



Power contactor, AC-3 38 A, 18.5 kW / 400 V 1 NO + 1 NC, 48 V DC 3-pole, size S0 ring cable lug

|   |  |
|---|--|
| <b>product brand name</b>   | SIRIUS   |
| <b>product designation</b>  | Power contactor                                      |
| <b>product type designation</b>   | 3RT2   |
| <b>General technical data</b>   |  |
| <b>size of contactor</b>  | S0   |
| <b>product extension</b>  |  |
| <ul style="list-style-type: none"> <li>function module for communication</li> <li>auxiliary switch</li> </ul>   | <p>No</p> <p>Yes</p>                                 |
| <b>power loss [W] for rated value of the current</b>  |  |
| <ul style="list-style-type: none"> <li>at AC in hot operating state</li> <li>at AC in hot operating state per pole</li> <li>without load current share typical</li> </ul>   | <p>9.6 W</p> <p>3.2 W</p> <p>5.9 W</p>               |
| <b>insulation voltage</b>   |  |
| <ul style="list-style-type: none"> <li>of main circuit with degree of pollution 3 rated value</li> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>   | <p>690 V</p> <p>690 V</p>                            |
| <b>surge voltage resistance</b>   |  |
| <ul style="list-style-type: none"> <li>of main circuit rated value</li> <li>of auxiliary circuit rated value</li> </ul>   | <p>6 kV</p> <p>6 kV</p>                              |
| maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1   | 400 V  |
| <b>shock resistance at rectangular impulse</b>  |  |
| <ul style="list-style-type: none"> <li>at DC</li> </ul>   | 10g / 5 ms, 7,5g / 10 ms                             |
| <b>shock resistance with sine pulse</b>   |  |
| <ul style="list-style-type: none"> <li>at DC</li> </ul>   | 15g / 5 ms, 10g / 10 ms                              |
| <b>mechanical service life (switching cycles)</b>   |  |
| <ul style="list-style-type: none"> <li>of contactor typical</li> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> <li>of the contactor with added auxiliary switch block typical</li> </ul> | <p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p> |
| <b>reference code according to IEC 81346-2</b>  | Q  |
| <b>Substance Prohibitance (Date)</b>  | 10/01/2009   |
| <b>Ambient conditions</b>   |  |
| installation altitude at height above sea level maximum   | 2 000 m  |
| <b>ambient temperature</b>  |  |
| <ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>  | <p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>          |
| <b>relative humidity minimum</b>  | 10 %   |
| <b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>   | 95 %   |

## Main circuit

|  |                    |
|--|--------------------|
| <b>number of poles for main current circuit</b>                        | 3                  |
| <b>number of NO contacts for main contacts</b>                         | 3                  |
| <b>operating voltage</b>   |                    |
| • at AC-3 rated value maximum  | 690 V              |
| • at AC-3e rated value maximum   | 690 V              |
| <b>operational current</b>   |                    |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value            | 50 A               |
| • at AC-1  |                    |
| — up to 690 V at ambient temperature 40 °C rated value                 | 50 A               |
| — up to 690 V at ambient temperature 60 °C rated value                 | 42 A               |
| • at AC-3  |                    |
| — at 400 V rated value   | 38 A               |
| — at 500 V rated value   | 32 A               |
| — at 690 V rated value   | 21 A               |
| • at AC-3e   |                    |
| — at 400 V rated value   | 38 A               |
| — at 500 V rated value   | 32 A               |
| — at 690 V rated value   | 21 A               |
| • at AC-4 at 400 V rated value   | 22 A               |
| • at AC-5a up to 690 V rated value                                     | 44 A               |
| • at AC-5b up to 400 V rated value                                     | 31.5 A             |
| • at AC-6a   |                    |
| — up to 230 V for current peak value n=20 rated value                  | 30.8 A             |
| — up to 400 V for current peak value n=20 rated value                  | 30.8 A             |
| — up to 500 V for current peak value n=20 rated value                  | 30.8 A             |
| — up to 690 V for current peak value n=20 rated value                  | 21 A               |
| • at AC-6a   |                    |
| — up to 230 V for current peak value n=30 rated value                  | 20.5 A             |
| — up to 400 V for current peak value n=30 rated value                  | 20.5 A             |
| — up to 500 V for current peak value n=30 rated value                  | 21.4 A             |
| — up to 690 V for current peak value n=30 rated value                  | 21 A               |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 10 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value   | 12 A               |
| • at 690 V rated value   | 12 A               |
| <b>operational current</b>   |                    |
| • <b>at 1 current path at DC-1</b>                                     |                    |
| — at 24 V rated value  | 35 A               |
| — at 110 V rated value   | 4.5 A              |
| — at 220 V rated value   | 1 A                |
| — at 440 V rated value   | 0.4 A              |
| — at 600 V rated value   | 0.25 A             |
| • <b>with 2 current paths in series at DC-1</b>                        |                    |
| — at 24 V rated value  | 35 A               |
| — at 110 V rated value   | 35 A               |
| — at 220 V rated value   | 5 A                |
| — at 440 V rated value   | 1 A                |
| — at 600 V rated value   | 0.8 A              |
| • <b>with 3 current paths in series at DC-1</b>                        |                    |

