## **SIEMENS**

Data sheet 3RT2016-2BE41



Power contactor, AC-3 9 A, 4 kW / 400 V 1 NO, 60 V DC, 3-pole, Size S00 Spring-type terminal

| product brand name  | SIRIUS                     |
|---|----------------------------|
| product designation   | Power contactor            |
| product type designation  | 3RT2                       |
| General technical data  |                            |
| size of contactor   | S00                        |
| product extension   |                            |
| <ul> <li>function module for communication</li> </ul>   | No                         |
| auxiliary switch  | Yes                        |
| power loss [W] for rated value of the current   |                            |
| <ul> <li>at AC in hot operating state</li> </ul>  | 0.9 W                      |
| <ul> <li>at AC in hot operating state per pole</li> </ul>   | 0.3 W                      |
| <ul> <li>without load current share typical</li> </ul>  | 4 W                        |
| insulation voltage  |                            |
| <ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>                                  | 690 V                      |
| <ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>                             | 690 V                      |
| surge voltage resistance  |                            |
| <ul> <li>of main circuit rated value</li> </ul>   | 6 kV                       |
| of auxiliary circuit rated value  | 6 kV                       |
| maximum permissible voltage for safe isolation 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 (switching cycles)  |                            |
| <ul> <li>of contactor typical</li> </ul>  | 30 000 000                 |
| <ul> <li>of the contactor with added electronically optimized<br/>auxiliary switch block typical</li> </ul> | 5 000 000                  |
| <ul> <li>of the contactor with added auxiliary switch block<br/>typical</li> </ul>                          | 10 000 000                 |
| reference code according to IEC 81346-2   | Q                          |
| Substance Prohibitance (Date)   | 10/01/2009                 |
| Ambient conditions  |                            |
| 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 %                       |

| 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  |                   |
| <ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>   | 22 A              |
| — up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ 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             |
| <ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>  | 5.3 A             |
| <ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>  | 5.3 A             |
| <ul> <li>up to 690 V for current peak value n=20 rated value</li> <li>at AC-6a</li> </ul>                          | 5 A               |
| — up to 230 V for current peak value n=30 rated value  | 3.5 A             |
| <ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>  | 3.5 A             |
| <ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>  | 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 operational current for approx. 200000 operating | 4 mm <sup>2</sup> |
| 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 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   | 0.07.             |
| — at 24 V rated value  | 20 A              |
| — at 24 V rated value  — at 110 V rated value  | 12 A              |
| — at 110 V rated value  — 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> <li>with 3 current paths in series at DC-1</li> </ul>   |                   |

