



Power contactor, AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC 220-240 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, size S12 Busbar connections Operating mechanism: conventional screw terminals









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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT1 |
| General technical data | |
| size of contactor | S12 |
| product extension | |
| <ul style="list-style-type: none"> function module for communication auxiliary switch | <p>No</p> <p>Yes</p> |
| power loss [W] for rated value of the current at AC in hot operating state | 165 W |
| <ul style="list-style-type: none"> per pole | 55 W |
| power loss [W] for rated value of the current without load current share typical | 10 W |
| surge voltage resistance | |
| <ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value | <p>8 kV</p> <p>6 kV</p> |
| maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1 | 690 V |
| shock resistance at rectangular impulse | |
| <ul style="list-style-type: none"> at AC at DC | <p>8,5g / 5 ms, 4,2g / 10 ms</p> <p>8,5g / 5 ms, 4,2g / 10 ms</p> |
| shock resistance with sine pulse | |
| <ul style="list-style-type: none"> at AC at DC | <p>13,4g / 5 ms, 6,5g / 10 ms</p> <p>13,4g / 5 ms, 6,5g / 10 ms</p> |
| mechanical service life (switching cycles) | |
| <ul style="list-style-type: none"> of contactor typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical | <p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p> |
| reference code acc. to IEC 81346-2 | Q |
| Substance Prohibition (Date) | 01.05.2012 00:00:00 |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| <ul style="list-style-type: none"> during operation during storage | <p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p> |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C acc. to IEC 60068-2-30 | 95 % |

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| maximum | |
| 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 |
| operational current | |
| <ul style="list-style-type: none"> ● at AC-1 at 400 V at ambient temperature 40 °C rated value | 610 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 | 610 A 550 A 200 A 200 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 — at 1000 V rated value | 500 A 500 A 450 A 180 A |
| ● at AC-4 at 400 V rated value | 430 A |
| ● at AC-5a up to 690 V rated value | 536 A |
| ● at AC-5b up to 400 V rated value | 415 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 — up to 1000 V for current peak value n=20 rated value | 414 A 414 A 414 A 414 A 180 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 — up to 1000 V for current peak value n=30 rated value | 276 A 276 A 276 A 276 A 180 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 370 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 | 175 A 150 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 | 400 A 33 A 3.8 A 0.9 A 0.6 A 400 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 ● 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 | <p>400 A</p> <p>400 A</p> <p>4 A</p> <p>2 A</p> <p>400 A</p> <p>400 A</p> <p>400 A</p> <p>11 A</p> <p>5.2 A</p> |
| <p>operational current</p> <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>400 A</p> <p>3 A</p> <p>0.6 A</p> <p>0.18 A</p> <p>0.125 A</p> <p>400 A</p> <p>400 A</p> <p>2.5 A</p> <p>0.65 A</p> <p>0.37 A</p> <p>400 A</p> <p>400 A</p> <p>400 A</p> <p>1.4 A</p> <p>0.75 A</p> |
| <p>operating power</p> <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 1000 V rated value | <p>160 kW</p> <p>250 kW</p> <p>315 kW</p> <p>400 kW</p> <p>250 kW</p> |
| <p>operating power for approx. 200000 operating cycles at AC-4</p> <ul style="list-style-type: none"> ● at 400 V rated value ● at 690 V rated value | <p>98 kW</p> <p>148 kW</p> |
| <p>operating apparent power at AC-6a</p> <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 ● up to 1000 V for current peak value n=20 rated value | <p>160 000 kV·A</p> <p>280 000 V·A</p> <p>350 000 V·A</p> <p>490 000 V·A</p> <p>310 000 V·A</p> |
| <p>operating apparent power at AC-6a</p> <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 ● up to 1000 V for current peak value n=30 rated value | <p>110 000 V·A</p> <p>190 000 V·A</p> <p>230 000 V·A</p> <p>330 000 V·A</p> <p>310 000 V·A</p> |
| <p>short-time withstand current in cold operating state up to 40 °C</p> <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 | <p>7 484 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>7 484 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>5 978 A; Use minimum cross-section acc. to AC-1 rated value</p> |

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| <ul style="list-style-type: none"> • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum | 3 765 A; Use minimum cross-section acc. to AC-1 rated value 2 887 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| <ul style="list-style-type: none"> • at AC • at DC | 2 000 1/h 2 000 1/h |
| operating frequency | |
| <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum | 500 1/h 170 1/h 420 1/h 130 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC | |
| <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value | 220 ... 240 V 220 ... 240 V |
| control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 220 ... 240 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| <ul style="list-style-type: none"> • initial value • full-scale value | 0.8 1.1 |
| 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 |
| design of the surge suppressor | with varistor |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 830 V·A 830 V·A |
| inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.9 0.9 |
| apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 9.2 V·A 9.2 V·A |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.9 0.9 |
| closing power of magnet coil at DC | 920 W |
| holding power of magnet coil at DC | 10 W |
| closing delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 45 ... 100 ms 45 ... 100 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 60 ... 100 ms 60 ... 100 ms |
| arcing time | 10 ... 15 ms |
| control version of the switch operating mechanism | Standard A1 - A2 |
| Auxiliary circuit | |
| number of NC contacts for auxiliary contacts instantaneous contact | 2 |
| number of NO contacts for auxiliary contacts instantaneous contact | 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 |

