

power contactor, AC-3 40 A, 18.5 kW / 400 V 2 NO + 2 NC, 400 V
AC AC (50-60 Hz) / DC operation 3-pole, Size S2, screw terminal



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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |
| General technical data | |
| size of contactor | S2 |
| 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 | 6.6 W |
| • at AC in hot operating state per pole | 2.2 W |
| power loss [W] for rated value of the current without load current share typical | 18.5 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 |

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| protection class IP | |
| • on the front | IP20 |
| • of the terminal | IP00 |
| shock resistance at rectangular impulse | |
| • at AC | 9.8g / 5 ms, 6.5g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 15.3g / 5 ms, 10.1g / 10 ms |
| mechanical service life (switching cycles) | |
| • of contactor typical | 10 000 000 |
| • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000 |
| • of the contactor with added auxiliary switch block typical | 10 000 000 |
| reference code acc. to DIN EN 81346-2 | Q |

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| 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 |

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| 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 | 60 A |
| • at AC-1 — up to 690 V at ambient temperature 40 °C rated value | 60 A |
| — up to 690 V at ambient temperature 60 °C rated value | 55 A |
| • at AC-3 — at 400 V rated value | 41 A |
| — at 500 V rated value | 41 A |
| — at 690 V rated value | 24 A |
| • at AC-4 at 400 V rated value | 35 A |
| • at AC-5a up to 690 V rated value | 52.8 A |
| • at AC-5b up to 400 V rated value | 33.2 A |
| • at AC-6a | |

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| — up to 230 V for current peak value n=20 rated value | 36.5 A |
| — up to 400 V for current peak value n=20 rated value | 36.5 A |
| — up to 500 V for current peak value n=20 rated value | 36.5 A |
| — up to 690 V for current peak value n=20 rated value | 24 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 24.2 A |
| — up to 400 V for current peak value n=30 rated value | 24.2 A |
| — up to 500 V for current peak value n=30 rated value | 24.2 A |
| — up to 690 V for current peak value n=30 rated value | 24 A |
| minimum cross-section in main circuit | |
| • at maximum AC-1 rated value | 16 mm ² |
| operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 22 A |
| • at 690 V rated value | 18.5 A |
| operating current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 55 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 | 55 A |
| — at 110 V rated value | 45 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 | 55 A |
| — at 110 V rated value | 55 A |
| — at 220 V rated value | 45 A |
| — at 440 V rated value | 2.9 A |
| — at 600 V rated value | 1.4 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 — 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 | 35 A 2.5 A 1 A 0.1 A 0.06 A 55 A 25 A 5 A 0.27 A 0.16 A 55 A 55 A 25 A 0.6 A 0.35 A |
| operating power | |
| <ul style="list-style-type: none"> • 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 | 18.5 kW 11 kW 18.5 kW 22 kW 22 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 | 11.6 kW 16.8 kW |
| operating apparent output at AC-6a | |
| <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 | 14.5 kV·A 25.2 kV·A 31.6 kV·A 28.6 kV·A |
| operating apparent output at AC-6a | |
| <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 | 9.6 kV·A 16.8 kV·A |

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| <ul style="list-style-type: none"> • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value | 21 kV·A 28.6 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 • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum | 843 A; Use minimum cross-section acc. to AC-1 rated value 596 A; Use minimum cross-section acc. to AC-1 rated value 400 A; Use minimum cross-section acc. to AC-1 rated value 241 A; Use minimum cross-section acc. to AC-1 rated value 196 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency <ul style="list-style-type: none"> • at AC | 5 000 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 | 1 200 1/h 750 1/h 1 000 1/h 300 1/h |

| Control circuit/ Control | |
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| type of voltage of the control supply voltage | AC |
| control supply voltage at AC <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value | 400 V 400 ... 440 V |
| operating range factor control supply voltage rated value of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.8 ... 1.1 0.85 ... 1.1 |
| apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 212 V·A 188 V·A |
| inductive power factor with closing power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.69 0.65 |
| apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 18.5 V·A 16.5 V·A |
| inductive power factor with the holding power of the coil | |

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| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.36 0.39 |
| closing delay | |
| <ul style="list-style-type: none"> • at AC | 10 ... 80 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC | 10 ... 18 ms |
| arcing time | 10 ... 20 ms |
| control version of the switch operating mechanism | Standard A1 - A2 |

