

power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 24 V DC
3-pole, Size S0 screw terminal



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

| General technical data | |
|---|-------|
| size of contactor | S0 |
| 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 | 2.7 W |
| <ul style="list-style-type: none"> at AC in hot operating state per pole | 0.9 W |
| power loss [W] for rated value of the current without load current share typical | 5.9 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 |

| | |
|---|--------------------------|
| protection class IP | |
| • on the front | IP20 |
| • of the terminal | IP20 |
| 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 (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 |

| | |
|---|----------------|
| 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 |

| | |
|--|--------|
| 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 | |
| • 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-3 | |
| — at 400 V rated value | 17 A |
| — at 500 V rated value | 17 A |
| — at 690 V rated value | 13 A |
| • at AC-4 at 400 V rated value | 15.5 A |
| • at AC-5a up to 690 V rated value | 35.2 A |
| • at AC-5b up to 400 V rated value | 14.1 A |
| • at AC-6a | |

| | |
|--|--------------------|
| — up to 230 V for current peak value n=20 rated value | 11.4 A |
| — up to 400 V for current peak value n=20 rated value | 11.4 A |
| — up to 500 V for current peak value n=20 rated value | 11.4 A |
| — up to 690 V for current peak value n=20 rated value | 11.3 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 7.6 A |
| — up to 400 V for current peak value n=30 rated value | 7.6 A |
| — up to 500 V for current peak value n=30 rated value | 7.6 A |
| — up to 690 V for current peak value n=30 rated value | 7.6 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 | 7.7 A |
| • at 690 V rated value | 7.7 A |
| operational current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 35 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 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 |
| • with 3 current paths in series at DC-1 | |
| — at 24 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 |
| operational current | |

| | |
|--|--|
| <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>20 A</p> <p>2.5 A</p> <p>1 A</p> <p>0.09 A</p> <p>0.06 A</p> <p>35 A</p> <p>15 A</p> <p>3 A</p> <p>0.27 A</p> <p>0.16 A</p> <p>35 A</p> <p>35 A</p> <p>10 A</p> <p>0.6 A</p> <p>0.6 A</p> |
| <p>operating power</p> <ul style="list-style-type: none"> • 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>4 kW</p> <p>7.5 kW</p> <p>7.5 kW</p> <p>11 kW</p> |
| <p>operating power for approx. 200000 operating cycles at AC-4</p> <ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value | <p>3.5 kW</p> <p>6 kW</p> |
| <p>operating apparent power at AC-6a</p> <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>4.5 kV·A</p> <p>7.8 kV·A</p> <p>9.9 kV·A</p> <p>13.6 kV·A</p> |
| <p>operating apparent power at AC-6a</p> <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>3 kV·A</p> <p>5.2 kV·A</p> |

| | |
|---|---|
| <ul style="list-style-type: none"> • up to 500 V for current peak value n=30 rated value | 6.6 kV·A |
| <ul style="list-style-type: none"> • up to 690 V for current peak value n=30 rated value | 9.1 kV·A |
| 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 | 225 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul style="list-style-type: none"> • limited to 5 s switching at zero current maximum | 225 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul style="list-style-type: none"> • limited to 10 s switching at zero current maximum | 180 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul style="list-style-type: none"> • limited to 30 s switching at zero current maximum | 115 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul style="list-style-type: none"> • limited to 60 s switching at zero current maximum | 96 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 | 1 000 1/h |
| <ul style="list-style-type: none"> • at AC-3 maximum | 1 000 1/h |
| <ul style="list-style-type: none"> • at AC-4 maximum | 300 1/h |

| Control circuit/ Control | |
|---|------------------|
| type of voltage of the control supply voltage | DC |
| control supply voltage at DC | |
| <ul style="list-style-type: none"> • 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 |
| 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 ... 17.5 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 | |
| <ul style="list-style-type: none"> • 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 | |
| • 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 |
| operational current at DC-12 | |
| • 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 |
| operational current at DC-13 | |
| • 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 |
| 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 | |
| • at 480 V rated value | 14 A |
| • at 600 V rated value | 17 A |
| yielded mechanical performance [hp] | |
| • for single-phase AC motor | |
| — at 110/120 V rated value | 1 hp |
| — at 230 V rated value | 3 hp |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 3 hp |
| — at 220/230 V rated value | 5 hp |
| — at 460/480 V rated value | 10 hp |
| — at 575/600 V rated value | 15 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |

