



CONTACTOR, AC-3, 18.5KW/400V, 1NO+1NC, AC 220V 50HZ, 240V 60HZ 3-POLE, SZ S0 SCREW TERMINAL

|                     |                |
|---------------------|----------------|
| product brand name  | SIRIUS         |
| Product designation | 3RT2 contactor |

General technical data:

|   |    |                                       |
|---|----|---------------------------------------|
| <b>Insulation voltage</b>   |    |                                       |
| <ul style="list-style-type: none"> <li>Rated value</li> </ul>   | V  | 690                                   |
| <b>Degree of pollution</b>  |    | 3                                     |
| <b>Surge voltage resistance Rated value</b>   | kV | 6                                     |
| <b>Mechanical service life (switching cycles)</b>   |    |                                       |
| <ul style="list-style-type: none"> <li>of the contactor typical</li> <li>of the contactor with added electronics-compatible auxiliary switch block typical</li> <li>of the contactor with added auxiliary switch block typical</li> </ul> |    | 10 000 000<br>5 000 000<br>10 000 000 |
| <b>Thermal short-time current restricted to 10 s</b>  | A  | 304                                   |
| <b>Protection class IP</b>  |    |                                       |
| <ul style="list-style-type: none"> <li>on the front</li> <li>of the terminal</li> </ul>   |    | IP20<br>IP20                          |
| <b>Equipment marking</b>  |    |                                       |
| <ul style="list-style-type: none"> <li>acc. to DIN EN 61346-2</li> <li>acc. to DIN EN 81346-2</li> </ul>  |    | Q<br>Q                                |

Main circuit:

|   |  |   |
|---|--|---|
| <b>Number of poles for main current circuit</b> |  | 3 |
| <b>Number of NC contacts for main contacts</b>  |  | 0 |
| <b>Number of NO contacts for main contacts</b>  |  | 3 |
| <b>Operating voltage</b>                        |  |   |

|   |   |      |
|---|---|------|
| • at AC-3 Rated value maximum                             | V | 690  |
| <b>Operating current</b>                                  |   |      |
| • at AC-1   |   |      |
| — at 400 V at ambient temperature 40 °C<br>Rated value    | A | 50   |
| — up to 690 V at ambient temperature 40 °C<br>Rated value | A | 50   |
| — up to 690 V at ambient temperature 60 °C<br>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   |
| <b>Operating current with 1 current path</b>              |   |      |
| • 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 |
| <b>Operating current with 2 current paths in series</b>   |   |      |
| • 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 |
| <b>Operating current with 3 current paths in series</b>   |   |      |

|  |     |             |
|--|-----|-------------|
| <ul style="list-style-type: none"> <li>• at DC-1 <ul style="list-style-type: none"> <li>— at 24 V Rated value</li> <li>— at 110 V Rated value</li> <li>— at 220 V Rated value</li> <li>— at 440 V Rated value</li> <li>— at 600 V Rated value</li> </ul> </li> <li>• at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 110 V Rated value</li> <li>— at 220 V Rated value</li> <li>— at 24 V Rated value</li> <li>— at 440 V Rated value</li> <li>— at 600 V Rated value</li> </ul> </li> </ul> | A   | 35          |
|  | A   | 35          |
|  | A   | 35          |
|  | A   | 2.9         |
|  | A   | 1.4         |
|  | A   | 35          |
|  | A   | 10          |
|  | A   | 35          |
|  | A   | 0.6         |
|  | A   | 0.6         |
| <b>Operating power</b>   |     |             |
| <ul style="list-style-type: none"> <li>• at AC-1 at 400 V Rated value</li> <li>• at AC-2 at 400 V Rated value</li> <li>• at AC-4 at 400 V Rated value</li> </ul>   | kW  | 28          |
|  | kW  | 18.5        |
|  | kW  | 11          |
| <b>Operating power</b>   |     |             |
| <ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— at 230 V at 60 °C Rated value</li> <li>— at 230 V Rated value</li> <li>— at 400 V at 60 °C Rated value</li> <li>— at 690 V at 60 °C Rated value</li> <li>— at 690 V Rated value</li> </ul> </li> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V Rated value</li> <li>— at 400 V Rated value</li> <li>— at 690 V Rated value</li> </ul> </li> </ul>  | kW  | 15.5        |
|  | kW  | 16          |
|  | kW  | 27.5        |
|  | kW  | 47.5        |
|  | kW  | 48          |
|  | kW  | 11          |
|  | kW  | 18.5        |
|  | kW  | 18.5        |
| <b>Operating power for ≥ 200000 operating cycles at AC-4</b>   |     |             |
| <ul style="list-style-type: none"> <li>• at 400 V Rated value</li> <li>• at 690 V Rated value</li> </ul>   | kW  | 6           |
|  | kW  | 10.3        |
| <b>Operating frequency</b>   |     |             |
| <ul style="list-style-type: none"> <li>• at AC-3 maximum</li> </ul>  | 1/h | 750         |
| <b>Control circuit/ Control:</b>   |     |             |
| <b>Type of voltage of the control supply voltage</b>   |     | AC          |
| <b>Control supply voltage with AC</b>  |     |             |
| <ul style="list-style-type: none"> <li>• at 50 Hz Rated value</li> <li>• at 60 Hz Rated value</li> </ul>   | V   | 220         |
|  | V   | 240         |
| <b>Operating range factor control supply voltage rated value of the magnet coil with AC</b>  |     |             |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>   |     | 0.8 ... 1.1 |

