

Contactor, AC-3, 30 kW / 400 V, 1 NO + 1 NC, 110 V AC, 50 Hz / 120 V, 60 Hz, 3-pole, Size S2, screw terminal



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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |

| General technical data | |
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| size of contactor | S2 |
| product extension | |
| <ul style="list-style-type: none"> function module for communication | No |
| <ul style="list-style-type: none"> auxiliary switch | Yes |
| power loss [W] for rated value of the current | |
| <ul style="list-style-type: none"> at AC in hot operating state | 11.4 W |
| <ul style="list-style-type: none"> at AC in hot operating state per pole | 3.8 W |
| power loss [W] for rated value of the current without load current share typical | 18.5 W |
| surge voltage resistance | |
| <ul style="list-style-type: none"> of main circuit rated value | 6 kV |
| <ul style="list-style-type: none"> of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for safe isolation | |
| <ul style="list-style-type: none"> between coil and main contacts acc. to EN 60947-1 | 400 V |

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| protection class IP | |
| <ul style="list-style-type: none"> • on the front • of the terminal | IP20 IP00 |
| shock resistance at rectangular impulse | |
| <ul style="list-style-type: none"> • at AC | 11.8g / 5 ms, 7.4g / 10 ms |
| shock resistance with sine pulse | |
| <ul style="list-style-type: none"> • at AC | 18.5g / 5 ms, 11.6g / 10 ms |
| mechanical service life (switching cycles) | |
| <ul style="list-style-type: none"> • of contactor typical | 10 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added auxiliary switch block typical | 10 000 000 |
| reference code acc. to DIN EN 81346-2 | Q |

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| Ambient conditions | |
| <ul style="list-style-type: none"> • installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| <ul style="list-style-type: none"> • during operation • during storage | -25 ... +60 °C -55 ... +80 °C |

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| Main circuit | |
| number of poles for main current circuit | 3 |
| number of NO contacts for main contacts | 3 |
| operating voltage | |
| <ul style="list-style-type: none"> • at AC-3 rated value maximum | 690 V |
| operating current | |
| <ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value • 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 • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value • at AC-4 at 400 V rated value • at AC-5a up to 690 V rated value • at AC-5b up to 400 V rated value • at AC-6a | 80 A 80 A 70 A 65 A 65 A 47 A 55 A 70.4 A 53.9 A |

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| — up to 230 V for current peak value n=20 rated value | 56.9 A |
| — up to 400 V for current peak value n=20 rated value | 56.9 A |
| — up to 500 V for current peak value n=20 rated value | 56.9 A |
| — up to 690 V for current peak value n=20 rated value | 47 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 38 A |
| — up to 400 V for current peak value n=30 rated value | 38 A |
| — up to 500 V for current peak value n=30 rated value | 38 A |
| — up to 690 V for current peak value n=30 rated value | 38 A |
| minimum cross-section in main circuit | |
| • at maximum AC-1 rated value | 25 mm ² |
| operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 28 A |
| • at 690 V rated value | 22 A |
| operating current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 55 A |
| — at 110 V rated value | 4.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.4 A |
| — at 600 V rated value | 0.25 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 55 A |
| — at 110 V rated value | 45 A |
| — at 220 V rated value | 5 A |
| — at 440 V rated value | 1 A |
| — at 600 V rated value | 0.8 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 55 A |
| — at 110 V rated value | 55 A |
| — at 220 V rated value | 45 A |
| — at 440 V rated value | 2.9 A |
| — at 600 V rated value | 1.4 A |
| operating current | |

