



Power contactor, AC-3 500 A, 250 kW / 400 V Coil AC 50/60 Hz and DC 200-277 V x (0.8-1.1) F-SPS input 24 V DC 3-pole size S12 Auxiliary contacts 2 NO + 2 NC permanently mounted Main circuit: Busbar Control and auxiliary circuit: Screw terminal

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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 | |
| <ul style="list-style-type: none"> at AC in hot operating state at AC in hot operating state per pole without load current share typical | <p>165 W</p> <p>55 W</p> <p>3.6 W</p> |
| insulation voltage | |
| <ul style="list-style-type: none"> of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value | <p>1 000 V</p> <p>500 V</p> |
| 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 according 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 according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 03/01/2017 |
| 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> |

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| 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 |
| 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 | 610 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 610 A |
| — up to 690 V at ambient temperature 60 °C rated value | 550 A |
| — up to 1000 V at ambient temperature 40 °C rated value | 200 A |
| — up to 1000 V at ambient temperature 60 °C rated value | 200 A |
| • at AC-3 | |
| — at 400 V rated value | 500 A |
| — at 500 V rated value | 500 A |
| — at 690 V rated value | 450 A |
| — at 1000 V rated value | 180 A |
| • at AC-3e | |
| — at 400 V rated value | 500 A |
| — at 500 V rated value | 500 A |
| — at 690 V rated value | 450 A |
| — at 1000 V rated value | 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 | |
| — up to 230 V for current peak value n=20 rated value | 414 A |
| — up to 400 V for current peak value n=20 rated value | 414 A |
| — up to 500 V for current peak value n=20 rated value | 414 A |
| — up to 690 V for current peak value n=20 rated value | 414 A |
| — up to 1000 V for current peak value n=20 rated value | 180 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 276 A |
| — up to 400 V for current peak value n=30 rated value | 276 A |
| — up to 500 V for current peak value n=30 rated value | 276 A |
| — up to 690 V for current peak value n=30 rated value | 276 A |
| — up to 1000 V for current peak value n=30 rated value | 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 | |
| • at 400 V rated value | 175 A |
| • at 690 V rated value | 150 A |
| operational current | |
| • at 1 current path at DC-1 | |

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| — at 24 V rated value | 400 A |
| — at 110 V rated value | 33 A |
| — at 220 V rated value | 3.8 A |
| — at 440 V rated value | 0.9 A |
| — at 600 V rated value | 0.6 A |
| ● with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 A |
| — at 440 V rated value | 4 A |
| — at 600 V rated value | 2 A |
| ● with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 A |
| — at 440 V rated value | 11 A |
| — at 600 V rated value | 5.2 A |
| ● at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 3 A |
| — at 220 V rated value | 0.6 A |
| — at 440 V rated value | 0.18 A |
| — at 600 V rated value | 0.125 A |
| ● with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 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 | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 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 | 250 kW |
| ● at AC-3 | |
| — at 230 V rated value | 160 kW |
| — at 400 V rated value | 250 kW |
| — at 500 V rated value | 315 kW |
| — at 690 V rated value | 400 kW |
| — at 1000 V rated value | 250 kW |
| ● at AC-3e | |
| — at 230 V rated value | 160 kW |
| — at 400 V rated value | 250 kW |
| — at 500 V rated value | 315 kW |
| — at 690 V rated value | 400 kW |
| — at 1000 V rated value | 250 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 98 kW |
| ● at 690 V rated value | 148 kW |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=20 rated value | 160 000 kVA |
| ● up to 400 V for current peak value n=20 rated value | 280 000 VA |
| ● up to 500 V for current peak value n=20 rated value | 350 000 VA |
| ● up to 690 V for current peak value n=20 rated value | 490 000 VA |
| ● up to 1000 V for current peak value n=20 rated value | 310 000 VA |
| operating apparent power at AC-6a | |

