

Power contactor, AC-3 16 A, 7.5 kW / 400 V 1 NO, 24 V DC, with integrated diode, 3-pole, Size S00 Spring-type terminals



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

| General technical data | |
|---|---------------------------|
| Size of contactor | S00 |
| Product extension | |
| <ul style="list-style-type: none"> function module for communication | No |
| <ul style="list-style-type: none"> Auxiliary switch | Yes |
| 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 | |
| <ul style="list-style-type: none"> on the front | IP20 |
| <ul style="list-style-type: none"> of the terminal | IP20 |
| Shock resistance at rectangular impulse | |
| <ul style="list-style-type: none"> at DC | 7.3g / 5 ms, 4.7g / 10 ms |

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| Shock resistance with sine pulse | |
| <ul style="list-style-type: none"> • at DC | 11,4g / 5 ms, 7,3g / 10 ms |
| Mechanical service life (switching cycles) | |
| <ul style="list-style-type: none"> • of contactor typical | 30 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added auxiliary switch block typical | 10 000 000 |
| 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

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| Installation altitude at height above sea level | |
| <ul style="list-style-type: none"> • maximum | 2 000 m |
| Ambient temperature | |
| <ul style="list-style-type: none"> • during operation | -25 ... +60 °C |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • at AC-3 rated value maximum | 690 V |
| Operating current | |
| <ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value | 22 A |
| <ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value | 22 A |
| <ul style="list-style-type: none"> — up to 690 V at ambient temperature 60 °C rated value | 20 A |
| <ul style="list-style-type: none"> • at AC-2 at 400 V rated value | 16 A |
| <ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value | 16 A |
| <ul style="list-style-type: none"> — at 500 V rated value | 12.4 A |
| <ul style="list-style-type: none"> — at 690 V rated value | 8.9 A |
| <ul style="list-style-type: none"> • at AC-4 at 400 V rated value | 11.5 A |
| <ul style="list-style-type: none"> • at AC-5a up to 690 V rated value | 19.4 A |
| <ul style="list-style-type: none"> • at AC-5b up to 400 V rated value | 13.2 A |
| <ul style="list-style-type: none"> • at AC-6a <ul style="list-style-type: none"> — up to 230 V at current peak n=20 rated value | 9.6 A |

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| — up to 400 V at current peak n=20 rated value | 9.6 A |
| — up to 500 V at current peak n=20 rated value | 9.6 A |
| — up to 690 V at current peak n=20 rated value | 8.9 A |
| • at AC-6a | |
| — up to 230 V at current peak n=30 rated value | 6.6 A |
| — up to 400 V at current peak n=30 rated value | 6.4 A |
| — up to 500 V at current peak n=30 rated value | 6.4 A |
| — up to 690 V at current peak n=30 rated value | 6.4 A |
| Connectable conductor cross-section in main circuit at AC-1 | |
| • at 60 °C minimum permissible | 2.5 mm ² |
| • at 40 °C minimum permissible | 4 mm ² |
| Operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 5.5 A |
| • at 690 V rated value | 4.4 A |
| Operating current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 2.1 A |
| — at 220 V rated value | 0.8 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.6 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 12 A |
| — at 220 V rated value | 1.6 A |
| — at 440 V rated value | 0.8 A |
| — at 600 V rated value | 0.7 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 20 A |
| — at 220 V rated value | 20 A |
| — at 440 V rated value | 1.3 A |
| — at 600 V rated value | 1 A |
| Operating current | |

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| <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 | <p>20 A</p> <p>0.1 A</p> <p>20 A</p> <p>0.35 A</p> <p>20 A</p> <p>20 A</p> <p>1.5 A</p> <p>0.2 A</p> <p>0.2 A</p> |
| 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 | <p>7.5 kW</p> <p>7.5 kW</p> <p>13 kW</p> <p>13 kW</p> <p>22 kW</p> <p>22 kW</p> <p>7.5 kW</p> <p>4 kW</p> <p>7.5 kW</p> <p>7.5 kW</p> <p>7.5 kW</p> |
| 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 | <p>2.5 kW</p> <p>3.5 kW</p> |
| Thermal short-time current limited to 10 s | 128 A |
| Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor | 2.2 W |
| 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 | <p>1 000 1/h</p> <p>750 1/h</p> <p>750 1/h</p> <p>250 1/h</p> |

