SIEMENS

## Data sheet 3RT2346-1AC20

contactor AC-1, 140 A, 400 V / 40 °C, 4-pole, 24 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product designation** | Contactor |
| **product type designation** | 3RT23 |
| **General technical data** | |
| **size of contactor** | S3 |
| **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 | 47.2 W |
| ● at AC in hot operating state per pole | 11.8 W |
| ● without load current share typical | 8.8 W |
| **type of calculation of power loss current-dependent** | quadratic |
| **insulation voltage** | |
| ● of main circuit with degree of pollution 3 rated value | 690 V |
| ● of the auxiliary and control circuit with degree of pollution 3 rated value | 690 V |
| **surge voltage resistance** | |
| ● of main circuit rated value | 8 kV |
| ● of auxiliary circuit rated value | 6 kV |
| **shock resistance at rectangular impulse** | |
| ● at AC | 6.7 g / 5 ms, 4.0 g / 10 ms |
| ● at DC | 6.7 g / 5 ms, 4 g / 10 ms |
| **shock resistance with sine pulse** | |
| ● at AC | 10.6 g / 5 ms, 6.3 g / 10 ms |
| ● at DC | 10.6 g / 5 ms, 6.3 g / 10 ms |
| **mechanical service life (operating cycles)** | |
| ● of contactor typical | 10 000 000 |
| ● of the contactor with added auxiliary switch block typical | 10 000 000 |
| **reference code according to IEC 81346-2** | Q |
| **Substance Prohibitance (day/month/year)** | 09/01/2017 |
| **Net Weight** | 1.952 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 % |


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| **Main circuit** | |
| **number of poles for main current circuit** | 4 |
| **number of NO contacts for main contacts** | 4 |
| **type of voltage for main current circuit** | AC |
| **operational current** | |
| ● at AC-1 at 400 V at ambient temperature 40 °C rated value | 140 A |
| ● at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 140 A |
| — up to 690 V at ambient temperature 60 °C rated value | 130 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 50 mm² |
| **operational current** | |
| ● **at 1 current path at DC-1** | |
| — at 24 V rated value | 80 A |
| — at 60 V rated value | 60 A |
| — at 110 V rated value | 9 A |
| — at 220 V rated value | 2 A |
| — at 440 V rated value | 0.6 A |
| ● **with 2 current paths in series at DC-1** | |
| — at 24 V rated value | 80 A |
| — at 60 V rated value | 80 A |
| — at 110 V rated value | 80 A |
| — at 220 V rated value | 10 A |
| — at 440 V rated value | 1.8 A |
| ● **with 3 current paths in series at DC-1** | |
| — at 24 V rated value | 80 A |
| — at 60 V rated value | 80 A |
| — at 110 V rated value | 80 A |
| — at 220 V rated value | 80 A |
| — at 440 V rated value | 4.5 A |
| ● **at 1 current path at DC-3 at DC-5** | |
| — at 24 V rated value | 20 A |
| — at 60 V rated value | 6.5 A |
| — at 110 V rated value | 2.5 A |
| — at 220 V rated value | 1 A |
| — at 440 V rated value | 0.15 A |
| ● **with 2 current paths in series at DC-3 at DC-5** | |
| — at 24 V rated value | 80 A |
| — at 60 V rated value | 80 A |
| — at 110 V rated value | 80 A |
| — at 220 V rated value | 7 A |
| — at 440 V rated value | 0.42 A |
| ● **with 3 current paths in series at DC-3 at DC-5** | |
| — at 24 V rated value | 80 A |
| — at 60 V rated value | 80 A |
| — at 110 V rated value | 80 A |
| — at 220 V rated value | 35 A |
| — at 440 V rated value | 0.8 A |
| **no-load switching frequency** | |
| ● at AC | 5 000 1/h |
| **operating frequency** | |
| ● at AC-1 maximum | 1 000 1/s |
| **Control circuit/ Control** | |
| **type of voltage** | AC |
| **type of voltage of the control supply voltage** | AC |
| **control supply voltage at AC** | |
| ● at 50 Hz rated value | 24 V |


