

Power contactor, AC-3 7 A, 3 kW / 400 V 1 NC, 24 V DC 0.85-1.85*
US, with diode integrated, 3-pole, Size S00, screw terminal



| | |
|--|----------------|
| Product brand name | SIRIUS |
| Product designation | Coupling relay |
| Product type designation | 3RT2 |
| General technical data | |
| Size of contactor | S00 |
| 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 | 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 | 1.6 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 |

| | |
|---|----------------------------|
| Protection class IP | |
| • on the front | IP20 |
| • of the terminal | IP20 |
| Shock resistance at rectangular impulse | |
| • at DC | 6,7g / 5 ms, 4,2g / 10 ms |
| Shock resistance with sine pulse | |
| • at DC | 10,5g / 5 ms, 6,6g / 10 ms |
| Mechanical service life (switching cycles) | |
| • of contactor typical | 30 000 000 |
| • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000 |
| Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 | K |
| Reference code acc. to DIN EN 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 |
| Operating current | |
| • at AC-1 at 400 V | |
| — at ambient temperature 40 °C rated value | 18 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 18 A |
| — up to 690 V at ambient temperature 60 °C rated value | 16 A |
| • at AC-2 at 400 V rated value | 7 A |
| • at AC-3 | |
| — at 400 V rated value | 7 A |
| — at 500 V rated value | 6 A |
| — at 690 V rated value | 4.9 A |
| • at AC-4 at 400 V rated value | 6.5 A |
| • at AC-5a up to 690 V rated value | 15.8 A |
| • at AC-5b up to 400 V rated value | 5.8 A |
| • at AC-6a | |

| | |
|--|---------------------|
| — up to 230 V for current peak value n=20 rated value | 4 A |
| — up to 400 V for current peak value n=20 rated value | 4 A |
| — up to 500 V for current peak value n=20 rated value | 3.8 A |
| — up to 690 V for current peak value n=20 rated value | 3.6 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 2.7 A |
| — up to 400 V for current peak value n=30 rated value | 2.7 A |
| — up to 500 V for current peak value n=30 rated value | 2.5 A |
| — up to 690 V for current peak value n=30 rated value | 2.4 A |
| Minimum cross-section in main circuit | |
| • at maximum AC-1 rated value | 2.5 mm ² |
| Operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 2.6 A |
| • at 690 V rated value | 1.8 A |
| Operating current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 15 A |
| — at 110 V rated value | 1.5 A |
| — at 220 V rated value | 0.6 A |
| — at 440 V rated value | 0.42 A |
| — at 600 V rated value | 0.42 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 15 A |
| — at 110 V rated value | 8.4 A |
| — at 220 V rated value | 1.2 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.5 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 15 A |
| — at 110 V rated value | 15 A |
| — at 220 V rated value | 15 A |
| — at 440 V rated value | 0.9 A |
| — at 600 V rated value | 0.7 A |
| Operating 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 • 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 • 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 | 15 A 0.1 A 15 A 0.25 A 15 A 15 A 1.2 A 0.14 A 0.14 A |
| Operating power <ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — at 230 V rated value — at 230 V at 60 °C rated value — at 400 V rated value — at 400 V at 60 °C rated value — at 690 V rated value — at 690 V at 60 °C rated value • 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 | 6.3 kW 6 kW 11 kW 10.5 kW 19 kW 18 kW 3 kW 1.5 kW 3 kW 3 kW 4 kW |
| 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 | 1.15 kW 1.15 kW |
| No-load switching frequency <ul style="list-style-type: none"> • at DC | 10 000 1/h |
| Operating frequency <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum | 1 000 1/h 750 1/h 750 1/h 250 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 | |
| • initial value | 0.85 |
| • Full-scale value | 1.85 |
| Design of the surge suppressor | with diode |
| Closing power of magnet coil at DC | 1.6 W |
| Holding power of magnet coil at DC | 1.6 W |
| Closing delay | |
| • at DC | 30 ... 100 ms |
| Opening delay | |
| • at DC | 7 ... 13 ms |
| Arcing time | 10 ... 15 ms |
| Control version of the switch operating mechanism | Standard A1 - A2 |