| -t 04 \ /tdb  | 00.4  |
|---|---|
| — at 24 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   |
| <ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>                   |   |
| — at 24 V rated value   | 20 A  |
| — at 110 V rated value  | 0.1 A   |
| <ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>      |   |
| — at 24 V rated value   | 20 A  |
| — at 110 V rated value  | 0.35 A  |
| <ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>      |   |
| — at 24 V rated value   | 20 A  |
| — at 110 V rated value  | 20 A  |
| — at 220 V rated value  | 1.5 A   |
| — at 440 V rated value  | 0.2 A   |
| — at 600 V rated value  | 0.2 A   |
| operating power   |   |
| • at AC-3   |   |
| — at 230 V rated value  | 2.2 kW  |
| — at 400 V rated value  | 4 kW  |
| — at 500 V rated value  | 4 kW  |
| — at 690 V rated value  | 5.5 kW  |
| • at AC-3e  |   |
| — at 230 V rated value  | 2.2 kW  |
| — at 400 V rated value  | 4 kW  |
| — at 500 V rated value  | 4 kW  |
| — at 690 V rated value  | 5 kW  |
| operating power for approx. 200000 operating cycles                     |   |
| at AC-4   |   |
| <ul> <li>at 400 V rated value</li> </ul>                                | 2 kW  |
| at 690 V rated value  | 2.5 kW  |
| operating apparent power at AC-6a                                       |   |
| <ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul> | 2 kVA   |
| <ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul> | 3.6 kVA   |
| • up to 500 V for current peak value n=20 rated value                   | 4.6 kVA   |
| • up to 690 V for current peak value n=20 rated value                   | 5.9 kVA   |
| operating apparent power at AC-6a                                       |   |
| <ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul> | 1.3 kVA   |
| <ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul> | 2.4 kVA   |
| • up to 500 V for current peak value n=30 rated value                   | 3.1 kVA   |
| • up to 690 V for current peak value n=30 rated value                   | 4 kVA   |
| short-time withstand current in cold operating state                    |   |
| up to 40 °C   |   |
| <ul> <li>limited to 1 s switching at zero current maximum</li> </ul>    | 155 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul> <li>limited to 5 s switching at zero current maximum</li> </ul>    | 111 A; Use minimum cross-section acc. to AC-1 rated value |
| <ul> <li>limited to 10 s switching at zero current maximum</li> </ul>   | 86 A; Use minimum cross-section acc. to AC-1 rated value  |
| <ul> <li>limited to 30 s switching at zero current maximum</li> </ul>   | 66 A; Use minimum cross-section acc. to AC-1 rated value  |
| <ul> <li>limited to 60 s switching at zero current maximum</li> </ul>   | 55 A; Use minimum cross-section acc. to AC-1 rated value  |
| no-load switching frequency   |   |
| • at DC   | 10 000 1/h  |
| operating frequency   |   |
| at AC-1 maximum   | 1 000 1/h   |
| • at AC-2 maximum   | 750 1/h   |
| • at AC-3 maximum   | 750 1/h   |
| • at AC-3e maximum  | 750 1/h   |
| • at AC-4 maximum   | 250 1/h   |
| Control circuit/ Control  |   |
| type of voltage of the control supply voltage                           | DC  |
| control supply voltage at DC  |   |
|   |   |

