



power contactor, AC-3e/AC-3 150 A, 75 kW / 400 V U_c: 72 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: busbar control and auxiliary circuit: spring-loaded terminal extended rated condition railroad IEC 60077

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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 | 27 W |
| • at AC in hot operating state per pole | 9 W |
| type of calculation of power loss depending on pole | quadratic |
| 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 Prohibitation (Date) | 09/06/2016 |
| SVHC substance name | Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 Perfluorobutane sulfonic acid (PFBS) and its salts - - Melamine - 108-78-1 |
| Weight | 3.265 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |

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| <ul style="list-style-type: none"> during operation during storage | -40 ... +70 °C |
| | -55 ... +80 °C |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum | 95 % |
| Main circuit | |
| 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 | |
| <ul style="list-style-type: none"> at AC-3 rated value maximum at AC-3e rated value maximum | 1 000 V 1 000 V |
| operational current | |
| <ul style="list-style-type: none"> at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 <ul style="list-style-type: none"> up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value up to 1000 V at ambient temperature 60 °C rated value at AC-2 at 400 V rated value at AC-3 <ul style="list-style-type: none"> at 400 V rated value at 500 V rated value at 690 V rated value at 1000 V rated value at AC-3e <ul style="list-style-type: none"> at 400 V rated value at 500 V rated value at 690 V rated value at 1000 V rated value at AC-4 at 400 V rated value | 185 A 185 A 160 A 90 A 150 A 150 A 150 A 65 A 150 A 150 A 150 A 65 A 132 A |
| minimum cross-section in main circuit | |
| <ul style="list-style-type: none"> at maximum AC-1 rated value at maximum Ith rated value | 95 mm ² 95 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| <ul style="list-style-type: none"> at 400 V rated value at 690 V rated value | 68 A 57 A |
| operational current | |
| <ul style="list-style-type: none"> at 1 current path at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value with 2 current paths in series at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value with 3 current paths in series at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> at 24 V rated value | 160 A 18 A 3.4 A 0.8 A 0.5 A 160 A 160 A 20 A 3.2 A 1.6 A 160 A 160 A 160 A 11.5 A 4 A 160 A |

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| <ul style="list-style-type: none"> — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 2.5 A 0.6 A 0.17 A 0.12 A |
| <ul style="list-style-type: none"> ● with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 160 A 160 A 2.5 A 0.65 A 0.37 A 160 A 160 A 160 A 1.4 A 0.75 A |
| operating power <ul style="list-style-type: none"> ● at AC-2 at 400 V rated value ● 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 1000 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 — at 1000 V rated value | 75 kW 50 kW 75 kW 90 kW 132 kW 90 kW 50 kW 75 kW 90 kW 132 kW 90 kW |
| operating power for approx. 200000 operating cycles at AC-4 <ul style="list-style-type: none"> ● at 400 V rated value ● at 690 V rated value | 38 kW 55 kW |
| short-time withstand current in cold operating state up to 40 °C <ul style="list-style-type: none"> ● limited to 1 s switching at zero current maximum ● limited to 5 s switching at zero current maximum ● limited to 10 s switching at zero current maximum ● limited to 30 s switching at zero current maximum ● limited to 60 s switching at zero current maximum | 2 727 A; Use minimum cross-section acc. to AC-1 rated value 1 831 A; Use minimum cross-section acc. to AC-1 rated value 1 300 A; Use minimum cross-section acc. to AC-1 rated value 850 A; Use minimum cross-section acc. to AC-1 rated value 703 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency <ul style="list-style-type: none"> ● at DC | 1 000 1/h |
| operating frequency <ul style="list-style-type: none"> ● at AC-1 maximum ● at AC-2 maximum ● at AC-3 maximum ● at AC-3e maximum ● at AC-2 at AC-3e maximum ● at AC-4 maximum | 800 1/h 300 1/h 750 1/h 750 1/h 300 1/h 130 1/h |
| operating frequency <ul style="list-style-type: none"> ● at DC-1 maximum ● at DC-3 maximum ● at DC-5 maximum | 400 1/h 350 1/h 350 1/h |
| Ratings for railway applications | |
| thermal current (I_{th}) up to 690 V <ul style="list-style-type: none"> ● up to 40 °C according to IEC 60077 rated value ● up to 70 °C according to IEC 60077 rated value | 185 A 140 A |
| Control circuit/ Control | |
| type of voltage | DC |
| type of voltage of the control supply voltage | DC |

