

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 |
| • at AC in hot operating state per pole | 0.4 W |
| Power loss [W] for rated value of the current without load current share typical | 2 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 |

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| Protection class IP | |
| • on the front | IP20 |
| • of the terminal | IP20 |
| 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 electronics-compatible auxiliary switch block typical | 5 000 000 |
| • of the contactor with added auxiliary switch block typical | 10 000 000 |
| Reference code acc. to DIN EN 81346-2 | Q |

Ambient conditions

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| 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

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| 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 |
| Operating current | |
| • at AC-1 at 400 V | |
| — at ambient temperature 40 °C rated value | 40 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 40 A |
| — up to 690 V at ambient temperature 60 °C rated value | 35 A |
| • at AC-2 at 400 V rated value | 9 A |
| • at AC-3 | |
| — at 400 V rated value | 9 A |
| — at 500 V rated value | 9 A |
| — at 690 V rated value | 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 |

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| <ul style="list-style-type: none"> • at AC-5b up to 400 V rated value | 7.4 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 9.1 A 9 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 6.1 A 6.1 A |
| Minimum cross-section in main circuit | |
| <ul style="list-style-type: none"> • at maximum AC-1 rated value | 10 mm ² |
| Operating 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 |
| Operating 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 • 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 • 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 | 35 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 5 A 1 A 0.8 A 35 A 35 A 35 A 2.9 A |

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| — at 600 V rated value | 1.4 A |
| Operating current | |
| • 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 output at AC-6a | |
| • up to 230 V for current peak value n=20 rated value | 4 500 V·A |
| • up to 400 V for current peak value n=20 rated value | 7 800 V·A |
| • up to 500 V for current peak value n=20 rated value | 7 800 V·A |
| • up to 690 V for current peak value n=20 rated value | 10 700 V·A |
| Operating apparent output at AC-6a | |

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| <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 | <p>3 000 V·A</p> <p>5 200 V·A</p> <p>5 200 V·A</p> <p>7 200 V·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>170 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>170 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>122 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>78 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>68 A; Use minimum cross-section acc. to AC-1 rated value</p> |
| No-load switching frequency <ul style="list-style-type: none"> • at AC • at DC | <p>1 500 1/h</p> <p>1 500 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>1 000 1/h</p> <p>1 000 1/h</p> <p>1 000 1/h</p> <p>300 1/h</p> |
| 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 | <p>21 ... 28 V</p> <p>21 ... 28 V</p> |
| 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 • Full-scale value | <p>0.7</p> <p>1.3</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>0.7 ... 1.3</p> <p>0.7 ... 1.3</p> |

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| Design of the surge suppressor | with varistor |
| Inrush current peak | 3 A |
| Duration of inrush current peak | 30 μ s |
| starting current average value | 0.3 A |
| Peak starting current | 0.52 A |
| Duration of starting current | 180 ms |
| Holding current average value | 0.045 A |
| Apparent pick-up power of magnet coil at AC | |
| • at 50 Hz | 6.6 V·A |
| • at 60 Hz | 6.7 V·A |
| Inductive power factor with closing power of the coil | |
| • at 50 Hz | 0.98 |
| • at 60 Hz | 0.98 |
| Apparent holding power of magnet coil at AC | |
| • at 50 Hz | 1.9 V·A |
| • at 60 Hz | 2 V·A |
| Inductive power factor with the holding power of the coil | |
| • at 50 Hz | 0.86 |
| • 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 | |
| • at AC | 60 ... 80 ms |
| • at DC | 60 ... 75 ms |
| Opening delay | |
| • at AC | 30 ... 45 ms |
| • at DC | 30 ... 45 ms |
| Arcing time | 10 ... 10 ms |
| Control version of the switch operating mechanism | Standard A1 - A2 |

Auxiliary circuit

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| Number of NC contacts for auxiliary contacts | |
| • instantaneous contact | 1 |
| Number of NO contacts for auxiliary contacts | |
| • instantaneous contact | 1 |
| Operating current at AC-12 maximum | 10 A |
| Operating current at AC-15 | |
| • at 230 V rated value | 10 A |
| • at 400 V rated value | 3 A |
| • at 500 V rated value | 2 A |
| • at 690 V rated value | 1 A |
| Operating current at DC-12 | |

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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 6 A 6 A 3 A 2 A 1 A 0.15 A |
| 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 | 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

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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 | 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 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 | 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

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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 | 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

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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 | 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

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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 | screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — single or multi-stranded — finely stranded with core end processing • at AWG conductors 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 |

