



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NC, screw terminal, size: S00, reusable packaging, pack = 72 units

|                                                                                                              |                            |
|--------------------------------------------------------------------------------------------------------------|----------------------------|
| product brand name                                                                                           | SIRIUS                     |
| product designation                                                                                          | Power contactor            |
| product type designation                                                                                     | 3RT2                       |
| <b>General technical data</b>                                                                                |                            |
| size of contactor                                                                                            | S00                        |
| product extension                                                                                            |                            |
| • function module for communication                                                                          | No                         |
| • auxiliary switch                                                                                           | Yes                        |
| power loss [W] for rated value of the current                                                                |                            |
| • at AC in hot operating state                                                                               | 0.9 W                      |
| • at AC in hot operating state per pole                                                                      | 0.3 W                      |
| • without load current share typical                                                                         | 4 W                        |
| type of calculation of power loss depending on pole                                                          | quadratic                  |
| 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                                                                                                      | 6,7g / 5 ms, 4,2g / 10 ms  |
| shock resistance with sine pulse                                                                             |                            |
| • at DC                                                                                                      | 10,5g / 5 ms, 6,6g / 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                                                                                                       | 0.281 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 %                       |
| <b>Main circuit</b>                                                                                          |                            |
| number of poles for main current circuit                                                                     | 3                          |
| number of NO contacts for main contacts                                                                      | 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            | 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                                                 | 9 A               |
| — at 500 V rated value                                                 | 7.7 A             |
| — at 690 V rated value                                                 | 6.7 A             |
| • at AC-3e                                                             |                   |
| — at 400 V rated value                                                 | 9 A               |
| — at 500 V rated value                                                 | 7.7 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                                     | 7.4 A             |
| • at AC-6a                                                             |                   |
| — up to 230 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 400 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 500 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 690 V for current peak value n=20 rated value                  | 5 A               |
| • at AC-6a                                                             |                   |
| — up to 230 V for current peak value n=30 rated value                  | 3.5 A             |
| — up to 400 V for current peak value n=30 rated value                  | 3.5 A             |
| — up to 500 V for current peak value n=30 rated value                  | 3.6 A             |
| — up to 690 V for current peak value n=30 rated value                  | 3.3 A             |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 4 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                   |
| • at 400 V rated value                                                 | 4.1 A             |
| • at 690 V rated value                                                 | 3.3 A             |
| <b>operational current</b>                                             |                   |
| • 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             |
| • with 3 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                                                 | 20 A              |
| — at 220 V rated value                                                 | 20 A              |
| — at 440 V rated value                                                 | 1.3 A             |
| — at 600 V rated value                                                 | 1 A               |
| • at 1 current path at DC-3 at DC-5                                    |                   |
| — at 24 V rated value                                                  | 20 A              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.5 A<br>0.15 A                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"> <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>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-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>                                                                                   | 2.2 kW<br>4 kW<br>4 kW<br>5.5 kW<br><br>2.2 kW<br>4 kW<br>4 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 kVA<br>3.6 kVA<br>4.6 kVA<br>5.9 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>                                                                                                                                                                                                | 1.3 kVA<br>2.4 kVA<br>3.1 kVA<br>4 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>                                                                                                              | 155 A; Use minimum cross-section acc. to AC-1 rated value<br>111 A; Use minimum cross-section acc. to AC-1 rated value<br>86 A; Use minimum cross-section acc. to AC-1 rated value<br>66 A; Use minimum cross-section acc. to AC-1 rated value<br>55 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> <li>● at AC-3e maximum</li> <li>● at AC-4 maximum</li> </ul>                                                                                                                                                                                                                                                                                                                                  | 1 000 1/h<br>750 1/h<br>750 1/h<br>750 1/h<br>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> <li>● full-scale value</li> </ul>                                                                                                                                                                                                                                                                                                                                                          | 0.8<br>1.1                                                                                                                                                                                                                                                                                                 |
| <b>closing power of magnet coil at DC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4 W                                                                                                                                                                                                                                                                                                        |
| <b>holding power of magnet coil at DC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4 W                                                                                                                                                                                                                                                                                                        |

