SIEMENS

Data sheet 3RT1054-6AF36

SIRIUS





power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC Uc: 110-127 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: busbar control and auxiliary circuit: screw terminal



| product brand name | SIRIUS |
|--|----------------------------|
| product designation | Power contactor |
| product type designation | 3RT1 |
| General technical data | |
| size of contactor | S6 |
| 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 | 21 W |
| at AC in hot operating state per pole | 7 W |
| without load current share typical | 5.2 W |
| type of calculation of power loss depending on pole | quadratic |
| insulation voltage | |
| of main circuit with degree of pollution 3 rated value | 1 000 V |
| of auxiliary circuit with degree of pollution 3 rated value | 500 V |
| surge voltage resistance | |
| of main circuit rated value | 8 kV |
| of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 | 690 V |
| shock resistance at rectangular impulse | |
| • at AC | 8,5g / 5 ms, 4,2g / 10 ms |
| • at DC | 8,5g / 5 ms, 4,2g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 13,4g / 5 ms, 6,5g / 10 ms |
| • at DC | 13,4g / 5 ms, 6,5g / 10 ms |
| mechanical service life (operating 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 according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 05/01/2012 |
| SVHC substance name | Lead - 7439-92-1 |
| Weight | 3.302 kg |
| 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 according to IEC 60068-2-30 maximum | 95 % |
| Environmental footprint | |
| global warming potential [CO2 eq] total | 379 kg |
| global warming potential [CO2 eq] during manufacturing | 17 kg |
| global warming potential [CO2 eq] during sales | 0.901 kg |
| global warming potential [CO2 eq] during operation | 363 kg |
| global warming potential [CO2 eq] after end of life | -2.28 kg |
| Siemens Eco Profile (SEP) | Siemens EcoTech |
| 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 |
| at AC-3e rated value maximum | 1 000 V |
| operational current | |
| at AC-1 at 400 V at ambient temperature 40 °C rated value | 160 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 160 A |
| — up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value | 140 A |
| — up to 1000 V at ambient temperature 40 $^{\circ}\text{C}$ rated value | 80 A |
| — up to 1000 V at ambient temperature 60 $^{\circ}\text{C}$ rated value | 80 A |
| • at AC-3 | |
| — at 400 V rated value | 115 A |
| — at 500 V rated value | 115 A |
| — at 690 V rated value | 115 A |
| — at 1000 V rated value | 53 A |
| • at AC-3e | |
| — at 400 V rated value | 115 A |
| — at 500 V rated value | 115 A |
| — at 690 V rated value | 115 A |
| — at 1000 V rated value | 53 A |
| • at AC-4 at 400 V rated value | 97 A |
| at AC-5a up to 690 V rated value | 140 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 | 115 A |
| — up to 400 V for current peak value n=20 rated value | 115 A |
| — up to 500 V for current peak value n=20 rated value | 115 A |
| — up to 690 V for current peak value n=20 rated value | 115 A |
| — up to 1000 V for current peak value n=20 rated value | 53 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 98 A |
| — up to 400 V for current peak value n=30 rated value | 98 A |
| — up to 500 V for current peak value n=30 rated value | 98 A |
| — up to 690 V for current peak value n=30 rated value | 98 A |
| up to 1000 V for current peak value n=30 rated value | 53 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 70 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| at 400 V rated value | 54 A |
| at 690 V rated value | 48 A |