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| Connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> • single or multi-stranded | 0.5 ... 2.5 mm ² |
| <ul style="list-style-type: none"> • finely stranded with core end processing | 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"> — single or multi-stranded | 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²) |
| <ul style="list-style-type: none"> — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) |
| <ul style="list-style-type: none"> • at AWG conductors for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14) |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> • for main contacts | 16 ... 8 |
| <ul style="list-style-type: none"> • for auxiliary contacts | 20 ... 14 |

Safety related data

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| B10 value | |
| <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 | 1 000 000 |
| Proportion of dangerous failures | |
| <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 | 40 % |
| <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 | 73 % |
| Failure rate [FIT] | |
| <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 | 100 FIT |
| Product function | |
| <ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 | Yes |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| Protection against electrical shock | finger-safe |
| Suitability for use safety-related switching OFF | Yes |

Certificates/ approvals

| | |
|--------------------------|-----|
| General Product Approval | EMC |
|--------------------------|-----|



[KC](#)



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

[Type Examination Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



| | |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



[Confirmation](#)

| |
|-------|
| other |
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|---------------------|
| Further information |
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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>

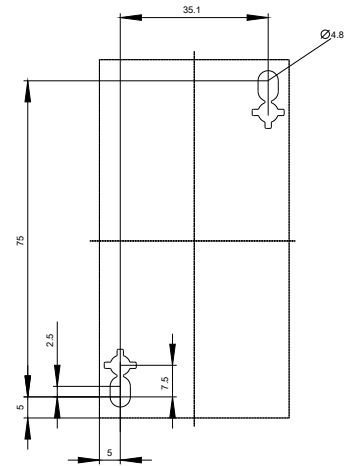
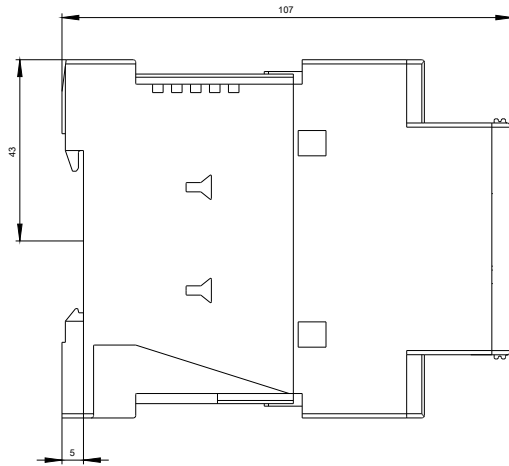
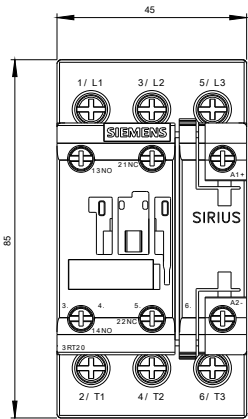
Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2023-1NB30>

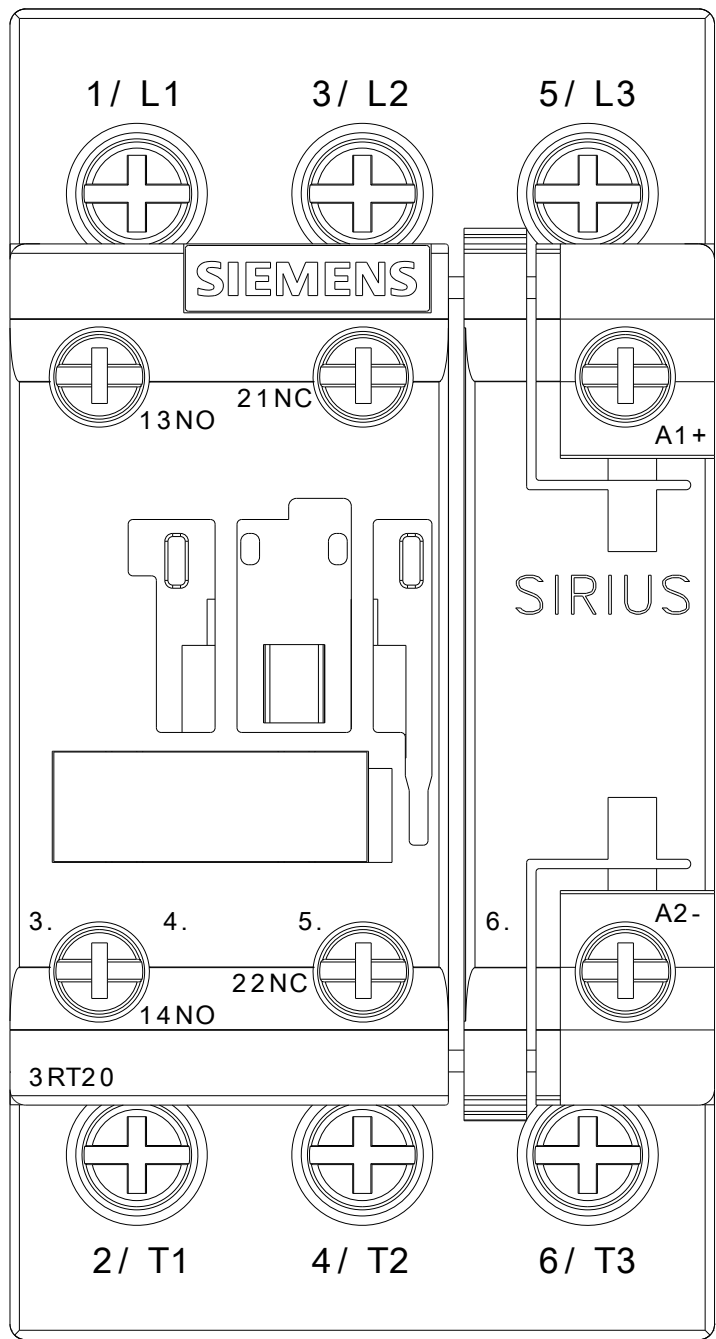
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1NB30>