| operating range factor control supply voltage rated value of magnet coll at DC   | rated value  | 60 V   |
|--|--|--|
| value of magnet coil at DC  • Initial value  • Initial va           |  | 00 7   |
|  |  |  |
| • full-scale value   |  | 0.8  |
| Closing power of magnet coil at DC   |  |  |
| Auditor   Audi             |  |  |
| closing delay  |  |  |
|  |  | 7 **   |
| opening delay  at DC  arcing time control version of the switch operating mechanism  Auxillary circuit  number of NO contacts for auxiliary contacts instantaneous contact  operational current at AC-12 maximum  oporational current at AC-12 maximum  operational current at AC-13 maximum  operational current at AC-12 maximum  operational current at AC-13 maximum  operational current at DC-12  at 200 v rated value  at 600 v rated value  at 60 v rated            |  | 30 100 mg  |
| a circle the   |  | 30 100 IIIS  |
| arcing time control version of the switch operating mechanism   Auxiliary circuit   Turmber of NO contacts for auxiliary contacts   Instantaneous contact   Operational current at AC-12 maximum   Operational current at AC-12 maximum   Operational current at AC-13 maximum   Operational current at AC-14 maximum   Operational current at AC-15 maximum   Operational current at DC-12   • at 450 V rated value   • at 690 V rated value   • at 690 V rated value   • at 48 V rated value   • at 48 V rated value   • at 49 V rated value   • at 100 V rated value   • at 110 V rated value   • at 220 V rated value   • at 42 V rated value   • at 42 V rated value   • at 48 V rated value   • at 48 V rated value   • at 220 V rated value   • at 220 V rated value   • at 220 V rated value   • at 48 V rated value   • at 80 V rated value             |  | 7 12 mg  |
| Control version of the switch operating mechanism   Standard A1 - A2   |  |  |
| Auxiliary circuit number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15  • at 230 V rated value • at 600           |  |  |
| Instantaneous contact  |  | Staridard AT - AZ  |
| instantaneous contact operational current at AC-15  e at 230 V rated value   |  |  |
| Operational current at AC-12 maximum   | •  | 1  |
| at 230 V rated value   |  | 10 A   |
| • at 230 V rated value • at 400 V rated value • at 400 V rated value • at 690 V rated value • at 690 V rated value • at 690 V rated value • at 48 V rated value • at 48 V rated value • at 48 V rated value • at 126 V rated value • at 126 V rated value • at 126 V rated value • at 24 V rated value • at 25 V rated value • at 260 V rated value • at 27 V rated value • at 28 V rated value • at 28 V rated value • at 48 V rated value • at 48 V rated value • at 48 V rated value • at 125 V rated value • at 125 V rated value • at 125 V rated value • at 126 V rated value • at 127 V rated value • at 128 V rated value • at 129 V rated value • at 120 V rated value • at 120 V rated value • at 220 V rated value • at 220 V rated value • at 300 V rated value • at 300 V rated value • at 480 V rated value • at 480 V rated value • at 600 V rated value • at 600 V rated value • at 200 V rated value • at 480 V rated value • at 200 V rated value • at 480 V rated value • at 200 V rated value • at 480 V rated value • at 575000 V rated value • at 575000 V rated value • 5 hp - at 480/480 V rated value • at 575000 V rated value • 400 V rated value • 5 hp - 40 V rated value • 40 V rated value • 5 hp - 50 V rated value • 60 V rated value • 6           | ·  | 10 A   |
| • at 400 V rated value • at 500 V rated value • at 600 V rated value • at 600 V rated value  operational current at DC-12 • at 24 V rated value • at 24 V rated value • at 60 V rated value • at 160 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 220 V rated value • at 60 V rated value • at 100 V rated value • at 60 V rated value            | •  | 10.4   |
| • at 500 V rated value • at 690 V rated value • at 690 V rated value • at 24 V rated value • at 48 V rated value • at 48 V rated value • at 48 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 48 V rated value • at 600 V rated value • at 110 V rated value • at 125 V rated value • at 600 V rated value • at 480 V rated value • at 600 V rated value • at 480 V rated value • at 600 V rated value  • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 200 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600 V rated value • for 3-phase AC motor • at 600           |  |  |
| • at 690 V rated value   |  |  |
| 10 A   12  |  |  |
|  |  | I A  |
| • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 126 V rated value • at 220 V rated value • at 220 V rated value • at 800 V rated value • at 600 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 800 V rated value • at 110 rated value • at 800 V           | •  | 40.4   |
| ** at 60 V rated value   |  |  |
| ** at 110 V rated value 2 A  ** at 125 V rated value 2 A  ** at 220 V rated value 0.15 A  operational current at DC-13  ** at 24 V rated value 2 A  ** at 48 V rated value 2 A  ** at 60 V rated value 2 A  ** at 110 V rated value 2 A  ** at 110 V rated value 2 A  ** at 110 V rated value 3 A  ** at 24 V rated value 4 A  ** at 110 V rated value 5 A  ** at 25 V rated value 1 A  ** at 110 V rated value 1 A  ** at 25 V rated value 1 A  ** at 25 V rated value 1 A  ** at 20 V rated value 1 A  ** at 600 V rated value 2 A  ** at 600 V rated value 3 A  ** at 600 V rated value 4 A  ** at 600 V rated value 5 A  ** at 600 V rated value 5 A  ** at 600 V rated value 7 A  ** at 600 V rated value 9 A  ** yielded mechanical performance [hp]  ** for single-phase AC motor 1 A  ** at 220 V rated value 1 A  ** at 360 V rated value 3 A  ** a           |  |  |
| • at 125 V rated value   |  |  |
|  |  |  |
| • at 600 V rated value   |  |  |
| operational current at DC-13  • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value  contact reliability of auxiliary contacts  I faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 10/120 V rated value • at 230 V rated value • for 3-phase AC motor  - at 230 V rated value • for 3-phase AC motor  - at 200/208 V rated value • at 200/208 V rated value • at 460/480 V rated value - at 460/480 V rated value - at 575/600 V rated value  - at 575/600 V rated value  - at 575/600 V rated value  - at 575/600 V rated value - at 600 V rated value - at 600 V rated value - at 600 V rated value - at 7.5 hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link • for short-circuit protection of the main circuit - with type of coordination 1 required - with type of coordination 1 required - with type of assignment 2 required - with type of assignment 2 required - with type of assignment 2 required - for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  |  |  |
| • at 24 V rated value • at 48 V rated value • at 48 V rated value • at 48 V rated value • at 110 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 480 V rated value • at 600 V rated value • at 110/120 V rated value • at 110/120 V rated value • at 230 V rated value • at 200/208 V rated value • at 200/208 V rated value • at 200/208 V rated value • at 460/480 V rated value • at 460/480 V rated value • at 575/600 V rated value • at 575/600 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 750 V rated value • at 600 V rated value • 5 hp contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link • for short-circuit protection of the main circuit • with type of assignment 2 required • with type of assignment 2 required • for short-circuit protection of the auxiliary switch • for short-circuit protection of the auxiliary switch • for short-circuit protection of the auxiliary switch   |  | 0.15 A   |
| • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 112 V rated value • at 122 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value  Contact reliability of auxiliary contacts  full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value  for single-phase AC motor • at 110/120 V rated value • at 230 V rated value • for 3-phase AC motor • at 200/208 V rated value • at 220/230 V rated value • at 460/480 V rated value • at 575/600 V rated value • at 575/600 V rated value • at 690 V           | •  |  |
| at 160 V rated value at 125 V rated value at 125 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 220 V rated value at 200 V rated value at 480 V rated value at 480 V rated value at 480 V rated value be for single-phase AC motor at 110/120 V rated value at 200/208 V rated value at 200/208 V rated value be for 3-phase AC motor at 200/208 V rated value at 460/480 V rated value at 460/480 V rated value at 200/208 V rated value at 200/208 V rated value at 200/208 V rated value at 460/480 V rated value at 460/480 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 460/480 V rated value for at 575/600 V rated value for short-circuit protection  design of the fuse link for short-circuit protection of the main circuit awith type of coordination 1 required with type of assignment 2 required for short-circuit protection of the main circuit awith type of assignment 2 required for short-circuit protection of the auxiliary switch for short-circuit protection of the auxiliary switch gC: 10 A (500 V, 1 kA)  gC: 10 A (500 V, 1 kA)  |  |  |
| <ul> <li>at 110 V rated value</li> <li>at 125 V rated value</li> <li>at 220 V rated value</li> <li>at 30 V rated value</li> <li>at 600 V rated value</li> <li>1 faulty switching per 100 million (17 V, 1 mA)</li> </ul> ULICSA ratings full-load current (FLA) for 3-phase AC motor <ul> <li>at 480 V rated value</li> <li>at 480 V rated value</li> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>for single-phase AC motor</li> <li>at 220/230 V rated value</li> <li>for 3-phase AC motor</li> <li>at 220/230 V rated value</li> <li>for 3-phase AC motor</li> <li>at 220/230 V rated value</li> <li>for 3-phase AC motor</li> <li>at 250/200 V rated value</li> <li>5 hp</li> <li>at 2575/600 V rated value</li> <li>5 hp</li> <li>contact rating of auxiliary contacts according to UL</li> </ul> Short-circuit protection <ul> <li>design of the fuse link</li> <li>for short-circuit protection of the main circuit</li> <li>with type of assignment 2 required</li> <li>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</li> <li>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)</li> <li>gG: 10 A (500 V, 1 kA)</li> </ul>   | <ul> <li>at 48 V rated value</li> </ul>              |  |
| <ul> <li>at 125 V rated value</li> <li>at 220 V rated value</li> <li>at 600 V rated value</li> <li>at 480 V rated value</li> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>for 3-phase AC motor</li> <li>at 220 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for 3-phase AC motor</li> <li>at 600/480 V rated value</li> <li>for 3-phase AC motor</li> <li>at 600/480 V rated value</li> <li>for 3-phase AC motor</li> <li>gt hp</li> <li>for 3-phase AC motor</li> <li>at 600/480 V rated value</li> <li>for 3-phase AC motor</li> <li>gt hp</li> <li>gt 3-phase AC motor</li> <li>gt 4-phase AC motor</li> <li>gt 4-pha</li></ul> | <ul><li>at 60 V rated value</li></ul>                | 2 A  |
| at 220 V rated value at 600 V rated value at 600 V rated value contact reliability of auxiliary contacts  I faulty switching per 100 million (17 V, 1 mA)  ILICSA ratings  full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 220/230 V rated value at 220/230 V rated value at 220/230 V rated value at 2575/600 V rated value at 575/600 V rated value contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link for short-circuit protection of the main circuit with type of coordination 1 required with type of assignment 2 required for short-circuit protection of the auxiliary switch for short-circuit protection of the auxiliary switch gG: 10 A (500 V, 1 kA)  9 Can (500 V, 1 kA)  | <ul> <li>at 110 V rated value</li> </ul>             | 1 A  |
| at 600 V rated value     contact reliability of auxiliary contacts  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor   | at 125 V rated value                                 | 0.9 A  |
| contact reliability of auxiliary contacts  I faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  • at 600 V rated value  9 A  yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value  1 hp  • for 3-phase AC motor  — at 220/230 V rated value  1 hp  • for 3-phase AC motor  — at 220/230 V rated value  — at 220/230 V rated value  3 hp  — at 460/480 V rated value  — at 575/600 V rated value  5 hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  — with type of coordination 1 required  — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch   | at 220 V rated value                                 | 0.3 A  |
| full-load current (FLA) for 3-phase AC motor  • at 480 V rated value • at 600 V rated value 9 A  yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 9 to for 3-phase AC motor — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value 2 hp — at 220/230 V rated value 3 hp — at 460/480 V rated value — at 575/600 V rated value — at 575/600 V rated value 7.5 hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link • for short-circuit protection of the main circuit — with type of coordination 1 required — with type of assignment 2 required  with type of assignment 2 required 9G: 20A (690V,100kA), aM: 20A (690V,100kA), BS88: 20A (415V,80kA)  • for short-circuit protection of the auxiliary switch 9G: 10 A (500 V, 1 kA)  | at 600 V rated value                                 | 0.1 A  |
| full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  • at 600 V rated value  9 A  yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value  • for 3-phase AC motor  — at 200/208 V rated value  — at 220/230 V rated value  — at 460/480 V rated value  — at 460/480 V rated value  — at 575/600 V rated value  Tontact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  — with type of assignment 2 required  which type of assignment 2 required  • for short-circuit protection of the auxiliary switch  | contact reliability of auxiliary contacts            | 1 faulty switching per 100 million (17 V, 1 mA)                    |
| at 480 V rated value  at 600 V rated value  yielded mechanical performance [hp]  for single-phase AC motor  at 110/120 V rated value  at 230 V rated value  for 3-phase AC motor  at 200/208 V rated value  at 220/230 V rated value  at 460/480 V rated value  at 5 hp  at 575/600 V rated value  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  for short-circuit protection of the main circuit  with type of coordination 1 required  with type of assignment 2 required  for short-circuit protection of the auxiliary switch  gc: 20A (690V,100kA), aM: 20A (690V,100kA), BS88: 20A (415V,80kA)  gc: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  gc: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  gc: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  gc: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  gc: 10 A (500 V, 1 kA)  | UL/CSA ratings                                       |  |