Auxiliary circuit

| | |
|---|---|
| Number of NC 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 | |
| • 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 |
| Operating 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 three-phase AC motor | |
|---|--|

| | |
|--|--|
| <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | 4.8 A 6.1 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 | 0.25 hp 0.75 hp 1.5 hp 2 hp 3 hp 5 hp |
| Contact rating of auxiliary contacts according to UL | A600 / Q600 |

Short-circuit protection

| | |
|--|--|
| 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: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA) gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA) 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 |
| Mounting type <ul style="list-style-type: none"> • Side-by-side mounting | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 Yes |
| Height | 58 mm |
| Width | 45 mm |
| Depth | 73 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 | 10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 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 current 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 (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), 2x 4 mm ² |
| — single or multi-stranded | 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), 2x 4 mm ² |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) |
| • at AWG conductors for main contacts | 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| Connectable conductor cross-section for main contacts | |
| • solid | 0.5 ... 4 mm ² |
| • stranded | 0.5 ... 4 mm ² |
| • finely stranded with core end processing | 0.5 ... 2.5 mm ² |
| Connectable conductor cross-section for auxiliary contacts | |
| • single or multi-stranded | 0.5 ... 4 mm ² |
| • finely stranded with core end processing | 0.5 ... 2.5 mm ² |
| Type of connectable conductor cross-sections | |
| • for auxiliary contacts | |
| — single or multi-stranded | 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), 2x 4 mm ² |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) |
| • at AWG conductors for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| AWG number as coded connectable conductor cross section | |
| • for main contacts | 20 ... 12 |
| • for auxiliary contacts | 20 ... 12 |

Safety related data

| | |
|--|-----------|
| B10 value | |
| • with high demand rate acc. to SN 31920 | 1 000 000 |
| Proportion of dangerous failures | |
| • with low demand rate acc. to SN 31920 | 40 % |
| • with high demand rate acc. to SN 31920 | 73 % |

| | |
|---|-------------|
| Failure rate [FIT] | |
| • with low demand rate acc. to SN 31920 | 100 FIT |
| Product function | |
| • 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 |

Certificates/ approvals

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



CCC



CSA



UL

[KC](#)



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

other

[Confirmation](#)



VDE

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2015-1VB42>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2015-1VB42>

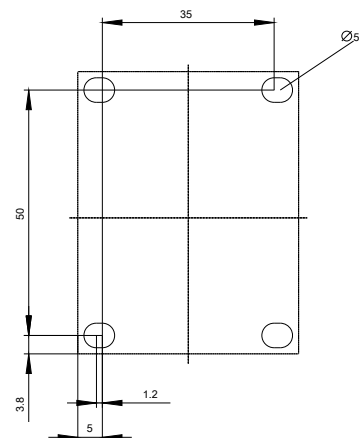
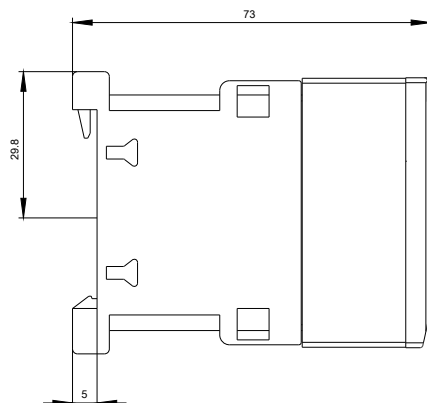
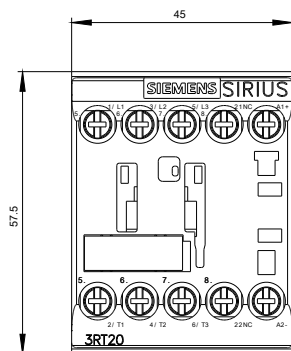
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

