SIEMENS

Data sheet 3RT2046-1AB00



power contactor, AC-3 95 A, 45 kW / 400 V 1 NO + 1 NC, 24 V AC, 50 Hz 3-pole, 3 NO, Size S3 screw terminal

| product brand name | SIRIUS | |
|-------------------------------------------------------------------------------------------------------------|------------------------------|--|
| product designation | Power contactor | |
| product type designation | 3RT2 | |
| General technical data | | |
| size of contactor | S3 | |
| 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 | 19.8 W | |
| • per pole | 6.6 W | |
| power loss [W] for rated value of the current without load current share typical | 19 W | |
| surge voltage resistance | | |
| of main circuit rated value | 8 kV | |
| of auxiliary circuit rated value | 6 kV | |
| maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1 | 690 V | |
| shock resistance at rectangular impulse | | |
| at AC | 6.7 g / 5 ms, 4.0 g / 10 ms | |
| shock resistance with sine pulse | | |
| • at AC | 10.6 g / 5 ms, 6.3 g / 10 ms | |
| mechanical service life (switching cycles) | | |
| of contactor typical | 10 000 000 | |
| 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 acc. to IEC 81346-2 | Q | |
| Substance Prohibitance (Date) | 01.03.2017 | |
| 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 | |
| relative humidity minimum | 10 % | |
| relative humidity at 55 °C acc. 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 | 1 000 V |
|---------------------------------------------------------------------------|-----------|
| operating voltage at AC-3 rated value maximum operational current | 1 000 V |
| at AC-1 at 400 V at ambient temperature 40 °C | 130 A |
| rated value | |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value | 130 A |
| up to 690 V at ambient temperature 60 °C rated value | 110 A |
| up to 1000 V at ambient temperature 40 °C rated value | 70 A |
| up to 1000 V at ambient temperature 60 °C rated value | 60 A |
| • at AC-3 | |
| — at 400 V rated value | 95 A |
| — at 500 V rated value | 95 A |
| — at 690 V rated value | 78 A |
| — at 1000 V rated value | 30 A |
| at AC-4 at 400 V rated value | 80 A |
| at AC-5a up to 690 V rated value | 114 A |
| at AC-5b up to 400 V rated value | 95 A |
| • at AC-6a | |
| up to 230 V for current peak value n=20 rated value | 84.4 A |
| up to 400 V for current peak value n=20 rated value | 84.4 A |
| up to 500 V for current peak value n=20 rated value | 84.4 A |
| up to 690 V for current peak value n=20 rated value | 58 A |
| • at AC-6a | |
| up to 230 V for current peak value n=30 rated value | 56.3 A |
| up to 400 V for current peak value n=30 rated value | 56.3 A |
| up to 500 V for current peak value n=30 rated value | 56.3 A |
| up to 690 V for current peak value n=30 rated value | 56.3 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 50 mm² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 42 A |
| at 690 V rated value | 30 A |
| operating power | |
| • at AC-2 at 400 V rated value | 45 kW |
| • at AC-3 | |
| — at 230 V rated value | 22 kW |
| — at 400 V rated value | 45 kW |
| — at 500 V rated value | 55 kW |
| — at 690 V rated value | 75 kW |
| — at 1000 V rated value | 37 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| at 400 V rated value | 22 kW |
| at 690 V rated value | 27.4 kW |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=20 rated value | 33 kV·A |
| • up to 400 V for current peak value n=20 rated value | 58 kV·A |
| up to 500 V for current peak value n=20 rated value | 73 kV·A |
| up to 690 V for current peak value n=20 rated value | 69 kV·A |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=30 rated value | 22.4 kV·A |
| - up to 200 v to outlone pour value 11-00 fated value | |

| up to 400 V for current peak value n=30 rated value | 39 kV·A | |
|--------------------------------------------------------------------------------|-------------------------------------------------------------|--|
| up to 500 V for current peak value n=30 rated value | 48.7 kV·A | |
| up to 690 V for current peak value n=30 rated value | 67.3 kV·A | |
| short-time withstand current in cold operating state up to 40 °C | | |
| limited to 1 s switching at zero current maximum | 1 725 A; Use minimum cross-section acc. to AC-1 rated value | |
| limited to 5 s switching at zero current maximum | 1 297 A; Use minimum cross-section acc. to AC-1 rated value | |
| limited to 10 s switching at zero current maximum | 946 A; Use minimum cross-section acc. to AC-1 rated value | |
| limited to 30 s switching at zero current maximum | 610 A; Use minimum cross-section acc. to AC-1 rated value | |
| limited to 60 s switching at zero current maximum | 486 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 | 900 1/h | |
| at AC-2 maximum | 350 1/h | |
| at AC-3 maximum | 850 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 | 24 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 | 296 V·A | |
| inductive power factor with closing power of the coil | | |
| ● at 50 Hz | 0.61 | |
| apparent holding power of magnet coil at AC | | |
| ● at 50 Hz | 19 V·A | |
| inductive power factor with the holding power of the coil | | |
| ● at 50 Hz | 0.38 | |
| closing delay | | |
| • at AC | 13 50 ms | |
| opening delay | | |
| • at AC | 10 21 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 | |
| operational current at AC-12 maximum | 10 A | |
| operational current at AC-15 | | |
| • at 230 V rated value | 6 A | |
| at 400 V rated value | 3 A | |
| • at 500 V rated value | 2 A | |
| at 690 V rated value | 1 A | |
| operational 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 | |
| operational 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 3-phase AC motor | | |
| at 480 V rated value | 96 A | |
| at 600 V rated value | 77 A | |
| yielded mechanical performance [hp] | | |
| for single-phase AC motor | | |
| — at 110/120 V rated value | 10 hp | |
| — at 230 V rated value | 20 hp | |
| for 3-phase AC motor | | |
| — at 200/208 V rated value | 30 hp | |
| — at 220/230 V rated value | 30 hp | |
| — at 460/480 V rated value | 75 hp | |
| — at 575/600 V rated value | 75 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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) | |
| — with type of assignment 2 required | gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) | |
| 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 | |
| fastening method | screw and snap-on mounting onto 35 mm standard mounting rail | |
| | according to DIN EN 60715 | |
| side-by-side mounting | Yes | |
| height | 140 mm | |
| width | 70 mm | |
| depth | 152 mm | |
| required spacing | | |
| with side-by-side mounting | | |
| — forwards | 20 mm | |
| — upwards | 10 mm | |
| — downwards | 10 mm | |
| — at the side | 0 mm | |
| for grounded parts | 20 mm | |
| — forwards | 20 mm | |
| — upwards | 10 mm | |
| — at the side | 10 mm | |
| — downwards | 10 mm | |
| for live partsforwards | 20 mm | |
| | | |
| — upwards — downwards | 10 mm 10 mm | |
| — downwards — at the side | 10 mm | |
| — at the side Connections/ Terminals | IV IIIII | |
| | | |
| type of electrical connection | corou tupo terminale | |
| for main current circuit for auxiliany and control circuit | screw-type terminals | |
| for auxiliary and control circuit at contactor for auxiliary contacts | screw-type terminals | |
| at contactor for auxiliary contacts of magnet coil | Screw-type terminals Screw-type terminals | |
| of magnet coil | A DESCRIPTION OF THE PROPERTY | |
| type of connectable conductor cross-sections | Colon type terminals | |