|                                                                    |                                                                                                                                      |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>closing delay</b>                                               |                                                                                                                                      |
| • at DC                                                            | 30 ... 100 ms                                                                                                                        |
| <b>opening delay</b>                                               |                                                                                                                                      |
| • at DC                                                            | 7 ... 13 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 NC contacts for auxiliary contacts instantaneous contact | 1                                                                                                                                    |
| operational current at AC-12 maximum                               | 10 A                                                                                                                                 |
| <b>operational current at AC-15</b>                                |                                                                                                                                      |
| • at 230 V rated value                                             | 10 A                                                                                                                                 |
| • at 400 V rated value                                             | 3 A                                                                                                                                  |
| • at 500 V rated value                                             | 2 A                                                                                                                                  |
| • at 690 V rated value                                             | 1 A                                                                                                                                  |
| <b>operational current at DC-12</b>                                |                                                                                                                                      |
| • at 24 V rated value                                              | 10 A                                                                                                                                 |
| • at 48 V rated value                                              | 6 A                                                                                                                                  |
| • at 60 V rated value                                              | 6 A                                                                                                                                  |
| • at 110 V rated value                                             | 3 A                                                                                                                                  |
| • at 125 V rated value                                             | 2 A                                                                                                                                  |
| • at 220 V rated value                                             | 1 A                                                                                                                                  |
| • at 600 V rated value                                             | 0.15 A                                                                                                                               |
| <b>operational current at DC-13</b>                                |                                                                                                                                      |
| • at 24 V rated value                                              | 10 A                                                                                                                                 |
| • at 48 V rated value                                              | 2 A                                                                                                                                  |
| • at 60 V rated value                                              | 2 A                                                                                                                                  |
| • at 110 V rated value                                             | 1 A                                                                                                                                  |
| • at 125 V rated value                                             | 0.9 A                                                                                                                                |
| • at 220 V rated value                                             | 0.3 A                                                                                                                                |
| • at 600 V rated value                                             | 0.1 A                                                                                                                                |
| <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>                |                                                                                                                                      |
| • at 480 V rated value                                             | 7.6 A                                                                                                                                |
| • at 600 V rated value                                             | 9 A                                                                                                                                  |
| <b>yielded mechanical performance [hp]</b>                         |                                                                                                                                      |
| • for single-phase AC motor                                        |                                                                                                                                      |
| — at 110/120 V rated value                                         | 0.33 hp                                                                                                                              |
| — at 230 V rated value                                             | 1 hp                                                                                                                                 |
| • for 3-phase AC motor                                             |                                                                                                                                      |
| — at 200/208 V rated value                                         | 2 hp                                                                                                                                 |
| — at 220/230 V rated value                                         | 3 hp                                                                                                                                 |
| — at 460/480 V rated value                                         | 5 hp                                                                                                                                 |
| — at 575/600 V rated value                                         | 7.5 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>                                     |                                                                                                                                      |
| • for short-circuit protection of the main circuit                 |                                                                                                                                      |
| — with type of coordination 1 required                             | gG: 35A (690V, 100kA), aM: 20A (690V, 100kA), BS88: 35A (415V, 80kA)                                                                 |
| — with type of assignment 2 required                               | gG: 20A (690V, 100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)                                                                 |
| • for short-circuit protection of the auxiliary switch required    | 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 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                                                                                        |
| <b>Connections/ Terminals</b>                                        |                                                                                             |
| <b>type of electrical connection</b>                                 |                                                                                             |
| • for main current circuit                                           | screw-type terminals                                                                        |
| • for auxiliary and control circuit                                  | screw-type terminals                                                                        |
| • at contactor for auxiliary contacts                                | Screw-type terminals                                                                        |
| • of magnet coil                                                     | Screw-type terminals                                                                        |
| <b>type of connectable conductor cross-sections</b>                  |                                                                                             |
| • for main contacts                                                  |                                                                                             |
| — solid                                                              | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> |
| — solid or stranded                                                  | 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> |
| — 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 cables for main contacts                                   | 2x (20 ... 16), 2x (18 ... 14), 2x 12                                                       |
| <b>connectable conductor cross-section for main contacts</b>         |                                                                                             |
| • solid                                                              | 0.5 ... 4 mm <sup>2</sup>                                                                   |
| • stranded                                                           | 0.5 ... 4 mm <sup>2</sup>                                                                   |
| • finely stranded with core end processing                           | 0.5 ... 2.5 mm <sup>2</sup>                                                                 |
| <b>connectable conductor cross-section for auxiliary contacts</b>    |                                                                                             |
| • solid or stranded                                                  | 0.5 ... 4 mm <sup>2</sup>                                                                   |
| • finely stranded with core end processing                           | 0.5 ... 2.5 mm <sup>2</sup>                                                                 |
| <b>type of connectable conductor cross-sections</b>                  |                                                                                             |
| • for auxiliary contacts                                             |                                                                                             |
| — solid or stranded                                                  | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> |
| — 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 cables for auxiliary contacts                              | 2x (20 ... 16), 2x (18 ... 14), 2x 12                                                       |
| <b>AWG number as coded connectable conductor cross section</b>       |                                                                                             |
| • for main contacts                                                  | 20 ... 12                                                                                   |
| • for auxiliary contacts                                             | 20 ... 12                                                                                   |
| <b>Safety related data</b>                                           |                                                                                             |
| <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                                                                                     |
| <b>ISO 13849</b>                                                     |                                                                                             |
| <b>device type according to ISO 13849-1</b>                          | 3                                                                                           |
| <b>overdimensioning according to ISO 13849-2 necessary</b>           | Yes                                                                                         |
| <b>IEC 61508</b>                                                     |                                                                                             |
| <b>safety device type according to IEC 61508-2</b>                   | Type A                                                                                      |

