

CONTACTOR, AC-3, 4KW/400V, 1NC, AC 24V, 50/60 HZ, 3-POLE, SZ S00 SCREW TERMINAL



| | |
|---|----------------|
| product brand name | SIRIUS |
| Product designation | 3RT2 contactor |
| General technical data: | |
| Size of contactor | S00 |
| Product expansion | |
| • function module for communication | No |
| • Auxiliary switch | Yes |
| Insulation voltage | |
| • rated value | 690 V |
| Surge voltage resistance rated value | 6 kV |
| maximum permissible voltage for safe isolation | |
| • between coil and main contacts acc. to EN 60947-1 | 400 V |
| Protection class IP | |
| • on the front | IP20 |
| • of the terminal | IP20 |
| Degree of pollution | 3 |
| Shock resistance | |
| • at rectangular impulse | |

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| <ul style="list-style-type: none"> — at AC • with sine pulse — at AC | 6,7g / 5 ms, 4,2g / 10 ms |
| Mechanical service life (switching cycles) <ul style="list-style-type: none"> • of contactor typical • of the contactor with added electronics-compatible auxiliary switch block typical • of the contactor with added auxiliary switch block typical | 30 000 000 5 000 000 10 000 000 |

Ambient conditions:

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

Main circuit:

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|--|--|
| Number of NO contacts for main contacts | 3 |
| Number of NC contacts for main contacts | 0 |
| Operating voltage | |
| <ul style="list-style-type: none"> • at AC-3 rated value maximum | 690 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 • at AC-1 up to 690 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value — at ambient temperature 60 °C rated value • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value | 22 A 22 A 20 A 9 A 9 A 7.7 A 6.7 A |
| Connectable conductor cross-section in main circuit at AC-1 | |
| <ul style="list-style-type: none"> • at 60 °C minimum permissible • at 40 °C minimum permissible | 2.5 mm ² 4 mm ² |
| Operating 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 | 4.1 A 3.3 A |
| Operating 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 | 20 A |

| | |
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| — at 110 V rated value | 2.1 A |
| — at 220 V rated value | 0.8 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.6 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 12 A |
| — at 220 V rated value | 1.6 A |
| — at 440 V rated value | 0.8 A |
| — at 600 V rated value | 0.7 A |
| • with 3 current paths in series at DC-1 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 20 A |
| — at 220 V rated value | 20 A |
| — at 440 V rated value | 1.3 A |
| — at 600 V rated value | 1 A |
| Operating current | |
| • at 1 current path at DC-3 at DC-5 | |
| — at 24 V rated value | 20 A |
| — at 110 V rated value | 0.1 A |
| • with 2 current paths in series at DC-3 at DC-5 | |
| — at 110 V rated value | 0.35 A |
| — at 24 V rated value | 20 A |
| • with 3 current paths in series at DC-3 at DC-5 | |
| — at 110 V rated value | 20 A |
| — at 220 V rated value | 1.5 A |
| — at 24 V rated value | 20 A |
| — at 440 V rated value | 0.2 A |
| — at 600 V rated value | 0.2 A |
| Operating power | |
| • at AC-1 | |
| — at 230 V rated value | 7.5 kW |
| — at 230 V at 60 °C rated value | 7.5 kW |
| — at 400 V rated value | 13 kW |
| — at 400 V at 60 °C rated value | 13 kW |
| — at 690 V rated value | 22 kW |
| — at 690 V at 60 °C rated value | 22 kW |
| • at AC-2 at 400 V rated value | 4 kW |
| • at AC-3 | |
| — at 230 V rated value | 2.2 kW |
| — at 400 V rated value | 4 kW |

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|---|------------|
| — at 690 V rated value | 5.5 kW |
| Operating power for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 2 kW |
| • at 690 V rated value | 2.5 kW |
| Thermal short-time current limited to 10 s | 72 A |
| Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor | 0.7 W |
| No-load switching frequency | |
| • at AC | 10 000 1/h |
| Operating frequency | |
| • at AC-1 maximum | 1 000 1/h |
| • at AC-2 maximum | 750 1/h |
| • at AC-3 maximum | 750 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 |
| • at 60 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 |
| • at 60 Hz | 0.85 ... 1.1 |
| Apparent pick-up power of magnet coil at AC | |
| • at 50 Hz | 27 V·A |
| • at 60 Hz | 31.7 V·A |
| Inductive power factor with closing power of the coil | |
| • at 50 Hz | 0.8 |
| • at 60 Hz | 0.81 |
| Apparent holding power of magnet coil at AC | |
| • at 50 Hz | 4.2 V·A |
| • at 60 Hz | 4.8 V·A |
| Inductive power factor with the holding power of the coil | |
| • at 50 Hz | 0.25 |
| • at 60 Hz | 0.25 |
| Closing delay | |
| • at AC | 9 ... 35 ms |
| Opening delay | |
| • at AC | 3.5 ... 14 ms |
| Arcing time | 10 ... 15 ms |

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| Residual current of the electronics for control with signal <0> | |
| <ul style="list-style-type: none"> • at AC at 230 V maximum permissible • at DC at 24 V maximum permissible | <p>3 mA</p> <p>10 mA</p> |

Auxiliary circuit:

