



power contactor, AC-3 9 A, 4 kW / 400 V 1 NO + 1 NC, AC (50 / 60 Hz) DC operation 21-28 V AC/DC, 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 | 1.2 W |
| • per pole | 0.4 W |
| power loss [W] for rated value of the current without load current share typical | 2 W |
| insulation voltage | |
| • of main circuit with degree of pollution 3 rated value | 690 V |
| • of auxiliary circuit with degree of pollution 3 rated value | 690 V |
| 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 |
| • at DC | 10g / 5 ms, 7,5g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 11,8g / 5 ms, 7,4g / 10 ms |
| • at DC | 15g / 5 ms, 10g / 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 |
| 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 |

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| relative humidity minimum | 10 % |
| relative humidity at 55 °C acc. 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 | 690 V |
| 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 | 9 A 9 A 9 A |
| ● at AC-4 at 400 V rated value | 8.5 A |
| ● at AC-5a up to 690 V rated value | 35.2 A |
| ● at AC-5b up to 400 V rated value | 7.4 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 | 11.4 A 11.4 A 9.1 A 9 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 | 7.6 A 7.6 A 6.1 A 6.1 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 | 4.1 A 3.3 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 | 35 A 35 A 35 A |

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| — at 440 V rated value | 2.9 A |
| — at 600 V rated value | 1.4 A |
| ● at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 2.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.09 A |
| — at 600 V rated value | 0.06 A |
| ● with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 35 A |
| — at 110 V rated value | 15 A |
| — at 220 V rated value | 3 A |
| — at 440 V rated value | 0.27 A |
| — at 600 V rated value | 0.16 A |
| ● with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 35 A |
| — at 110 V rated value | 35 A |
| — at 220 V rated value | 10 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.6 A |
| operating power | |
| ● at AC-2 at 400 V rated value | 4 kW |
| ● at AC-3 | |
| — at 230 V rated value | 2.2 kW |
| — at 400 V rated value | 4 kW |
| — at 500 V rated value | 4 kW |
| — at 690 V rated value | 7.5 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 2 kW |
| ● at 690 V rated value | 2.5 kW |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=20 rated value | 4.5 kV·A |
| ● up to 400 V for current peak value n=20 rated value | 7.8 kV·A |
| ● up to 500 V for current peak value n=20 rated value | 7.8 kV·A |
| ● up to 690 V for current peak value n=20 rated value | 10.7 kV·A |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=30 rated value | 3 kV·A |
| ● up to 400 V for current peak value n=30 rated value | 5.2 kV·A |
| ● up to 500 V for current peak value n=30 rated value | 5.2 kV·A |
| ● up to 690 V for current peak value n=30 rated value | 7.2 kV·A |
| short-time withstand current in cold operating state up to 40 °C | |
| ● limited to 1 s switching at zero current maximum | 170 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum | 170 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 10 s switching at zero current maximum | 122 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 30 s switching at zero current maximum | 78 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 60 s switching at zero current maximum | 68 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| ● at AC | 1 500 1/h |
| ● at DC | 1 500 1/h |
| operating frequency | |
| ● at AC-1 maximum | 1 000 1/h |
| ● at AC-2 maximum | 1 000 1/h |
| ● at AC-3 maximum | 1 000 1/h |
| ● at AC-4 maximum | 300 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC | |
| ● at 50 Hz rated value | 21 ... 28 V |