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| <ul style="list-style-type: none"> • at 690 V rated value | 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 | 477 A 472 A |
| yielded mechanical performance [hp] <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 | 150 hp 200 hp 400 hp 500 hp |
| contact rating of auxiliary contacts according to UL | A600 / Q600 |
| 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: 630 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 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 +/- 22.5° tiltable to the front and back |
| fastening method <ul style="list-style-type: none"> • side-by-side mounting | screw fixing Yes |
| height | 214 mm |
| width | 160 mm |
| depth | 225 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 | 20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm |

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| — downwards | 10 mm | |
| — at the side | 10 mm | |
| Connections/ Terminals | | |
| width of connection bar | 25 mm | |
| thickness of connection bar | 6 mm | |
| diameter of holes | 11 mm | |
| number of holes | 1 | |
| type of electrical connection | Connection bar screw-type terminals Screw-type terminals Screw-type terminals | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil | | |
| type of connectable conductor cross-sections | 2/0 ... 500 kcmil | |
| <ul style="list-style-type: none"> • at AWG cables for main contacts | | |
| connectable conductor cross-section for main contacts | 70 ... 240 mm ² | |
| <ul style="list-style-type: none"> • stranded | | |
| connectable conductor cross-section for auxiliary contacts | 0.5 ... 4 mm ² 0.5 ... 2.5 mm ² | |
| <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing | | |
| type of connectable conductor cross-sections | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 1x 12 | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts | | |
| AWG number as coded connectable conductor cross section | 18 ... 14 | |
| <ul style="list-style-type: none"> • for auxiliary contacts | | |
| Safety related data | | |
| product function mirror contact acc. to IEC 60947-4-1 | Yes | |
| B10 value with high demand rate acc. to SN 31920 | 1 000 000 | |
| product function positively driven operation acc. to IEC 60947-5-1 | No | |
| protection class IP on the front acc. to IEC 60529 | IP00; IP20 with box terminal/cover | |
| touch protection on the front acc. to IEC 60529 | finger-safe, for vertical contact from the front with box terminal/cover | |
| suitability for use | Yes | |
| <ul style="list-style-type: none"> • safety-related switching OFF | | |
| Certificates/ approvals | | |
| General Product Approval | EMC | Functional Safety/Safety of Machinery |
|      | Type Examination Certificate | |
| Test Certificates | | Marine / Shipping |
| Special Test Certificate | Type Test Certificates/Test Report | Miscellaneous |
| |    | |
| 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=3RT1076-6AP36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-6AP36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AP36>

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

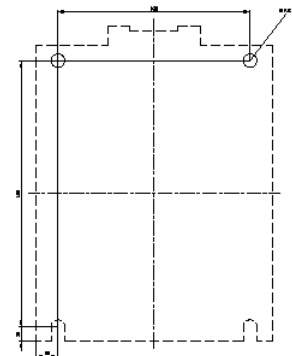
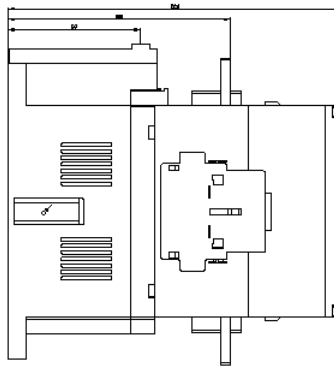
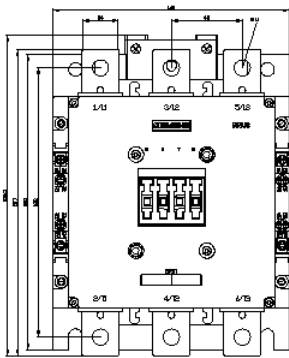
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6AP36&lang=en

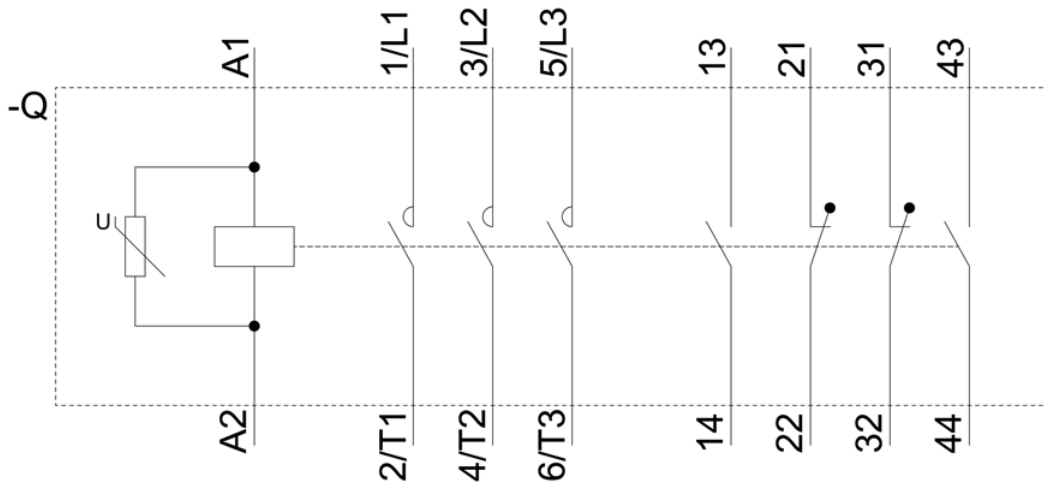
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AP36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-6AP36&objecttype=14&gridview=view1>





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7/22/2021 