



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 24 V DC, 0.7-1.25\* Us, with integrated varistor, auxiliary contacts: 1 NC, ring cable lug connection, size: S00

|                                                                                                              |                            |
|--------------------------------------------------------------------------------------------------------------|----------------------------|
| product brand name                                                                                           | SIRIUS                     |
| product designation                                                                                          | Coupling contactor         |
| product type designation                                                                                     | 3RT2                       |
| <b>General technical data</b>                                                                                |                            |
| size of contactor                                                                                            | S00                        |
| product extension                                                                                            |                            |
| • function module for communication                                                                          | No                         |
| • auxiliary switch                                                                                           | No                         |
| power loss [W] for rated value of the current                                                                |                            |
| • at AC in hot operating state                                                                               | 1.5 W                      |
| • at AC in hot operating state per pole                                                                      | 0.5 W                      |
| • without load current share typical                                                                         | 2.8 W                      |
| type of calculation of power loss depending on pole                                                          | quadratic                  |
| insulation voltage                                                                                           |                            |
| • of main circuit with degree of pollution 3 rated value                                                     | 690 V                      |
| • of auxiliary circuit with degree of pollution 3 rated value                                                | 690 V                      |
| surge voltage resistance                                                                                     |                            |
| • of main circuit rated value                                                                                | 6 kV                       |
| • of auxiliary circuit rated value                                                                           | 6 kV                       |
| maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 | 400 V                      |
| shock resistance at rectangular impulse                                                                      |                            |
| • at DC                                                                                                      | 7.3g / 5 ms, 4.7g / 10 ms  |
| shock resistance with sine pulse                                                                             |                            |
| • at DC                                                                                                      | 11.4g / 5 ms, 7.3g / 10 ms |
| mechanical service life (operating cycles)                                                                   |                            |
| • of contactor typical                                                                                       | 30 000 000                 |
| • of the contactor with added electronically optimized auxiliary switch block typical                        | 5 000 000                  |
| • of the contactor with added auxiliary switch block typical                                                 | 10 000 000                 |
| reference code according to IEC 81346-2                                                                      | Q                          |
| Substance Prohibitance (Date)                                                                                |                            |
| Weight                                                                                                       | 0.289 kg                   |
| <b>Ambient conditions</b>                                                                                    |                            |
| 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 %                       |