|                                                         |                                                  |
|---------------------------------------------------------|--------------------------------------------------|
| Electrical Safety                                       |                                                  |
| protection class IP on the front according to IEC 60529 | IP20                                             |
| touch protection on the front according to IEC 60529    | finger-safe, for vertical contact from the front |
| 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=3RT2016-1BB42-Z X95>

#### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1BB42-Z X95>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BB42-Z X95>

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

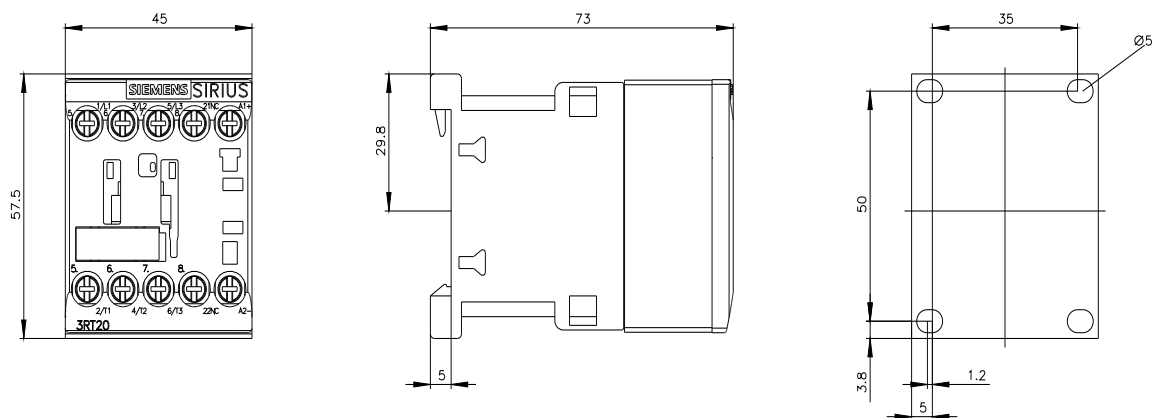
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-1BB42-Z X95&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1BB42-Z X95&lang=en)

