



power contactor, AC-3 95 A, 45 kW / 400 V 1 NO + 1 NC, 110 V AC, 50 Hz
Hz 120 V/60 Hz 3-pole, 3 NO, Size S3 screw terminal

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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |
| General technical data | |
| size of contactor | S3 |
| 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 | 19.8 W |
| • per pole | 6.6 W |
| power loss [W] for rated value of the current without load current share typical | 22 W |
| surge voltage resistance | |
| • of main circuit rated value | 8 kV |
| • of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1 | 690 V |
| shock resistance at rectangular impulse | |
| • at AC | 6.7 g / 5 ms, 4.0 g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 10.6 g / 5 ms, 6.3 g / 10 ms |
| mechanical service life (switching 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 acc. to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 01.03.2017 00:00:00 |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| • ambient temperature during operation | -25 ... +60 °C |
| • ambient temperature during storage | -55 ... +80 °C |
| Main circuit | |
| number of poles for main current circuit | 3 |
| number of NO contacts for main contacts | 3 |
| • operating voltage at AC-3 rated value maximum | 1 000 V |

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| operational current | |
| <ul style="list-style-type: none"> ● at AC-1 at 400 V at ambient temperature 40 °C rated value | 130 A |
| <ul style="list-style-type: none"> ● 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 40 °C rated value — up to 1000 V at ambient temperature 60 °C rated value | 130 A 110 A 70 A 60 A |
| <ul style="list-style-type: none"> ● at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value | 95 A 95 A 78 A |
| ● at AC-4 at 400 V rated value | 80 A |
| ● at AC-5a up to 690 V rated value | 114 A |
| ● at AC-5b up to 400 V rated value | 95 A |
| ● at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=20 rated value — up to 400 V for current peak value n=20 rated value — up to 500 V for current peak value n=20 rated value — up to 690 V for current peak value n=20 rated value | 84.4 A 84.4 A 84.4 A 58 A |
| ● at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=30 rated value — up to 400 V for current peak value n=30 rated value — up to 500 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value | 56.3 A 56.3 A 56.3 A 56.3 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 50 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 | 42 A 30 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 | 100 A 9 A 2 A 0.6 A 0.4 A |
| <ul style="list-style-type: none"> ● 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 | 100 A 100 A 10 A 1.8 A 1 A |
| <ul style="list-style-type: none"> ● 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 | 100 A 100 A 80 A 4.5 A 2.6 A |

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| operational current | |
| <ul style="list-style-type: none"> ● at 1 current path 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 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 | <p>40 A</p> <p>2.5 A</p> <p>1 A</p> <p>0.15 A</p> <p>0.06 A</p> <p>100 A</p> <p>100 A</p> <p>7 A</p> <p>0.42 A</p> <p>0.16 A</p> <p>100 A</p> <p>100 A</p> <p>35 A</p> <p>0.8 A</p> <p>0.35 A</p> |
| 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 | <p>45 kW</p> <p>22 kW</p> <p>45 kW</p> <p>55 kW</p> <p>75 kW</p> |
| 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 | <p>22 kW</p> <p>27.4 kW</p> |
| operating apparent power at AC-6a | |
| <ul style="list-style-type: none"> ● up to 230 V for current peak value n=20 rated value ● up to 400 V for current peak value n=20 rated value ● up to 500 V for current peak value n=20 rated value ● up to 690 V for current peak value n=20 rated value | <p>33 kV·A</p> <p>58 kV·A</p> <p>73 kV·A</p> <p>69 kV·A</p> |
| operating apparent power at AC-6a | |
| <ul style="list-style-type: none"> ● up to 230 V for current peak value n=30 rated value ● up to 400 V for current peak value n=30 rated value ● up to 500 V for current peak value n=30 rated value ● up to 690 V for current peak value n=30 rated value | <p>22.4 kV·A</p> <p>39 kV·A</p> <p>48.7 kV·A</p> <p>67.3 kV·A</p> |
| 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 | <p>1 725 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>1 297 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>946 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>610 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>486 A; Use minimum cross-section acc. to AC-1 rated value</p> |
| no-load switching frequency | |
| <ul style="list-style-type: none"> ● at AC | <p>5 000 1/h</p> |
| operating frequency | |
| <ul style="list-style-type: none"> ● at AC-1 maximum ● at AC-2 maximum ● at AC-3 maximum ● at AC-4 maximum | <p>900 1/h</p> <p>350 1/h</p> <p>850 1/h</p> <p>250 1/h</p> |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC |
| control supply voltage at AC | |
| <ul style="list-style-type: none"> ● at 50 Hz rated value ● at 60 Hz rated value | <p>110 V</p> <p>120 V</p> |

