



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 24 V DC, with plugged-in diode combination, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S0, captive auxiliary switch

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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 | No |
| power loss [W] for rated value of the current | |
| • at AC in hot operating state | 9.6 W |
| • at AC in hot operating state per pole | 3.2 W |
| • without load current share typical | 5.9 W |
| type of calculation of power loss depending on pole | quadratic |
| 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 protective separation between coil and main contacts according to EN 60947-1 | 400 V |
| shock resistance at rectangular impulse | |
| • at DC | 10g / 5 ms, 7,5g / 10 ms |
| shock resistance with sine pulse | |
| • at DC | 15g / 5 ms, 10g / 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) | |
| SVHC substance name | Lead - 7439-92-1 |
| Weight | 0.654 kg |
| 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 |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C according to IEC 60068-2-30 | 95 % |

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| maximum | |
| Environmental footprint | |
| Environmental Product Declaration(EPD) | Yes |
| Global Warming Potential [CO2 eq] total | 221 kg |
| Global Warming Potential [CO2 eq] during manufacturing | 2.65 kg |
| Global Warming Potential [CO2 eq] during operation | 219 kg |
| Global Warming Potential [CO2 eq] after end of life | -0.639 kg |
| 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 |
| • at AC-3e rated value maximum | 690 V |
| operational current | |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value | 50 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 50 A |
| — up to 690 V at ambient temperature 60 °C rated value | 42 A |
| • at AC-3 | |
| — at 400 V rated value | 38 A |
| — at 500 V rated value | 32 A |
| — at 690 V rated value | 21 A |
| • at AC-3e | |
| — at 400 V rated value | 38 A |
| — at 500 V rated value | 32 A |
| — at 690 V rated value | 21 A |
| • at AC-4 at 400 V rated value | 22 A |
| • at AC-5a up to 690 V rated value | 44 A |
| • at AC-5b up to 400 V rated value | 31.5 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 30.8 A |
| — up to 400 V for current peak value n=20 rated value | 30.8 A |
| — up to 500 V for current peak value n=20 rated value | 30.8 A |
| — up to 690 V for current peak value n=20 rated value | 21 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 20.5 A |
| — up to 400 V for current peak value n=30 rated value | 20.5 A |
| — up to 500 V for current peak value n=30 rated value | 21.4 A |
| — up to 690 V for current peak value n=30 rated value | 21 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 | |
| • at 400 V rated value | 12 A |
| • at 690 V rated value | 12 A |
| operational current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 20 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 | 35 A |
| — at 60 V rated value | 35 A |
| — at 110 V rated value | 35 A |
| — at 220 V rated value | 5 A |
| — at 440 V rated value | 1 A |

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| — at 600 V rated value | 0.8 A |
| ● with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 35 A |
| — at 60 V rated value | 35 A |
| — at 110 V rated value | 35 A |
| — at 220 V rated value | 35 A |
| — 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 60 V rated value | 5 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 60 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 60 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 | 18.5 kW |
| ● at AC-3 | |
| — at 230 V rated value | 11 kW |
| — at 400 V rated value | 18.5 kW |
| — at 500 V rated value | 18.5 kW |
| — at 690 V rated value | 18.5 kW |
| ● at AC-3e | |
| — at 230 V rated value | 11 kW |
| — at 400 V rated value | 18.5 kW |
| — at 500 V rated value | 18.5 kW |
| — at 690 V rated value | 18.5 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 6 kW |
| ● at 690 V rated value | 10.3 kW |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=20 rated value | 12.2 kVA |
| ● up to 400 V for current peak value n=20 rated value | 21.3 kVA |
| ● up to 500 V for current peak value n=20 rated value | 26.6 kVA |
| ● up to 690 V for current peak value n=20 rated value | 25 kVA |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=30 rated value | 8.1 kVA |
| ● up to 400 V for current peak value n=30 rated value | 14.2 kVA |
| ● up to 500 V for current peak value n=30 rated value | 18.5 kVA |
| ● up to 690 V for current peak value n=30 rated value | 25 kVA |
| short-time withstand current in cold operating state up to 40 °C | |
| ● limited to 1 s switching at zero current maximum | 593 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum | 341 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 10 s switching at zero current maximum | 260 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 30 s switching at zero current maximum | 199 A; Use minimum cross-section acc. to AC-1 rated value |