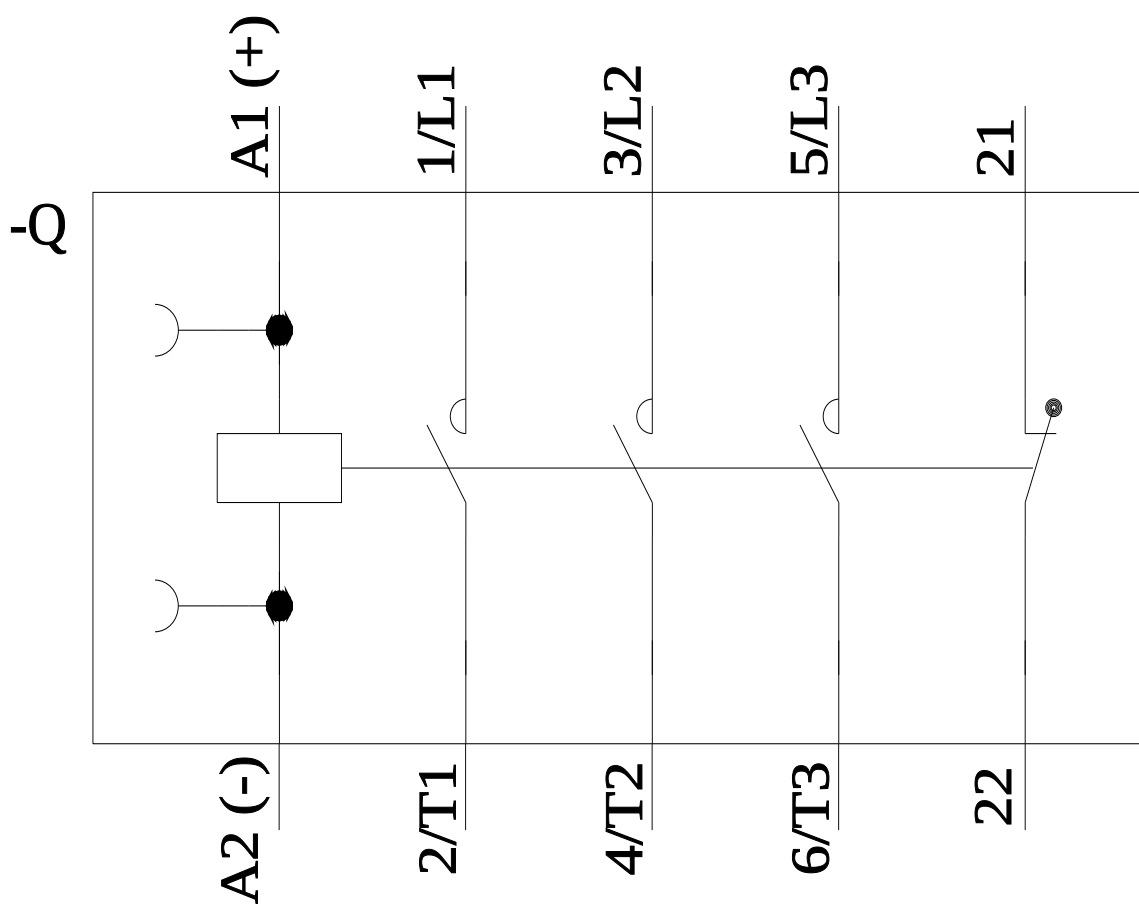
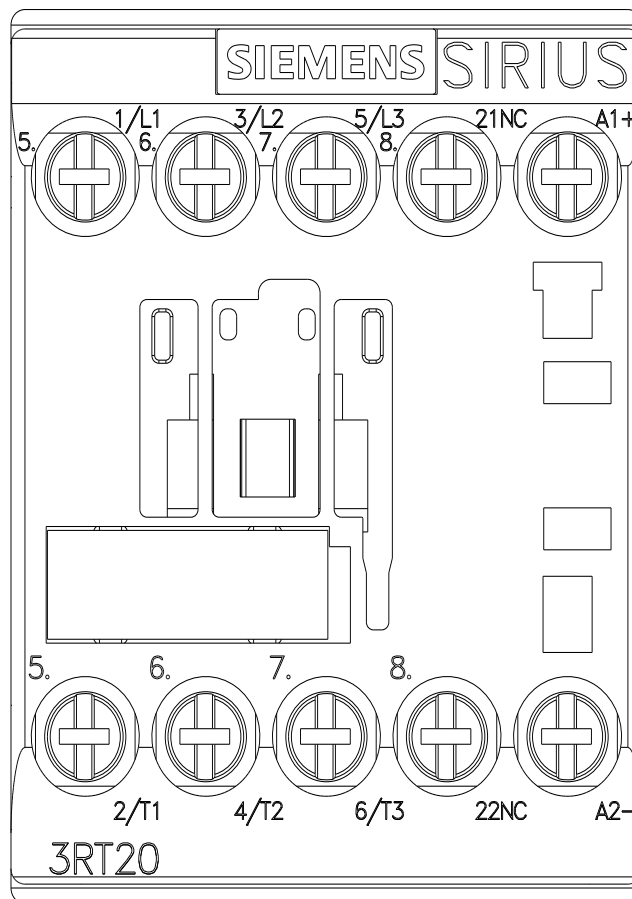
#### Characteristic: Tripping characteristics, $I^2t$ , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BB42-Z X95/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1BB42-Z X95&objecttype=14&gridview=view1>





last modified:

