

Siemens
EcoTech



power contactor, AC-3e/AC-3 300 A, 160 kW / 400 V, AC (50-60 Hz) / DC U_c: 42-48 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 | S10 |
| 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 | 66 W |
| • at AC in hot operating state per pole | 22 W |
| • without load current share typical | 7.4 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 | 6.615 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

| | |
|--|-----------------|
| Environmental Product Declaration (EPD) | Yes |
| global warming potential [CO2 eq] total | 548 kg |
| global warming potential [CO2 eq] during manufacturing | 31.5 kg |
| global warming potential [CO2 eq] during sales | 2.6 kg |
| global warming potential [CO2 eq] during operation | 521 kg |
| global warming potential [CO2 eq] after end of life | -7.22 kg |
| Siemens Eco Profile (SEP) | Siemens EcoTech |

Main circuit

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|--|---------------------|
| number of poles for main current circuit | 3 |
| number of NO contacts for main contacts | 3 |
| number of NC contacts for main contacts | 0 |
| 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 | 330 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 330 A |
| — up to 690 V at ambient temperature 60 °C rated value | 300 A |
| — up to 1000 V at ambient temperature 40 °C rated value | 150 A |
| — up to 1000 V at ambient temperature 60 °C rated value | 150 A |
| • at AC-3 | |
| — at 400 V rated value | 300 A |
| — at 500 V rated value | 300 A |
| — at 690 V rated value | 280 A |
| — at 1000 V rated value | 95 A |
| • at AC-3e | |
| — at 400 V rated value | 300 A |
| — at 500 V rated value | 300 A |
| — at 690 V rated value | 280 A |
| — at 1000 V rated value | 95 A |
| • at AC-4 at 400 V rated value | 280 A |
| • at AC-5a up to 690 V rated value | 290 A |
| • at AC-5b up to 400 V rated value | 249 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 292 A |
| — up to 400 V for current peak value n=20 rated value | 292 A |
| — up to 500 V for current peak value n=20 rated value | 292 A |
| — up to 690 V for current peak value n=20 rated value | 280 A |
| — up to 1000 V for current peak value n=20 rated value | 95 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 195 A |
| — up to 400 V for current peak value n=30 rated value | 195 A |
| — up to 500 V for current peak value n=30 rated value | 195 A |
| — up to 690 V for current peak value n=30 rated value | 195 A |
| — up to 1000 V for current peak value n=30 rated value | 95 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 185 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |

| | |
|--|---|
| <ul style="list-style-type: none"> ● at 400 V rated value ● at 690 V rated value | <p>125 A</p> <p>115 A</p> |
| operational current | |
| <ul style="list-style-type: none"> ● at 1 current path at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 60 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-1 <ul style="list-style-type: none"> — at 24 V rated value — at 60 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-1 <ul style="list-style-type: none"> — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 60 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 60 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 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | <p>300 A</p> <p>300 A</p> <p>33 A</p> <p>3.8 A</p> <p>0.9 A</p> <p>0.6 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>4 A</p> <p>2 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>11 A</p> <p>5.2 A</p> <p>300 A</p> <p>11 A</p> <p>0.6 A</p> <p>0.18 A</p> <p>0.125 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>2.5 A</p> <p>0.65 A</p> <p>0.37 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>1.4 A</p> <p>0.75 A</p> |
| operating power | |
| <ul style="list-style-type: none"> ● 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 — at 1000 V rated value ● at AC-3e <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 — at 1000 V rated value | <p>90 kW</p> <p>160 kW</p> <p>200 kW</p> <p>250 kW</p> <p>132 kW</p> <p>90 kW</p> <p>160 kW</p> <p>200 kW</p> <p>250 kW</p> <p>132 kW</p> |
| 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 | <p>71 kW</p> <p>112 kW</p> |