- at 60 Hz

0.85 ... 1.1

#### Auxiliary circuit:

|  |   |   |
|--|---|---|
| <b>Number of NC contacts</b>   |   |   |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts           <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>  |   | 1   |
| <b>Number of NO contacts</b>   |   |   |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts           <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>  |   | 1   |
| <b>Product expansion Auxiliary switch</b>  |   | Yes   |
| <b>Operating current at AC-15</b>  |   |   |
| <ul style="list-style-type: none"> <li>• at 230 V Rated value</li> </ul>   | A | 10  |
| <ul style="list-style-type: none"> <li>• at 400 V Rated value</li> </ul>   | A | 3   |
| <ul style="list-style-type: none"> <li>• at 690 V Rated value</li> </ul>   | A | 1   |
| <b>Operating current</b>   |   |   |
| <ul style="list-style-type: none"> <li>• at DC-12 at 125 V Rated value</li> </ul>  | A | 2   |
| <ul style="list-style-type: none"> <li>• at DC-12 at 220 V Rated value</li> </ul>  | A | 1   |
| <ul style="list-style-type: none"> <li>• at DC-12 at 600 V Rated value</li> </ul>  | A | 0.15  |
| <ul style="list-style-type: none"> <li>• at DC-13 at 125 V Rated value</li> </ul>  | A | 0.9   |
| <ul style="list-style-type: none"> <li>• at DC-13 at 220 V Rated value</li> </ul>  | A | 0.3   |
| <ul style="list-style-type: none"> <li>• at DC-13 at 600 V Rated value</li> </ul>  | A | 0.1   |
| <b>Operating current</b>   |   |   |
| <ul style="list-style-type: none"> <li>• at DC-12           <ul style="list-style-type: none"> <li>— at 60 V Rated value</li> <li>— at 110 V Rated value</li> </ul> </li> </ul>                                | A | 6   |
|  | A | 3   |
| <ul style="list-style-type: none"> <li>• at DC-13           <ul style="list-style-type: none"> <li>— at 24 V Rated value</li> <li>— at 60 V Rated value</li> <li>— at 110 V Rated value</li> </ul> </li> </ul> | A | 10  |
|  | A | 2   |
|  | A | 1   |
| <b>Contact reliability of the auxiliary contacts</b>   |   | 1 faulty switching per 100 million (17 V, 1 mA) |

#### UL/CSA ratings:

|  |           |    |
|--|-----------|----|
| <b>Full-load current (FLA) for three-phase AC motor</b>  |           |    |
| <ul style="list-style-type: none"> <li>• at 480 V Rated value</li> </ul>                               | A         | 34 |
| <ul style="list-style-type: none"> <li>• at 600 V Rated value</li> </ul>                               | A         | 27 |
| <b>yielded mechanical performance [hp]</b>   |           |    |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor at 110/120 V Rated value</li> </ul> | metric hp | 3  |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor at 230 V Rated value</li> </ul>     | metric hp | 5  |
| <ul style="list-style-type: none"> <li>• for three-phase AC motor at 200/208 V Rated value</li> </ul>  | metric hp | 10 |
| <ul style="list-style-type: none"> <li>• for three-phase AC motor at 220/230 V Rated value</li> </ul>  | metric hp | 10 |

|   |           |             |
|---|-----------|-------------|
| <ul style="list-style-type: none"> <li>• for three-phase AC motor at 460/480 V Rated value</li> </ul> | metric hp | 25          |
| <ul style="list-style-type: none"> <li>• for three-phase AC motor at 575/600 V Rated value</li> </ul> | metric hp | 25          |
| <b>Contact rating of the auxiliary contacts acc. to UL</b>  |           | A600 / Q600 |

