



power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 230 V AC, 50 Hz, 3-pole, Size S0 screw terminal

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|---|----------------------------|
| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |
| General technical data | |
| size of contactor | S0 |
| 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 | 2.7 W |
| • per pole | 0.9 W |
| power loss [W] for rated value of the current without load current share typical | 7.6 W |
| surge voltage resistance | |
| • of main circuit rated value | 6 kV |
| • of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1 | 400 V |
| shock resistance at rectangular impulse | |
| • at AC | 7,5g / 5 ms, 4,7g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 11,8g / 5 ms, 7,4g / 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) | 01.10.2009 00:00:00 |
| 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 |
| 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 | 690 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 | 40 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 | 40 A 35 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 | 17 A 17 A 13 A |
| ● at AC-4 at 400 V rated value | 15.5 A |
| ● at AC-5a up to 690 V rated value | 35.2 A |
| ● at AC-5b up to 400 V rated value | 14.1 A |
| <ul style="list-style-type: none"> ● 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 | 11.4 A 11.4 A 11.4 A 11.3 A |
| <ul style="list-style-type: none"> ● 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 | 7.6 A 7.6 A 7.6 A 7.6 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 10 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 | 7.7 A 7.7 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 | 35 A 4.5 A 1 A 0.4 A 0.25 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 | 35 A 35 A 5 A 1 A 0.8 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 | 35 A 35 A 35 A 2.9 A 1.4 A |
| 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 | 20 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 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 | 2.5 A 1 A 0.09 A 0.06 A 35 A 15 A 3 A 0.27 A 0.16 A 35 A 35 A 10 A 0.6 A 0.6 A |
| operating power <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 | 4 kW 7.5 kW 7.5 kW 11 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 | 3.5 kW 6 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 | 4.5 kV·A 7.8 kV·A 9.9 kV·A 13.6 kV·A |
| 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 | 3 kV·A 5.2 kV·A 6.6 kV·A 9.1 kV·A |
| 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 | 225 A; Use minimum cross-section acc. to AC-1 rated value 225 A; Use minimum cross-section acc. to AC-1 rated value 180 A; Use minimum cross-section acc. to AC-1 rated value 115 A; Use minimum cross-section acc. to AC-1 rated value 96 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency <ul style="list-style-type: none"> ● at AC | 5 000 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 | 1 000 1/h 1 000 1/h 1 000 1/h 300 1/h |
| 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 | 230 V |
| operating range factor control supply voltage rated value of magnet coil at AC <ul style="list-style-type: none"> ● at 50 Hz | 0.8 ... 1.1 |
| apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> ● at 50 Hz | 65 V·A |

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| inductive power factor with closing power of the coil • at 50 Hz | 0.82 |
| apparent holding power of magnet coil at AC • at 50 Hz | 7.6 V·A |
| inductive power factor with the holding power of the coil • at 50 Hz | 0.25 |
| closing delay • at AC | 8 ... 40 ms |
| opening delay • at AC | 4 ... 16 ms |
| arcing time | 10 ... 10 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 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value | 10 A 3 A 2 A 1 A |
| operational current at DC-12 • 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 • 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 • at 480 V rated value • at 600 V rated value | 14 A 17 A |
| yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value | 1 hp 3 hp 3 hp 5 hp 10 hp 15 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: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA) |

- with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

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|------------------------------|--|
| 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 |
| ● side-by-side mounting | Yes |
| height | 85 mm |
| width | 45 mm |
| depth | 97 mm |
| required spacing | |
| ● with side-by-side mounting | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 0 mm |
| ● for grounded parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — at the side | 6 mm |
| — downwards | 10 mm |
| ● for live parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 6 mm |