| operational current | |
|--|--------|
| at 1 current path at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 160 A |
| — at 110 V rated value | 18 A |
| — at 220 V rated value | 3.4 A |
| — at 440 V rated value | 0.8 A |
| — at 600 V rated value | 0.5 A |
| with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 20 A |
| — at 440 V rated value | 3.2 A |
| — at 600 V rated value | 1.6 A |
| with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 160 A |
| — at 440 V rated value | 11.5 A |
| — at 600 V rated value | 4 A |
| • at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 7.5 A |
| — at 220 V rated value | 0.6 A |
| — at 440 V rated value | 0.17 A |
| — at 600 V rated value | 0.12 A |
| with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 2.5 A |
| — at 440 V rated value | 0.65 A |
| — at 600 V rated value | 0.37 A |
| with 3 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 160 A |
| — at 60 V rated value | 160 A |
| — at 110 V rated value | 160 A |
| — at 220 V rated value | 160 A |
| — at 440 V rated value | 1.4 A |
| — at 600 V rated value | 0.75 A |
| operating power | |
| • at AC-3 | |
| — at 230 V rated value | 37 kW |
| — at 400 V rated value | 55 kW |
| — at 500 V rated value | 75 kW |
| — at 690 V rated value | 110 kW |
| — at 1000 V rated value | 75 kW |
| • at AC-3e | |
| — at 230 V rated value | 37 kW |
| — at 400 V rated value | 55 kW |
| — at 500 V rated value | 75 kW |
| — at 690 V rated value | 110 kW |
| — at 1000 V rated value | 75 kW |
| operating power for approx. 200000 operating cycles at AC- | |
| at 400 V rated value | 29 kW |
| • at 690 V rated value | 48 kW |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=20 rated value | 40 kVA |
| - ap to 200 v to: carrent pour value II-20 lated value | |

| • up to 400 V for current peak value n=20 rated value | 80 kVA | | | | |
|---|---|--|--|--|--|
| up to 500 V for current peak value n=20 rated value | 100 kVA | | | | |
| up to 690 V for current peak value n=20 rated value | 130 kVA | | | | |
| up to 1000 V for current peak value n=20 rated value | 90 kVA | | | | |
| operating apparent power at AC-6a | | | | | |
| up to 230 V for current peak value n=30 rated value | 30 kVA | | | | |
| up to 400 V for current peak value n=30 rated value | 60 kVA | | | | |
| • up to 500 V for current peak value n=30 rated value | 80 kVA | | | | |
| • up to 690 V for current peak value n=30 rated value | 110 kVA | | | | |
| • up to 1000 V for current peak value n=30 rated value | 90 kVA | | | | |
| short-time withstand current in cold operating state up to | | | | | |
| 40 °C | | | | | |
| limited to 1 s switching at zero current maximum | 2 565 A; Use minimum cross-section acc. to AC-1 rated value | | | | |
| limited to 5 s switching at zero current maximum | 1 654 A; Use minimum cross-section acc. to AC-1 rated value | | | | |
| limited to 10 s switching at zero current maximum | 1 170 A; Use minimum cross-section acc. to AC-1 rated value | | | | |
| limited to 30 s switching at zero current maximum | 729 A; Use minimum cross-section acc. to AC-1 rated value | | | | |
| Ilimited to 60 s switching at zero current maximum | 572 A; Use minimum cross-section acc. to AC-1 rated value | | | | |
| no-load switching frequency | 2 000 1/h | | | | |
| • at AC | 2 000 1/h | | | | |
| • at DC | 2 000 1/h | | | | |
| operating frequency | 000.4/b | | | | |
| • at AC-1 maximum | 800 1/h | | | | |
| • at AC-2 maximum | 400 1/h | | | | |
| • at AC-3 maximum | 1 000 1/h | | | | |
| at AC-3e maximum | 1 000 1/h | | | | |
| at AC-4 maximum | 130 1/h | | | | |
| Control circuit/ Control | 40/00 | | | | |
| type of voltage of the control supply voltage | AC/DC | | | | |
| control supply voltage at AC | 440 40714 | | | | |
| at 50 Hz rated value | 110 127 V | | | | |
| at 60 Hz rated value | 110 127 V | | | | |
| control supply voltage at DC rated value | 110 127 V | | | | |
| operating range factor control supply voltage rated value of magnet coil at DC | | | | | |
| • initial value | 0.8 | | | | |
| full-scale value | 1.1 | | | | |
| operating range factor control supply voltage rated value of magnet coil at AC | | | | | |
| • at 50 Hz | 0.8 1.1 | | | | |
| • at 60 Hz | 0.8 1.1 | | | | |
| design of the surge suppressor | with varistor | | | | |
| apparent pick-up power | | | | | |
| at minimum rated control supply voltage at AC | | | | | |
| — at 50 Hz | 250 VA | | | | |
| — at 60 Hz | 250 VA | | | | |
| at maximum rated control supply voltage at AC | | | | | |
| — at 60 Hz | 300 VA | | | | |
| — at 50 Hz | 300 VA | | | | |
| apparent pick-up power of magnet coil at AC | | | | | |
| • at 50 Hz | 300 VA | | | | |
| ● at 60 Hz | 300 VA | | | | |
| inductive power factor with closing power of the coil | | | | | |
| • at 50 Hz | 0.9 | | | | |
| • at 60 Hz | 0.9 | | | | |
| apparent holding power | | | | | |
| at minimum rated control supply voltage at DC | 4.3 VA | | | | |
| at maximum rated control supply voltage at DC | 5.2 VA | | | | |
| apparent holding power | | | | | |
| at minimum rated control supply voltage at AC | | | | | |
| — at 50 Hz | 4.8 VA | | | | |
| — at 60 Hz | 4.8 VA | | | | |
| at maximum rated control supply voltage at AC | | | | | |
| | | | | | |