Control circuit/ Control

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|---|------------------|
| 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 | |
| • initial value | 0.8 |
| • Full-scale value | 1.1 |
| Design of the surge suppressor | with diode |
| Closing power of magnet coil at DC | 4 W |
| Holding power of magnet coil at DC | 4 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 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 | |
| • 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 | <p>14 A</p> <p>11 A</p> |
| 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 | <p>1 hp</p> <p>2 hp</p> <p>3 hp</p> <p>5 hp</p> <p>10 hp</p> <p>10 hp</p> |
| 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 | <p>gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)</p> <p>gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p> |

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 | 70 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 | <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> |

| | |
|------------------|-------|
| — 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 | spring-loaded terminals |
| • for auxiliary and control current circuit | spring-loaded terminals |
| Type of connectable conductor cross-sections | |
| • for main contacts | |
| — solid | 2x (0.5 ... 4 mm ²) |
| — single or multi-stranded | 2x (0,5 ... 4 mm ²) |
| — finely stranded with core end processing | 2x (0.5 ... 2.5 mm ²) |
| — finely stranded without core end processing | 2x (0.5 ... 2.5 mm ²) |
| • at AWG conductors for main contacts | 2x (20 ... 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 |
| • finely stranded without 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 |
| • finely stranded without 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 ... 4 mm ²) |
| — finely stranded with core end processing | 2x (0.5 ... 2.5 mm ²) |
| — finely stranded without core end processing | 2x (0.5 ... 2.5 mm ²) |
| • at AWG conductors for auxiliary contacts | 2x (20 ... 12) |
| AWG number as coded connectable conductor cross section | |
| • for main contacts | 20 ... 12 |
| • for auxiliary contacts | 20 ... 12 |






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; with 3RH29 |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| Protection against electrical shock | finger-safe |

Certificates/approvals

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| General Product Approval | Functional Safety/Safety of Machinery |
|  CCC |  CSA |
|  UL |  EAC |
| | KC Type Examination Certificate |

| | | |
|---|---|---|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|  EG-Konf. | Miscellaneous Type Test Certificates/Test Report Special Test Certificate |  ABS |
| | |  BUREAU VERITAS |

| | |
|---|------------------------------|
| Marine / Shipping | other |
|  LRS | Confirmation |
|  PRS | |
|  RINA | |
|  RMRS | |
|  DNV-GL | |

| |
|--|
| other |
|  VDE |

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)
<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2018-2FB41>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-2FB41>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2FB41>

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

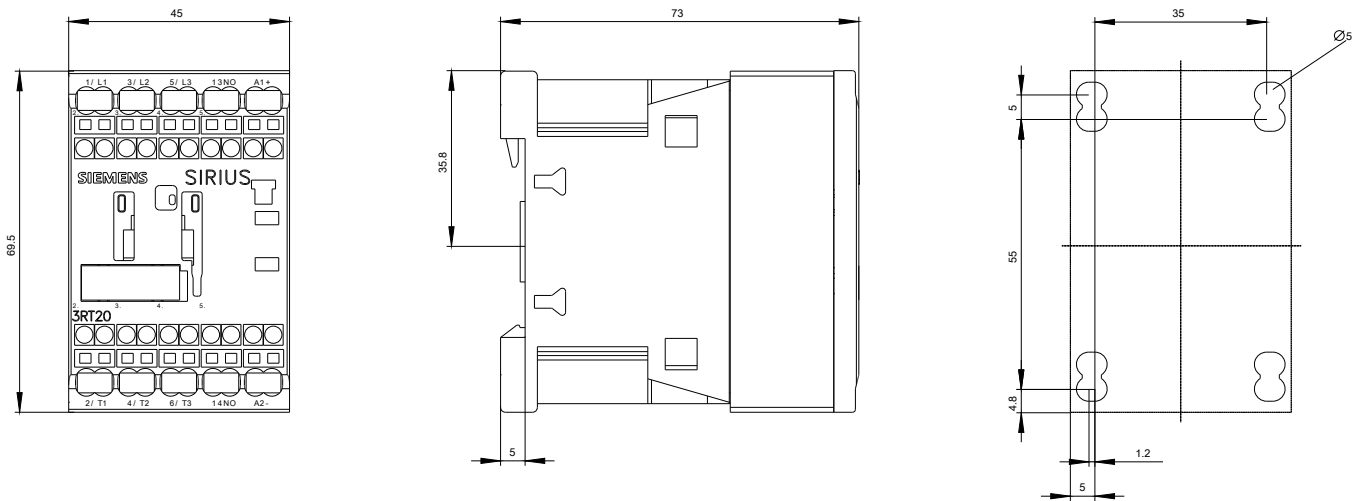
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2018-2FB41&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