| Environmental footprint                                           |                   |
|-------------------------------------------------------------------|-------------------|
| Environmental Product Declaration(EPD)                            | Yes               |
| Global Warming Potential [CO2 eq] total                           | 153 kg            |
| Global Warming Potential [CO2 eq] during manufacturing            | 1.42 kg           |
| Global Warming Potential [CO2 eq] during operation                | 152 kg            |
| Global Warming Potential [CO2 eq] after end of life               | -0.305 kg         |
| Main circuit                                                      |                   |
| number of poles for main current circuit                          | 3                 |
| number of NO contacts for main contacts                           | 3                 |
| operating voltage                                                 |                   |
| • at AC-3 rated value maximum                                     | 690 V             |
| • at AC-3e rated value maximum                                    | 690 V             |
| operational current                                               |                   |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value       | 22 A              |
| • at AC-1                                                         |                   |
| — up to 690 V at ambient temperature 40 °C rated value            | 22 A              |
| — up to 690 V at ambient temperature 60 °C rated value            | 20 A              |
| • at AC-3                                                         |                   |
| — at 400 V rated value                                            | 12 A              |
| — at 500 V rated value                                            | 9.2 A             |
| — at 690 V rated value                                            | 6.7 A             |
| • at AC-3e                                                        |                   |
| — at 400 V rated value                                            | 12 A              |
| — at 500 V rated value                                            | 9.2 A             |
| — at 690 V rated value                                            | 6.7 A             |
| • at AC-4 at 400 V rated value                                    | 8.5 A             |
| • at AC-5a up to 690 V rated value                                | 19.4 A            |
| • at AC-5b up to 400 V rated value                                | 9.9 A             |
| • at AC-6a                                                        |                   |
| — up to 230 V for current peak value n=20 rated value             | 7.2 A             |
| — up to 400 V for current peak value n=20 rated value             | 7.2 A             |
| — up to 500 V for current peak value n=20 rated value             | 7.2 A             |
| — up to 690 V for current peak value n=20 rated value             | 6.7 A             |
| • at AC-6a                                                        |                   |
| — up to 230 V for current peak value n=30 rated value             | 4.8 A             |
| — up to 400 V for current peak value n=30 rated value             | 4.8 A             |
| — up to 500 V for current peak value n=30 rated value             | 4.8 A             |
| — up to 690 V for current peak value n=30 rated value             | 4.8 A             |
| minimum cross-section in main circuit at maximum AC-1 rated value | 4 mm <sup>2</sup> |
| operational current for approx. 200000 operating cycles at AC-4   |                   |
| • at 400 V rated value                                            | 4.1 A             |
| • at 690 V rated value                                            | 3.3 A             |
| operational current                                               |                   |
| • at 1 current path at DC-1                                       |                   |
| — at 24 V rated value                                             | 20 A              |
| — at 60 V rated value                                             | 20 A              |
| — 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 60 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             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• with 3 current paths in series at DC-1 <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> <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 1 current path at DC-3 at DC-5 <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> <li>• with 2 current paths in series at DC-3 at DC-5 <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> <li>• with 3 current paths in series at DC-3 at DC-5 <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> <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>20 A<br>20 A<br>20 A<br>1.3 A<br>1 A<br><br>20 A<br>0.5 A<br>0.15 A<br><br>20 A<br>5 A<br>0.35 A<br><br>20 A<br>20 A<br>20 A<br>1.5 A<br>0.2 A<br>0.2 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5.5 kW<br><br>3 kW<br>5.5 kW<br>5.5 kW<br>5.5 kW<br><br>3 kW<br>5.5 kW<br>5.5 kW<br>5.5 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2 kW<br>2.5 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2.8 kVA<br>4.9 kVA<br>6.2 kVA<br>8 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.9 kVA<br>3.3 kVA<br>4.1 kVA<br>5.7 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 200 A; Use minimum cross-section acc. to AC-1 rated value<br>123 A; Use minimum cross-section acc. to AC-1 rated value<br>96 A; Use minimum cross-section acc. to AC-1 rated value<br>74 A; Use minimum cross-section acc. to AC-1 rated value<br>61 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 000 1/h                                                                                                                                                                                                                                                                                                 |
| <b>operating frequency</b> <ul style="list-style-type: none"> <li>• at AC-1 maximum</li> <li>• at AC-2 maximum</li> <li>• at AC-3 maximum</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 000 1/h<br>750 1/h<br>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 rated value</b>                                                                                                             | 24 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>                                                                                           | 0.7                                             |
| <ul style="list-style-type: none"> <li>• full-scale value</li> </ul>                                                                                        | 1.25                                            |
| <b>design of the surge suppressor</b>                                                                                                                       | with varistor                                   |
| <b>closing power of magnet coil at DC</b>                                                                                                                   | 2.8 W                                           |
| <b>holding power of magnet coil at DC</b>                                                                                                                   | 2.8 W                                           |
| <b>closing delay</b>                                                                                                                                        |                                                 |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                   | 25 ... 130 ms                                   |
| <b>opening delay</b>                                                                                                                                        |                                                 |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                   | 7 ... 20 ms                                     |
| <b>arcing time</b>                                                                                                                                          | 10 ... 15 ms                                    |
| <b>control version of the switch operating mechanism</b>                                                                                                    | Standard A1 - A2                                |
| <b>Auxiliary circuit</b>                                                                                                                                    |                                                 |
| 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>                                                                                    | 11 A                                            |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>                                                                                    | 11 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> </ul> </li> </ul> | 0.5 hp                                          |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 230 V rated value</li> </ul> </li> </ul>                                | 2 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> </ul> </li> </ul>      | 3 hp                                            |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220/230 V rated value</li> </ul> </li> </ul>                            | 3 hp                                            |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 460/480 V rated value</li> </ul> </li> </ul>                            | 7.5 hp                                          |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 575/600 V rated value</li> </ul> </li> </ul>                            | 10 hp                                           |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                 | A600 / Q600                                     |
| <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</li> </ul>                                                        |                                                 |

