

Power contactor, AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC
 110-127 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, size S12
 Busbar connections Operating mechanism: conventional screw
 terminals



| | |
|--------------------------|-----------------|
| Product brand name | SIRIUS |
| Product designation | Power contactor |
| Product type designation | 3RT1 |

| General technical data | |
|---|---|
| Size of contactor | S12 |
| Product extension | |
| <ul style="list-style-type: none"> function module for communication | No |
| <ul style="list-style-type: none"> Auxiliary switch | Yes |
| Surge voltage resistance | |
| <ul style="list-style-type: none"> of main circuit rated value | 8 kV |
| <ul style="list-style-type: none"> of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for safe isolation | |
| <ul style="list-style-type: none"> between coil and main contacts acc. to EN 60947-1 | 690 V |
| Protection class IP | |
| <ul style="list-style-type: none"> on the front | IP00; IP20 on the front with cover / box terminal |
| <ul style="list-style-type: none"> of the terminal | IP00 |
| Shock resistance at rectangular impulse | |
| <ul style="list-style-type: none"> at AC | 8,5g / 5 ms, 4,2g / 10 ms |

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| <ul style="list-style-type: none"> • at DC | 8,5g / 5 ms, 4,2g / 10 ms |
| Shock resistance with sine pulse | |
| <ul style="list-style-type: none"> • at AC | 13,4g / 5 ms, 6,5g / 10 ms |
| <ul style="list-style-type: none"> • at DC | 13,4g / 5 ms, 6,5g / 10 ms |
| Mechanical service life (switching cycles) | |
| <ul style="list-style-type: none"> • of contactor typical | 10 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000 |
| <ul style="list-style-type: none"> • of the contactor with added auxiliary switch block typical | 10 000 000 |
| Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 | K |
| Reference code acc. to DIN EN 81346-2 | Q |

Ambient conditions

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| Installation altitude at height above sea level | |
| <ul style="list-style-type: none"> • maximum | 2 000 m |
| Ambient temperature | |
| <ul style="list-style-type: none"> • during operation | -25 ... +60 °C |
| <ul style="list-style-type: none"> • during storage | -55 ... +80 °C |

Main circuit

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| Number of poles for main current circuit | 3 |
| Number of NO contacts for main contacts | 3 |
| Operating voltage | |
| <ul style="list-style-type: none"> • at AC-3 rated value maximum | 1 000 V |
| Operating current | |
| <ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value | 610 A |
| <ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value — up to 1000 V at ambient temperature 40 °C rated value — up to 1000 V at ambient temperature 60 °C rated value | 610 A 550 A 200 A 200 A |
| <ul style="list-style-type: none"> • at AC-2 at 400 V rated value | 500 A |
| <ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value | 500 A 500 A 450 A 180 A |

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| • at AC-4 at 400 V rated value | 430 A |
| • at AC-5a up to 690 V rated value | 536 A |
| • at AC-5b up to 400 V rated value | 415 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 404 A |
| — up to 400 V for current peak value n=20 rated value | 404 A |
| — up to 500 V for current peak value n=20 rated value | 404 A |
| — up to 690 V for current peak value n=20 rated value | 404 A |
| — up to 1000 V for current peak value n=20 rated value | 180 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 270 A |
| — up to 400 V for current peak value n=30 rated value | 270 A |
| — up to 500 V for current peak value n=30 rated value | 270 A |
| — up to 690 V for current peak value n=30 rated value | 270 A |
| — up to 1000 V for current peak value n=30 rated value | 180 A |
| Minimum cross-section in main circuit | |
| • at maximum AC-1 rated value | 370 mm ² |
| Operating current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 175 A |
| • at 690 V rated value | 150 A |
| Operating current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 33 A |
| — at 220 V rated value | 3.8 A |
| — at 440 V rated value | 0.9 A |
| — at 600 V rated value | 0.6 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 A |
| — at 440 V rated value | 4 A |

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| — at 600 V rated value | 2 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 A |
| — at 440 V rated value | 11 A |
| — at 600 V rated value | 5.2 A |
| Operating current | |
| • at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 3 A |
| — at 220 V rated value | 0.6 A |
| — at 440 V rated value | 0.18 A |
| — at 600 V rated value | 0.125 A |
| • with 2 current paths in series at DC-3 at DC-5 | |
| — at 24 V rated value | 400 A |
| — at 110 V rated value | 400 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 | 400 A |
| — at 110 V rated value | 400 A |
| — at 220 V rated value | 400 A |
| — at 440 V rated value | 1.4 A |
| — at 600 V rated value | 0.75 A |
| Operating power | |
| • at AC-1 | |
| — at 230 V at 60 °C rated value | 208 kW |
| — at 400 V rated value | 362 kW |
| — at 400 V at 60 °C rated value | 362 kW |
| — at 690 V rated value | 624 kW |
| — at 690 V at 60 °C rated value | 624 kW |
| — at 1000 V at 60 °C rated value | 329 kW |
| • at AC-2 at 400 V rated value | 250 kW |
| • at AC-3 | |
| — at 230 V rated value | 160 kW |
| — at 400 V rated value | 250 kW |
| — at 500 V rated value | 315 kW |
| — at 690 V rated value | 400 kW |
| — at 1000 V rated value | 250 kW |