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| ● 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 | 348 V·A |
| ● at 60 Hz | 296 V·A |
| **inductive power factor with closing power of the coil** | |
| ● at 50 Hz | 0.62 |
| ● at 60 Hz | 0.55 |
| **apparent holding power of magnet coil at AC** | |
| ● at 50 Hz | 25 V·A |
| ● at 60 Hz | 18 V·A |
| **inductive power factor with the holding power of the coil** | |
| ● at 50 Hz | 0.35 |
| ● at 60 Hz | 0.41 |
| **closing delay** | |
| ● at AC | 13 ... 50 ms |
| **opening delay** | |
| ● at AC | 10 ... 21 ms |
| **arcing time** | 10 ... 20 ms |
| **control version of the switch operating mechanism** | Standard A1 - A2 |
| **Auxiliary circuit** | |
| **number of NC contacts for auxiliary contacts** | 1 |
| ● attachable | 2 |
| ● instantaneous contact | 1 |
| **number of NO contacts for auxiliary contacts** | 1 |
| ● attachable | 2 |
| ● instantaneous contact | 1 |
| 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 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** | |
| **contact rating of auxiliary contacts according to UL** | A600 / P600 |
| **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 | |


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| — with type of coordination 1 required | gG: 250 A (690 V, 100 kA) |
| — with type of coordination 2 required | gR: 250 A (690 V, 100 kA) |
| ● for short-circuit protection of the auxiliary switch required | gG: 10 A (690 V, 1 kA) |
| **Installation/ mounting/ dimensions** | |
| **mounting position** | +/-180° 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 and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 |
| **height** | 140 mm |
| **width** | 96 mm |
| **depth** | 152 mm |
| **required spacing** | |
| ● 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 | screw-type terminals |
| ● for auxiliary and control circuit | screw-type terminals |
| ● at contactor for auxiliary contacts | Screw-type terminals |
| ● of magnet coil | screw terminal |
| **type of connectable conductor cross-sections** | |
| ● for main contacts | |
| — stranded | 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²) |
| — solid or stranded | 2x (2.5 ... 16 mm²), 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²) |
| — finely stranded with core end processing | 2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²) |
| ● for AWG cables for main contacts | 2x (10 ... 1/0), 1x (10 ... 2/0) |
| **connectable conductor cross-section for main contacts** | |
| ● solid | 2.5 ... 16 mm² |
| ● solid or stranded | 4 ... 70 mm² |
| ● stranded | 6 ... 70 mm² |
| ● finely stranded with core end processing | 2.5 ... 50 mm² |
| **connectable conductor cross-section for auxiliary contacts** | |
| ● solid or stranded | 0.5 ... 2.5 mm² |
| ● finely stranded with core end processing | 0.5 ... 2.5 mm² |
| **type of connectable conductor cross-sections** | |
| ● for auxiliary contacts | |
| — solid | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) |
| — solid or stranded | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 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) |
| **AWG number extended as coded connectable conductor cross section for main contacts** | 10 ... 2/0 |
| **AWG number as coded connectable conductor cross section for auxiliary contacts** | 20 ... 14 |
| **Safety related data** | |
| **product function** | |
| ● **mirror contact according to IEC 60947-4-1** | Yes |


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| ● **positively driven operation according to IEC 60947-5-1** | No |
| Electrical Safety | |
| **protection class IP on the front according to IEC 60529** | IP20 |
| **touch protection on the front according to IEC 60529** | finger-safe, for vertical contact from the front |
| **Communication/ Protocol** | |
| **product function bus communication** | No |
| **Approvals Certificates** | |
| Environmental Product Declaration | |
| ● global warming potential [CO2 eq] / during manufacturing | 9.57 kg |
| ● global warming potential [CO2 eq] / during operation | 473 kg |
| ● global warming potential [CO2 eq] / after end of life | -1.54 kg |
| ● global warming potential [CO2 eq] / total | 481 kg |

**Environment**

Environmental Confirmations

**General Product Approval**

**General Product Approval**

**EMV**

**Test Certificates**

Special Test Certificate

Type Test Certificates/Test Report

**Maritime application**

**Maritime application**

**other**

Confirmation

**Railway**

Special Test Certificate

**Dangerous goods**

Transport Information

**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=3RT2346-1AC20
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AC20
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1AC20&lang=en
**Cax online generator**
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2346-1AC20
**Kennlinien**
https://curves.simaris.siemens.com/curves/3RT2346-1AC20