|  |   |
|--|---|
| <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>  | 35 A<br>35 A<br>35 A<br>2.9 A<br>1.4 A  |
| <ul style="list-style-type: none"> <li>● <b>at 1 current path at DC-3 at DC-5</b> <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> </ul>  | 20 A<br>2.5 A<br>1 A<br>0.09 A<br>0.06 A  |
| <ul style="list-style-type: none"> <li>● <b>with 2 current paths in series at DC-3 at DC-5</b> <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> </ul>   | 35 A<br>15 A<br>3 A<br>0.27 A<br>0.16 A   |
| <ul style="list-style-type: none"> <li>● <b>with 3 current paths in series at DC-3 at DC-5</b> <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> </ul>   | 35 A<br>35 A<br>10 A<br>0.6 A<br>0.6 A  |
| <b>operating power</b> <ul style="list-style-type: none"> <li>● at AC-2 at 400 V rated value</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 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> <li>● at AC-3e               <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul> | 18.5 kW<br><br>11 kW<br>18.5 kW<br>18.5 kW<br>18.5 kW<br><br>11 kW<br>18.5 kW<br>18.5 kW<br>18.5 kW   |
| <b>operating power for approx. 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>  | 6 kW<br>10.3 kW   |
| <b>operating apparent power at AC-6a</b> <ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=20 rated value</li> <li>● up to 400 V for current peak value n=20 rated value</li> <li>● up to 500 V for current peak value n=20 rated value</li> <li>● up to 690 V for current peak value n=20 rated value</li> </ul>  | 12.2 kVA<br>21.3 kVA<br>26.6 kVA<br>25 kVA  |
| <b>operating apparent power at AC-6a</b> <ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=30 rated value</li> <li>● up to 400 V for current peak value n=30 rated value</li> <li>● up to 500 V for current peak value n=30 rated value</li> <li>● up to 690 V for current peak value n=30 rated value</li> </ul>  | 8.1 kVA<br>14.2 kVA<br>18.5 kVA<br>25 kVA   |
| <b>short-time withstand current in cold operating state up to 40 °C</b> <ul style="list-style-type: none"> <li>● limited to 1 s switching at zero current maximum</li> <li>● limited to 5 s switching at zero current maximum</li> <li>● limited to 10 s switching at zero current maximum</li> <li>● limited to 30 s switching at zero current maximum</li> <li>● limited to 60 s switching at zero current maximum</li> </ul>  | 593 A; Use minimum cross-section acc. to AC-1 rated value<br>395 A; Use minimum cross-section acc. to AC-1 rated value<br>260 A; Use minimum cross-section acc. to AC-1 rated value<br>186 A; Use minimum cross-section acc. to AC-1 rated value<br>152 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>no-load switching frequency</b> <ul style="list-style-type: none"> <li>● at DC</li> </ul>   | 1 500 1/h   |
| <b>operating frequency</b> <ul style="list-style-type: none"> <li>● at AC-1 maximum</li> <li>● at AC-2 maximum</li> </ul>  | 1 000 1/h<br>750 1/h  |