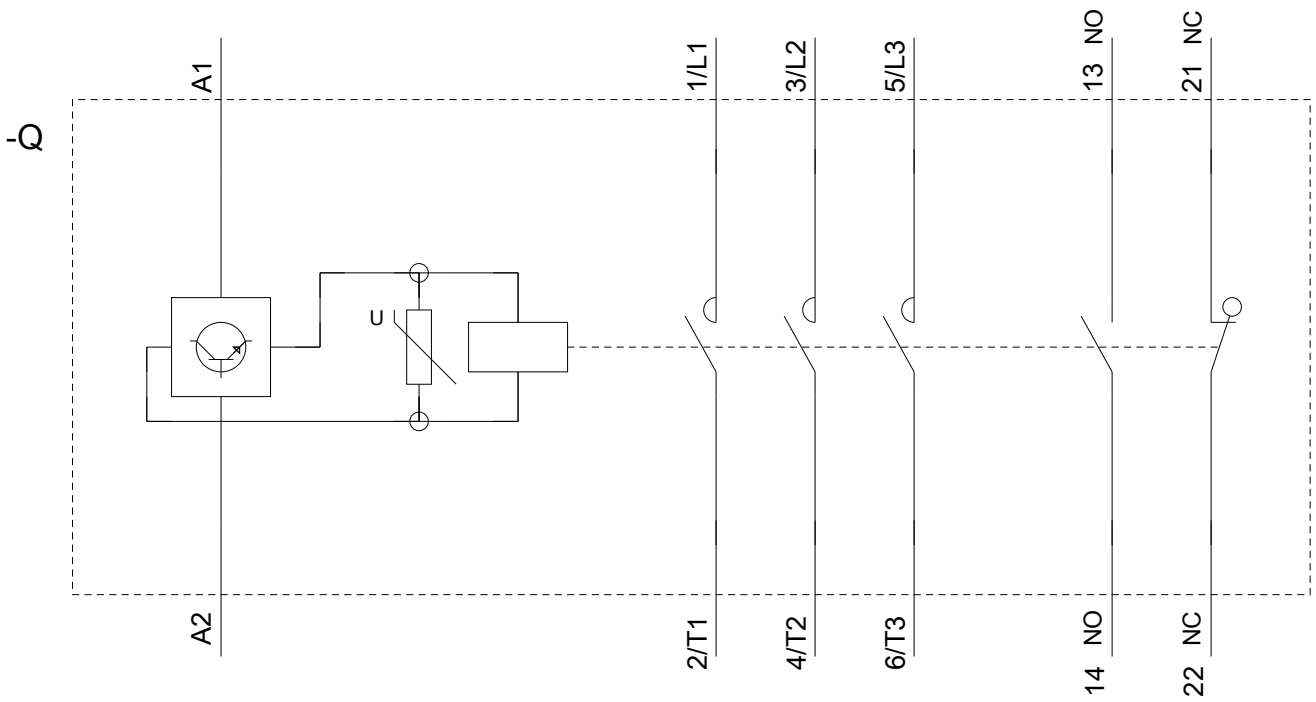
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2023-1NB30&lang=en

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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