



power contactor, AC-3e/AC-3 300 A, 160 kW / 400 V, AC (50-60 Hz) / DC U_c: 21-27, 3 V PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main circuit: busbar control and auxiliary circuit: spring-loaded terminal

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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT1 |
| General technical data | |
| size of contactor | S10 |
| 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 | 66 W |
| • at AC in hot operating state per pole | 22 W |
| • without load current share typical | 3.4 W |
| type of calculation of power loss depending on pole | quadratic |
| 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 Prohibitance (Date) | 05/01/2012 |
| SVHC substance name | Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 |
| Weight | 6.607 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |

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| — at 600 V rated value | 0.6 A |
| ● with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 300 A |
| — at 60 V rated value | 300 A |
| — at 110 V rated value | 300 A |
| — at 220 V rated value | 300 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 | 300 A |
| — at 60 V rated value | 300 A |
| — at 110 V rated value | 300 A |
| — at 220 V rated value | 300 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 | 300 A |
| — at 60 V rated value | 11 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 | 300 A |
| — at 60 V rated value | 300 A |
| — at 110 V rated value | 300 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 | 300 A |
| — at 60 V rated value | 300 A |
| — at 110 V rated value | 300 A |
| — at 220 V rated value | 300 A |
| — at 440 V rated value | 1.4 A |
| — at 600 V rated value | 0.75 A |
| operating power | |
| ● at AC-3 | |
| — at 230 V rated value | 90 kW |
| — at 400 V rated value | 160 kW |
| — at 500 V rated value | 200 kW |
| — at 690 V rated value | 250 kW |
| — at 1000 V rated value | 132 kW |
| ● at AC-3e | |
| — at 230 V rated value | 90 kW |
| — at 400 V rated value | 160 kW |
| — at 500 V rated value | 200 kW |
| — at 690 V rated value | 250 kW |
| — at 1000 V rated value | 132 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 71 kW |
| ● at 690 V rated value | 112 kW |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=20 rated value | 110 kVA |
| ● up to 400 V for current peak value n=20 rated value | 200 kVA |
| ● up to 500 V for current peak value n=20 rated value | 250 kVA |
| ● up to 690 V for current peak value n=20 rated value | 330 kVA |
| ● up to 1000 V for current peak value n=20 rated value | 160 kVA |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=30 rated value | 70 kVA |
| ● up to 400 V for current peak value n=30 rated value | 130 kVA |

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| <ul style="list-style-type: none"> • 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 | 160 kVA 230 kVA 160 kVA |
| 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 | 5 524 A; Use minimum cross-section acc. to AC-1 rated value 4 579 A; Use minimum cross-section acc. to AC-1 rated value 3 153 A; Use minimum cross-section acc. to AC-1 rated value 1 883 A; Use minimum cross-section acc. to AC-1 rated value 1 445 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 | 1 000 1/h 1 000 1/h |
| operating frequency <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e <ul style="list-style-type: none"> — maximum • at AC-4 maximum | 750 1/h 250 1/h 500 1/h 500 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 | 21 ... 27.3 V 21 ... 27.3 V |
| control supply voltage at DC rated value | 21 ... 27.3 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 2 |
| consumed current at PLC-control input according to IEC 60947-1 maximum | 20 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 <ul style="list-style-type: none"> • at minimum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 60 Hz — at 50 Hz | 400 VA 400 VA 530 VA 530 VA |
| apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 530 VA 530 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 <ul style="list-style-type: none"> • at minimum rated control supply voltage at DC • at maximum rated control supply voltage at DC | 2.8 VA 3.4 VA |
| apparent holding power <ul style="list-style-type: none"> • at minimum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz | 5.5 VA 5.5 VA 8.5 VA |

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| — at 60 Hz | 8.5 VA |
| inductive power factor with the holding power of the coil | |
| • at 50 Hz | 0.5 |
| • at 60 Hz | 0.4 |
| closing power of magnet coil at DC | 580 W |
| holding power of magnet coil at DC | 3.4 W |
| closing delay | |
| • at AC | 45 ... 80 ms |
| • at DC | 45 ... 80 ms |
| opening delay | |
| • at AC | 80 ... 100 ms |
| • at DC | 80 ... 100 ms |
| arcing time | 10 ... 15 ms |
| control version of the switch operating mechanism | PLC-IN or Standard A1 - A2 (adjustable) |

Auxiliary circuit

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| 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 | 302 A |
| • at 600 V rated value | 289 A |
| yielded mechanical performance [hp] | |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 100 hp |
| — at 220/230 V rated value | 125 hp |
| — at 460/480 V rated value | 250 hp |
| — at 575/600 V rated value | 300 hp |
| contact rating of auxiliary contacts according to UL | A600 / Q600 |

Short-circuit protection

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|---|---|
| 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: 500 A (690 V, 100 kA) |
| — with type of coordination 2 required | gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA) |
| • for short-circuit protection of the auxiliary switch required | gG: 10 A (500 V, 1 kA) |

Installation/ mounting/ dimensions

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| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| fastening method side-by-side mounting | Yes |
| fastening method | screw fixing |
| height | 210 mm |
| width | 145 mm |
| depth | 202 mm |
| 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 • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil | Connection bar spring-loaded terminals Spring-type terminals Spring-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"> • for 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 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing • finely stranded without core end processing | 0.25 ... 2.5 mm ² 0.25 ... 1.5 mm ² 0.25 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| <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 — finely stranded without core end processing • for AWG cables for auxiliary contacts | 2x (0.25 ... 2.5 mm ²) 2x (0,25 ... 2,5 mm ²) 2x (0.25 ... 1.5 mm ²) 2x (0.25 ... 2.5 mm ²) 2x (24 ... 14) |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 24 ... 14 |

Safety related data

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|---|---|
| product function | |
| <ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function | Yes No Yes |
| suitability for use safety-related switching OFF | Yes; safety-related disconnection via A1 A2 |
| service life maximum | 20 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> • with low demand rate according to SN 31920 | 40 % |

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| • 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 | 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 |

Approvals Certificates

General Product Approval



KC



| | | | |
|------------|--------------------------|--------------------------|-----------------------------|
| EMV | Functional Safety | Test Certificates | Maritime application |
|------------|--------------------------|--------------------------|-----------------------------|



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



| | |
|-----------------------------|--------------|
| Maritime application | other |
|-----------------------------|--------------|



[Miscellaneous](#)



[Confirmation](#)

| | | |
|--------------|----------------|--------------------|
| other | Railway | Environment |
|--------------|----------------|--------------------|

[Confirmation](#)

[Miscellaneous](#)

[Special Test Certificate](#)

[Environmental Confirmations](#)

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=3RT1066-2NB36>

Cax online generator

<https://support.industry.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-2NB36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-2NB36>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-2NB36&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-2NB36/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-2NB36&objecttype=14&gridview=view1>