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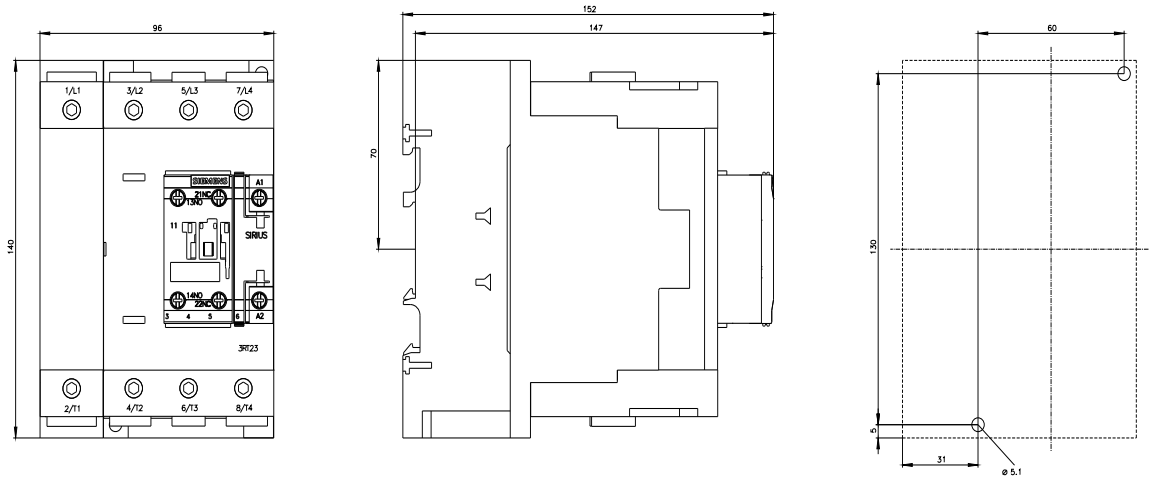


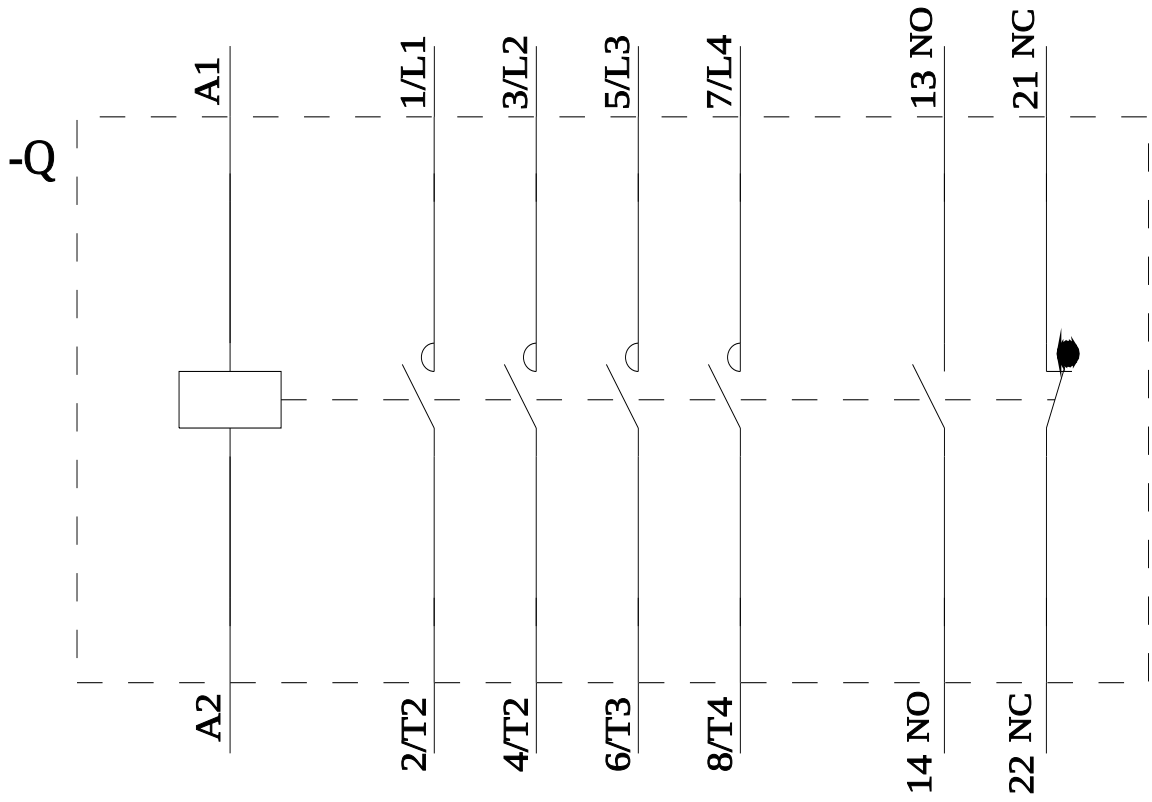


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