Short-circuit protection

| | |
|--|--|
| design of the fuse link | |
| • for short-circuit protection of the main circuit | |

| | |
|---|---|
| — with type of coordination 1 required | gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA) |
| — with type of assignment 2 required | gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA) |
| • for short-circuit protection of the auxiliary switch required | 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 |
| • side-by-side mounting | Yes |
| height | 85 mm |
| width | 45 mm |
| depth | 107 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

| | |
|---|---|
| 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) |

| | |
|---|---|
| <ul style="list-style-type: none"> — finely stranded with core end processing • at AWG cables for main contacts | <p>2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²</p> <p>2x (16 ... 12), 2x (14 ... 8)</p> |
| <p>connectable conductor cross-section for main contacts</p> <ul style="list-style-type: none"> • solid • stranded • finely stranded with core end processing | <p>1 ... 10 mm²</p> <p>1 ... 10 mm²</p> <p>1 ... 10 mm²</p> |
| <p>connectable conductor cross-section for auxiliary contacts</p> <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing | <p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p> |
| <p>type of connectable conductor cross-sections for auxiliary contacts</p> <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing | <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>type of connectable conductor cross-sections at AWG cables for auxiliary contacts</p> <ul style="list-style-type: none"> • type of connectable conductor cross-sections at AWG cables for auxiliary contacts | <p>2x (20 ... 16), 2x (18 ... 14)</p> |
| <p>AWG number as coded connectable conductor cross section</p> <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts | <p>16 ... 8</p> <p>20 ... 14</p> |

Safety related data

| | |
|--|-------------------------|
| <p>B10 value</p> <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 | <p>1 000 000</p> |
| <p>proportion of dangerous failures</p> <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> |
| <p>failure rate [FIT]</p> <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 | <p>100 FIT</p> |
| <p>product function</p> <ul style="list-style-type: none"> • mirror contact acc. to IEC 60947-4-1 | <p>Yes</p> |
| <p>T1 value for proof test interval or service life acc. to IEC 61508</p> | <p>20 y</p> |
| <p>touch protection against electrical shock</p> | <p>finger-safe</p> |
| <p>suitability for use safety-related switching OFF</p> | <p>Yes</p> |

Certificates/ approvals

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



[KC](#)



| | | |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Miscellaneous](#)



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



[Confirmation](#)

| |
|-------|
| other |
|-------|



| |
|---------------------|
| 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=3RT2025-1BB40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BB40>

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

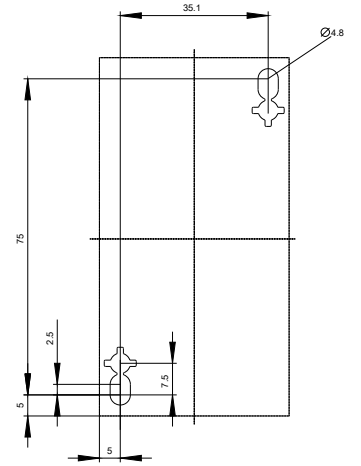
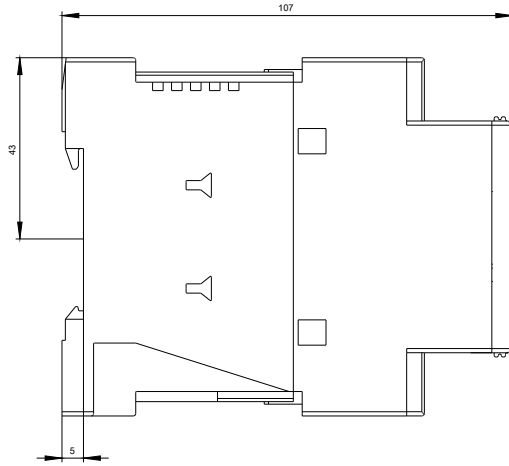
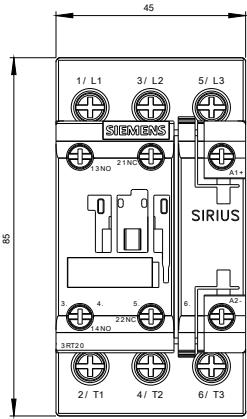
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1BB40&lang=en