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| 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>98 kW</p> <p>148 kW</p> |
| Thermal short-time current limited to 10 s | 4 000 A |
| Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor | 55 W |
| No-load switching frequency | |
| <ul style="list-style-type: none"> • at AC • at DC | <p>2 000 1/h</p> <p>2 000 1/h</p> |
| Operating frequency | |
| <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum | <p>500 1/h</p> <p>170 1/h</p> <p>420 1/h</p> <p>130 1/h</p> |

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| 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 | <p>110 ... 127 V</p> <p>110 ... 127 V</p> |
| Control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 110 ... 127 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 | <p>0.8</p> <p>1.1</p> |
| 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 | <p>0.8 ... 1.1</p> <p>0.8 ... 1.1</p> |
| Design of the surge suppressor | with varistor |
| Apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 830 V·A |
| Inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.9 |
| Apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 9.2 V·A |
| Inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.9 |
| Closing power of magnet coil at DC | 920 W |
| Holding power of magnet coil at DC | 10 W |
| Closing delay | |

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| <ul style="list-style-type: none"> • at AC • at DC | 45 ... 100 ms 45 ... 100 ms |
| Opening delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 60 ... 100 ms 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 | |
| <ul style="list-style-type: none"> • instantaneous contact | 2 |
| Number of NO contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • instantaneous contact | 2 |
| Operating current at AC-12 maximum | 10 A |
| Operating current at AC-15 | |
| <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 | 6 A 3 A 2 A 1 A |
| Operating current at DC-12 | |
| <ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value | 10 A 6 A 6 A 3 A 2 A 1 A 0.15 A |
| Operating current at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value | 10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 three-phase AC motor | |
| <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | 477 A 472 A |
| Yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> • for three-phase AC motor | |

| | |
|----------------------------|--------|
| — at 200/208 V rated value | 150 hp |
| — at 220/230 V rated value | 200 hp |
| — at 460/480 V rated value | 400 hp |
| — at 575/600 V rated value | 500 hp |

Contact rating of auxiliary contacts according to UL A600 / Q600

Short-circuit protection

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 assignment 2 required • for short-circuit protection of the auxiliary switch required | <p>gG: 630 A (690 V, 100 kA)</p> <p>gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA)</p> <p>gG: 10 A (500 V, 1 kA)</p> |
|---|---|

Installation/ mounting/ dimensions

Mounting position with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back

Mounting type screw fixing

• Side-by-side mounting Yes

Height 214 mm

Width 160 mm

Depth 225 mm

Required spacing

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| <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 | |
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Connections/ Terminals

Type of electrical connection

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|---|----------------------|
| • for main current circuit | Connection bar |
| • for auxiliary and control current circuit | screw-type terminals |

| | |
|---|---|
| <ul style="list-style-type: none"> • at contactor for auxiliary contacts • of magnet coil | <p>Screw-type terminals</p> <p>Screw-type terminals</p> |
| Type of connectable conductor cross-sections <ul style="list-style-type: none"> • at AWG conductors 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"> • single or multi-stranded • finely stranded with core end processing | <p>0.5 ... 4 mm²</p> <p>0.5 ... 2.5 mm²</p> |
| Type of connectable conductor cross-sections <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts | <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)</p> <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14), 1x 12</p> |
| AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for auxiliary contacts | 18 ... 14 |

Safety related data

| | |
|---|--|
| B10 value <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 | 1 000 000 |
| Product function <ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 | <p>Yes</p> <p>No</p> |
| Protection against electrical shock | finger-safe when touched vertically from front acc. to IEC 60529 |

Certificates/ approvals

| | | |
|--------------------------|---------------------------------------|---------------------------|
| General Product Approval | Functional Safety/Safety of Machinery | Declaration of Conformity |
|--------------------------|---------------------------------------|---------------------------|



[Type Examination Certificate](#)



| | | |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|

[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)



| | | |
|-------------------|-------|---------|
| Marine / Shipping | other | Railway |
|-------------------|-------|---------|



[Miscellaneous](#)

