



power contactor, AC-3e/AC-3, 32 A, 15 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

|  |                            |
|--|----------------------------|
| product brand name   | SIRIUS                     |
| product designation  | Power contactor            |
| product type designation   | 3RT2                       |
| <b>General technical data</b>  |                            |
| 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   | 6.3 W                      |
| • at AC in hot operating state per pole  | 2.3 W                      |
| • without load current share typical   | 2.7 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 AC  | 8,3g / 5 ms, 5,3g / 10 ms  |
| shock resistance with sine pulse   |                            |
| • at AC  | 13,5g / 5 ms, 8,3g / 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)  | 10/01/2009                 |
| <b>Ambient conditions</b>  |                            |
| 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 maximum   | 95 %                       |
| <b>Environmental footprint</b>   |                            |

|  |                    |
|--|--------------------|
| Environmental Product Declaration(EPD)                                 | Yes                |
| Global Warming Potential [CO2 eq] total                                | 74.2 kg            |
| Global Warming Potential [CO2 eq] during manufacturing                 | 1.9 kg             |
| Global Warming Potential [CO2 eq] during operation                     | 72.4 kg            |
| Global Warming Potential [CO2 eq] after end of life                    | -0.117 kg          |
| <b>Main circuit</b>  |                    |
| 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   | 32 A               |
| — at 500 V rated value   | 32 A               |
| — at 690 V rated value   | 21 A               |
| • at AC-3e   |                    |
| — at 400 V rated value   | 32 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                                     | 26.5 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                  | 27 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                  | 18 A               |
| — up to 690 V for current peak value n=30 rated value                  | 18 A               |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 10 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value   | 12 A               |
| • at 690 V rated value   | 12 A               |
| <b>operational current</b>   |                    |
| • <b>at 1 current path at DC-1</b>                                     |                    |
| — 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             |
| • <b>with 2 current paths in series at DC-1</b>                        |                    |
| — 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                |
| — at 600 V rated value   | 0.8 A              |
| • <b>with 3 current paths in series at DC-1</b>                        |                    |

|   |   |
|---|---|
| — 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   |
| <b>• at 1 current path at DC-3 at DC-5</b>                              |   |
| — at 24 V rated value   | 20 A  |
| — at 60 V rated value   | 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  |
| <b>• with 2 current paths in series at DC-3 at DC-5</b>                 |   |
| — 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  |
| <b>• with 3 current paths in series at DC-3 at DC-5</b>                 |   |
| — 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   |
| <b>operating power</b>  |   |
| <b>• at AC-3</b>  |   |
| — at 230 V rated value  | 7.5 kW  |
| — at 400 V rated value  | 15 kW   |
| — at 500 V rated value  | 15 kW   |
| — at 690 V rated value  | 18.5 kW   |
| <b>• at AC-3e</b>   |   |
| — at 230 V rated value  | 7.5 kW  |
| — at 400 V rated value  | 15 kW   |
| — at 500 V rated value  | 15 kW   |
| — at 690 V rated value  | 18.5 kW   |
| <b>operating power for approx. 200000 operating cycles at AC-4</b>      |   |
| <b>• at 400 V rated value</b>   | 6 kW  |
| <b>• at 690 V rated value</b>   | 10.3 kW   |
| <b>operating apparent power at AC-6a</b>                                |   |
| <b>• up to 230 V for current peak value n=20 rated value</b>            | 12.2 kVA  |
| <b>• up to 400 V for current peak value n=20 rated value</b>            | 21.3 kVA  |
| <b>• up to 500 V for current peak value n=20 rated value</b>            | 23.3 kVA  |
| <b>• up to 690 V for current peak value n=20 rated value</b>            | 25 kVA  |
| <b>operating apparent power at AC-6a</b>                                |   |
| <b>• up to 230 V for current peak value n=30 rated value</b>            | 8.1 kVA   |
| <b>• up to 400 V for current peak value n=30 rated value</b>            | 14.2 kVA  |
| <b>• up to 500 V for current peak value n=30 rated value</b>            | 15.5 kVA  |
| <b>• up to 690 V for current peak value n=30 rated value</b>            | 21.5 kVA  |
| <b>short-time withstand current in cold operating state up to 40 °C</b> |   |
| <b>• limited to 1 s switching at zero current maximum</b>               | 499 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>• limited to 5 s switching at zero current maximum</b>               | 341 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>• limited to 10 s switching at zero current maximum</b>              | 260 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>• limited to 30 s switching at zero current maximum</b>              | 199 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>• limited to 60 s switching at zero current maximum</b>              | 162 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>no-load switching frequency</b>                                      |   |
| <b>• at AC</b>  | 5 000 1/h   |
| <b>operating frequency</b>  |   |