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| operating range factor control supply voltage rated value of magnet coil at AC | |
| <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz | 0.8 ... 1.1 0.8 ... 1.1 |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz | 326 V·A 326 V·A |
| inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz | 0.62 0.55 |
| apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz | 22 V·A 22 V·A |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz | 0.36 0.4 |
| closing delay | |
| <ul style="list-style-type: none"> ● at AC | 13 ... 50 ms |
| opening delay | |
| <ul style="list-style-type: none"> ● at AC | 10 ... 21 ms |
| arcing time | 10 ... 20 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 | |
| <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 | 6 A 3 A 2 A 1 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 | 10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 | |
| <ul style="list-style-type: none"> ● at 480 V rated value ● at 600 V rated value | 96 A 77 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 | 10 hp 20 hp |

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| <ul style="list-style-type: none"> ● 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 | 30 hp 30 hp 75 hp 75 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |
| Short-circuit protection | |
| 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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) 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 | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 |
| <ul style="list-style-type: none"> ● side-by-side mounting | Yes |
| height | 140 mm |
| width | 70 mm |
| depth | 152 mm |
| required spacing | |
| <ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side ● for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards ● for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side | 20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm |
| Connections/ Terminals | |
| type of electrical connection | |
| <ul style="list-style-type: none"> ● for main current circuit ● for auxiliary and control circuit ● at contactor for auxiliary contacts ● of magnet coil | screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — finely stranded with core end processing ● at AWG cables for main contacts | 2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²) 2x (10 ... 1/0), 1x (10 ... 2) |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> ● solid ● stranded ● finely stranded with core end processing | 2.5 ... 16 mm ² 6 ... 70 mm ² 2.5 ... 50 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> ● solid or stranded ● finely stranded with core end processing | 0.5 ... 2.5 mm ² 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |

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| <ul style="list-style-type: none"> for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing at AWG cables for auxiliary contacts | 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14) |
| <ul style="list-style-type: none"> AWG number as coded connectable conductor cross section for main contacts AWG number as coded connectable conductor cross section for auxiliary contacts | 10 ... 2 20 ... 14 |

| Safety related data | |
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| B10 value with high demand rate acc. to SN 31920 | 1 000 000 |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> with low demand rate acc. to SN 31920 with high demand rate acc. to SN 31920 | 40 % 73 % |
| failure rate [FIT] with low demand rate acc. to SN 31920 | 100 FIT |
| product function | |
| <ul style="list-style-type: none"> mirror contact acc. to IEC 60947-4-1 positively driven operation acc. to IEC 60947-5-1 | Yes No |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| protection class IP on the front acc. to IEC 60529 | IP20 |
| touch protection on the front acc. to IEC 60529 | finger-safe, for vertical contact from the front |
| suitability for use safety-related switching OFF | Yes |