Connections/ Terminals

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|---|---|
| type of electrical connection | |
| ● for main current circuit | screw-type terminals |
| ● for auxiliary and control circuit | screw-type terminals |
| ● at contactor for auxiliary contacts | Screw-type terminals |
| ● of magnet coil | Screw-type terminals |
| type of connectable conductor cross-sections | |
| ● for main contacts | |
| — solid | 2x (1 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) |
| — solid or stranded | 2x (1 ... 2,5 mm ²), 2x (2,5 ... 10 mm ²) |
| — finely stranded with core end processing | 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² |
| ● at AWG cables for main contacts | 2x (16 ... 12), 2x (14 ... 8) |
| connectable conductor cross-section for main contacts | |
| ● solid | 1 ... 10 mm ² |
| ● stranded | 1 ... 10 mm ² |
| ● finely stranded with core end processing | 1 ... 10 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| ● solid or stranded | 0.5 ... 2.5 mm ² |
| ● finely stranded with core end processing | 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| ● for auxiliary contacts | |
| — solid or stranded | 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²) |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) |
| ● at AWG cables for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14) |
| AWG number as coded connectable conductor cross section | |
| ● for main contacts | 16 ... 8 |
| ● for auxiliary contacts | 20 ... 14 |

Safety related data

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|---|--|
| product function mirror contact acc. to IEC 60947-4-1 | Yes |
| B10 value with high demand rate acc. to SN 31920 | 450 000 |
| proportion of dangerous failures | |
| • with low demand rate acc. to SN 31920 | 40 % |
| • with high demand rate acc. to SN 31920 | 73 % |
| failure rate [FIT] with low demand rate acc. to SN 31920 | 100 FIT |
| 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 |
|---------------------------------|------------|



[KC](#)



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| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | Marine / Shipping |
|--|----------------------------------|--------------------------|--------------------------|

[Type Examination Certificate](#)



[UK Declaration of Conformity](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



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| Marine / Shipping | other |
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[Confirmation](#)

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| other |
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[Confirmation](#)

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=3RT2025-1AP00>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1AP00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1AP00>

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

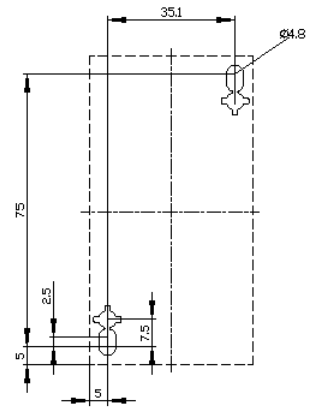
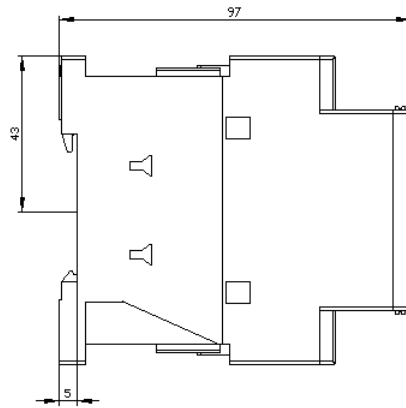
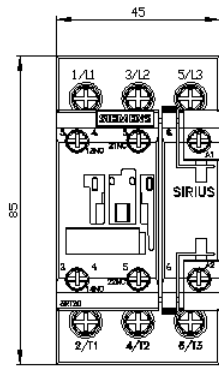
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1AP00&lang=en