- with type of coordination 1 required
- with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)  
gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)  
gG: 10 A (500 V, 1 kA)

#### 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>fastening method</b>      | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715                                                             |
| <b>height</b>                | 58 mm                                                                                                                                |
| <b>width</b>                 | 45 mm                                                                                                                                |
| <b>depth</b>                 | 73 mm                                                                                                                                |
| <b>required spacing</b>      |                                                                                                                                      |
| • with side-by-side mounting |                                                                                                                                      |
| — forwards                   | 10 mm                                                                                                                                |
| — upwards                    | 10 mm                                                                                                                                |
| — downwards                  | 10 mm                                                                                                                                |
| — at the side                | 0 mm                                                                                                                                 |
| • for grounded parts         |                                                                                                                                      |
| — forwards                   | 10 mm                                                                                                                                |
| — upwards                    | 10 mm                                                                                                                                |
| — at the side                | 6 mm                                                                                                                                 |
| — downwards                  | 10 mm                                                                                                                                |
| • for live parts             |                                                                                                                                      |
| — forwards                   | 10 mm                                                                                                                                |
| — upwards                    | 10 mm                                                                                                                                |
| — downwards                  | 10 mm                                                                                                                                |
| — at the side                | 6 mm                                                                                                                                 |

#### Connections/ Terminals

|                                       |                              |
|---------------------------------------|------------------------------|
| <b>type of electrical connection</b>  |                              |
| • for main current circuit            | Ring cable lug connection    |
| • for auxiliary and control circuit   | ring terminal lug connection |
| • at contactor for auxiliary contacts | Ring cable lug connection    |
| • of magnet coil                      | Ring cable lug connection    |

#### Safety related data

|                                                                      |           |
|----------------------------------------------------------------------|-----------|
| <b>product function</b>                                              |           |
| • mirror contact according to IEC 60947-4-1                          | Yes       |
| • positively driven operation according to IEC 60947-5-1             | No        |
| • suitable for safety function                                       | Yes       |
| suitability for use safety-related switching OFF                     | Yes       |
| <b>service life maximum</b>                                          | 20 a      |
| <b>test wear-related service life necessary</b>                      | Yes       |
| <b>proportion of dangerous failures</b>                              |           |
| • with low demand rate according to SN 31920                         | 40 %      |
| • with high demand rate according to SN 31920                        | 73 %      |
| <b>B10 value with high demand rate according to SN 31920</b>         | 1 000 000 |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b> | 100 FIT   |
| ISO 13849                                                            |           |
| <b>device type according to ISO 13849-1</b>                          | 3         |
| <b>overdimensioning according to ISO 13849-2 necessary</b>           | Yes       |
| IEC 61508                                                            |           |
| <b>safety device type according to IEC 61508-2</b>                   | Type A    |
| Electrical Safety                                                    |           |
| <b>protection class IP on the front according to IEC 60529</b>       | IP00      |

#### Approvals Certificates

|                          |  |
|--------------------------|--|
| General Product Approval |  |
|--------------------------|--|



[Confirmation](#)



[KC](#)

|                          |     |                   |                   |                   |
|--------------------------|-----|-------------------|-------------------|-------------------|
| General Product Approval | EMV | Functional Safety | Test Certificates | Marine / Shipping |
|--------------------------|-----|-------------------|-------------------|-------------------|



[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



|                   |       |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



[Miscellaneous](#)

|       |         |                 |             |
|-------|---------|-----------------|-------------|
| other | Railway | Dangerous goods | Environment |
|-------|---------|-----------------|-------------|

[Confirmation](#)

[Special Test Certificate](#)

[Transport Information](#)



[Environmental Confirmations](#)

#### Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT2017-4LB42>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-4LB42>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-4LB42>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-4LB42&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-4LB42&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-4LB42/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-4LB42&objecttype=14&gridview=view1>



