



power contactor, AC-3e/AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC 96-127 V x (0.8-1.1) F-PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC
permanently mounted drive: electronic main circuit: busbar control and auxiliary circuit: screw terminal

| | |
|--|----------------------------|
| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT1 |
| General technical data | |
| size of contactor | S12 |
| 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 | 165 W |
| • at AC in hot operating state per pole | 55 W |
| • without load current share typical | 3.6 W |
| 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 at rectangular impulse | |
| • at AC | 8,5g / 5 ms, 4,2g / 10 ms |
| • at DC | 8,5g / 5 ms, 4,2g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 13,4g / 5 ms, 6,5g / 10 ms |
| • 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) | 03/01/2017 |
| 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 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 | |
| — at 24 V rated value | 400 A |
| — at 60 V rated value | 330 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 60 V rated value | 400 A |
| — at 110 V rated value | 400 A |

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| <ul style="list-style-type: none"> — at 220 V rated value — at 440 V rated value — at 600 V rated value | 400 A 4 A 2 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 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 400 A 400 A 400 A 400 A 11 A 5.2 A |
| <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 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 400 A 11 A 3 A 0.6 A 0.18 A 0.125 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 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 400 A 400 A 400 A 2.5 A 0.65 A 0.37 A |
| <ul style="list-style-type: none"> ● with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | 400 A 400 A 400 A 400 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 | 250 kW 160 kW 250 kW 315 kW 400 kW 250 kW 160 kW 250 kW 315 kW 400 kW 250 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 | 98 kW 148 kW |
| 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 ● up to 1000 V for current peak value n=20 rated value | 160 000 kVA 280 000 VA 350 000 VA 490 000 VA 310 000 VA |
| 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 ● 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 |

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| 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 | 200 1/h 170 1/h 200 1/h 200 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 | 96 ... 127 V 96 ... 127 V |
| control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 96 ... 127 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 |
| 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 |
| 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 | 9 VA 9 VA |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.4 0.4 |
| 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 |
| opening delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 115 ... 130 ms 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 | 2 |

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| contact | |
| 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 |
| required spacing | |
| • with side-by-side mounting | |
| — forwards | 20 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 0 mm |
| • for grounded parts | |
| — forwards | 20 mm |
| — upwards | 10 mm |

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| — at the side | 10 mm |
| — downwards | 10 mm |
| • for live parts | |
| — forwards | 20 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 10 mm |
| Connections/ Terminals | |
| type of electrical connection | |
| • 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 |
| connectable conductor cross-section for main contacts | |
| • stranded | 70 ... 240 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| • solid or stranded | 0.5 ... 4 mm ² |
| • finely stranded with core end processing | 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| • for auxiliary contacts | |
| — solid | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) |
| — solid or stranded | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) |
| • for AWG cables for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14), 1x 12 |
| AWG number as coded connectable conductor cross section | |
| • for auxiliary contacts | 18 ... 14 |
| Safety related data | |
| product function | |
| • 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 | 4.5E-7 1/h |
| PFDavg with low demand rate according to IEC 61508 | 0.007 |
| MTBF | 75 a |
| hardware fault tolerance according to IEC 61508 | 0 |
| T1 value for proof test interval or service life according to IEC 61508 | 20 a |
| 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 | |
| • safety-related switching on | No |
| • safety-related switching OFF | Yes |
| Certificates/ approvals | |
| General Product Approval | EMC |



[Confirmation](#)



| | | | |
|---------------------------------------|---------------------------|-------------------|-------|
| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | other |
|---------------------------------------|---------------------------|-------------------|-------|

[Type Examination Certificate](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Confirmation](#)

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| other | Railway |
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[Miscellaneous](#)

[Miscellaneous](#)

[Special Test Certificate](#)

Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT1076-6SF36-3PA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-6SF36-3PA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6SF36-3PA0>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6SF36-3PA0&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6SF36-3PA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-6SF36-3PA0&objecttype=14&gridview=view1>