|   |              |
|---|--------------|
| • at AC-1 maximum   | 1 000 1/h    |
| • at AC-2 maximum   | 750 1/h      |
| • at AC-3 maximum   | 750 1/h      |
| • at AC-3e maximum  | 750 1/h      |
| • at AC-4 maximum   | 250 1/h      |
| <b>Control circuit/ Control</b>   |              |
| <b>type of voltage of the control supply voltage</b>                                  | AC           |
| <b>control supply voltage at AC</b>   |              |
| • at 50 Hz rated value  | 230 V        |
| • at 60 Hz rated value  | 230 V        |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b> |              |
| • at 50 Hz  | 0.8 ... 1.1  |
| • at 60 Hz  | 0.85 ... 1.1 |
| <b>apparent pick-up power of magnet coil at AC</b>                                    |              |
| • at 50 Hz  | 81 VA        |
| • at 60 Hz  | 79 VA        |
| <b>inductive power factor with closing power of the coil</b>                          |              |
| • at 50 Hz  | 0.72         |
| • at 60 Hz  | 0.74         |
| <b>apparent holding power of magnet coil at AC</b>                                    |              |
| • at 50 Hz  | 10.5 VA      |
| • at 60 Hz  | 8.5 VA       |
| <b>inductive power factor with the holding power of the coil</b>                      |              |
| • at 50 Hz  | 0.25         |
| • at 60 Hz  | 0.28         |
| <b>closing delay</b>  |              |
| • at AC   | 8 ... 40 ms  |
| <b>opening delay</b>  |              |
| • at AC   | 4 ... 16 ms  |
| <b>arcing time</b>  |              |
| <b>control version of the switch operating mechanism</b>                              |              |
| <b>Auxiliary circuit</b>  |              |
| 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         |
| <b>operational current at AC-15</b>   |              |
| • 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          |
| <b>operational current at DC-12</b>   |              |
| • at 24 V rated value   | 10 A         |
| • at 48 V rated value   | 6 A          |
| • at 60 V rated value   | 6 A          |
| • at 110 V rated value  | 3 A          |
| • at 125 V rated value  | 2 A          |
| • at 220 V rated value  | 1 A          |
| • at 600 V rated value  | 0.15 A       |
| <b>operational current at DC-13</b>   |              |
| • at 24 V rated value   | 10 A         |
| • at 48 V rated value   | 2 A          |
| • at 60 V rated value   | 2 A          |
| • at 110 V rated value  | 1 A          |
| • at 125 V rated value  | 0.9 A        |
| • at 220 V rated value  | 0.3 A        |
| • at 600 V rated value  | 0.1 A        |
| <b>contact reliability of auxiliary contacts</b>                                      |              |
| 1 faulty switching per 100 million (17 V, 1 mA)                                       |              |
| <b>UL/CSA ratings</b>   |              |