| for main contacts | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--|--|
| finely stranded with core end processing | 2x (2.5 35 mm²), 1x (2.5 50 mm²) | | |
| at AWG cables for main contacts | 2x (10 1/0), 1x (10 2) | | |
| connectable conductor cross-section for main contacts | | | |
| • solid | 2.5 16 mm² | | |
| stranded | 6 70 mm² | | |
| finely stranded with core end processing | 2.5 50 mm² | | |
| connectable conductor cross-section for auxiliary contacts | | | |
| solid or stranded | 0.5 2.5 mm² | | |
| finely stranded with core end processing | 0.5 2.5 mm² | | |
| type of connectable conductor cross-sections | | | |
| for auxiliary contacts | | | |
| — solid or stranded | 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) | | |
| finely stranded with core end processing | 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) | | |
| at AWG cables for auxiliary contacts | 2x (20 16), 2x (18 14) | | |
| AWG number as coded connectable conductor cross section | | | |
| for main contacts | 10 2 | | |
| | | | |
| for auxiliary contacts | 20 14 | | |
| for auxiliary contacts Safety related data | 20 14 | | |
| | 20 14 1 000 000 | | |
| Safety related data | | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 | | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures | 1 000 000 | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 | 1 000 000 | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 | 1 000 000 40 % 73 % | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to | 1 000 000 40 % 73 % 100 FIT | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to IEC 61508 | 1 000 000 40 % 73 % 100 FIT 20 y | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to IEC 61508 protection class IP on the front acc. to IEC 60529 | 1 000 000 40 % 73 % 100 FIT 20 y | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to IEC 61508 protection class IP on the front acc. to IEC 60529 touch protection on the front acc. to IEC 60529 | 1 000 000 40 % 73 % 100 FIT 20 y | | |
| Safety related data B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to IEC 61508 protection class IP on the front acc. to IEC 60529 touch protection on the front acc. to IEC 60529 suitability for use | 1 000 000 40 % 73 % 100 FIT 20 y IP20 finger-safe, for vertical contact from the front | | |

Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>



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



Type Examination Certificate



UK Declaration of Conformity Type Test Certificates/Test Report

Special Test Certificate

Marine / Shipping













other Railway Dangerous Good

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=3RT2046-1AB00

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1AB00

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1AB00

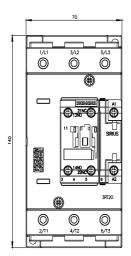
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

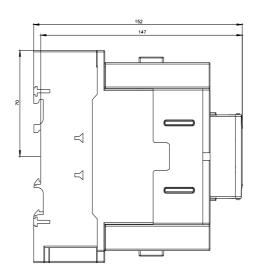
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1AB00&lang=en

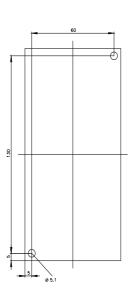
Characteristic: Tripping characteristics, I2t, Let-through current

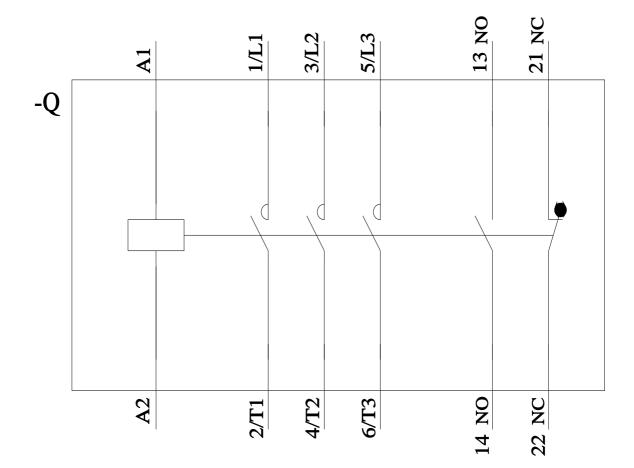
https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1AB00/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2046-1AB00&objecttype=14&gridview=view1









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