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| <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 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 | <p>35 A</p> <p>2.5 A</p> <p>1 A</p> <p>0.1 A</p> <p>0.06 A</p> <p>55 A</p> <p>25 A</p> <p>5 A</p> <p>0.27 A</p> <p>0.16 A</p> <p>55 A</p> <p>55 A</p> <p>25 A</p> <p>0.6 A</p> <p>0.35 A</p> |
| 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 | <p>30 kW</p> <p>18.5 kW</p> <p>30 kW</p> <p>37 kW</p> <p>37 kW</p> |
| 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 | <p>14.7 kW</p> <p>20 kW</p> |
| operating apparent output 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 | <p>22.6 kV·A</p> <p>39.4 kV·A</p> <p>49.2 kV·A</p> <p>56.1 kV·A</p> |
| operating apparent output 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 | <p>15.1 kV·A</p> <p>26.2 kV·A</p> |

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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 | <p>32.8 kV·A</p> <p>45.3 kV·A</p> |
| 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 | <p>1 055 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>730 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>520 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>336 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>272 A; Use minimum cross-section acc. to AC-1 rated value</p> |
| no-load switching frequency <ul style="list-style-type: none"> • at AC | <p>5 000 1/h</p> |
| operating frequency <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum | <p>800 1/h</p> <p>400 1/h</p> <p>700 1/h</p> <p>200 1/h</p> |

Control circuit/ Control

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| 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 • at 60 Hz rated value | <p>110 V</p> <p>120 V</p> |
| 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 | <p>0.8 ... 1.1</p> <p>0.8 ... 1.1</p> |
| apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | <p>212 V·A</p> <p>188 V·A</p> |
| inductive power factor with closing power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | <p>0.69</p> <p>0.65</p> |
| apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | <p>18.5 V·A</p> <p>16.5 V·A</p> |
| inductive power factor with the holding power of the coil | |

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| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | <p>0.36</p> <p>0.39</p> |
| closing delay | |
| <ul style="list-style-type: none"> • at AC | 10 ... 80 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC | 10 ... 18 ms |
| arcing time | 10 ... 20 ms |
| control version of the switch operating mechanism | Standard A1 - A2 |

Auxiliary circuit

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|---|---|
| number of NC contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • instantaneous contact | 1 |
| number of NO contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • instantaneous contact | 1 |
| operating current at AC-12 maximum | 10 A |
| operating current at AC-15 | |
| <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 | <p>10 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> |
| operating current at DC-12 | |
| <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 | <p>10 A</p> <p>6 A</p> <p>6 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> <p>0.15 A</p> |
| operating current at DC-13 | |
| <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 | <p>10 A</p> <p>2 A</p> <p>2 A</p> <p>1 A</p> <p>0.9 A</p> <p>0.3 A</p> <p>0.1 A</p> |
| contact reliability of auxiliary contacts | 1 faulty switching per 100 million (17 V, 1 mA) |

UL/CSA ratings

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|--|-------------------------|
| full-load current (FLA) for three-phase AC motor | |
| <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | <p>65 A</p> <p>52 A</p> |
| yielded mechanical performance [hp] | |

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| <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 three-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 | <p>5 hp</p> <p>10 hp</p> <p>20 hp</p> <p>20 hp</p> <p>50 hp</p> <p>50 hp</p> |
| contact rating of auxiliary contacts according to UL | A600 / P600 |

Short-circuit protection

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| 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 | <p>gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)</p> <p>gG: 125A (690V,100kA), aM: 63A (690V,100kA), BS88: 100A (415V,80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p> |

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 |
| mounting type | 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 | 114 mm |
| width | 55 mm |
| depth | 130 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 | <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> |

- downwards
- at the side

10 mm

6 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 current circuit • at contactor for auxiliary contacts • of magnet coil | <p>screw-type terminals</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> <p>Screw-type terminals</p> |
| type of connectable conductor cross-sections <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • at AWG conductors for main contacts | <p>2x (1 ... 35 mm²), 1x (1 ... 50 mm²)</p> <p>2x (1 ... 25 mm²), 1x (1 ... 35 mm²)</p> <p>2x (18 ... 2), 1x (18 ... 1)</p> |
| connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • finely stranded with core end processing | <p>1 ... 35 mm²</p> |
| connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing | <p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p> |
| <ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • type of connectable conductor cross-sections at AWG conductors for auxiliary contacts | <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p> |
| AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts | <p>18 ... 1</p> <p>20 ... 14</p> |