|   |  |
|---|--|
| <b>full-load current (FLA) for 3-phase AC motor</b>               |  |
| • at 480 V rated value  | 27 A   |
| • at 600 V rated value  | 27 A   |
| <b>yielded mechanical performance [hp]</b>                        |  |
| • for single-phase AC motor                                       |  |
| — at 110/120 V rated value  | 2 hp   |
| — 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  | 20 hp  |
| — at 575/600 V rated value  | 25 hp  |
| <b>contact rating of auxiliary contacts according to UL</b>       | A600 / P600  |
| <b>Short-circuit protection</b>                                   |  |
| <b>design of the fuse link</b>                                    |  |
| • 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)   |
| <b>Installation/ mounting/ dimensions</b>                         |  |
| <b>mounting position</b>  | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| <b>fastening method</b>   | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715   |
| <b>height</b>   | 102 mm   |
| <b>width</b>  | 45 mm  |
| <b>depth</b>  | 97 mm  |
| <b>required spacing</b>   |  |
| • 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   |
| <b>Connections/ Terminals</b>                                     |  |
| <b>type of electrical connection</b>                              |  |
| • for main current circuit  | spring-loaded terminals  |
| • for auxiliary and control circuit                               | spring-loaded terminals  |
| • at contactor for auxiliary contacts                             | Spring-type terminals  |
| • of magnet coil  | Spring-type terminals  |
| <b>type of connectable conductor cross-sections</b>               |  |
| • for main contacts   |  |
| — solid   | 2x (1 ... 10 mm <sup>2</sup> )   |
| — solid or stranded   | 2x (1 ... 10 mm <sup>2</sup> )   |
| — finely stranded with core end processing                        | 2x (1 ... 6 mm <sup>2</sup> )  |
| — finely stranded without core end processing                     | 2x (1 ... 6 mm <sup>2</sup> )  |
| • for AWG cables for main contacts                                | 2x (18 ... 8)  |
| <b>connectable conductor cross-section for main contacts</b>      |  |
| • solid   | 1 ... 10 mm <sup>2</sup>   |
| • stranded  | 1 ... 10 mm <sup>2</sup>   |
| • finely stranded with core end processing                        | 1 ... 6 mm <sup>2</sup>  |
| • finely stranded without core end processing                     | 1 ... 6 mm <sup>2</sup>  |
| <b>connectable conductor cross-section for auxiliary contacts</b> |  |

|  |  |
|--|--|
| • solid or stranded  | 0.5 ... 2.5 mm <sup>2</sup>                        |
| • finely stranded with core end processing                           | 0.5 ... 1.5 mm <sup>2</sup>                        |
| • finely stranded without core end processing                        | 0.5 ... 2.5 mm <sup>2</sup>                        |
| <b>type of connectable conductor cross-sections</b>                  |  |
| • for auxiliary contacts   |  |
| — solid or stranded  | 2x (0.5 ... 2.5 mm <sup>2</sup> )                  |
| — finely stranded with core end processing                           | 2x (0.5 ... 1.5 mm <sup>2</sup> )                  |
| — finely stranded without core end processing                        | 2x (0.5 ... 2.5 mm <sup>2</sup> )                  |
| • for AWG cables for auxiliary contacts                              | 2x (20 ... 14)                                     |
| <b>AWG number as coded connectable conductor cross-section</b>       |  |
| • for main contacts  | 18 ... 8   |
| • for auxiliary contacts   | 20 ... 14  |
| <b>Safety related data</b>   |  |
| <b>product function</b>  |  |
| • mirror contact according to IEC 60947-4-1                          | Yes  |
| <b>suitability for use safety-related switching OFF</b>              | Yes; applies only to contactor operating mechanism |
| <b>proportion of dangerous failures</b>                              |  |
| • with low demand rate according to SN 31920                         | 40 %   |
| • with high demand rate according to SN 31920                        | 73 %   |
| <b>B10 value with high demand rate according to SN 31920</b>         | 1 000 000  |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b> | 100 FIT  |
| IEC 61508  |  |
| <b>T1 value</b>  |  |
| • for proof test interval or service life according to IEC 61508     | 20 a   |
| Electrical Safety  |  |
| <b>protection class IP on the front according to IEC 60529</b>       | IP20   |
| <b>touch protection on the front according to IEC 60529</b>          | finger-safe, for vertical contact from the front   |