Certificates/ approvals

General Product Approval EMC



Declaration of Conformity Test Certificates Marine / Shipping

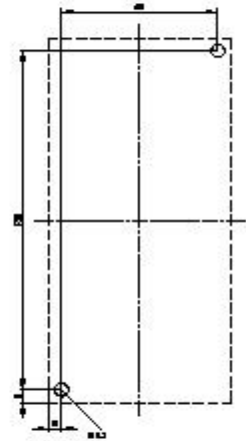
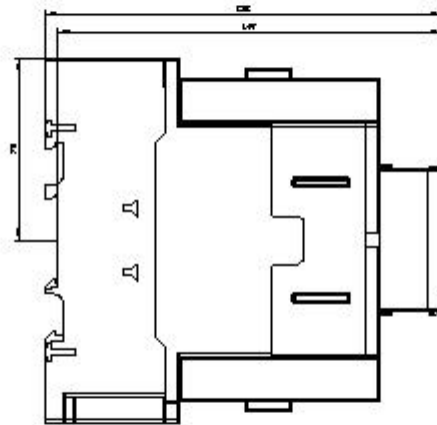
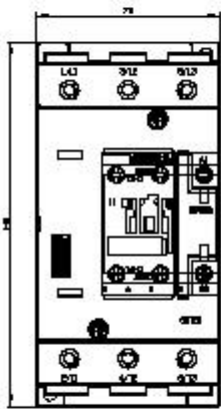


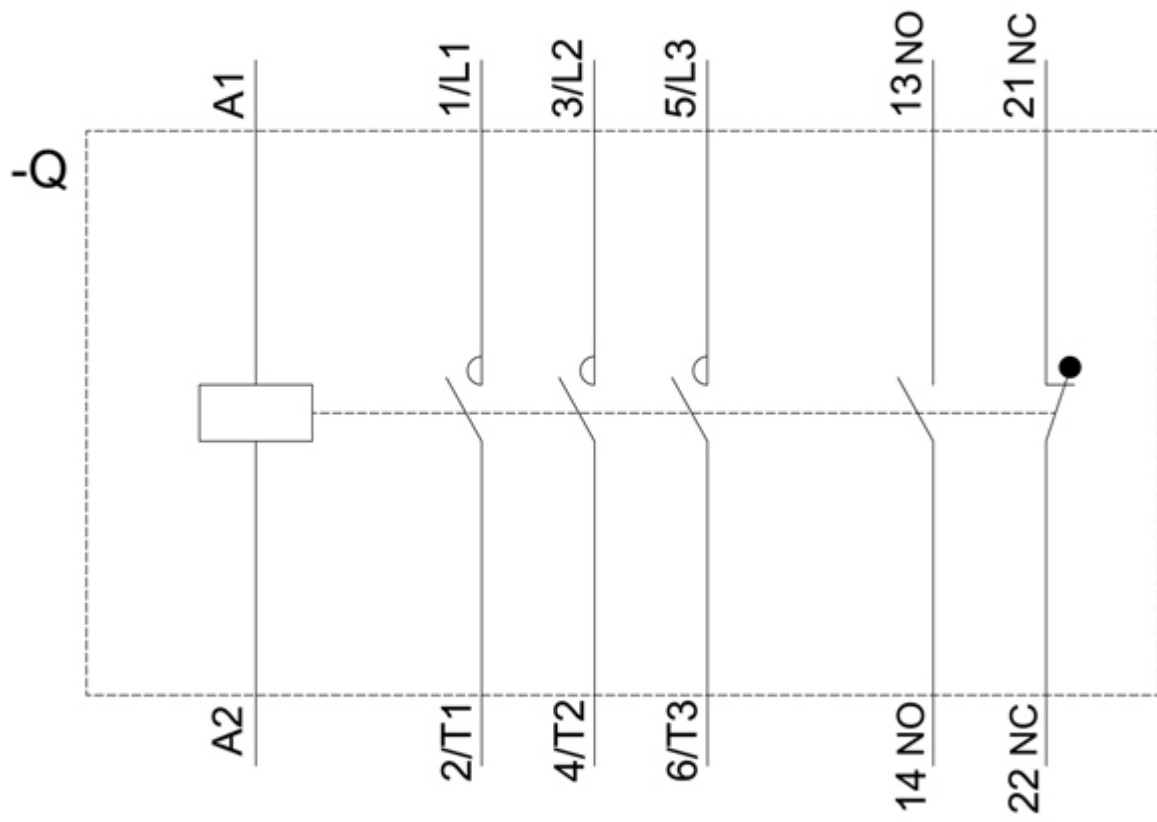
Marine / Shipping other Railway



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=3RT2046-1AK60>
Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1AK60>
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1AK60>
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1AK60&lang=en
Characteristic: Tripping characteristics, I_t, Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1AK60/char>
Further characteristics (e.g. electrical endurance, switching frequency)





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12/21/2020 