#### Short-circuit:

|   |  |   |
|---|--|---|
| <b>Design of the fuse link</b>  |  |   |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of assignment 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul> |  | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE:<br>100 A<br><br>gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE:<br>35 A<br><br>fuse gL/gG: 10 A |

#### Installation/ mounting/ dimensions:

|   |    |  |
|---|----|--|
| <b>mounting position</b>  |    | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| <b>Mounting type</b>  |    | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022   |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>   |    | Yes  |
| <b>Height</b>   | mm | 85   |
| <b>Width</b>  | mm | 45   |
| <b>Depth</b>  | mm | 97   |
| <b>Required spacing</b>   |    |  |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> </ul> </li> </ul> | mm | 0<br>0<br>0<br>0<br>0<br><br>0<br>0<br>0<br>6<br>0<br><br>0<br>0<br>0<br>0   |

— at the side

mm 6

### Connections/ Terminals:

|  |     |   |
|--|-----|---|
| <b>Type of electrical connection</b>                     |     |   |
| • for main current circuit                               |     | screw-type terminals  |
| • for auxiliary and control current circuit              |     | screw-type terminals  |
| <b>Type of connectable conductor cross-section</b>       |     |   |
| • for main contacts                                      |     | 2x (1 ... 2,5 mm <sup>2</sup> ), 2x (2,5 ... 10 mm <sup>2</sup> )                       |
| — single or multi-stranded                               |     |   |
| — finely stranded with core end processing               |     | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> |
| • for AWG conductors for main contacts                   |     | 2x (16 ... 12), 2x (14 ... 8)   |
| • for auxiliary contacts                                 |     | 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> )                   |
| — single or multi-stranded                               |     |   |
| — finely stranded with core end processing               |     | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )                   |
| • for AWG conductors for auxiliary contacts              |     | 2x (20 ... 16), 2x (18 ... 14)  |
| <b>Apparent pick-up power of the magnet coil with AC</b> |     |   |
| • at 50 Hz   | V·A | 81  |
| • at 60 Hz   | V·A | 79  |

### Safety related data:

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

### Mechanical data:

|                          |  |    |
|--------------------------|--|----|
| <b>Size of contactor</b> |  | S0 |
|--------------------------|--|----|

### Ambient conditions:

|  |    |             |
|--|----|-------------|
| <b>Installation altitude at height above sea level maximum</b> | m  | 2 000       |
| <b>Ambient temperature</b>                                     |    |             |
| • during operation   | °C | -25 ... +60 |
| • during storage   | °C | -55 ... +80 |

### Certificates/ approvals:

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



[Type Examination](#)

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



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



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



[Confirmation](#)

|       |
|-------|
| other |
|-------|

[Environmental Confirmations](#)



### 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**

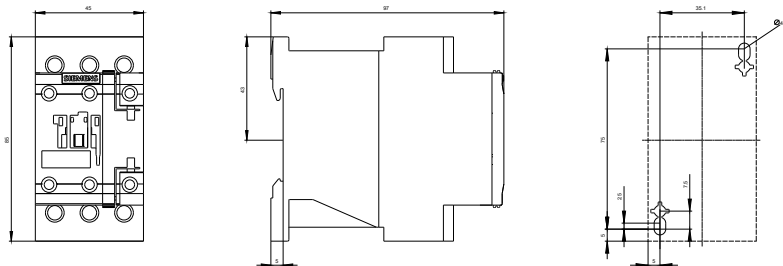
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20281AP60>

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

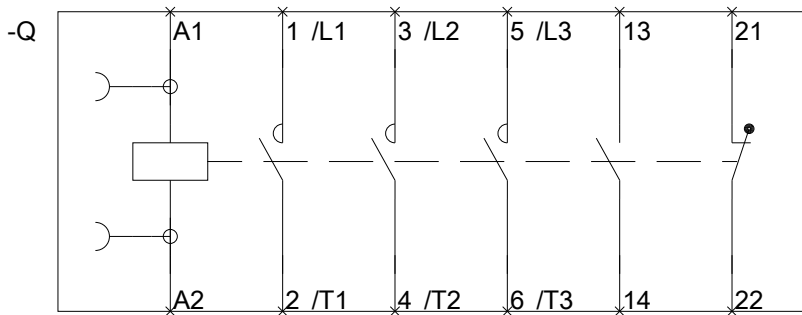
<http://support.automation.siemens.com/WW/view/en/3RT20281AP60/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT20281AP60&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20281AP60&lang=en)







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