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| <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 | 110 000 VA 190 000 VA 230 000 VA 330 000 VA 310 000 VA |
| 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 | 7 484 A; Use minimum cross-section acc. to AC-1 rated value 7 484 A; Use minimum cross-section acc. to AC-1 rated value 5 978 A; Use minimum cross-section acc. to AC-1 rated value 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 | 500 1/h 500 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-4 maximum | 350 1/h 200 1/h 350 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 | 200 ... 277 V 200 ... 277 V |
| control supply voltage at DC <ul style="list-style-type: none"> • rated value | 200 ... 277 V |
| type of PLC-control input according to IEC 60947-1 | Type 1 |
| consumed current at PLC-control input according to IEC 60947-1 maximum | 14 mA |
| voltage at PLC-control input rated value | 24 V |
| operating range factor of the voltage at PLC-control input | 0.8 ... 1.1 |
| 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 | 750 VA 750 VA |
| inductive power factor with closing power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.8 0.8 |
| apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 7 VA 7 VA |
| inductive power factor with the holding power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.8 0.8 |
| closing power of magnet coil at DC | 800 W |
| holding power of magnet coil at DC | 3.6 W |
| closing delay <ul style="list-style-type: none"> • at AC • at DC | 60 ... 75 ms 60 ... 75 ms |

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| opening delay | |
| • at AC | 115 ... 130 ms |
| • at DC | 115 ... 130 ms |
| recovery time after power failure typical | 2 s |
| arcing time | 10 ... 15 ms |
| control version of the switch operating mechanism | Fail-safe PLC input (F-PLC-IN) |
| 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 | |
| • at 230 V rated value | 6 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 | 477 A |
| • at 600 V rated value | 472 A |
| yielded mechanical performance [hp] | |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 150 hp |
| — at 220/230 V rated value | 200 hp |
| — at 460/480 V rated value | 400 hp |
| — at 575/600 V rated value | 500 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |
| Short-circuit protection | |
| design of the fuse link | |
| • for short-circuit protection of the main circuit | |
| — with type of coordination 1 required | gG: 630 A (690 V, 100 kA) |
| — with type of assignment 2 required | gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA) |
| • for short-circuit protection of the auxiliary switch required | 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 | screw fixing |
| • side-by-side mounting | Yes |
| height | 214 mm |
| width | 160 mm |
| depth | 225 mm |

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| 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 0 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 Connection bar • for auxiliary and control circuit screw-type terminals • at contactor for auxiliary contacts Screw-type terminals • of magnet coil Screw-type terminals | |
| width of connection bar | 25 mm |
| thickness of connection bar | 6 mm |
| diameter of holes | 11 mm |
| number of holes | 1 |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • at AWG cables for main contacts 2/0 ... 500 kcmil | |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> • stranded 70 ... 240 mm² | |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> • solid or stranded 0.5 ... 4 mm² • finely stranded with core end processing 0.5 ... 2.5 mm² | |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) — solid or stranded 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²) — finely stranded with core end processing 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) • at AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14), 1x 12 | |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> • for auxiliary contacts 18 ... 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 | |
| safety device type according to IEC 61508-2 | Type B |
| B10 value with high demand rate according to SN 31920 | 1 000 000 |
| Safety Integrity Level (SIL) according to IEC 61508 | 2 |
| SIL Claim Limit (subsystem) according to EN 62061 | 2 |
| performance level (PL) according to EN ISO 13849-1 | c |
| category according to EN ISO 13849-1 | 2 |
| stop category according to EN 60204-1 | 0 |
| Safe failure fraction (SFF) | 93 % |
| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT |
| PFHD with high demand rate according to EN 62061 | 0.00000045 1/h |
| PFDavg with low demand rate according to IEC 61508 | 0.007 |

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| MTBF | 75 y |
| hardware fault tolerance according to IEC 61508 | 0 |
| T1 value for proof test interval or service life according to IEC 61508 | 20 y |
| 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 |
| suitability for use | |
| <ul style="list-style-type: none"> • safety-related switching on • safety-related switching OFF | No Yes |

Certificates/ approvals

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|---------------------------------|------------|
| General Product Approval | EMC |
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[Confirmation](#)



| | | | |
|--|----------------------------------|--------------------------|--------------|
| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | other |
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[Type Examination Certificate](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)

[Confirmation](#)

| | |
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| other | Railway |
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[Miscellaneous](#)