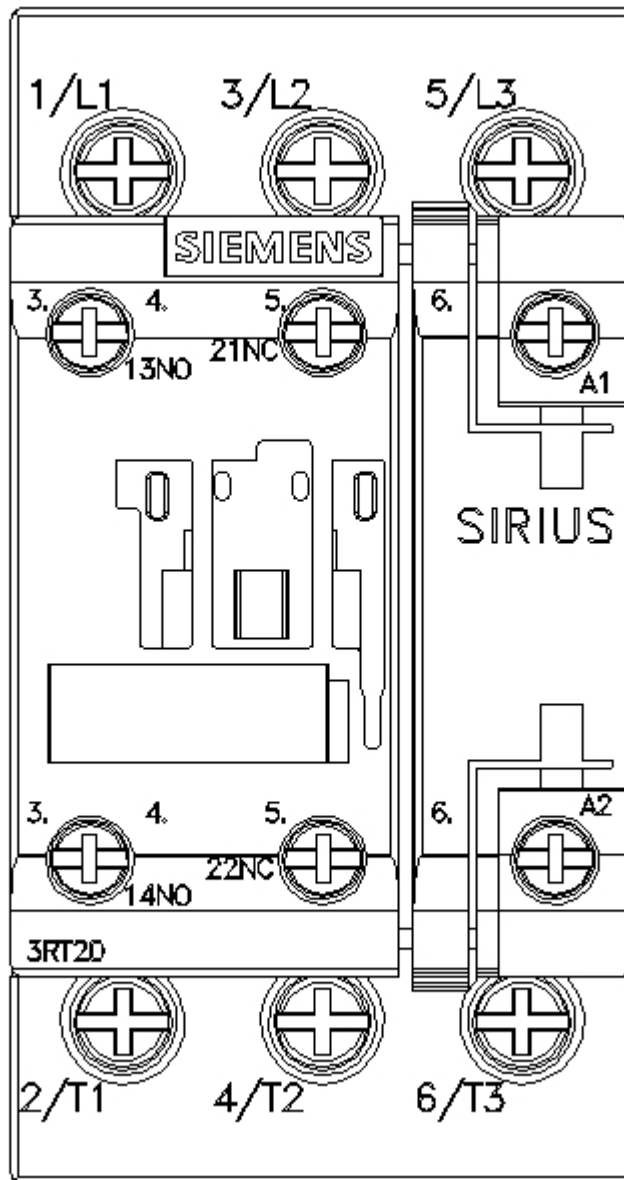
Characteristic: Tripping characteristics, I_t, Let-through current

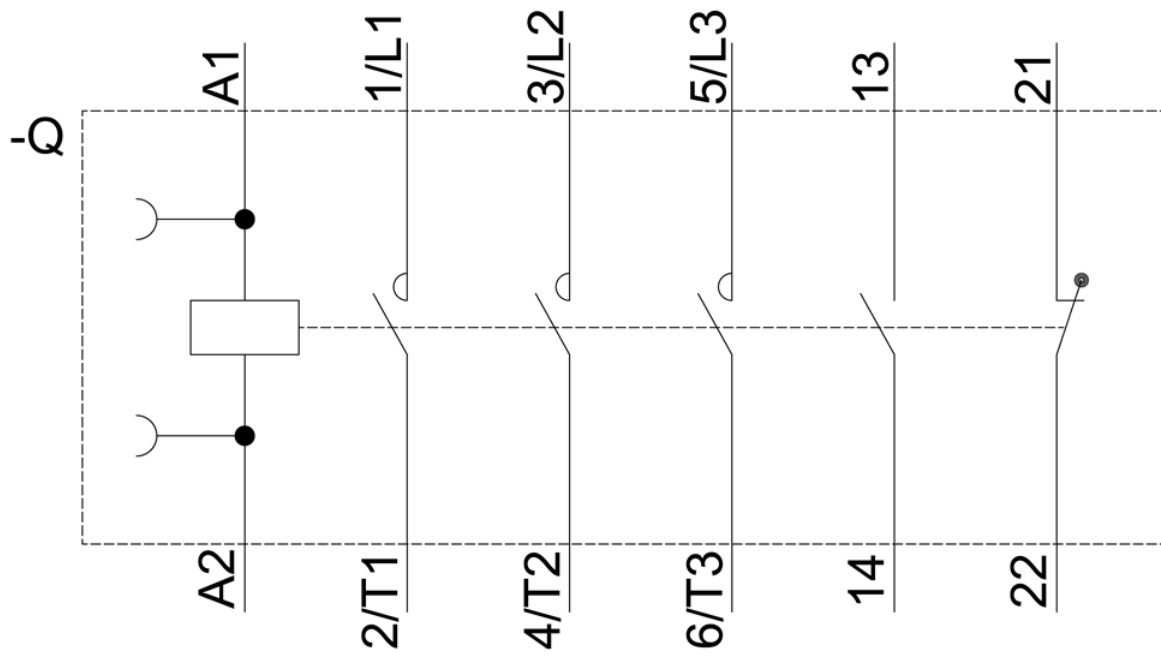
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1AP00/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1AP00&objecttype=14&gridview=view1>







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