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| <ul style="list-style-type: none"> • at 60 Hz rated value | 21 ... 28 V |
| control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 21 ... 28 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| <ul style="list-style-type: none"> • initial value | 0.7 |
| <ul style="list-style-type: none"> • full-scale value | 1.3 |
| operating range factor control supply voltage rated value of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.7 ... 1.3 |
| <ul style="list-style-type: none"> • at 60 Hz | 0.7 ... 1.3 |
| design of the surge suppressor | with varistor |
| inrush current peak | 3 A |
| duration of inrush current peak | 30 μs |
| locked-rotor current mean value | 0.3 A |
| locked-rotor current peak | 0.52 A |
| duration of locked-rotor current | 180 ms |
| holding current mean value | 45 mA |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 6.6 V·A |
| <ul style="list-style-type: none"> • at 60 Hz | 6.7 V·A |
| inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.98 |
| <ul style="list-style-type: none"> • at 60 Hz | 0.98 |
| apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 1.9 V·A |
| <ul style="list-style-type: none"> • at 60 Hz | 2 V·A |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.86 |
| <ul style="list-style-type: none"> • at 60 Hz | 0.82 |
| closing power of magnet coil at DC | 5.9 W |
| holding power of magnet coil at DC | 1.4 W |
| closing delay | |
| <ul style="list-style-type: none"> • at AC | 50 ... 80 ms |
| <ul style="list-style-type: none"> • at DC | 50 ... 75 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC | 30 ... 50 ms |
| <ul style="list-style-type: none"> • at DC | 30 ... 50 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 | |
| <ul style="list-style-type: none"> • at 230 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 400 V rated value | 3 A |
| <ul style="list-style-type: none"> • at 500 V rated value | 2 A |
| <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 | 10 A |
| <ul style="list-style-type: none"> • at 48 V rated value | 6 A |
| <ul style="list-style-type: none"> • at 60 V rated value | 6 A |
| <ul style="list-style-type: none"> • at 110 V rated value | 3 A |
| <ul style="list-style-type: none"> • at 125 V rated value | 2 A |
| <ul style="list-style-type: none"> • at 220 V rated value | 1 A |
| <ul style="list-style-type: none"> • at 600 V rated value | 0.15 A |
| operational current at DC-13 | |

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| <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 | 7.6 A 9 A |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • 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 | 1 hp 1 hp 2 hp 3 hp 5 hp 7.5 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |
| 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: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA) gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA) gG: 10 A (500 V, 1 kA) |
| Installation/ mounting/ dimensions | |
| 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 |
| <ul style="list-style-type: none"> • side-by-side mounting | Yes |
| height | 85 mm |
| width | 45 mm |
| depth | 107 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 — downwards — at the side | 10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 6 mm |
| Connections/ Terminals | |
| 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 | screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals |

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| type of connectable conductor cross-sections <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts | 2x (1 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² 2x (16 ... 12), 2x (14 ... 8) |
| connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • solid • stranded • finely stranded with core end processing | 1 ... 10 mm ² 1 ... 10 mm ² 1 ... 10 mm ² |
| connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing | 0.5 ... 2.5 mm ² 0.5 ... 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 or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14) |
| AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts | 16 ... 8 20 ... 14 |

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| Safety related data | |
| B10 value with high demand rate acc. to SN 31920 | 450 000 |
| proportion of dangerous failures <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 | 40 % 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 <ul style="list-style-type: none"> • safety-related switching OFF | Yes |

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



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



[Type Examination Certificate](#)



EG-Konf.

[UK Declaration of Conformity](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Marine / Shipping



[Confirmation](#)[Transport Information](#)

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=3RT2023-1NB30>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2023-1NB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1NB30>

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

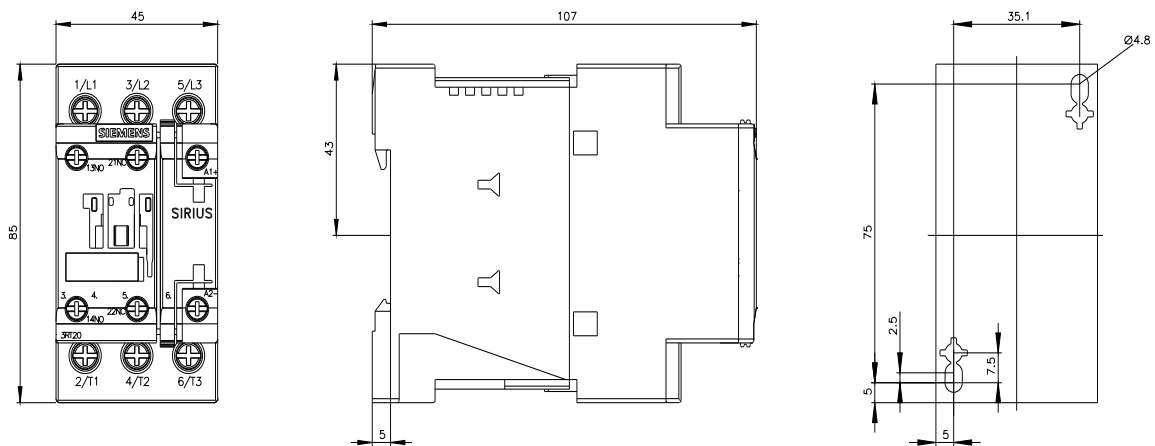
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2023-1NB30&lang=en

