SIEMENS

## Data sheet 3RT2028-1AV60

| | | |
|---|---|---|
| | | CONTACTOR, AC-3, 18.5KW/400V, 1NO+1NC, AC 480V 60HZ, 3-POLE, SZ S0 SCREW TERMINAL |
| product brand name | | SIRIUS |
| Product designation | | 3RT2 contactor |
| **General technical data:** | | |
| **Insulation voltage** | | |
| • Rated value | V | 690 |
| **Degree of pollution** | | 3 |
| **Surge voltage resistance Rated value** | kV | 6 |
| **Mechanical service life (switching cycles)** | | |
| • of the contactor typical | | 10 000 000 |
| • of the contactor with added electronics-compatible auxiliary switch block typical | | 5 000 000 |
| • of the contactor with added auxiliary switch block typical | | 10 000 000 |
| **Thermal short-time current restricted to 10 s** | A | 304 |
| **Protection class IP** | | |
| • on the front | | IP20 |
| • of the terminal | | IP20 |
| **Equipment marking** | | |
| • acc. to DIN EN 61346-2 | | Q |
| • acc. to DIN EN 81346-2 | | Q |
| **Main circuit:** | | |
| **Number of poles for main current circuit** | | 3 |
| **Number of NC contacts for main contacts** | | 0 |
| **Number of NO contacts for main contacts** | | 3 |
| **Operating voltage** | | |
| • at AC-3 Rated value maximum | V | 690 |
| **Operating current** | | |
| • at AC-1 | | |
| — at 400 V at ambient temperature 40 °C Rated value | A | 50 |
| — up to 690 V at ambient temperature 40 °C Rated value | A | 50 |
| — up to 690 V at ambient temperature 60 °C Rated value | A | 42 |
| • at AC-2 at 400 V Rated value | A | 38 |
| • at AC-3 | | |

| | | |
|---|---|---|
| — at 400 V Rated value | A | 38 |
| — at 500 V Rated value | A | 32 |
| — at 690 V Rated value | A | 21 |
| • at AC-4 at 400 V Rated value | A | 22 |
| **Operating current with 1 current path** | | |
| • at DC-1 | | |
| — at 24 V Rated value | A | 35 |
| — at 110 V Rated value | A | 4.5 |
| — at 220 V Rated value | A | 1 |
| — at 440 V Rated value | A | 0.4 |
| — at 600 V Rated value | A | 0.25 |
| • at DC-3 at DC-5 | | |
| — at 24 V Rated value | A | 20 |
| — at 110 V Rated value | A | 2.5 |
| — at 220 V Rated value | A | 1 |
| — at 440 V Rated value | A | 0.09 |
| — at 600 V Rated value | A | 0.06 |
| **Operating current with 2 current paths in series** | | |
| • at DC-1 | | |
| — at 24 V Rated value | A | 35 |
| — at 110 V Rated value | A | 35 |
| — at 220 V Rated value | A | 5 |
| — at 440 V Rated value | A | 1 |
| — at 600 V Rated value | A | 0.8 |
| • at DC-3 at DC-5 | | |
| — at 110 V Rated value | A | 15 |
| — at 220 V Rated value | A | 3 |
| — at 24 V Rated value | A | 35 |
| — at 440 V Rated value | A | 0.27 |
| — at 600 V Rated value | A | 0.16 |
| **Operating current with 3 current paths in series** | | |
| • at DC-1 | | |
| — at 24 V Rated value | A | 35 |
| — at 110 V Rated value | A | 35 |
| — at 220 V Rated value | A | 35 |
| — at 440 V Rated value | A | 2.9 |
| — at 600 V Rated value | A | 1.4 |
| • at DC-3 at DC-5 | | |
| — at 110 V Rated value | A | 35 |
| — at 220 V Rated value | A | 10 |
| — at 24 V Rated value | A | 35 |

| | | |
|---|---|---|
| — at 440 V Rated value | A | 0.6 |
| — at 600 V Rated value | A | 0.6 |
| **Operating power** | | |
| • at AC-1 at 400 V Rated value | kW | 28 |
| • at AC-2 at 400 V Rated value | kW | 18.5 |
| • at AC-4 at 400 V Rated value | kW | 11 |
| **Operating power** | | |
| • at AC-1 | | |
| — at 230 V at 60 °C Rated value | kW | 15.5 |
| — at 230 V Rated value | kW | 16 |
| — at 400 V at 60 °C Rated value | kW | 27.5 |
| — at 690 V at 60 °C Rated value | kW | 47.5 |
| — at 690 V Rated value | kW | 48 |
| • at AC-3 | | |
| — at 230 V Rated value | kW | 11 |
| — at 400 V Rated value | kW | 18.5 |
| — at 690 V Rated value | kW | 18.5 |
| **Operating power for ≥ 200000 operating cycles at AC-4** | | |
| • at 400 V Rated value | kW | 6 |
| • at 690 V Rated value | kW | 10.3 |
| **Operating frequency** | | |
| • at AC-3 maximum | 1/h | 750 |

| Control circuit/ Control: | | |
|---|---|---|
| **Type of voltage of the control supply voltage** | | AC |
| **Control supply voltage with AC** | | |
| • at 60 Hz Rated value | V | 480 |
| **Operating range factor control supply voltage rated value of the magnet coil with AC** | | |
| • at 60 Hz | | 0.8 ... 1.1 |

| Auxiliary circuit: | | |
|---|---|---|
| **Number of NC contacts** | | |
| • for auxiliary contacts | | |
| — instantaneous contact | | 1 |
| **Number of NO contacts** | | |
| • for auxiliary contacts | | |
| — instantaneous contact | | 1 |
| **Product expansion Auxiliary switch** | | Yes |
| **Operating current at AC-15** | | |
| • at 230 V Rated value | A | 10 |
| • at 400 V Rated value | A | 3 |