Safety related data

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| B10 value <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 | <p>1 000 000</p> |
| 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 | <p>40 %</p> <p>73 %</p> |
| failure rate [FIT] <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 | <p>100 FIT</p> |
| product function <ul style="list-style-type: none"> • mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 | <p>Yes</p> <p>No</p> |

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| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| protection against electrical shock | finger-safe when touched vertically from front acc. to IEC 60529 |
| suitability for use safety-related switching OFF | Yes |

Certificates/ approvals

| General Product Approval | | | EMC | | |
|--|---|---|--|--|--|
|  CCC |  CSA |  UL | KC |  EAC |  RCM |
| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | | Marine / Shipping | |
| Type Examination Certificate |  EG-Konf. | Miscellaneous | Type Test Certificates/Test Report | Special Test Certificate | |
| | | | |  ABS | |

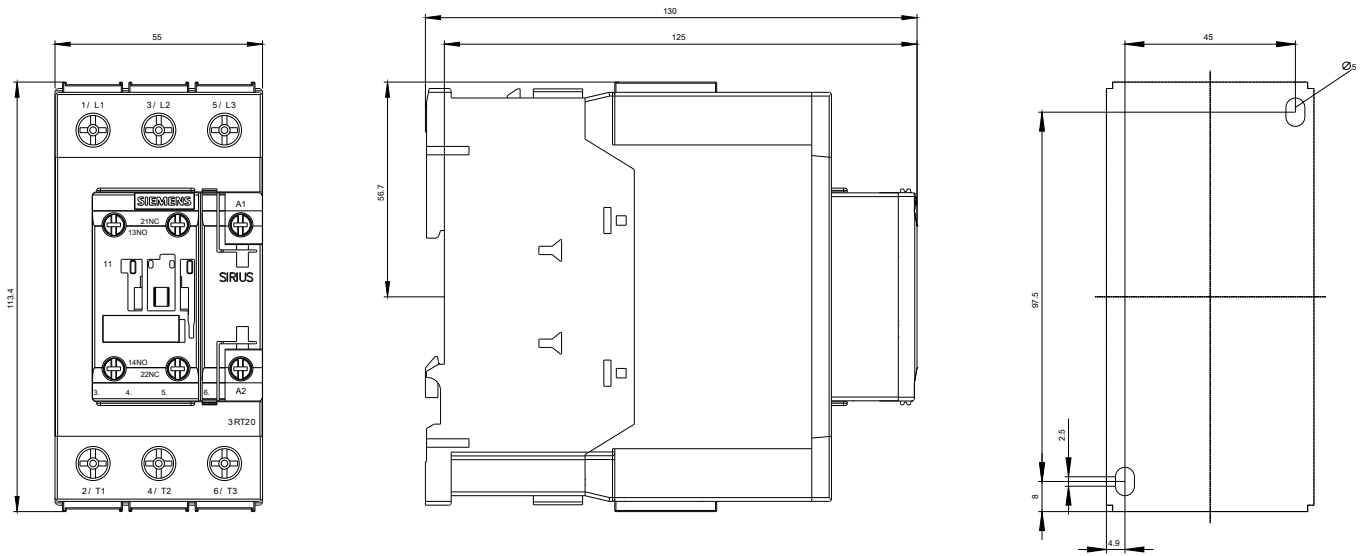
| Marine / Shipping | | | | | |
|---|--|--|---|---|---|
|  BUREAU VERITAS |  LRS |  PRS |  RINA |  RMRS |  DNV-GL DNVGL.COM/AF |