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|--|---|
| <ul style="list-style-type: none"> <li>• at AC-3 maximum</li> </ul>  | 750 1/h   |
| <ul style="list-style-type: none"> <li>• at AC-3e maximum</li> </ul>   | 750 1/h   |
| <ul style="list-style-type: none"> <li>• at AC-4 maximum</li> </ul>  | 250 1/h   |
| <b>Control circuit/ Control</b>  |   |
| <b>type of voltage of the control supply voltage</b>   | DC  |
| <b>control supply voltage at DC</b>  |   |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>  | 48 V  |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b>  |   |
| <ul style="list-style-type: none"> <li>• initial value</li> </ul>  | 0.8   |
| <ul style="list-style-type: none"> <li>• full-scale value</li> </ul>   | 1.1   |
| <b>closing power of magnet coil at DC</b>  | 5.9 W   |
| <b>holding power of magnet coil at DC</b>  | 5.9 W   |
| <b>closing delay</b>   |   |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>  | 50 ... 170 ms                                   |
| <b>opening delay</b>   |   |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>  | 15 ... 17.5 ms                                  |
| <b>arcing time</b>   | 10 ... 10 ms                                    |
| <b>control version of the switch operating mechanism</b>   | Standard A1 - A2                                |
| <b>Auxiliary circuit</b>   |   |
| number of NC contacts for auxiliary contacts instantaneous contact   | 1   |
| number of NO contacts for auxiliary contacts instantaneous contact   | 1   |
| operational current at AC-12 maximum   | 10 A  |
| <b>operational current at AC-15</b>  |   |
| <ul style="list-style-type: none"> <li>• at 230 V rated value</li> </ul>   | 10 A  |
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>   | 3 A   |
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>   | 2 A   |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>   | 1 A   |
| <b>operational current at DC-12</b>  |   |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>  | 10 A  |
| <ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>  | 6 A   |
| <ul style="list-style-type: none"> <li>• at 60 V rated value</li> </ul>  | 6 A   |
| <ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>   | 3 A   |
| <ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>   | 2 A   |
| <ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>   | 1 A   |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>   | 0.15 A  |
| <b>operational current at DC-13</b>  |   |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>  | 10 A  |
| <ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>  | 2 A   |
| <ul style="list-style-type: none"> <li>• at 60 V rated value</li> </ul>  | 2 A   |
| <ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>   | 1 A   |
| <ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>   | 0.9 A   |
| <ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>   | 0.3 A   |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>   | 0.1 A   |
| <b>contact reliability of auxiliary contacts</b>   | 1 faulty switching per 100 million (17 V, 1 mA) |
| <b>UL/CSA ratings</b>  |   |
| <b>full-load current (FLA) for 3-phase AC motor</b>  |   |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>   | 34 A  |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>   | 27 A  |
| <b>yielded mechanical performance [hp]</b>   |   |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> </ul>  | 3 hp<br>5 hp                                    |
| <ul style="list-style-type: none"> <li>• for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul> | 10 hp<br>10 hp<br>25 hp<br>25 hp                |

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| <b>contact rating of auxiliary contacts according to UL</b>   | A600 / P600  |
| <b>Short-circuit protection</b>   |  |
| <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 coordination 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>   | gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)<br>gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)<br>gG: 10 A (500 V, 1 kA) |
| <b>Installation/ mounting/ dimensions</b>   |  |
| <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>fastening method</b>   | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715   |
| <ul style="list-style-type: none"> <li>● side-by-side mounting</li> </ul>   | Yes  |
| <b>height</b>   | 85 mm  |
| <b>width</b>  | 45 mm  |
| <b>depth</b>  | 107 mm   |
| <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>— 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>— 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>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br><br>10 mm<br>10 mm<br>6 mm<br>10 mm<br><br>10 mm<br>10 mm<br>10 mm<br>6 mm  |
| <b>Connections/ Terminals</b>   |  |
| <b>type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>● for main current circuit</li> <li>● for auxiliary and control circuit</li> <li>● at contactor for auxiliary contacts</li> <li>● of magnet coil</li> </ul>  | Ring cable lug connection<br>ring terminal lug connection<br>Ring cable lug connection<br>Ring cable lug connection  |
| <b>Safety related data</b>  |  |
| <b>product function</b>   |  |
| <ul style="list-style-type: none"> <li>● mirror contact according to IEC 60947-4-1</li> </ul>   | Yes  |
| B10 value with high demand rate according to SN 31920   | 450 000  |
| <b>proportion of dangerous failures</b>   |  |
| <ul style="list-style-type: none"> <li>● with low demand rate according to SN 31920</li> <li>● with high demand rate according to SN 31920</li> </ul>   | 40 %<br>73 %   |
| failure rate [FIT] with low demand rate according to SN 31920   | 100 FIT  |
| T1 value for proof test interval or service life according to IEC 61508   | 20 y   |
| <b>protection class IP on the front according to IEC 60529</b>  | IP00   |
| <b>suitability for use</b>  |  |
| <ul style="list-style-type: none"> <li>● safety-related switching OFF</li> </ul>  | Yes  |
| <b>Certificates/ approvals</b>  |  |
| <b>General Product Approval</b>   |  |



[Confirmation](#)



[KC](#)



|     |                                       |                           |                   |
|-----|---------------------------------------|---------------------------|-------------------|
| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates |
|-----|---------------------------------------|---------------------------|-------------------|



[Type Examination Certificate](#)



EG-Konf.

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

### Marine / Shipping



|                   |       |                |
|-------------------|-------|----------------|
| Marine / Shipping | other | Dangerous Good |
|-------------------|-------|----------------|



[Confirmation](#)

[Environmental Confirmations](#)



VDE

[Transport Information](#)

### Further information

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=3RT2028-4BW40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-4BW40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-4BW40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2028-4BW40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-4BW40&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-4BW40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-4BW40&objecttype=14&gridview=view1>

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