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| <ul style="list-style-type: none"> limited to 60 s switching at zero current maximum | 162 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| <ul style="list-style-type: none"> at DC | 1 500 1/h |
| operating frequency | |
| <ul style="list-style-type: none"> at AC-1 maximum | 1 000 1/h |
| <ul style="list-style-type: none"> at AC-2 maximum | 750 1/h |
| <ul style="list-style-type: none"> at AC-3 maximum | 750 1/h |
| <ul style="list-style-type: none"> at AC-3e maximum | 750 1/h |
| <ul style="list-style-type: none"> at AC-4 maximum | 250 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | DC |
| control supply voltage at DC rated value | 24 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| <ul style="list-style-type: none"> initial value | 0.8 |
| <ul style="list-style-type: none"> full-scale value | 1.1 |
| design of the surge suppressor | with diode assemblies |
| closing power of magnet coil at DC | 5.9 W |
| holding power of magnet coil at DC | 5.9 W |
| closing delay | |
| <ul style="list-style-type: none"> at DC | 50 ... 170 ms |
| opening delay | |
| <ul style="list-style-type: none"> at DC | 15 ... 18 ms |
| arcing time | 10 ... 10 ms |
| control version of the switch operating mechanism | Standard A1 - A2 |
| Auxiliary circuit | |
| design of the auxiliary switch | on the front, non-detachable |
| 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 | |
| <ul style="list-style-type: none"> at 230 V rated value | 6 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 | |
| <ul style="list-style-type: none"> at 24 V rated value | 6 A |
| <ul style="list-style-type: none"> at 48 V rated value | 2 A |
| <ul style="list-style-type: none"> at 60 V rated value | 2 A |
| <ul style="list-style-type: none"> at 110 V rated value | 1 A |
| <ul style="list-style-type: none"> at 125 V rated value | 0.9 A |
| <ul style="list-style-type: none"> at 220 V rated value | 0.3 A |
| <ul style="list-style-type: none"> 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 | |
| <ul style="list-style-type: none"> at 480 V rated value | 34 A |
| <ul style="list-style-type: none"> at 600 V rated value | 27 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 | 3 hp |

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| — at 230 V rated value | 5 hp |
| ● for 3-phase AC motor | |
| — at 200/208 V rated value | 10 hp |
| — at 220/230 V rated value | 10 hp |
| — at 460/480 V rated value | 25 hp |
| — at 575/600 V rated value | 25 hp |

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| contact rating of auxiliary contacts according to UL | A600 / Q600 |
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Short-circuit protection

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| design of the fuse link | |
| ● for short-circuit protection of the main circuit | |
| — with type of coordination 1 required | gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA) |
| — with type of assignment 2 required | gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA) |
| ● 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 | +/-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 DIN rail according to DIN EN 60715 |
| height | 85 mm |
| width | 45 mm |
| depth | 151 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 |
| ● for 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) |
| ● for AWG cables for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14) |
| AWG number as coded connectable conductor cross | |

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| section | |
| • for main contacts | 16 ... 8 |
| • for auxiliary contacts | 20 ... 14 |
| Safety related data | |
| product function | |
| • mirror contact according to IEC 60947-4-1 | Yes |
| • positively driven operation according to IEC 60947-5-1 | No |
| • suitable for safety function | Yes |
| suitability for use safety-related switching OFF | Yes |
| service life maximum | 20 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| • with low demand rate according to SN 31920 | 40 % |
| • 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 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |

Approvals Certificates

General Product Approval



[Confirmation](#)



[KC](#)

| | | | | |
|--------------------------|-----|-------------------|-------------------|-------------------|
| General Product Approval | EMV | Functional Safety | Test Certificates | Marine / Shipping |
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[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



| | |
|-------------------|-------|
| Marine / Shipping | other |
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[Miscellaneous](#)

[Confirmation](#)

| | | |
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| Railway | Dangerous goods | Environment |
|---------|-----------------|-------------|

[Special Test Certificate](#)

[Transport Information](#)



[Environmental Confirmations](#)

Further information

- Information on the packaging
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- 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=3RT2028-1FB44-3MA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-1FB44-3MA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1FB44-3MA0>

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

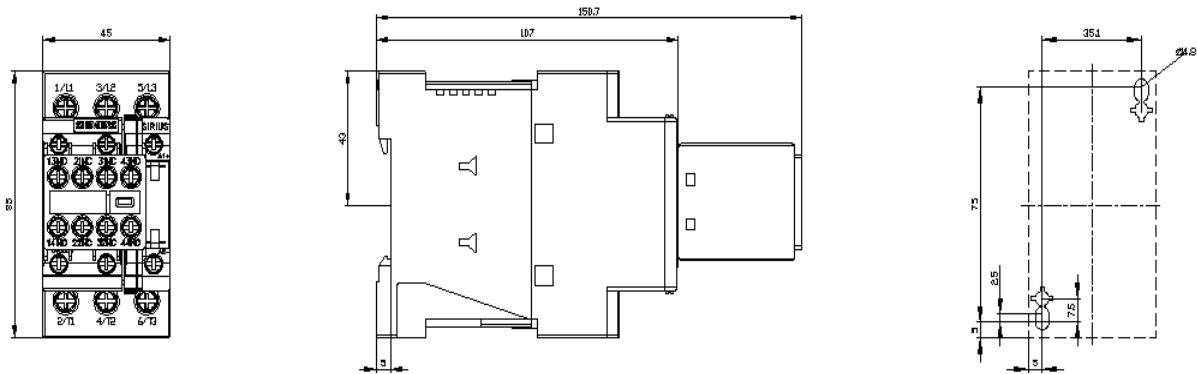
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-1FB44-3MA0&lang=en