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|---|---|
| Number of NC contacts | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — instantaneous contact | 1 |
| Number of NO contacts | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — instantaneous contact | 0 |
| 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 | <p>10 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> |
| 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 | <p>10 A</p> <p>6 A</p> <p>6 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> <p>0.15 A</p> |
| 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 | <p>10 A</p> <p>2 A</p> <p>2 A</p> <p>1 A</p> <p>0.9 A</p> <p>0.3 A</p> <p>0.1 A</p> |
| 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 • yielded mechanical performance [hp] for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value | <p>7.6 A</p> <p>9 A</p> <p>0.33 hp</p> |

| | |
|--|-------------|
| — at 230 V rated value | 1 hp |
| • Yielded mechanical performance [hp] for three-phase AC motor | |
| — at 200/208 V rated value | 2 hp |
| — at 220/230 V rated value | 3 hp |
| — at 460/480 V rated value | 5 hp |
| — at 575/600 V rated value | 7.5 hp |
| Contact rating of auxiliary contacts according to UL | A600 / Q600 |

Short-circuit protection

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|---|--|
| Design of the fuse link | |
| • for short-circuit protection of the main circuit | |
| — with type of assignment 1 required | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A |
| — with type of assignment 2 required | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A |
| • for short-circuit protection of the auxiliary switch required | fuse gL/gG: 10 A |

Installation/ mounting/ dimensions:

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|------------------------------|--|
| Mounting position | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| Mounting type | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022 |
| • Side-by-side mounting | Yes |
| Height | 58 mm |
| Width | 45 mm |
| Depth | 73 mm |
| Required spacing | |
| • with side-by-side mounting | |
| — forwards | 0 mm |
| — Backwards | 0 mm |
| — upwards | 0 mm |
| — downwards | 0 mm |
| — at the side | 0 mm |
| • for grounded parts | |
| — forwards | 0 mm |
| — Backwards | 0 mm |
| — upwards | 0 mm |
| — at the side | 6 mm |
| — downwards | 0 mm |
| • for live parts | |
| — forwards | 0 mm |
| — Backwards | 0 mm |
| — upwards | 0 mm |

- downwards
- at the side

0 mm
6 mm

Connections/ Terminals:

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|--|---|
| Type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit | <p>screw-type terminals</p> <p>screw-type terminals</p> |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • at AWG conductors for main contacts | <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm²</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14), 2x 12</p> |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — 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), 2x 4 mm²</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14), 2x 12</p> |

Safety related data:

| | |
|---|-------------------------|
| B10 value with high demand rate acc. to SN 31920 | 1 000 000 |
| Proportion of dangerous failures | |
| <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 | <p>40 %</p> <p>73 %</p> |
| Failure rate [FIT] | |
| <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 | 100 FIT |
| Product function | |
| <ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 | Yes |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |

Certificates/approvals

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



[KTL](#)



[Baumusterbescheinigung](#)

| | | |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Shipping Approval |
|---------------------------|-------------------|-------------------|



[spezielle Prüfbescheinigungen](#)

[Typprüfbescheinigung/Werkszeugnis](#)



| | |
|-------------------|-------|
| Shipping Approval | other |
|-------------------|-------|



[Bestätigungen](#)

| |
|-------|
| other |
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[Umweltbestätigung](#)



Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT20161AB02>

Cax online generator

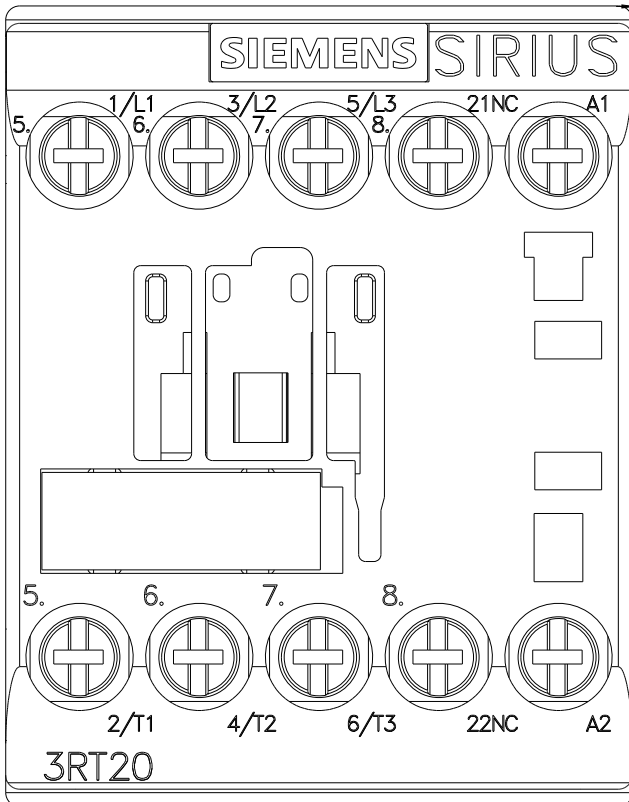
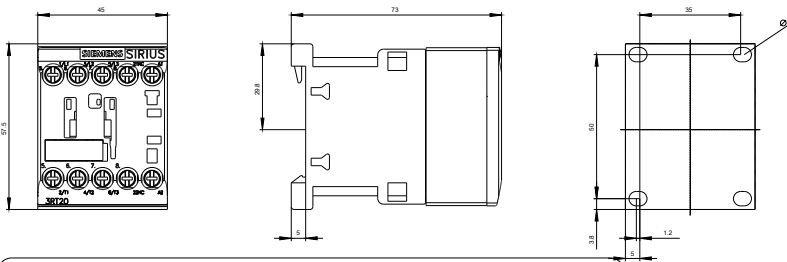
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20161AB02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT20161AB02>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20161AB02&lang=en





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