC | 35 ... 75 ms |
| opening delay <ul style="list-style-type: none"> at DC | 80 ... 90 ms |
| arcing time | 10 ... 15 ms |
| control version of the switch operating mechanism | PLC-IN or Standard A1 - A2 (adjustable) |
| Auxiliary circuit | |
| number of NC contacts for auxiliary contacts <ul style="list-style-type: none"> instantaneous contact | 2 2 |
| number of NO contacts for auxiliary contacts <ul style="list-style-type: none"> instantaneous contact | 2 2 |
| operational current at AC-12 maximum | 10 A |
| operational current at AC-15 <ul style="list-style-type: none"> at 230 V rated value at 400 V rated value at 500 V rated value | 6 A 3 A 2 A |
| operational current at DC-12 <ul style="list-style-type: none"> at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value | 10 A 6 A 6 A 3 A 2 A 1 A 0.15 A |
| operational current at DC-13 <ul style="list-style-type: none"> at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value | 6 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 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 | 124 A 125 A |
| yielded mechanical performance [hp] <ul style="list-style-type: none"> for single-phase AC motor <ul style="list-style-type: none"> 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 | 25 hp 40 hp 50 hp 100 hp 125 hp |
| contact rating of auxiliary contacts according to UL | A600 / Q600 |
| Short-circuit protection | |
| product function short circuit protection | No |
| design of the fuse link <ul style="list-style-type: none"> for short-circuit protection of the main circuit <ul style="list-style-type: none"> with type of coordination 1 required with type of assignment 2 required for short-circuit protection of the auxiliary switch required | gG: 355 A (690 V, 100 kA) gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA) gG: 10 A (500 V, 1 kA) |
| Installation/ mounting/ dimensions | |
| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface |

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| | +/- 22.5° tiltable to the front and back |
| fastening method | screw fixing |
| • side-by-side mounting | Yes |
| height | 172 mm |
| width | 120 mm |
| depth | 170 mm |
| required spacing | |
| • with side-by-side mounting | |
| — forwards | 20 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 10 mm |
| • for grounded parts | |
| — forwards | 20 mm |
| — upwards | 10 mm |
| — at the side | 10 mm |
| — downwards | 10 mm |
| • for live parts | |
| — forwards | 20 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 10 mm |
| Connections/ Terminals | |
| type of electrical connection | |
| • for main current circuit | screw-type terminals |
| • for auxiliary and control circuit | spring-loaded terminals |
| width of connection bar | 17 mm |
| thickness of connection bar | 3 mm |
| diameter of holes | 9 mm |
| number of holes | 1 |
| type of connectable conductor cross-sections for main contacts | |
| • stranded | max. 2x 70 mm ² |
| • solid or stranded | max. 1x 50, 1x 70 mm ² |
| • finely stranded with core end processing | max. 1x 50, 1x 70 mm ² |
| • finely stranded without core end processing | max. 1x 50, 1x 70 mm ² |
| type of connectable conductor cross-sections | |
| • for auxiliary contacts | |
| — solid | 2x (0.25 ... 2.5 mm ²) |
| — solid or stranded | 2x (0.25 ... 2.5 mm ²) |
| — finely stranded with core end processing | 2x (0.25 ... 1.5 mm ²) |
| — finely stranded without core end processing | 2x (0.25 ... 2.5 mm ²) |
| • for AWG cables for auxiliary contacts | 2x (24 ... 14) |
| AWG number as coded connectable conductor cross section | |
| • for main contacts | 6 |
| • for auxiliary contacts | 24 ... 14 |
| Safety related data | |
| product function | |
| • mirror contact according to IEC 60947-4-1 | Yes |
| • positively driven operation according to IEC 60947-5-1 | No |
| B10 value with high demand rate according to SN 31920 | 1 000 000 |
| T1 value for proof test interval or service life according to IEC 61508 | 20 a |
| 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 |
| Communication/ Protocol | |
| product function bus communication | No |
| Certificates/ approvals | |
| General Product Approval | |



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| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates |
|-----|---------------------------------------|---------------------------|-------------------|
|-----|---------------------------------------|---------------------------|-------------------|



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| other | Railway |
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Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT1054-3XB46-0LA2>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-3XB46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-3XB46-0LA2>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-3XB46-0LA2&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-3XB46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-3XB46-0LA2&objecttype=14&gridview=view1>

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