



vacuum contactor AC-3e/AC-3 400 A, 200 kW / 400 V, 3-pole, U_c: 42-48 V AC(50-60 Hz) / DC drive: conventional auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

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| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT12 |
| General technical data | |
| size of contactor | S12 |
| 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 | 63 W |
| • at AC in hot operating state per pole | 21 W |
| • without load current share typical | 10 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 | 10.37 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 |

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| 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 |
| 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 | 610 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 610 A |
| — up to 690 V at ambient temperature 60 °C rated value | 550 A |
| • at AC-3 | |
| — at 400 V rated value | 400 A |
| — at 500 V rated value | 400 A |
| — at 690 V rated value | 400 A |
| • at AC-3e | |
| — at 400 V rated value | 400 A |
| — at 500 V rated value | 400 A |
| — at 690 V rated value | 400 A |
| • at AC-4 at 400 V rated value | 350 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 400 A |
| — up to 400 V for current peak value n=20 rated value | 400 A |
| — up to 500 V for current peak value n=20 rated value | 400 A |
| — up to 690 V for current peak value n=20 rated value | 400 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 293 A |
| — up to 400 V for current peak value n=30 rated value | 293 A |
| — up to 500 V for current peak value n=30 rated value | 293 A |
| — up to 690 V for current peak value n=30 rated value | 293 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 370 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 175 A |
| • at 690 V rated value | 175 A |
| operating power | |
| • at AC-3 | |
| — at 230 V rated value | 132 kW |
| — at 400 V rated value | 200 kW |
| — at 500 V rated value | 250 kW |
| — at 690 V rated value | 400 kW |
| • at AC-3e | |
| — at 230 V rated value | 132 kW |
| — at 400 V rated value | 200 kW |
| — at 500 V rated value | 250 kW |
| — at 690 V rated value | 400 kW |
| operating power for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 98 kW |
| • at 690 V rated value | 172 kW |
| operating apparent power at AC-6a | |
| • up to 230 V for current peak value n=20 rated value | 150 kVA |
| • up to 400 V for current peak value n=20 rated value | 270 kVA |
| • up to 500 V for current peak value n=20 rated value | 340 kVA |
| • up to 690 V for current peak value n=20 rated value | 470 kVA |

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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=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 | 110 kVA 200 kVA 250 kVA 350 kVA 500 kVA |
| 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 | 700 1/h 250 1/h 750 1/h 750 1/h 250 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 | 700 VA 700 VA 830 VA 830 VA |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 830 VA 830 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 | 8.5 VA 10 VA |
| apparent holding 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 50 Hz — at 60 Hz | 7.6 VA 7.6 VA 9.2 VA 9.2 VA |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 0.9 0.9 |
| closing power of magnet coil at DC | 920 W |
| holding power of magnet coil at DC | 10 W |
| closing delay | |
| <ul style="list-style-type: none"> • at AC | 45 ... 100 ms |

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| <ul style="list-style-type: none"> • at DC | 45 ... 100 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC | 60 ... 100 ms |
| <ul style="list-style-type: none"> • at DC | 60 ... 100 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 | |
| <ul style="list-style-type: none"> • at 230 V rated value | 6 A |
| <ul style="list-style-type: none"> • at 400 V rated value | 3 A |
| <ul style="list-style-type: none"> • at 500 V rated value | 2 A |
| <ul style="list-style-type: none"> • at 690 V rated value | 1 A |
| operational current at DC-12 | |
| <ul style="list-style-type: none"> • at 24 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 48 V rated value | 6 A |
| <ul style="list-style-type: none"> • at 60 V rated value | 6 A |
| <ul style="list-style-type: none"> • at 110 V rated value | 3 A |
| <ul style="list-style-type: none"> • at 125 V rated value | 2 A |
| <ul style="list-style-type: none"> • at 220 V rated value | 1 A |
| <ul style="list-style-type: none"> • at 600 V rated value | 0.15 A |
| operational current at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 48 V rated value | 2 A |
| <ul style="list-style-type: none"> • at 60 V rated value | 2 A |
| <ul style="list-style-type: none"> • at 110 V rated value | 1 A |
| <ul style="list-style-type: none"> • at 125 V rated value | 0.9 A |
| <ul style="list-style-type: none"> • at 220 V rated value | 0.3 A |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • at 480 V rated value | 361 A |
| <ul style="list-style-type: none"> • at 600 V rated value | 382 A |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value | 125 hp |
| <ul style="list-style-type: none"> — at 220/230 V rated value | 150 hp |
| <ul style="list-style-type: none"> — at 460/480 V rated value | 300 hp |
| <ul style="list-style-type: none"> — at 575/600 V rated value | 400 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 | |
| <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 coordination 2 required | gG: 800 A (690 V, 100 kA) gG: 800 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 800 A (415 V, 50 kA) |
| <ul style="list-style-type: none"> • for short-circuit protection of the auxiliary switch required | gG: 10 A (500 V, 1 kA) |
| Installation/ mounting/ dimensions | |
| mounting position | +/-22,5° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| fastening method side-by-side mounting | Yes |
| fastening method | screw fixing |
| height | 217 mm |
| width | 160 mm |
| depth | 225 mm |

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| 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

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| type of electrical connection | <ul style="list-style-type: none"> • 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 | 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 mm² |
| connectable conductor cross-section for auxiliary contacts | <ul style="list-style-type: none"> • solid or stranded 0.5 ... 4 mm² • finely stranded with core end processing 0.5 ... 2.5 mm² |
| 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

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| product function | |
| <ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 Yes • positively driven operation according to IEC 60947-5-1 No | |

Electrical Safety

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| 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

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| General Product Approval | EMV |
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| Functional Safety | Test Certificates | Maritime application |
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10/21/2025 