Auxiliary circuit

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| number of NC contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • instantaneous contact | 2 |
| number of NO contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • instantaneous contact | 2 |
| operating current at AC-12 maximum | 10 A |
| operating current at AC-15 | |
| <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 A 3 A 2 A 1 A |
| operating current at DC-12 | |
| <ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value | 10 A 6 A 6 A 3 A 2 A 1 A 0.15 A |
| operating current at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value | 6 A 2 A 2 A 1 A 0.9 A 0.3 A 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 | 40 A 41 A |
| yielded mechanical performance [hp] | |

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| <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 | 3 hp 7.5 hp 10 hp 15 hp 30 hp 40 hp |
| contact rating of auxiliary contacts according to UL | A600 / Q600 |

Short-circuit protection

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| 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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA) 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 |
| 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 | 114 mm |
| width | 55 mm |
| depth | 174 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 • for live parts <ul style="list-style-type: none"> — forwards — upwards | 10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm |

- downwards
- at the side

10 mm

6 mm

Connections/ Terminals






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|--|---|
| type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit • at contactor for auxiliary contacts • of magnet coil | <p>screw-type terminals</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> <p>Screw-type terminals</p> |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • at AWG conductors for main contacts | <p>2x (1 ... 35 mm²), 1x (1 ... 50 mm²)</p> <p>2x (1 ... 25 mm²), 1x (1 ... 35 mm²)</p> <p>2x (18 ... 2), 1x (18 ... 1)</p> |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> • finely stranded with core end processing | 1 ... 35 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing | <p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p> |
| <ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • type of connectable conductor cross-sections at AWG conductors for auxiliary contacts | <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>2x (20 ... 16), 2x (18 ... 14)</p> |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts | <p>18 ... 1</p> <p>20 ... 14</p> |



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 • with high demand rate acc. to SN 31920 | <p>40 %</p> <p>73 %</p> |
| 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 • positively driven operation acc. to IEC 60947-5-1 | <p>Yes</p> <p>No</p> |

| | |
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| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| protection against electrical shock | finger-safe when touched vertically from front acc. to IEC 60529 |
| suitability for use safety-related switching OFF | Yes |

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 DNVGL.COM/AF |

| other |
|------------------------------|
| Confirmation |

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=3RT2035-1AR64>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2035-1AR64>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1AR64>

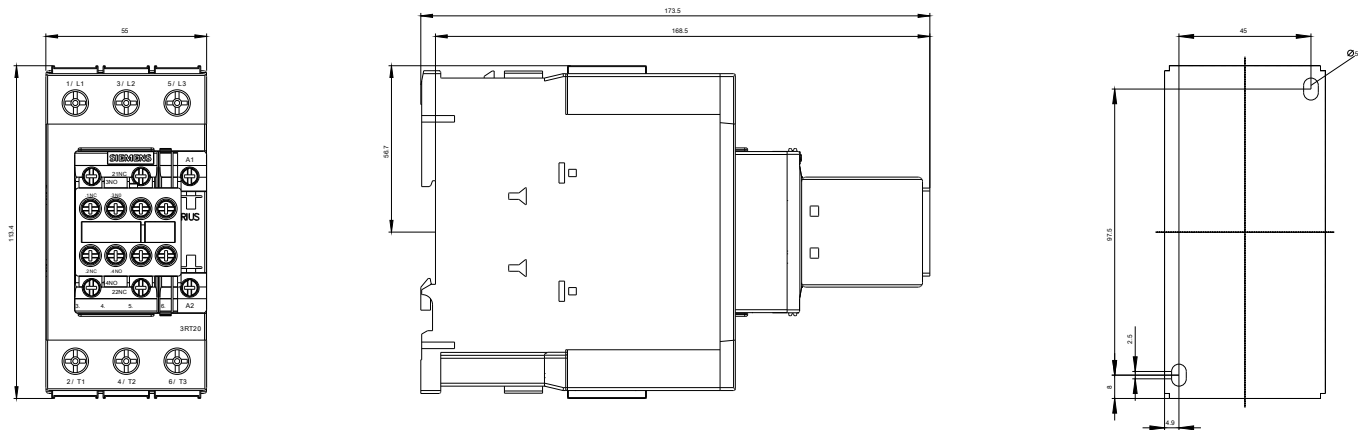
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2035-1AR64&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1AR64/char>

Further characteristics (e.g. electrical endurance, switching frequency)
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2035-1AR64&objecttype=14&gridview=view1>





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