SIEMENS

Data sheet

3RT2036-3AF00

power contactor, AC-3 50 A, 22 kW / 400 V 1 NO + 1 NC, 110 V AC, 50 Hz 3-pole, Size S2, Spring-type terminal



| 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 | Yes |
| power loss [W] for rated value of the current | |
| at AC in hot operating state | 12 W |
| at AC in hot operating state per pole | 4 W |
| power loss [W] for rated value of the current without load current share typical | 16 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 | IP00 | | | |
| shock resistance at rectangular impulse | | | | |
| • at AC | 11.8g / 5 ms, 7.4g / 10 ms | | | |
| shock resistance with sine pulse | | | | |
| • at AC | 18.5g / 5 ms, 11.6g / 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 | | | |
| Ambient conditions | | | | |
| installation altitude at height above sea level | 2 000 m | | | |
| maximum | | | | |
| 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 at AC-1 | 70 A | | | |
| — up to 690 V at ambient temperature 40 °C rated value | 70 A | | | |
| — up to 690 V at ambient temperature 60 °C rated value | 60 A | | | |
| • at AC-3 | | | | |
| — at 400 V rated value | 51 A | | | |
| — at 500 V rated value | 51 A | | | |
| — at 690 V rated value | 24 A | | | |
| • at AC-4 at 400 V rated value | 41 A | | | |
| • at AC-5a up to 690 V rated value | 61.6 A | | | |
| • at AC-5b up to 400 V rated value | 41.5 A | | | |
| • at AC-6a | | | | |
| | | | | |

| — up to 230 V for current peak value n=20 rated value | 43.2 A |
|---|----------------|
| — up to 400 V for current peak value n=20 rated value | 43.2 A |
| — up to 500 V for current peak value n=20 rated value | 43.2 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 | 28.8 A |
| — up to 400 V for current peak value n=30 rated value | 28.8 A |
| — up to 500 V for current peak value n=30 rated value | 28.8 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 | 25 mm² |
| operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 24 A |
| • at 690 V rated value | 20 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 440 V rated value — at 600 V rated value | 2.9 A 1.4 A |

| • at 1 current path at DC-3 at DC-5 | |
|---|-----------|
| — at 24 V rated value | 35 A |
| — at 110 V rated value | 2.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.1 A |
| — at 600 V rated value | 0.06 A |
| with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 55 A |
| — at 110 V rated value | 25 A |
| — at 220 V rated value | 5 A |
| — at 440 V rated value | 0.27 A |
| — at 600 V rated value | 0.16 A |
| with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 55 A |
| — at 110 V rated value | 55 A |
| — at 220 V rated value | 25 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.35 A |
| operating power | |
| at AC-2 at 400 V rated value | 22 kW |
| • at AC-3 | |
| — at 230 V rated value | 15 kW |
| — at 400 V rated value | 22 kW |
| — at 500 V rated value | 30 kW |
| — at 690 V rated value | 22 kW |
| operating power for approx. 200000 operating cycles | |
| at AC-4 | |
| • at 400 V rated value | 12.6 kW |
| • at 690 V rated value | 18.2 kW |
| operating apparent output at AC-6a | |
| up to 230 V for current peak value n=20 rated value | 17.2 kV·A |
| up to 400 V for current peak value n=20 rated value | 29.9 kV·A |
| up to 500 V for current peak value n=20 rated value | 37.4 kV·A |
| up to 690 V for current peak value n=20 rated value | 28.6 kV·A |
| operating apparent output at AC-6a | |
| up to 230 V for current peak value n=30 rated value | 11.4 kV·A |
| up to 400 V for current peak value n=30 rated value | 19.9 kV·A |
| | |