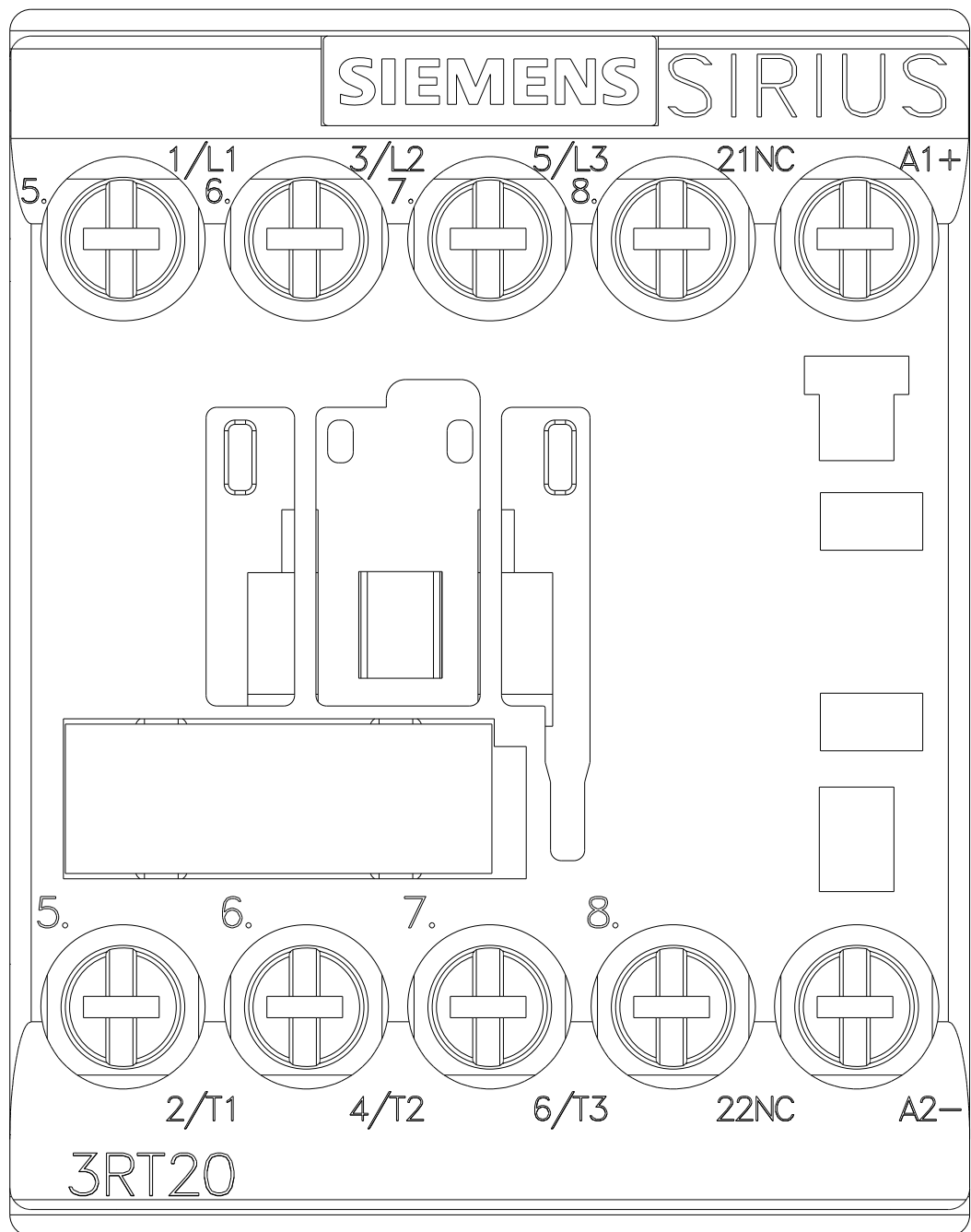
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1VB42>