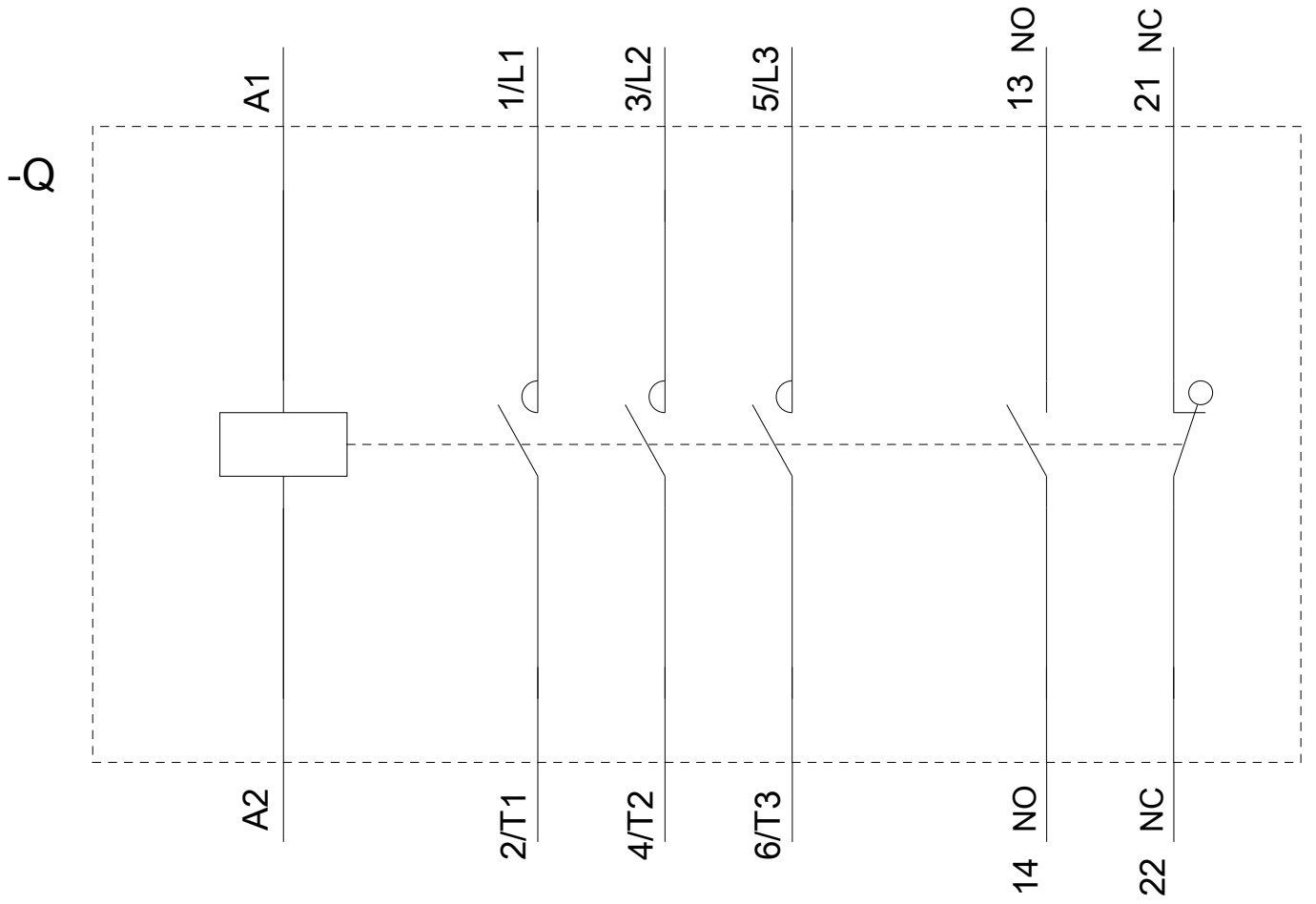
| other |
|------------------------------|
| Confirmation |

| 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=3RT2037-1AK60 |
| Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2037-1AK60 |
| Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT2037-1AK60 |
| Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2037-1AK60&lang=en |
| Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2037-1AK60/char |

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2037-1AK60&objecttype=14&gridview=view1>





last modified:

09/24/2020