| up to 500 V for current peak value n=30 rated value | 24.9 kV·A | | | |
|---|---|--|--|--|
| up to 690 V for current peak value n=30 rated value | 28.6 kV·A | | | |
| short-time withstand current in cold operating state | | | | |
| up to 40 °C | | | | |
| | 027 A: Los minimum cross sostian ass to AC 1 reted value | | | |
| limited to 1 s switching at zero current maximum | 937 A; Use minimum cross-section acc. to AC-1 rated value | | | |
| limited to 5 s switching at zero current maximum | 697 A; Use minimum cross-section acc. to AC-1 rated value | | | |
| limited to 10 s switching at zero current maximum | 468 A; Use minimum cross-section acc. to AC-1 rated value | | | |
| limited to 30 s switching at zero current | 282 A; Use minimum cross-section acc. to AC-1 rated value | | | |
| maximum | | | | |
| limited to 60 s switching at zero current maximum | 229 A; Use minimum cross-section acc. to AC-1 rated value | | | |
| no-load switching frequency | | | | |
| • at AC | 5 000 1/h | | | |
| operating frequency | | | | |
| • at AC-1 maximum | 1 000 1/h | | | |
| ● at AC-2 maximum | 600 1/h | | | |
| ● at AC-3 maximum | 800 1/h | | | |
| ● at AC-4 maximum | 250 1/h | | | |
| | | | | |
| Control circuit/ Control | | | | |
| type of voltage of the control supply voltage | AC | | | |
| control supply voltage at AC | | | | |
| • at 50 Hz rated value | 110 V | | | |
| operating range factor control supply voltage rated value of magnet coil at AC | | | | |
| • at 50 Hz | 0.8 1.1 | | | |
| apparent pick-up power of magnet coil at AC | | | | |
| ● at 50 Hz | 190 V·A | | | |
| inductive power factor with closing power of the coil | | | | |
| ● at 50 Hz | 0.72 | | | |
| apparent holding power of magnet coil at AC | | | | |
| • at 50 Hz | 16 V·A | | | |
| inductive power factor with the holding power of the | | | | |
| coil | | | | |
| • at 50 Hz | 0.37 | | | |
| closing delay | | | | |
| ● at AC | | | | |
| • al AG | 10 80 ms | | | |
| opening delay | 10 80 ms | | | |
| | 10 80 ms 10 18 ms | | | |

| arcing time | 10 20 ms | | | |
|---|---|--|--|--|
| control version of the switch operating mechanism | Standard A1 - A2 | | | |
| Auxiliary circuit | | | | |
| number of NC contacts for auxiliary contacts | | | | |
| • instantaneous contact | 1 | | | |
| 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) | | | |
| JL/CSA ratings | | | | |
| full-load current (FLA) for three-phase AC motor | | | | |
| • at 480 V rated value | 52 A | | | |
| • at 600 V rated value | 52 A | | | |
| yielded mechanical performance [hp] | | | | |
| for single-phase AC motor | | | | |
| | | | | |

| — at 110/120 V rated value | 3 hp |
|--|-------|
| — at 230 V rated value | 10 hp |
| for three-phase AC motor | |
| — at 200/208 V rated value | 15 hp |
| — at 220/230 V rated value | 15 hp |
| | |

| — at 460/480 V rated value | 40 hp | | | |
|---|--|--|--|--|
| — at 575/600 V rated value | 50 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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) | | | |
| — with type of assignment 2 required | gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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 | | | |
| mounting type | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 | | | |
| side-by-side mounting | Yes | | | |
| height | 114 mm | | | |
| width | 55 mm | | | |
| depth | 130 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 current circuit | spring-loaded terminals | | | |