| in at 600 V rated value  yielded mechanical performance [hp]      in for single-phase AC motor   | full-load current (FLA) for 3-phase AC motor         |  |
| yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value — at 230 V rated value — at 200/208 V rated value — at 220/230 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value  To hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit — with type of coordination 1 required — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch   | <ul><li>at 480 V rated value</li></ul>               | 7.6 A  |
| <ul> <li>for single-phase AC motor  — at 110/120 V rated value — at 230 V rated value 1 hp </li> <li>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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  for short-circuit protection of the main circuit — with type of coordination 1 required with type of assignment 2 required  for short-circuit protection of the auxiliary switch  for short-circuit protection of the auxiliary switch  gG: 35A (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)</li> </ul>   | <ul> <li>at 600 V rated value</li> </ul>             | 9 A  |
| <ul> <li>for single-phase AC motor  — at 110/120 V rated value — at 230 V rated value 1 hp </li> <li>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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  for short-circuit protection of the main circuit — with type of coordination 1 required with type of assignment 2 required  for short-circuit protection of the auxiliary switch  for short-circuit protection of the auxiliary switch  gG: 35A (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)</li> </ul>   | yielded mechanical performance [hp]                  |  |
| - at 230 V rated value  • 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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit - with type of coordination 1 required with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  |  |  |
| - at 230 V rated value  • 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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit - with type of coordination 1 required with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  | — at 110/120 V rated value                           | 0.33 hp  |
| <ul> <li>• for 3-phase AC motor  — at 200/208 V rated value — 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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit — with type of coordination 1 required — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the short-circuit protection of the auxiliary switch  • for short-circuit protection of the short-circuit p</li></ul>  | — at 230 V rated value                               |  |
| - at 200/208 V rated value - 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  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link • for short-circuit protection of the main circuit - with type of coordination 1 required with type of assignment 2 required • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  9 G: 35A (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)  | • for 3-phase AC motor                               |  |
| - at 220/230 V rated value - at 460/480 V rated value 5 hp - at 575/600 V rated value 7.5 hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit - with type of coordination 1 required with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  GG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)  GG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  • for short-circuit protection of the auxiliary switch  GG: 10 A (500 V, 1 kA)   |  | 2 hp   |
| - at 460/480 V rated value - at 575/600 V rated value  7.5 hp  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  - with type of coordination 1 required - with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  5 hp  7.5 hp  A600 / Q600  Short-circuit protection  GG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)  GG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  • for short-circuit protection of the auxiliary switch  GG: 10 A (500 V, 1 kA)  |  |  |
| - at 575/600 V rated value  contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  — with type of coordination 1 required — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  • for short-circuit protection of the auxiliary switch  7.5 hp  A600 / Q600  Short-circuit protection  gG: 35A (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)   |  |  |
| contact rating of auxiliary contacts according to UL  Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  — with type of coordination 1 required  — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  G: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)  g: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  g: 10 A (500 V, 1 kA)  |  |  |
| Short-circuit protection  design of the fuse link  • for short-circuit protection of the main circuit  — with type of coordination 1 required  — with type of assignment 2 required  • for short-circuit protection of the auxiliary switch  GG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)  gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)  • for short-circuit protection of the auxiliary switch  GG: 10 A (500 V, 1 kA)   |  | ·  |
| <ul> <li>design of the fuse link</li> <li>for short-circuit protection of the main circuit</li> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> <li>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</li> <li>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)</li> <li>for short-circuit protection of the auxiliary switch</li> <li>gG: 10 A (500 V, 1 kA)</li> </ul>  |  |  |
| <ul> <li>for short-circuit protection of the main circuit</li> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> <li>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</li> <li>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)</li> <li>for short-circuit protection of the auxiliary switch</li> <li>gG: 10 A (500 V, 1 kA)</li> </ul>  |  |  |
| <ul> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> <li>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</li> <li>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,80kA)</li> <li>for short-circuit protection of the auxiliary switch</li> <li>gG: 10 A (500 V, 1 kA)</li> </ul>  | -  |  |
| — 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  gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)   |  | aC: 354 (600)/ 100k4) aM: 204 (600)/ 100k4) DS99: 254 (415)/ 20k4) |
| • for short-circuit protection of the auxiliary switch gG: 10 A (500 V, 1 kA)  |  |  |
| • for short-circuit protection of the auxiliary switch gG: 10 A (500 V, 1 kA)  | — with type of assignment 2 required                 |  |
|  | for short-circuit protection of the auxiliary switch |  |
|  |  | •  |