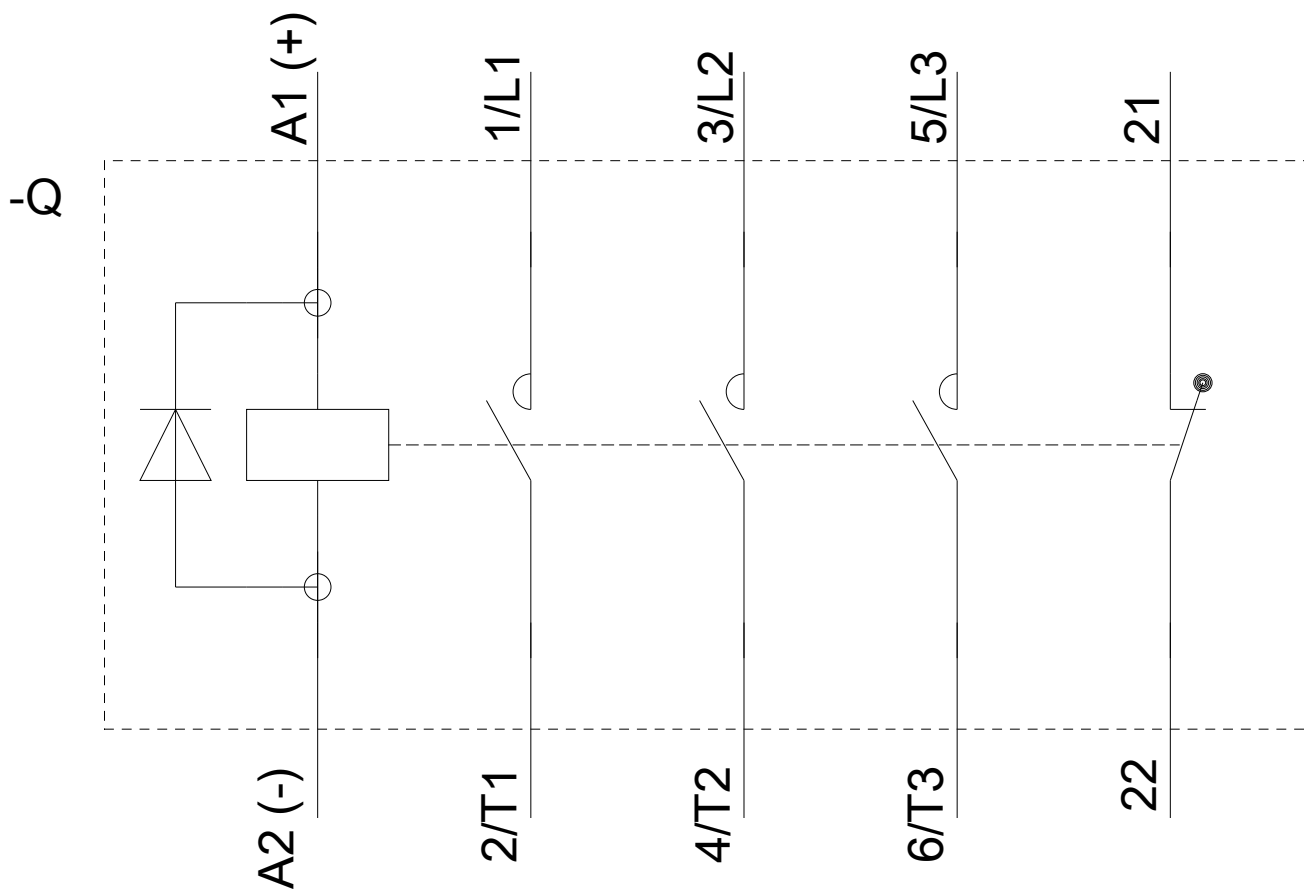
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2015-1VB42&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1VB42/char>

Further characteristics (e.g. electrical endurance, switching frequency)
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2015-1VB42&objecttype=14&gridview=view1>







last modified:

11/19/2019