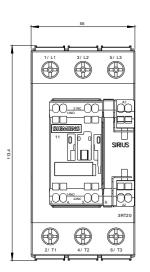
| at contactor for auxiliary contacts | Spring-type terminals | | | |
|---|--|--|--|--|
| of magnet coil | Spring-type terminals | | | |
| type of connectable conductor cross-sections | | | | |
| for main contacts | | | | |
| — single or multi-stranded | 2x (1 35 mm²), 1x (1 50 mm²) | | | |
| finely stranded with core end processing | 2x (1 25 mm ²), 1x (1 35 mm ²) | | | |
| • at AWG conductors for main contacts | 2x (18 2), 1x (18 1) | | | |
| connectable conductor cross-section for main contacts | | | | |
| finely stranded with core end processing | 1 35 mm² | | | |
| connectable conductor cross-section for auxiliary contacts | | | | |
| single or multi-stranded | 0.5 2.5 mm² | | | |
| finely stranded with core end processing | 0.5 1.5 mm² | | | |
| finely stranded without core end processing | 0.5 2.5 mm² | | | |
| type of connectable conductor cross-sections for auxiliary contacts | | | | |
| — single or multi-stranded | 2x (0.5 2.5 mm²) | | | |
| — finely stranded with core end processing | 2x (0.5 1.5 mm²) | | | |
| finely stranded without core end processing | 2x (0.5 2.5 mm²) | | | |
| type of connectable conductor cross-sections at AWG conductors for auxiliary contacts | 2x (20 14) | | | |
| AWG number as coded connectable conductor cross section | | | | |
| for main contacts | 18 1 | | | |
| for auxiliary contacts | 20 14 | | | |
| Safety related data | | | | |
| B10 value | 4 000 000 | | | |
| • with high demand rate acc. to SN 31920 | 1 000 000 | | | |
| proportion of dangerous failures | 40.9/ | | | |
| • with low demand rate acc. to SN 31920 | 40 % | | | |
| • with high demand rate acc. to SN 31920 failure rate [FIT] | 73 % | | | |
| | 100 FIT | | | |
| with low demand rate acc. to SN 31920 product function | | | | |
| mirror contact acc. to IEC 60947-4-1 | Yes | | | |
| positively driven operation acc. to IEC 60947-5- | No | | | |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 у | | | |
| protection against electrical shock | finger-safe when touched vertically from front acc. to IEC 60529 | | | |
| suitability for use safety-related switching OFF | Yes | | | |

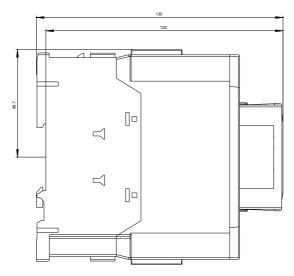
| Certificates/ approva | als | | | | |
|---|----------------------------|----------------------|---|-------------------------------|------------------------|
| General Product | Approval | | | | EMC |
| | CSA | | <u>KC</u> | EHC | RCM |
| Functional Safety/Safety of Machinery | Declaration o | f Conformity | Test Certificates | | Marine / Ship- ping |
| Type Examination Certificate | EG-Konf. | <u>Miscellaneous</u> | Type Test Certific- ates/Test Report | Special Test Certi- ficate | ABS |
| Marine / Shippin | g | | | | |
| BUREAU VERITAS | Lloyd's Register Irs | PRS | RINA | RMRS | DNV-GL |
| 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=3RT2036-3AF00 | | | | | |
| Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-3AF00 | | | | | |
| Service&Support (Manuals, Certificates, Characteristics, FAQs,) https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3AF00 | | | | | |

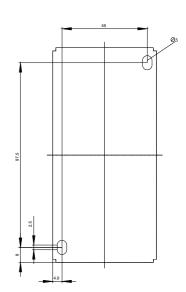
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3AF00&lang=en

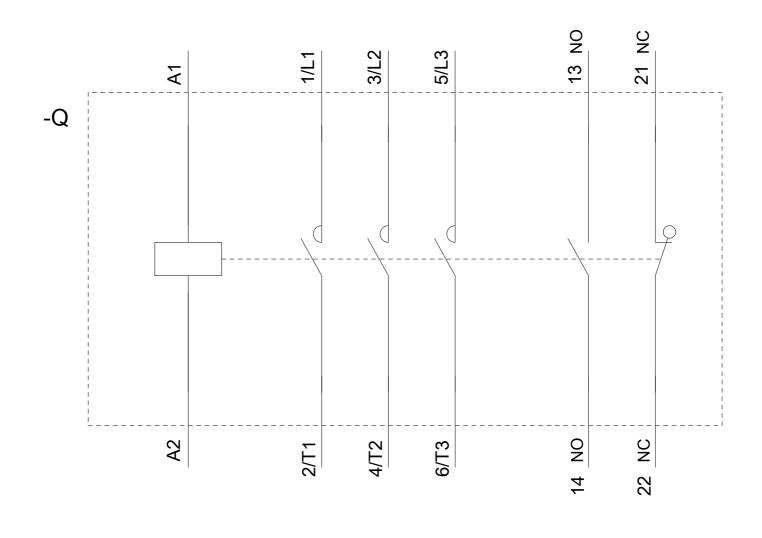
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3AF00/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-3AF00&objecttype=14&gridview=view1









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