| nstallation/ mounting/ dimensions                               |  |
|---|--|
| mounting position   | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| fastening method  | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715   |
| • side-by-side mounting   | Yes  |
| height  | 70 mm  |
| width   | 45 mm  |
| depth   | 73 mm  |
| required spacing  |  |
| <ul> <li>with side-by-side mounting</li> </ul>                  |  |
| — forwards  | 10 mm  |
| — upwards   | 10 mm  |
| — downwards   | 10 mm  |
| — at the side   | 0 mm   |
| <ul> <li>for grounded parts</li> </ul>                          |  |
| — 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   |
| onnections/ Terminals   |  |
| type of electrical connection                                   |  |
| • for main current circuit                                      | spring-loaded terminals  |
| <ul> <li>for auxiliary and control circuit</li> </ul>           | spring-loaded terminals  |
| at contactor for auxiliary contacts                             | Spring-type terminals  |
| of magnet coil  | Spring-type terminals  |
| type of connectable conductor cross-sections                    |  |
| • for main contacts   | 0 (0.5 4 3)  |
| — solid   | 2x (0.5 4 mm²)   |
| — solid or stranded   | 2x (0,5 4 mm²)   |
| — finely stranded with core end processing                      | 2x (0.5 2.5 mm²)   |
| — finely stranded without core end processing                   | 2x (0.5 2.5 mm²)   |
| at AWG cables for main contacts                                 | 2x (20 12)   |
| connectable conductor cross-section for main contacts           |  |
| • solid   | 0.5 4 mm²  |
| stranded  | 0.5 4 mm <sup>2</sup>  |
| finely stranded with core end processing                        | 0.5 2.5 mm <sup>2</sup>  |
| finely stranded without core end processing                     | 0.5 2.5 mm <sup>2</sup>  |
| connectable conductor cross-section for auxiliary contacts      |  |
| solid or stranded   | 0.5 4 mm²  |
| <ul> <li>finely stranded with core end processing</li> </ul>    | 0.5 2.5 mm²  |
| • finely stranded without core end processing                   | 0.5 2.5 mm²  |
| type of connectable conductor cross-sections                    |  |
| for auxiliary contacts  |  |
| <ul><li>— solid or stranded</li></ul>                           | 2x (0,5 4 mm²)   |
| <ul> <li>finely stranded with core end processing</li> </ul>    | 2x (0.5 2.5 mm²)   |
| <ul> <li>finely stranded without core end processing</li> </ul> | 2x (0.5 2.5 mm²)   |
| at AWG cables for auxiliary contacts                            | 2x (20 12)   |
| AWG number as coded connectable conductor cross section         |  |
| for main contacts   | 20 12  |
|   |  |
| for auxiliary contacts  | 20 12  |