[Confirmation](#)

[Special Test Certificate](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1076-6AF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-6AF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AF36>

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

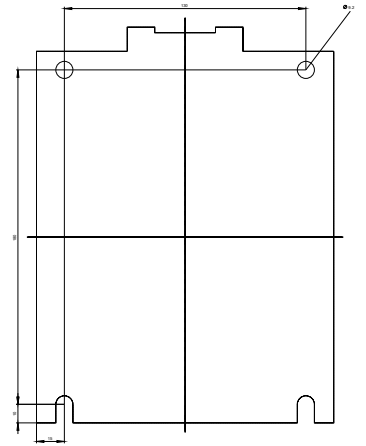
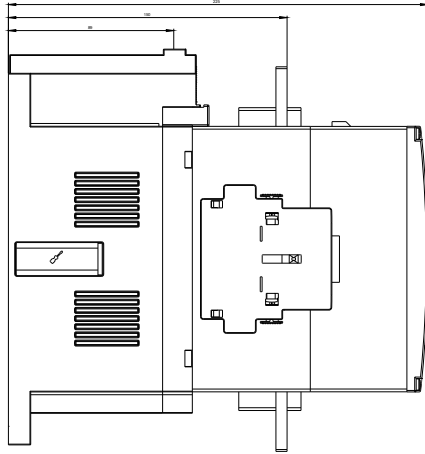
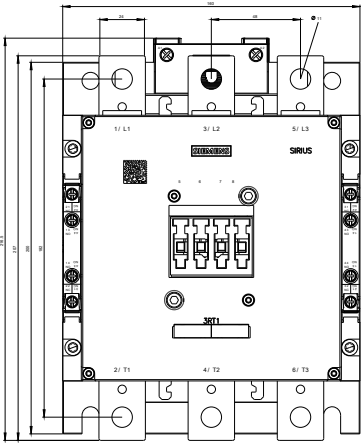
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6AF36&lang=en

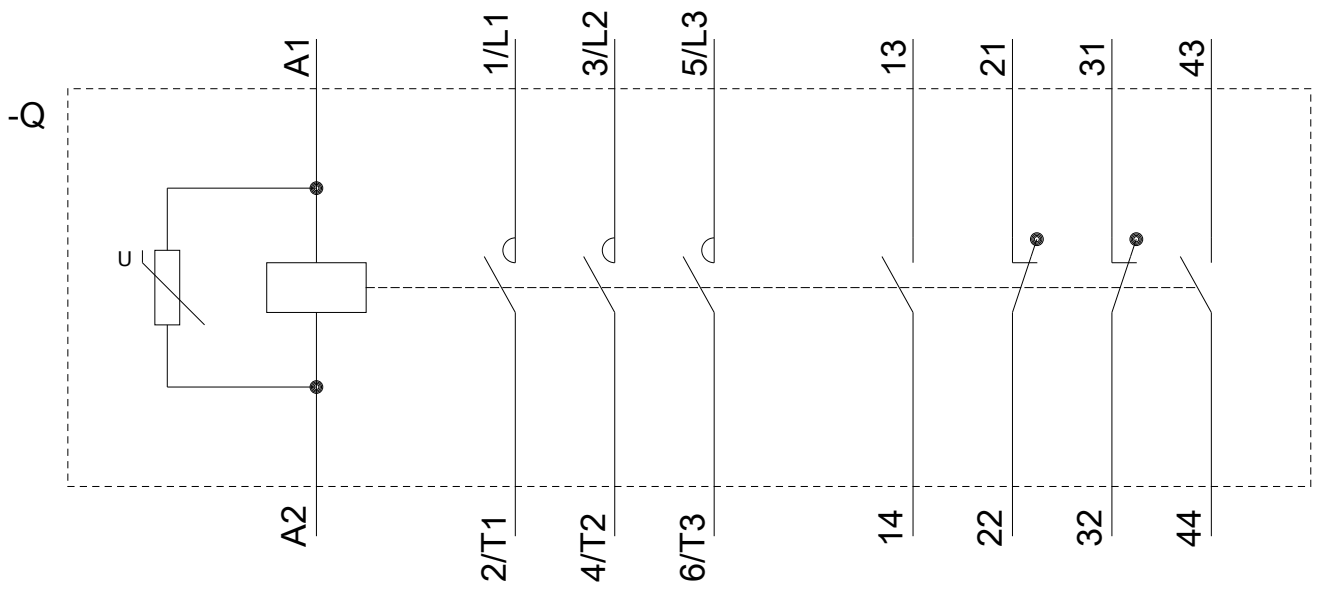
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-6AF36&objecttype=14&gridview=view1>





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