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| operating apparent power 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 • up to 1000 V for current peak value n=20 rated value | 110 kVA 200 kVA 250 kVA 330 kVA 160 kVA |
| operating apparent power 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 • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 1000 V for current peak value n=30 rated value | 70 kVA 130 kVA 160 kVA 230 kVA 160 kVA |
| 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 | 5 524 A; Use minimum cross-section acc. to AC-1 rated value 4 579 A; Use minimum cross-section acc. to AC-1 rated value 3 153 A; Use minimum cross-section acc. to AC-1 rated value 1 883 A; Use minimum cross-section acc. to AC-1 rated value 1 445 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | |
| <ul style="list-style-type: none"> • at AC • at DC | 2 000 1/h 2 000 1/h |
| operating frequency | |
| <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e <ul style="list-style-type: none"> — maximum • at AC-4 maximum | 750 1/h 250 1/h 500 1/h 500 1/h 130 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC | |
| <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value | 42 ... 48 V 42 ... 48 V |
| control supply voltage at DC rated value | 42 ... 48 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 |
| 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 0.8 ... 1.1 |
| design of the surge suppressor | with varistor |
| apparent pick-up power | |
| <ul style="list-style-type: none"> • at minimum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 60 Hz — at 50 Hz | 490 VA 490 VA 590 VA 590 VA |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 590 VA 590 VA |
| inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.9 0.9 |
| apparent holding power | |
| <ul style="list-style-type: none"> • at minimum rated control supply voltage at DC • at maximum rated control supply voltage at DC | 6.1 VA 7.4 VA |
| apparent holding power | |
| <ul style="list-style-type: none"> • at minimum rated control supply voltage at AC | |

| | |
|---|---|
| — at 50 Hz | 5.6 VA |
| — at 60 Hz | 5.6 VA |
| • at maximum rated control supply voltage at AC | |
| — at 50 Hz | 6.7 VA |
| — at 60 Hz | 6.7 VA |
| inductive power factor with the holding power of the coil | |
| • at 50 Hz | 0.9 |
| • at 60 Hz | 0.9 |
| closing power of magnet coil at DC | 650 W |
| holding power of magnet coil at DC | 7.4 W |
| closing delay | |
| • at AC | 30 ... 95 ms |
| • at DC | 30 ... 95 ms |
| opening delay | |
| • at AC | 40 ... 80 ms |
| • at DC | 40 ... 80 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 | 302 A |
| • at 600 V rated value | 289 A |
| yielded mechanical performance [hp] | |
| • for 3-phase AC motor | |
| — at 200/208 V rated value | 100 hp |
| — at 220/230 V rated value | 125 hp |
| — at 460/480 V rated value | 250 hp |
| — at 575/600 V rated value | 300 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 1 required
 - with type of coordination 2 required
- for short-circuit protection of the auxiliary switch required

gG: 500 A (690 V, 100 kA)
 gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA)
 gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

| | |
|--|--|
| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| fastening method side-by-side mounting | Yes |
| fastening method | screw fixing |
| height | 210 mm |
| width | 145 mm |
| depth | 202 mm |
| required spacing | |
| <ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 0 mm • for grounded parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — at the side 10 mm — downwards 10 mm • for live parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm | |

Connections/ Terminals

| | |
|---|--|
| 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 | Connection bar screw-type terminals Screw-type terminals Screw-type terminals |
| width of connection bar | 25 mm |
| thickness of connection bar | 6 mm |
| diameter of holes | 11 mm |
| number of holes | 1 |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for AWG cables for main contacts | 2/0 ... 500 kcmil |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> • stranded | 70 ... 240 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 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) — solid or stranded 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²) — finely stranded with core end processing 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) • for AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14), 1x 12 | |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 18 ... 14 |

Safety related data

| | |
|---|------------------|
| product function | |
| <ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function | Yes No Yes |
| suitability for use safety-related switching OFF | Yes |
| service life maximum | 20 a |

| | |
|---|--|
| 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



[KC](#)



| EMV | Functional Safety | Test Certificates | Maritime application |
|-----|-------------------|-------------------|----------------------|
|-----|-------------------|-------------------|----------------------|



[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



| Maritime application | other |
|----------------------|-------|
|----------------------|-------|



[Miscellaneous](#)



[Confirmation](#)

| other | Railway | Environment |
|-------|---------|-------------|
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[Miscellaneous](#)

[Confirmation](#)

[Special Test Certificate](#)



[Environmental Confirmations](#)

Further information

Information on the packaging

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

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RT1066-6AD36>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6AD36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AD36>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6AD36&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AD36/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6AD36&objectype=14&gridview=view1>