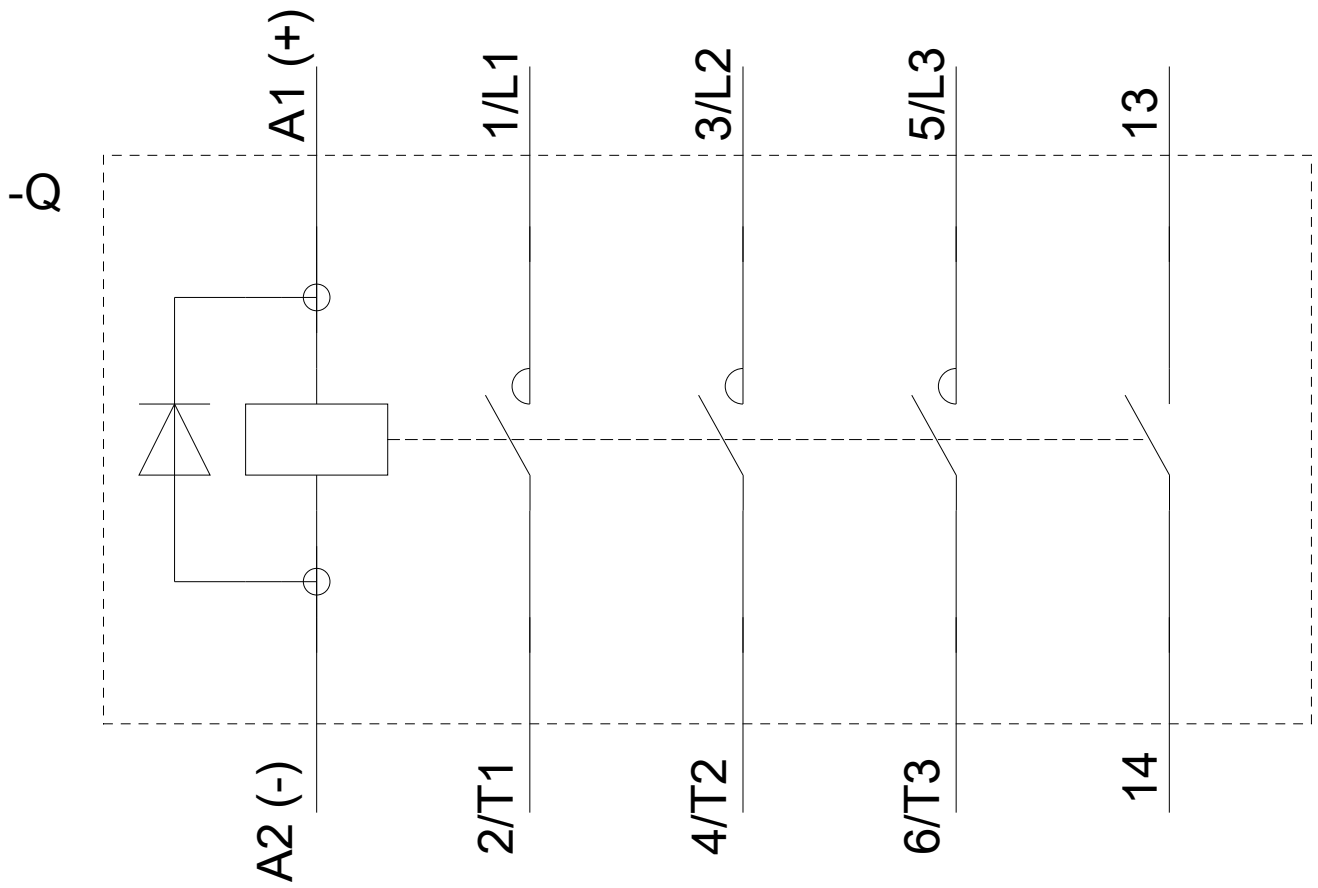
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2FB41/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2018-2FB41&objecttype=14&gridview=view1>







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