| — at 50 Hz | 5.8 VA | | | |
|---|---|--|--|--|
| — at 50 пz — at 60 Hz | 5.8 VA 5.8 VA | | | |
| inductive power factor with the holding power of the coil | 0.0 VA | | | |
| | 0.0 | | | |
| • at 50 Hz | 0.8 | | | |
| • at 60 Hz | 0.8 | | | |
| closing power of magnet coil at DC | 360 W | | | |
| holding power of magnet coil at DC | 5.2 W | | | |
| closing delay | 00 05 | | | |
| • at AC | 20 95 ms | | | |
| • at DC | 20 95 ms | | | |
| opening delay | 4000 | | | |
| • at AC | 40 60 ms | | | |
| • at DC | 40 60 ms | | | |
| arcing time | 10 15 ms | | | |
| control version of the switch operating mechanism | Standard A1 - A2 | | | |
| Auxiliary circuit | | | | |
| number of NC contacts for auxiliary contacts instantaneous contact | 2 | | | |
| number of NO contacts for auxiliary contacts instantaneous contact | 2 | | | |
| 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 | 124 A | | | |
| at 600 V rated value | 125 A | | | |
| yielded mechanical performance [hp] | | | | |
| for single-phase AC motor | | | | |
| — at 230 V rated value | 25 hp | | | |
| • for 3-phase AC motor | | | | |
| — at 200/208 V rated value | 40 hp | | | |
| — at 220/230 V rated value | 50 hp | | | |
| — at 460/480 V rated value | 100 hp | | | |
| — at 575/600 V rated value | 125 hp | | | |
| contact rating of auxiliary contacts according to UL | A600 / Q600 | | | |
| Short-circuit protection | | | | |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V | C characteristic: 10 A; 0.4 kA | | | |
| design of the fuse link | | | | |
| for short-circuit protection of the main circuit | | | | |