#### Approvals Certificates

##### General Product Approval



[Confirmation](#)



##### General Product Approval

EMV

Functional Safety

Test Certificates

[KC](#)



[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

##### Marine / Shipping



##### Marine / Shipping

other

Railway

Environment



[Miscellaneous](#)

[Confirmation](#)

[Confirmation](#)

[Special Test Certificate](#)



##### Environment

**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=3RT2027-2AL20>

Cax online generator

<http://support.automation.siemens.com/WW/CAxorder/default.aspx?lang=en&mlfb=3RT2027-2AL20>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2AL20>

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

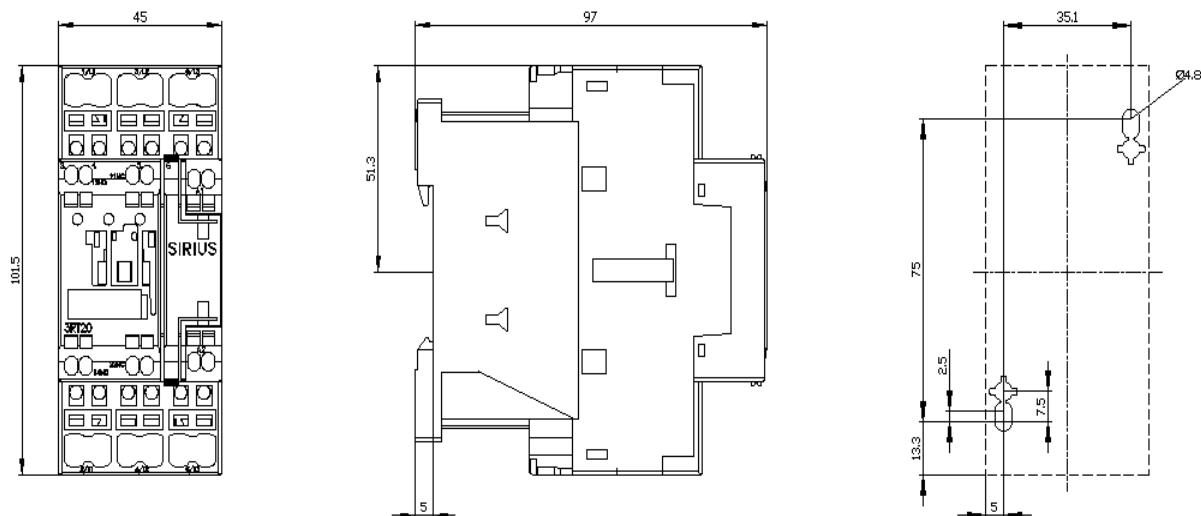
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2027-2AL20&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-2AL20&lang=en)

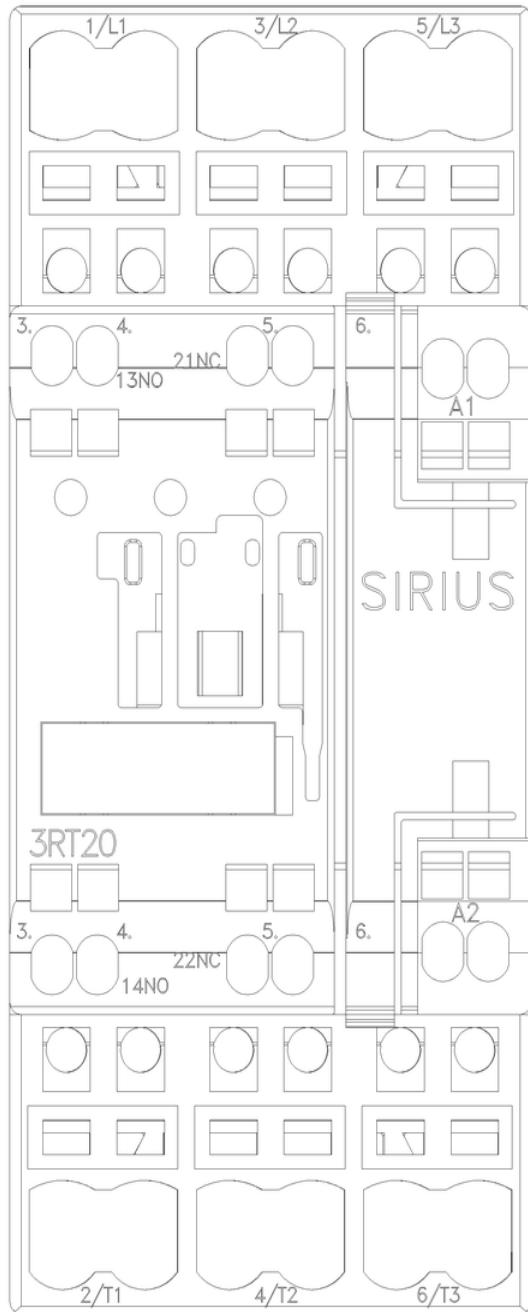
Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current

