



power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 24 V DC
communication-capable, 3-pole Size S00, screw terminal

| | |
|---|---|
| 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 Yes • auxiliary switch Yes |
| power loss [W] for rated value of the current | <ul style="list-style-type: none"> • at AC in hot operating state 1.5 W • at AC in hot operating state per pole 0.5 W • without load current share typical 4 W |
| insulation voltage | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 according to EN 60947-1 | 400 V |
| shock resistance at rectangular impulse | <ul style="list-style-type: none"> • at DC 7.3g / 5 ms, 4.7g / 10 ms |
| 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 • 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 |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | <ul style="list-style-type: none"> • 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 % |

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 |
| • at AC-3e rated value maximum | 690 V |
| operational current | |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value | 22 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 22 A |
| — up to 690 V at ambient temperature 60 °C rated value | 20 A |
| • at AC-3 | |
| — at 400 V rated value | 12 A |
| — at 500 V rated value | 9.2 A |
| — at 690 V rated value | 6.7 A |
| • at AC-3e | |
| — at 400 V rated value | 12 A |
| — at 500 V rated value | 9.2 A |
| — at 690 V rated value | 6.7 A |
| • at AC-4 at 400 V rated value | 8.5 A |
| • at AC-5a up to 690 V rated value | 19.4 A |
| • at AC-5b up to 400 V rated value | 9.9 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 7.2 A |
| — up to 400 V for current peak value n=20 rated value | 7.2 A |
| — up to 500 V for current peak value n=20 rated value | 7.2 A |
| — up to 690 V for current peak value n=20 rated value | 6.7 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 4.8 A |
| — up to 400 V for current peak value n=30 rated value | 4.8 A |
| — up to 500 V for current peak value n=30 rated value | 4.8 A |
| — up to 690 V for current peak value n=30 rated value | 4.8 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 4 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 4.1 A |
| • at 690 V rated value | 3.3 A |
| operational 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 | |

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|---|---|
| — 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 |
| ● at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 0.1 A |
| ● with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 0.35 A |
| ● with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 20 A |
| — at 220 V rated value | 1.5 A |
| — at 440 V rated value | 0.2 A |
| — at 600 V rated value | 0.2 A |
| operating power | |
| ● at AC-3 | |
| — at 230 V rated value | 3 kW |
| — at 400 V rated value | 5.5 kW |
| — at 500 V rated value | 5.5 kW |
| — at 690 V rated value | 5.5 kW |
| ● at AC-3e | |
| — at 230 V rated value | 3 kW |
| — at 400 V rated value | 5.5 kW |
| — at 500 V rated value | 5.5 kW |
| — at 690 V rated value | 5.5 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| ● at 400 V rated value | 2 kW |
| ● at 690 V rated value | 2.5 kW |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=20 rated value | 2.8 kVA |
| ● up to 400 V for current peak value n=20 rated value | 4.9 kVA |
| ● up to 500 V for current peak value n=20 rated value | 6.2 kVA |
| ● up to 690 V for current peak value n=20 rated value | 8 kVA |
| operating apparent power at AC-6a | |
| ● up to 230 V for current peak value n=30 rated value | 1.9 kVA |
| ● up to 400 V for current peak value n=30 rated value | 3.3 kVA |
| ● up to 500 V for current peak value n=30 rated value | 4.1 kVA |
| ● up to 690 V for current peak value n=30 rated value | 5.7 kVA |
| short-time withstand current in cold operating state up to 40 °C | |
| ● limited to 1 s switching at zero current maximum | 200 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum | 123 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 10 s switching at zero current maximum | 96 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 30 s switching at zero current maximum | 74 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 60 s switching at zero current maximum | 61 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| ● at DC | 10 000 1/h |
| operating frequency | |
| ● 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 |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | DC |
| control supply voltage at DC | |

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| <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 • full-scale value | 0.8 1.1 |
| closing power of magnet coil at DC | 4 W |
| holding power of magnet coil at DC | 4 W |
| closing delay | |
| <ul style="list-style-type: none"> • at DC | 30 ... 100 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at DC | 7 ... 13 ms |
| arcing time | 10 ... 15 ms |
| control version of the switch operating mechanism | Standard A1 - A2, optionally via function module |
| Auxiliary circuit | |
| number of NC contacts for auxiliary contacts instantaneous contact | 1 |
| operational current at AC-12 maximum | 10 A |
| operational 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 | 10 A 3 A 2 A 1 A |
| operational 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 |
| operational 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 | 10 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 3-phase AC motor | |
| <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | 11 A 11 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 3-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 | 0.5 hp 2 hp 3 hp 3 hp 7.5 hp 10 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: 50A (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

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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 |
| fastening method | 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 | 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 • for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side | 10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 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 circuit • at contactor for auxiliary contacts • of magnet coil | screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), 2x 4 mm ² 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), 2x 4 mm ² 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> • solid • stranded • finely stranded with core end processing | 0.5 ... 4 mm ² 0.5 ... 4 mm ² 0.5 ... 2.5 mm ² |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing | 0.5 ... 4 mm ² 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), 2x 4 mm ² 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts | 20 ... 12 20 ... 12 |

Safety related data

| | |
|--|-----------|
| product function | |
| <ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 | Yes |
| B10 value with high demand rate according to SN 31920 | 1 000 000 |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> • with low demand rate according to SN 31920 | 40 % |

| | |
|---|--|
| <ul style="list-style-type: none"> with high demand rate according to SN 31920 | 73 % |
| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT |
| T1 value for proof test interval or service life according to IEC 61508 | 20 y |
| protection class IP on the front according to IEC 60529 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |
| suitability for use <ul style="list-style-type: none"> safety-related switching OFF | Yes |

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



| | | | |
|------------|--|----------------------------------|--------------------------|
| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates |
|------------|--|----------------------------------|--------------------------|



[Type Examination Certificate](#)



EG-Konf.

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

Marine / Shipping



| | | | |
|--------------------------|--------------|----------------|-----------------------|
| Marine / Shipping | other | Railway | Dangerous Good |
|--------------------------|--------------|----------------|-----------------------|



[Confirmation](#)



[Vibration and Shock](#)

[Transport Information](#)

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=3RT2017-1BB42-0CC0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-1BB42-0CC0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1BB42-0CC0>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-1BB42-0CC0&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1BB42-0CC0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1BB42-0CC0&objecttype=14&gridview=view1>

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