| with type of coordination 4 required | aC: 255 A (600 V 100 kA) | | |
|--|--|--|--|
| with type of coordination 1 required with type of assignment 2 required. | gG: 355 A (690 V, 100 kA) | | |
| with type of assignment 2 required | gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA) | | |
| • for short-circuit protection of the auxiliary switch required | gG: 10 A (500 V, 1 kA) | | |
| Installation/ mounting/ dimensions | | | |
| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface | | |
| factoring mathed side by side manuating | +/- 22.5° tiltable to the front and back | | |
| fastening method side-by-side mounting | Yes | | |
| fastening method | screw fixing 172 mm | | |
| height width | 120 mm | | |
| depth | 170 mm | | |
| required spacing | 170 11111 | | |
| with side-by-side mounting | | | |
| — forwards | 20 mm | | |
| — upwards | 10 mm | | |
| — downwards | 10 mm | | |
| — at the side | 0 mm | | |
| for grounded parts | | | |
| — forwards | 20 mm | | |
| — upwards | 10 mm | | |
| — at the side | 10 mm | | |
| — downwards | 10 mm | | |
| for live parts | | | |
| — forwards | 20 mm | | |
| — upwards | 10 mm | | |
| — downwards | 10 mm | | |
| — at the side | 10 mm | | |
| Connections/ Terminals | | | |
| type of electrical connection | | | |
| for main current circuit | Connection bar | | |
| for auxiliary and control circuit | screw-type terminals | | |
| at contactor for auxiliary contacts | Screw-type terminals | | |
| of magnet coil | Screw-type terminals | | |
| width of connection bar | 17 mm | | |
| thickness of connection bar | 3 mm | | |
| diameter of holes | 9 mm | | |
| number of holes | 1 | | |
| type of connectable conductor cross-sections | | | |
| for AWG cables for main contacts | 4 250 kcmil | | |
| connectable conductor cross-section for main contacts | | | |
| • stranded | 25 120 mm² | | |
| connectable conductor cross-section for auxiliary contacts | 0.5 4 mm² | | |
| solid or stranded finally attended with care and processing. | 0.5 4 mm ² | | |
| • finely stranded with core end processing | 0.5 2.5 mm ² | | |
| type of connectable conductor cross-sections | | | |
| for auxiliary contacts | 2v (0.5 | | |
| — solid | 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), max. 2x (0.75 4 mm²) | | |
| — solid or stranded— finely stranded with core end processing | 2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), max. 2x (0,75 4 mm²) 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) | | |
| Innery stranded with core end processing for AWG cables for auxiliary contacts | 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14), 1x 12 | | |
| AWG number as coded connectable conductor cross | 21 (20 10), 21 (10 17), 11 12 | | |
| section | | | |
| for auxiliary contacts | 18 14 | | |
| Safety related data | | | |
| product function | | | |
| mirror contact according to IEC 60947-4-1 | Yes | | |
| positively driven operation according to IEC 60947-5-1 | No | | |
| suitable for safety function | Yes | | |
| | 100 | | |
| suitability for use safety-related switching OFF | Yes | | |

| test wear-related service life necessary | Yes | | | |
|---|--|--|--|--|
| proportion of dangerous failures | | | | |
| with low demand rate according to SN 31920 | 40 % | | | |
| with high demand rate according to SN 31920 | 73 % | | | |
| B10 value with high demand rate according to SN 31920 | 1 000 000 | | | |
| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT | | | |
| ISO 13849 | | | | |
| device type according to ISO 13849-1 | 3 | | | |
| overdimensioning according to ISO 13849-2 necessary | Yes | | | |
| IEC 61508 | | | | |
| safety device type according to IEC 61508-2 | Type A | | | |
| Electrical Safety | | | | |
| protection class IP on the front according to IEC 60529 | IP00; IP20 with box terminal/cover | | | |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front with box terminal/cover | | | |
| Approvals Certificates | | | | |

General Product Approval









<u>KC</u>



EMV Functional Saftey Test Certificates Marine / Shipping



Type Examination Certificate Special Test Certificate

Type Test Certificates/Test Report

Miscellaneous



Marine / Shipping other









Miscellaneous

Confirmation

other Railway Environment

Confirmation

Miscellaneous

Special Test Certificate



Siemens EcoTech



Environmental Confirmations

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT1054-6AF36

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT1054-6AF36}$

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6AF36

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

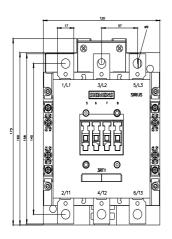
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-6AF36&lang=en

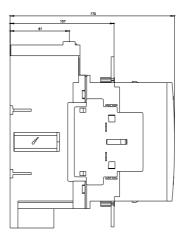
Characteristic: Tripping characteristics, I2t, Let-through current

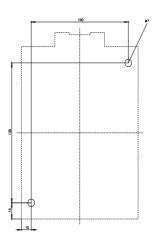
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6AF36/cha

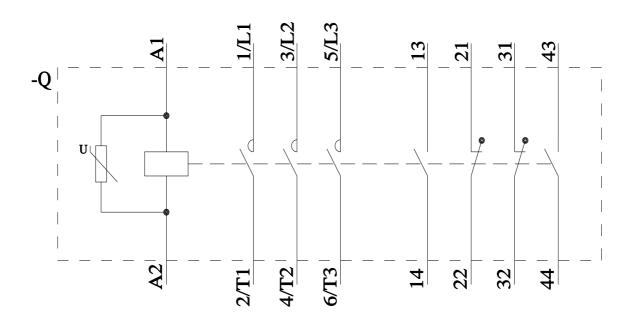
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-6AF36&objecttype=14&gridview=view1









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