



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |
| General technical data | |
| size of contactor | S0 |
| 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 | 0.9 W |
| • at AC in hot operating state per pole | 0.3 W |
| • without load current share typical | 5.9 W |
| type of calculation of power loss depending on pole | quadratic |
| insulation voltage | |
| • of main circuit with degree of pollution 3 rated value | 690 V |
| • of auxiliary circuit with degree of pollution 3 rated value | 690 V |
| surge voltage resistance | |
| • of main circuit rated value | 6 kV |
| • of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 | 400 V |
| shock resistance at rectangular impulse | |
| • at DC | 10g / 5 ms, 7.5g / 10 ms |
| shock resistance with sine pulse | |
| • at DC | 15g / 5 ms, 10g / 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) | 10/01/2009 |
| Net Weight | 0.634 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -25 ... +60 °C |
| • during storage | -55 ... +80 °C |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C according to IEC 60068-2-30 | 95 % |

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| maximum | |
| Environmental footprint | |
| Environmental Product Declaration(EPD) | Yes |
| global warming potential [CO2 eq] total | 221 kg |
| global warming potential [CO2 eq] during manufacturing | 2.65 kg |
| global warming potential [CO2 eq] during operation | 219 kg |
| global warming potential [CO2 eq] after end of life | -0.639 kg |
| 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 | |
| • at AC-3 rated value maximum | 690 V |
| • at AC-3e rated value maximum | 690 V |
| operational current | |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value | 40 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 40 A |
| — up to 690 V at ambient temperature 60 °C rated value | 35 A |
| • at AC-3 | |
| — at 400 V rated value | 12 A |
| — at 500 V rated value | 12 A |
| — at 690 V rated value | 9 A |
| • at AC-3e | |
| — at 400 V rated value | 12 A |
| — at 500 V rated value | 12 A |
| — at 690 V rated value | 9 A |
| • at AC-4 at 400 V rated value | 12.5 A |
| • at AC-5a up to 690 V rated value | 35.2 A |
| • at AC-5b up to 400 V rated value | 9.9 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 11.4 A |
| — up to 400 V for current peak value n=20 rated value | 11.4 A |
| — up to 500 V for current peak value n=20 rated value | 11.3 A |
| — up to 690 V for current peak value n=20 rated value | 9 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 7.6 A |
| — up to 400 V for current peak value n=30 rated value | 7.6 A |
| — up to 500 V for current peak value n=30 rated value | 7.6 A |
| — up to 690 V for current peak value n=30 rated value | 7.6 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 10 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 5.5 A |
| • at 690 V rated value | 5.5 A |
| operational current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 20 A |
| — at 110 V rated value | 4.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.4 A |
| — at 600 V rated value | 0.25 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 35 A |

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| — at 110 V rated value | 35 A |
| — at 220 V rated value | 5 A |
| — at 440 V rated value | 1 A |
| — at 600 V rated value | 0.8 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 35 A |
| — at 110 V rated value | 35 A |
| — at 220 V rated value | 35 A |
| — at 440 V rated value | 2.9 A |
| — at 600 V rated value | 1.4 A |
| • at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 60 V rated value | 5 A |
| — at 110 V rated value | 2.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.09 A |
| — at 600 V rated value | 0.06 A |
| • with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 35 A |
| — at 110 V rated value | 15 A |
| — at 220 V rated value | 3 A |
| — at 440 V rated value | 0.27 A |
| — at 600 V rated value | 0.16 A |
| • with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 35 A |
| — at 110 V rated value | 35 A |
| — at 220 V rated value | 10 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.6 A |
| operating power | |
| • at AC-3 | |
| — at 230 V rated value | 3 kW |
| — at 400 V rated value | 5.5 kW |
| — at 500 V rated value | 5.5 kW |
| — at 690 V rated value | 7.5 kW |
| • at AC-3e | |
| — at 230 V rated value | 3 kW |
| — at 400 V rated value | 5.5 kW |
| — at 500 V rated value | 5.5 kW |
| — at 690 V rated value | 7.5 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 2.6 kW |
| • at 690 V rated value | 4.6 kW |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=20 rated value | 4.5 kVA |
| • up to 400 V for current peak value n=20 rated value | 7.8 kVA |
| • up to 500 V for current peak value n=20 rated value | 9.8 kVA |
| • up to 690 V for current peak value n=20 rated value | 10.7 kVA |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=30 rated value | 3 kVA |
| • up to 400 V for current peak value n=30 rated value | 5.2 kVA |
| • up to 500 V for current peak value n=30 rated value | 6.5 kVA |
| • up to 690 V for current peak value n=30 rated value | 9 kVA |
| short-time withstand current in cold operating state up to 40 °C | |