[Special Test Certificate](#)

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?mfb=3RT1076-6SP36-3PA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RT1076-6SP36-3PA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6SP36-3PA0>

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

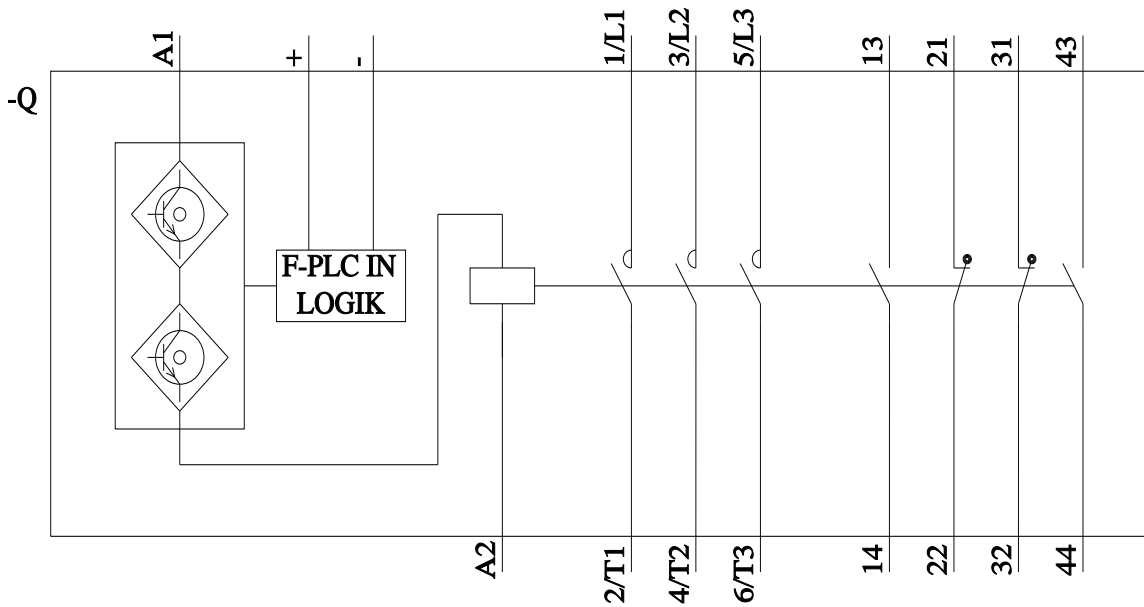
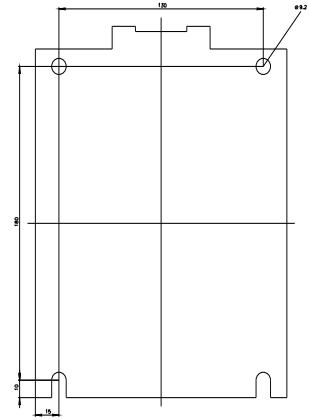
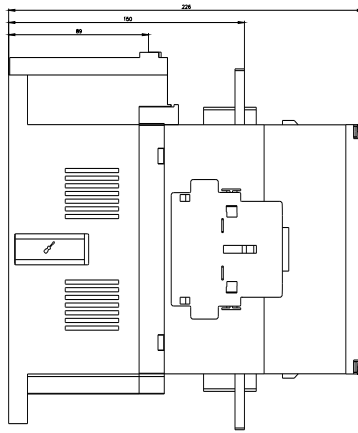
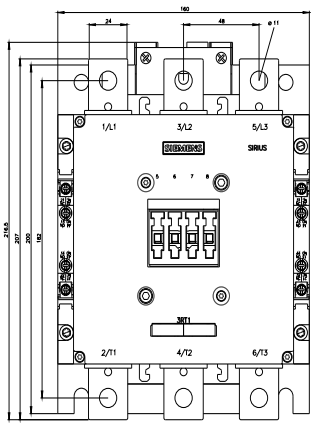
http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RT1076-6SP36-3PA0&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6SP36-3PA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mfb=3RT1076-6SP36-3PA0&objecttype=14&gridview=view1>



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