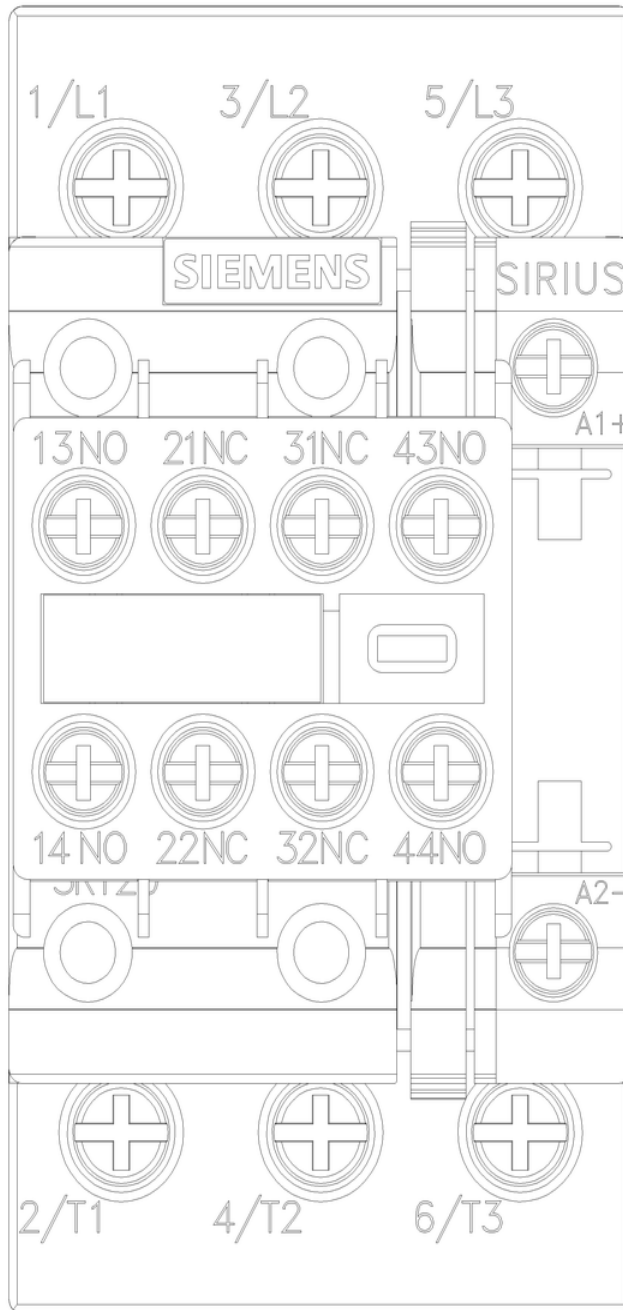
Characteristic: Tripping characteristics, I²t, Let-through current

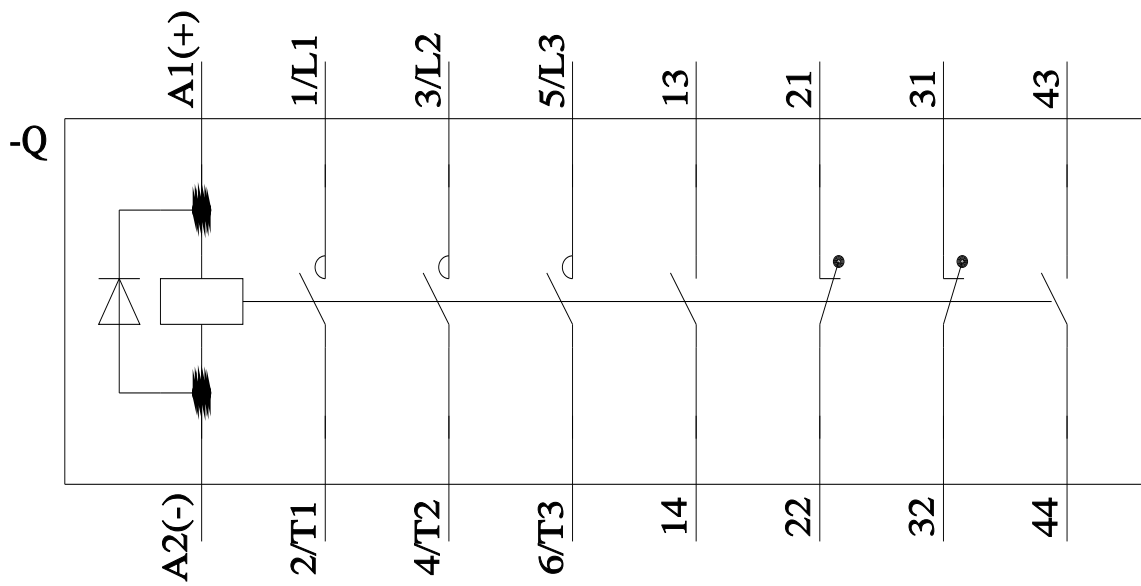
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1FB44-3MA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-1FB44-3MA0&objectype=14&gridview=view1>







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