| <ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>           | Yes; with 3RH29                                  |
|---|--|
| B10 value with high demand rate according to SN 31920                   | 1 000 000  |
| proportion of dangerous failures  |  |
| <ul> <li>with low demand rate according to SN 31920</li> </ul>          | 40 %   |
| <ul> <li>with high demand rate according to SN 31920</li> </ul>         | 73 %   |
| failure rate [FIT] with low demand rate according to SN 31920           | 100 FIT  |
| T1 value for proof test interval or service life according to IEC 61508 | 20 y   |
| 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 |
| suitability for use   |  |
| <ul> <li>safety-related switching OFF</li> </ul>                        | Yes  |
|   |  |

Certificates/ approvals

## **General Product Approval**





Confirmation



<u>KC</u>



**EMC** 

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

## Marine / Shipping













Marine / Shipping

other

**Dangerous Good** 



Confirmation



Transport Information

## Further information

 $Information-\ and\ Download center\ (Catalogs,\ Brochures,...)$ 

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2016-2BE41

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2016-2BE41}$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2BE41

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

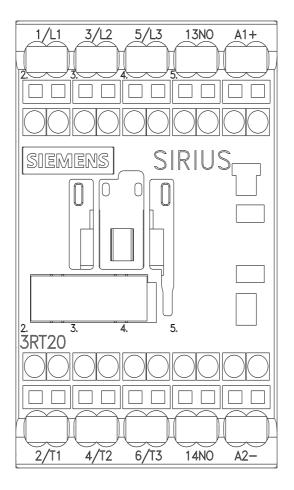
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2016-2BE41\&lang=en}}$ 

Characteristic: Tripping characteristics, I2t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2BE41/char

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

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-2BE41&objecttype=14&gridview=view1



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