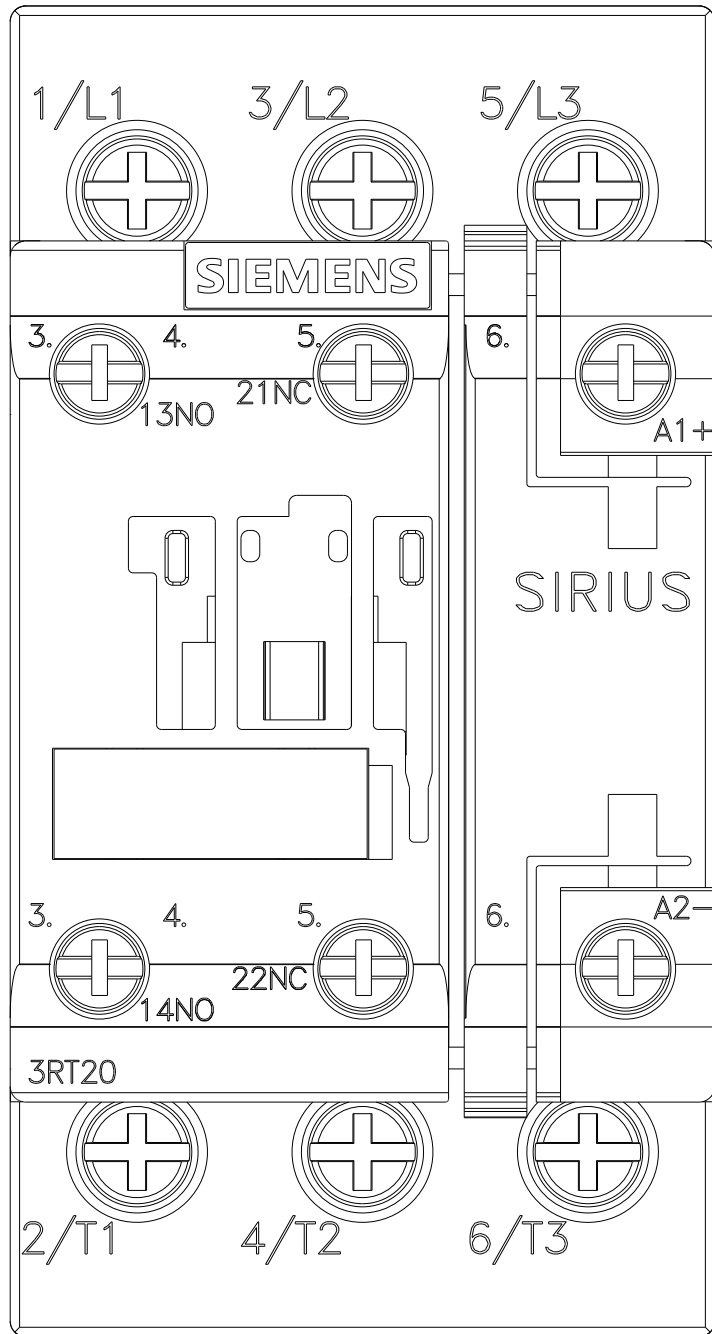
Characteristic: Tripping characteristics, I^t, Let-through current