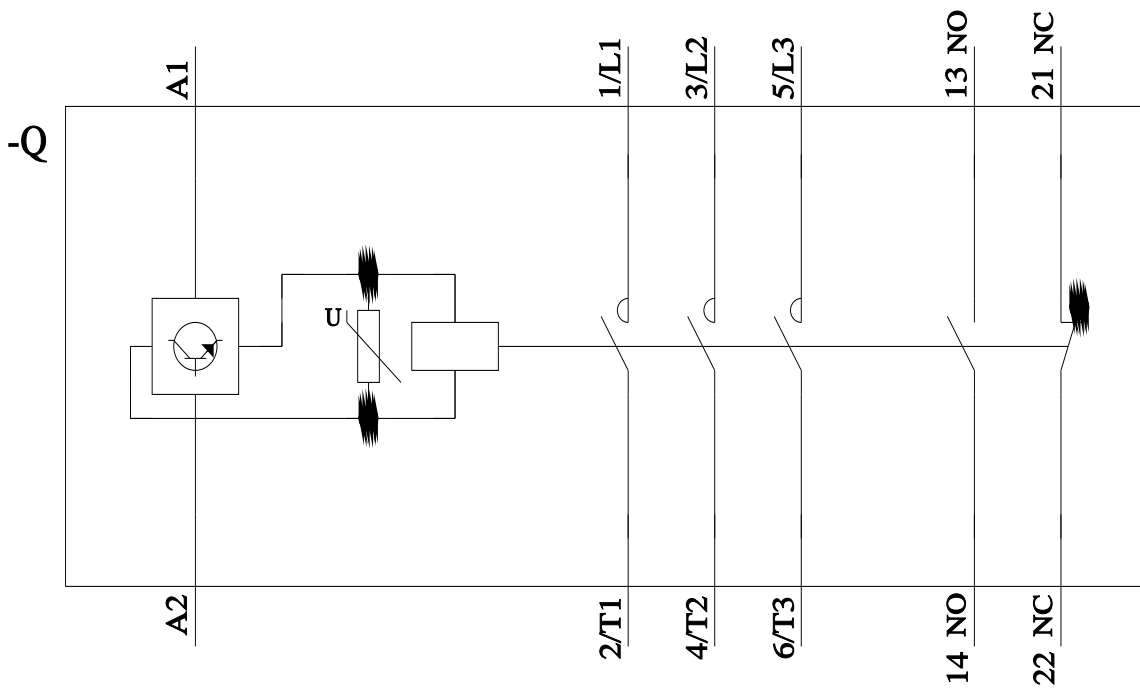
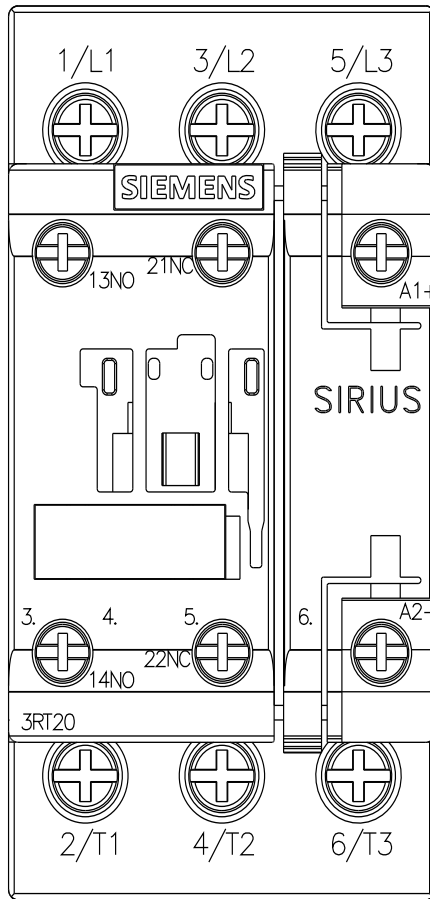
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1NB30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2023-1NB30&objecttype=14&gridview=view1>





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