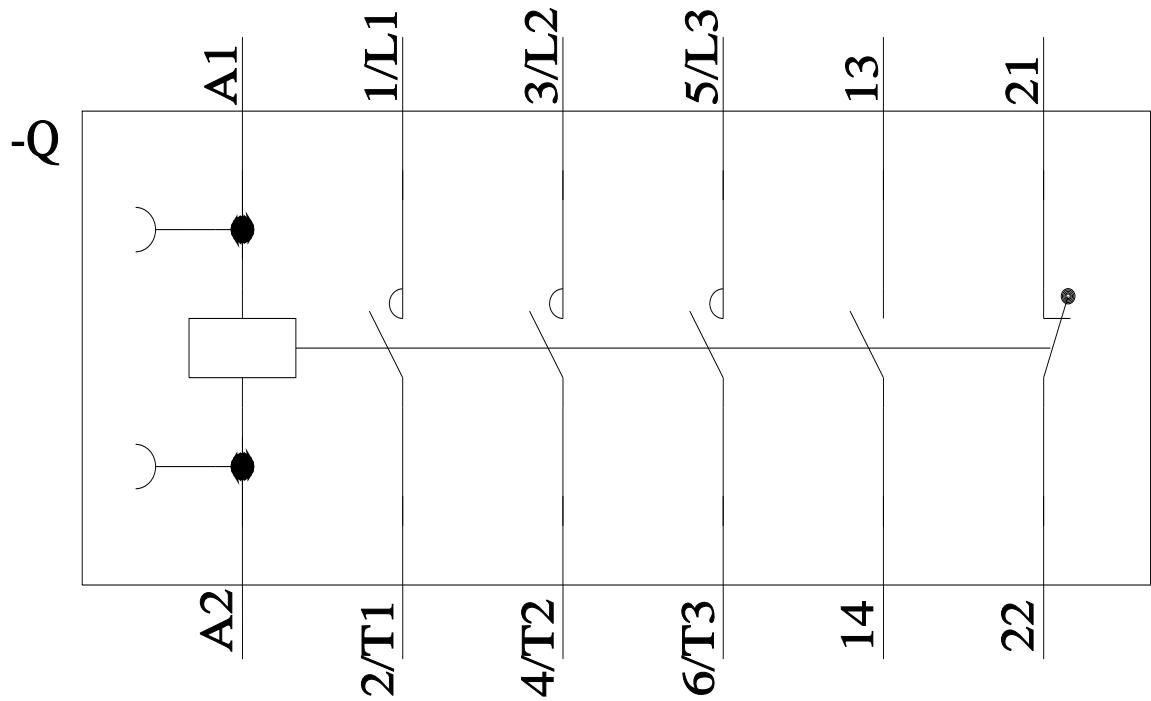
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2AL20/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-2AL20&objecttype=14&gridview=view1>







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