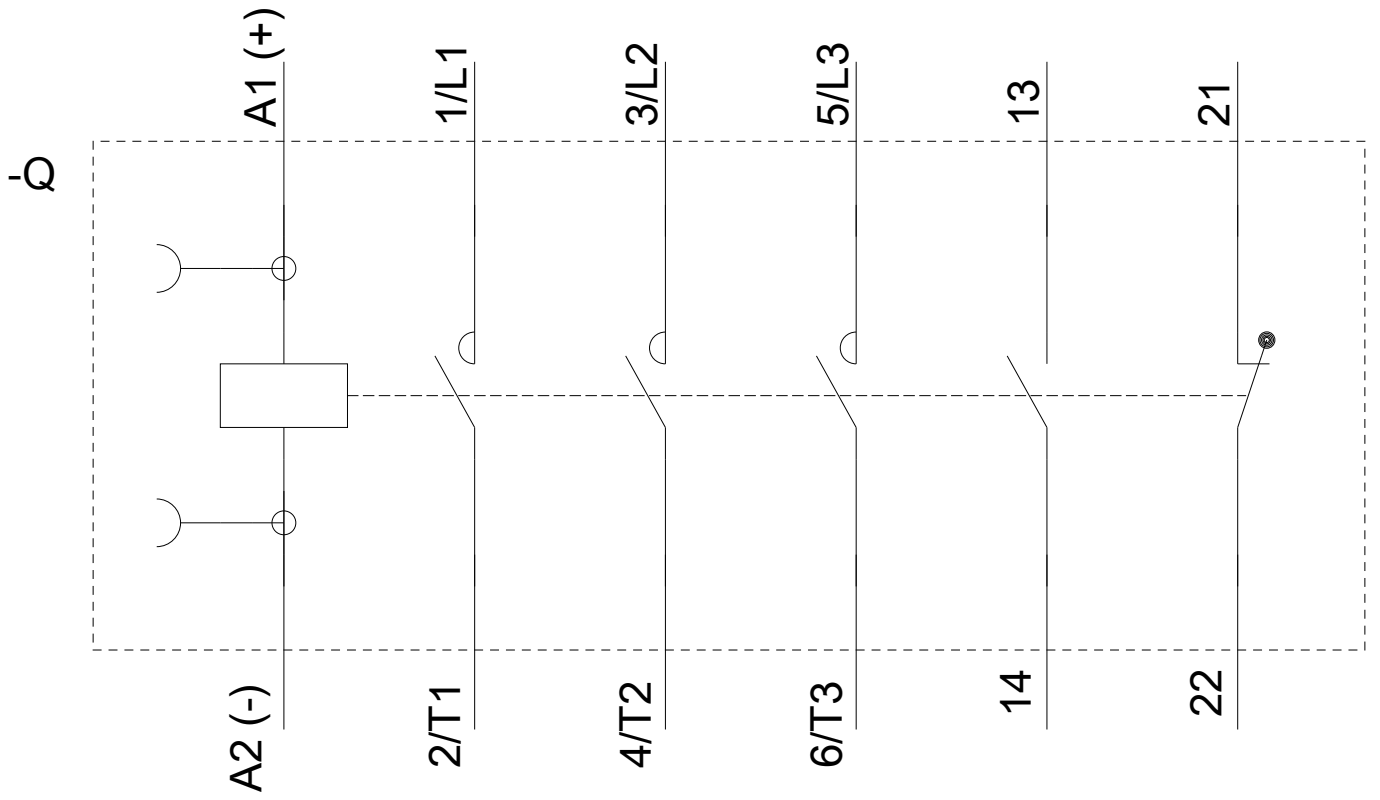
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1BB40&objecttype=14&gridview=view1>







last modified:

11/23/2020