| | | |
|---|---|---|
| • at 690 V Rated value | A | 1 |
| **Operating current** | | |
| • at DC-12 at 125 V Rated value | A | 2 |
| • at DC-12 at 220 V Rated value | A | 1 |
| • at DC-12 at 600 V Rated value | A | 0.15 |
| • at DC-13 at 125 V Rated value | A | 0.9 |
| • at DC-13 at 220 V Rated value | A | 0.3 |
| • at DC-13 at 600 V Rated value | A | 0.1 |
| **Operating current** | | |
| • at DC-12 | | |
| — at 60 V Rated value | A | 6 |
| — at 110 V Rated value | A | 3 |
| • at DC-13 | | |
| — at 24 V Rated value | A | 10 |
| — at 60 V Rated value | A | 2 |
| — at 110 V Rated value | A | 1 |
| **Contact reliability of the auxiliary contacts** | | 1 faulty switching per 100 million (17 V, 1 mA) |

| UL/CSA ratings: | | |
|---|---|---|
| **Full-load current (FLA) for three-phase AC motor** | | |
| • at 480 V Rated value | A | 34 |
| • at 600 V Rated value | A | 27 |
| **yielded mechanical performance [hp]** | | |
| • for single-phase AC motor at 110/120 V Rated value | metric hp | 3 |
| • for single-phase AC motor at 230 V Rated value | metric hp | 5 |
| • for three-phase AC motor at 200/208 V Rated value | metric hp | 10 |
| • for three-phase AC motor at 220/230 V Rated value | metric hp | 10 |
| • for three-phase AC motor at 460/480 V Rated value | metric hp | 25 |
| • for three-phase AC motor at 575/600 V Rated value | metric hp | 25 |
| **Contact rating of the auxiliary contacts acc. to UL** | | A600 / Q600 |

| Short-circuit: | | |
|---|---|---|
| **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: 100 A |
| — with type of assignment 2 required | | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A |

| | | |
|---|---|---|
| • for short-circuit protection of the auxiliary switch required | | fuse gL/gG: 10 A |
| **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 |
| **Mounting type** | | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022 |
| • Side-by-side mounting | | Yes |
| **Height** | mm | 85 |
| **Width** | mm | 45 |
| **Depth** | mm | 97 |
| **Required spacing** | | |
| • with side-by-side mounting | | |
| — forwards | mm | 0 |
| — Backwards | mm | 0 |
| — upwards | mm | 0 |
| — downwards | mm | 0 |
| — at the side | mm | 0 |
| • for grounded parts | | |
| — forwards | mm | 0 |
| — Backwards | mm | 0 |
| — upwards | mm | 0 |
| — at the side | mm | 6 |
| — downwards | mm | 0 |
| • for live parts | | |
| — forwards | mm | 0 |
| — Backwards | mm | 0 |
| — upwards | mm | 0 |
| — downwards | mm | 0 |
| — at the side | mm | 6 |
| **Connections/ Terminals:** | | |
| **Type of electrical connection** | | |
| • for main current circuit | | screw-type terminals |
| • for auxiliary and control current circuit | | screw-type terminals |
| **Type of connectable conductor cross-section** | | |
| • for main contacts | | |
| — single or multi-stranded | | 2x (1 ... 2,5 mm²), 2x (2,5 ... 10 mm²) |
| — finely stranded with core end processing | | 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² |
| • for AWG conductors for main contacts | | 2x (16 ... 12), 2x (14 ... 8) |
| • for auxiliary contacts | | |

| | | |
|---|---|---|
| — single or multi-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 conductors for auxiliary contacts | | 2x (20 ... 16), 2x (18 ... 14) |
| **Apparent pick-up power of the magnet coil with AC** | | |
| • at 50 Hz | V·A | 77 |

| Safety related data: | | |
|---|---|---|
| **B10 value with high demand rate acc. to SN 31920** | | 1 000 000 |
| **Proportion of dangerous failures** | | |
| • with low demand rate acc. to SN 31920 | % | 40 |
| • with high demand rate acc. to SN 31920 | % | 73 |
| **Failure rate [FIT] with low demand rate acc. to SN 31920** | FIT | 100 |
| **Product function Mirror contact acc. to IEC 60947-4-1** | | Yes |
| **T1 value for proof test interval or service life acc. to IEC 61508** | y | 20 |
| **Protection against electrical shock** | | finger-safe |

| Mechanical data: | | |
|---|---|---|
| **Size of contactor** | | S0 |

| Ambient conditions: | | |
|---|---|---|
| **Installation altitude at height above sea level maximum** | m | 2 000 |
| **Ambient temperature** | | |
| • during operation | °C | -25 ... +60 |
| • during storage | °C | -55 ... +80 |

| Certificates/ approvals: |
|---|

| General Product Approval | | | | Declaration of Conformity | Test Certificates |
|---|---|---|---|---|---|
| CCC | CSA | UL | EAC | EG-Konf. | Type Test Certificates/Test Report |

| Test Certificates | | Shipping Approval | | | |
|---|---|---|---|---|---|
| Special Test Certificate | Declaration of the Compliance with the order | ABS | BUREAU VERITAS | DNV | GL |

| Shipping Approval | | | | other | |
|---|---|---|---|---|---|
| LRS | PRS | RINA | RMRS | Environmental Confirmations | VDE |

## Further information

**Information- and Downloadcenter (Catalogs, Brochures,…)**
http://www.siemens.com/industrial-controls/catalogs

**Industry Mall (Online ordering system)**
http://www.siemens.com/industrymall

**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20281AV60

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
http://support.automation.siemens.com/WW/view/en/3RT20281AV60/all

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20281AV60&lang=en

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