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| • 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 | 210 A; Use minimum cross-section acc. to AC-1 rated value 210 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 126 A; Use minimum cross-section acc. to AC-1 rated value 105 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| • at DC | 1 500 1/h |
| operating frequency | |
| • at AC-1 maximum | 1 000 1/h |
| • at AC-2 maximum | 1 000 1/h |
| • at AC-3 maximum | 1 000 1/h |
| • at AC-3e — maximum | 1 000 1/h |
| • at AC-4 maximum | 300 1/h |
| Control circuit/ Control | |
| 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 | 0.8 |
| • full-scale value | 1.1 |
| closing power of magnet coil at DC | 5.9 W |
| holding power of magnet coil at DC | 5.9 W |
| closing delay | |
| • at DC | 50 ... 170 ms |
| opening delay | |
| • at DC | 15 ... 18 ms |
| arcing time | 10 ... 10 ms |
| control version of the switch operating mechanism | Standard A1 - A2 |
| Auxiliary circuit | |
| number of NC contacts for auxiliary contacts instantaneous contact | 1 |
| number of NO contacts for auxiliary contacts instantaneous contact | 1 |
| operational current at AC-12 maximum | 10 A |
| operational current at AC-15 | |
| • at 230 V rated value | 10 A |
| • at 400 V rated value | 3 A |
| • at 500 V rated value | 2 A |
| • at 690 V rated value | 1 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 | 10 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 |
| contact reliability of auxiliary contacts | 1 faulty switching per 100 million (17 V, 1 mA) |
| UL/CSA ratings | |
| full-load current (FLA) for 3-phase AC motor | |
| • at 480 V rated value | 11 A |

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| • at 600 V rated value | 11 A |
| yielded mechanical performance [hp] | |
| • for single-phase AC motor | |
| — at 110/120 V rated value | 1 hp |
| — at 230 V rated value | 2 hp |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 3 hp |
| — at 220/230 V rated value | 3 hp |
| — at 460/480 V rated value | 8 hp |
| — at 575/600 V rated value | 10 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |
| Category Control Number (CCN) | E31519 (NLDX, NLDX7) |
| 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 | gG: 63 A (690 V, 100 kA), aM: 32 A (690 V, 100 kA), BS88: 63 A (415 V, 80 kA) |
| — with type of coordination 2 required | gG: 25 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 25 A (415 V, 80 kA) |
| • for short-circuit protection of the auxiliary switch required | gG: 10 A (500 V, 1 kA) |
| Installation/ mounting/ dimensions | |
| mounting position | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| fastening method side-by-side mounting | Yes |
| fastening method | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 |
| height | 102 mm |
| width | 45 mm |
| depth | 107 mm |
| required spacing | |
| • with side-by-side mounting | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 0 mm |
| • for grounded parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — at the side | 6 mm |
| — downwards | 10 mm |
| • for live parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 6 mm |
| Connections/ Terminals | |
| type of electrical connection | |
| • for main current circuit | spring-loaded terminals |
| • for auxiliary and control circuit | spring-loaded terminals |
| • at contactor for auxiliary contacts | Spring-type terminals |
| • of magnet coil | Spring-type terminals |
| type of connectable conductor cross-sections | |
| • for main contacts | |
| — solid | 2x (1 ... 10 mm ²) |
| — solid or stranded | 2x (1 ... 10 mm ²) |
| — finely stranded with core end processing | 2x (1 ... 6 mm ²) |
| — finely stranded without core end processing | 2x (1 ... 6 mm ²) |
| • for AWG cables for main contacts | 2x (18 ... 8) |
| connectable conductor cross-section for main contacts | |
| • solid | 1 ... 10 mm ² |

| | |
|---|-----------------------------------|
| • stranded | 1 ... 10 mm ² |
| • finely stranded with core end processing | 1 ... 6 mm ² |
| • finely stranded without core end processing | 1 ... 6 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| • solid or stranded | 0.5 ... 2.5 mm ² |
| • finely stranded with core end processing | 0.5 ... 1.5 mm ² |
| • finely stranded without core end processing | 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| • for auxiliary contacts | |
| — solid or stranded | 2x (0.5 ... 2.5 mm ²) |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²) |
| — finely stranded without core end processing | 2x (0.5 ... 2.5 mm ²) |
| • for AWG cables for auxiliary contacts | 2x (20 ... 14) |
| AWG number as coded connectable conductor cross section for main contacts | 18 ... 8 |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 20 ... 14 |

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| Safety related data | |
| product function | |
| • 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 |
| service life maximum | 20 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| • 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 |
| 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 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |

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| Approvals Certificates | |
| General Product Approval | |



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| General Product Approval | EMV | Test Certificates | Maritime application |
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



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|----------------------|-------|
| Maritime application | other |
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| other | Railway | Dangerous goods | Environment |
|---|------------------------------|--|--|
|  | Confirmation | Special Test Certificate | Transport Information  |

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=3RT2024-2BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-2BB40>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2024-2BB40&lang=en

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2024-2BB40>

Characteristic curves

[https://curves.samaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>](https://curves.samaris.siemens.com/curves/<mmp_prod_noCOMP=)