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| control supply voltage at DC rated value | 72 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| • initial value | 0.7 |
| • full-scale value | 1.25 |
| 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 | |
| • at DC | 35 ... 75 ms |
| opening delay | |
| • 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 | 2 |
| • instantaneous contact | 2 |
| number of NO contacts for auxiliary contacts | 2 |
| • instantaneous contact | 2 |
| operational current at AC-12 maximum | 10 A |
| operational current at AC-15 | |
| • at 230 V rated value | 6 A |
| • at 400 V rated value | 3 A |
| • at 500 V rated value | 2 A |
| operational current at DC-12 | |
| • at 24 V rated value | 10 A |
| • at 48 V rated value | 6 A |
| • at 60 V rated value | 6 A |
| • at 110 V rated value | 3 A |
| • at 125 V rated value | 2 A |
| • at 220 V rated value | 1 A |
| • at 600 V rated value | 0.15 A |
| operational current at DC-13 | |
| • at 24 V rated value | 6 A |
| • at 48 V rated value | 2 A |
| • at 60 V rated value | 2 A |
| • at 110 V rated value | 1 A |
| • at 125 V rated value | 0.9 A |
| • at 220 V rated value | 0.3 A |
| • at 600 V rated value | 0.1 A |
| UL/CSA ratings | |
| full-load current (FLA) for 3-phase AC motor | |
| • at 480 V rated value | 156 A |
| • at 600 V rated value | 144 A |
| yielded mechanical performance [hp] | |
| • for single-phase AC motor | |
| — at 230 V rated value | 30 hp |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 50 hp |
| — at 220/230 V rated value | 60 hp |
| — at 460/480 V rated value | 125 hp |
| — at 575/600 V rated value | 150 hp |
| contact rating of auxiliary contacts according to UL | A600 / Q600 |
| Short-circuit protection | |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V | C characteristic: 10 A; 0.4 kA |
| design of the fuse link | |
| • for short-circuit protection of the main circuit | |

- with type of coordination 1 required
- with type of coordination 2 required

gG: 355 A (690 V, 100 kA)
 gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50 kA)
 gG: 10 A (500 V, 1 kA)

- for short-circuit protection of the auxiliary switch required

Installation/ mounting/ dimensions

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| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| fastening method side-by-side mounting | Yes |
| fastening method | screw fixing |
| height | 172 mm |
| width | 120 mm |
| depth | 170 mm |
| required spacing | |
| <ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm ● for grounded parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — at the side 10 mm — downwards 10 mm ● for live parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm | |

Connections/ Terminals

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| type of electrical connection | |
| <ul style="list-style-type: none"> ● 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 | |
| <ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — solid or stranded 2x (25 ... 120 mm²) ● for AWG cables for main contacts 4 ... 250 kcmil | |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> ● for auxiliary contacts <ul style="list-style-type: none"> — solid 2x (0.25 ... 2.5 mm²) — solid or stranded 2x (0,25 ... 2,5 mm²) — finely stranded with core end processing 2x (0.25 ... 1.5 mm²) — finely stranded without core end processing 2x (0.25 ... 2.5 mm²) ● for AWG cables for auxiliary contacts 2x (24 ... 14) | |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 24 ... 14 |

Safety related data

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| product function | |
| <ul style="list-style-type: none"> ● mirror contact according to IEC 60947-4-1 Yes ● positively driven operation according to IEC 60947-5-1 No ● suitable for safety function Yes | |
| suitability for use safety-related switching OFF | Yes; safety-related disconnection via A1 A2 |
| service life maximum | 20 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> ● with low demand rate according to SN 31920 40 % ● with high demand rate according to SN 31920 73 % | |
| B10 value with high demand rate according to SN 31920 | 1 000 000 |

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| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT |
| ISO 13849 | |
| device type according to ISO 13849-1 | 3 |
| overdimensioning according to ISO 13849-2 necessary | Yes |
| IEC 61508 | |
| safety device type according to IEC 61508-2 | Type A |
| Electrical Safety | |
| protection class IP on the front according to IEC 60529 | IP00; IP20 with box terminal/cover |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front with box terminal/cover |
| Communication/ Protocol | |
| product function bus communication | No |
| Approvals Certificates | |
| General Product Approval | |



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| EMV | Functional Safety | Test Certificates | other | | |
|------------------------------|--|--|--|---|--|
| | Type Examination Certificate | Special Test Certificate | Type Test Certificates/Test Report | Miscellaneous | |
| other | | Railway | Environment | | |
| Confirmation | Miscellaneous | Type Test Certificates/Test Report | Special Test Certificate | Environmental Confirmations | |

Further information

- Information on the packaging
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- Information for data generation and storage
<https://support.industry.siemens.com/cs/ww/en/view/109995012>
- 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=3RT1055-2XJ46-0LA2>
- Cax online generator
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1055-2XJ46-0LA2>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-2XJ46-0LA2>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1055-2XJ46-0LA2&lang=en
- Characteristic: Tripping characteristics, I²t, Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-2XJ46-0LA2/char>
- Further characteristics (e.g. electrical endurance, switching frequency)
<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1055-2XJ46-0LA2&objecttype=14&gridview=view1>



