



contactor AC-1, 140 A, 400 V / 40 °C, 4-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

|   |                              |
|---|------------------------------|
| <b>product brand name</b>   | SIRIUS                       |
| <b>product designation</b>  | Contacteur                   |
| <b>product type designation</b>   | 3RT23                        |
| <b>General technical data</b>   |                              |
| <b>size of contactor</b>  | S3                           |
| <b>product extension</b>  |                              |
| • function module for communication   | No                           |
| • auxiliary switch  | Yes                          |
| <b>power loss [W] for rated value of the current</b>                          |                              |
| • at AC in hot operating state  | 47.2 W                       |
| • at AC in hot operating state per pole                                       | 11.8 W                       |
| <b>type of calculation of power loss depending on pole</b>                    | quadratic                    |
| <b>insulation voltage</b>   |                              |
| • of main circuit with degree of pollution 3 rated value                      | 690 V                        |
| • of the auxiliary and control circuit with degree of pollution 3 rated value | 690 V                        |
| <b>surge voltage resistance</b>   |                              |
| • of main circuit rated value   | 8 kV                         |
| • of auxiliary circuit rated value  | 6 kV                         |
| <b>shock resistance at rectangular impulse</b>                                |                              |
| • at AC   | 6.7 g / 5 ms, 4.0 g / 10 ms  |
| • at DC   | 6.7 g / 5 ms, 4g / 10 ms     |
| <b>shock resistance with sine pulse</b>                                       |                              |
| • at AC   | 10.6 g / 5 ms, 6.3 g / 10 ms |
| • at DC   | 10.6 g / 5 ms, 6.3 g / 10 ms |
| <b>mechanical service life (operating cycles)</b>                             |                              |
| • of contactor typical  | 10 000 000                   |
| • of the contactor with added auxiliary switch block typical                  | 10 000 000                   |
| <b>reference code according to IEC 81346-2</b>                                | Q                            |
| <b>Substance Prohibition (Date)</b>   | 09/01/2017                   |
| <b>Weight</b>   | 2.082 kg                     |
| <b>Ambient conditions</b>   |                              |
| installation altitude at height above sea level maximum                       | 2 000 m                      |
| <b>ambient temperature</b>  |                              |
| • during operation  | -25 ... +60 °C               |
| • during storage  | -55 ... +80 °C               |
| <b>relative humidity minimum</b>  | 10 %                         |
| <b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>         | 95 %                         |
| <b>Environmental footprint</b>  |                              |
| Environmental Product Declaration (EPD)                                       | Yes                          |

|  |                    |
|--|--------------------|
| global warming potential [CO2 eq] total  | 481 kg             |
| global warming potential [CO2 eq] during manufacturing   | 9.57 kg            |
| global warming potential [CO2 eq] during operation   | 473 kg             |
| global warming potential [CO2 eq] after end of life  | -1.54 kg           |
| <b>Main circuit</b>  |                    |
| <b>number of poles for main current circuit</b>  | 4                  |
| <b>number of NO contacts for main contacts</b>   | 4                  |
| <b>type of voltage for main current circuit</b>  | AC                 |
| <b>operational current</b>   |                    |
| <ul style="list-style-type: none"> <li>● at AC-1 at 400 V at ambient temperature 40 °C rated value</li> </ul>  | 140 A              |
| <ul style="list-style-type: none"> <li>● at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> </ul> </li> </ul>              | 140 A              |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul> </li> </ul>                       | 130 A              |
| minimum cross-section in main circuit at maximum AC-1 rated value  | 50 mm <sup>2</sup> |
| <b>operational current</b>   |                    |
| <ul style="list-style-type: none"> <li>● <b>at 1 current path at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>                      | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 60 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 9 A                |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 2 A                |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 0.6 A              |
| <ul style="list-style-type: none"> <li>● <b>with 2 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>         | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 10 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 1.8 A              |
| <ul style="list-style-type: none"> <li>● <b>with 3 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>         | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 4.5 A              |
| <ul style="list-style-type: none"> <li>● <b>at 1 current path at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>              | 20 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 6.5 A              |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 2.5 A              |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 1 A                |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 0.15 A             |
| <ul style="list-style-type: none"> <li>● <b>with 2 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul> | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 7 A                |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 0.42 A             |
| <ul style="list-style-type: none"> <li>● <b>with 3 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul> | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 60 V rated value</li> </ul> </li> </ul>  | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>   | 80 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>   | 35 A               |
| <ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>   | 0.8 A              |
| <b>no-load switching frequency</b>   |                    |
| <ul style="list-style-type: none"> <li>● at AC</li> </ul>  | 5 000 1/h          |
| operating frequency at AC-1 maximum  | 1 000 1/s          |
| <b>Control circuit/ Control</b>  |                    |
| <b>type of voltage</b>   | AC                 |
| <b>type of voltage of the control supply voltage</b>   | AC                 |
| <b>control supply voltage at AC</b>  |                    |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>  | 230 V<br>230 V                                    |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.8 ... 1.1<br>0.85 ... 1.1                       |
| <b>apparent pick-up power of magnet coil at AC</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 348 VA<br>296 VA                                  |
| <b>inductive power factor with closing power of the coil</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.62<br>0.55                                      |
| <b>apparent holding power of magnet coil at AC</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 25 VA<br>18 VA                                    |
| <b>inductive power factor with the holding power of the coil</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.35<br>0.41                                      |
| <b>closing delay</b>  |   |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 13 ... 50 ms                                      |
| <b>opening delay</b>  |   |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 10 ... 21 ms                                      |
| <b>arcing time</b>  | 10 ... 20 ms                                      |
| <b>control version of the switch operating mechanism</b>  | Standard A1 - A2                                  |
| <b>Auxiliary circuit</b>  |   |
| <b>number of NC contacts for auxiliary contacts</b>   | 1   |
| <ul style="list-style-type: none"> <li>• attachable</li> <li>• instantaneous contact</li> </ul>   | 2<br>1  |
| <b>number of NO contacts for auxiliary contacts</b>   | 1   |
| <ul style="list-style-type: none"> <li>• attachable</li> <li>• instantaneous contact</li> </ul>   | 2<br>1  |
| operational current at AC-12 maximum  | 10 A  |
| <b>operational current at AC-15</b>   |   |
| <ul style="list-style-type: none"> <li>• at 230 V rated value</li> <li>• at 400 V rated value</li> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>  | 6 A<br>3 A<br>2 A<br>1 A                          |
| <b>operational current at DC-12</b>   |   |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul> | 10 A<br>6 A<br>6 A<br>3 A<br>2 A<br>1 A<br>0.15 A |
| <b>operational current at DC-13</b>   |   |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>                                | 10 A<br>2 A<br>1 A<br>0.9 A<br>0.3 A<br>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>contact rating of auxiliary contacts according to UL</b>   | A600 / P600                                       |
| <b>Short-circuit protection</b>   |   |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V   | C characteristic: 10 A; 0.4 kA                    |
| <b>design of the fuse link</b>  |   |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit</li> <li>— with type of coordination 1 required</li> </ul>  | gG: 250 A (690 V, 100 kA)                         |

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>— with type of coordination 2 required</li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>  | gR: 250 A (690 V, 100 kA)<br>gG: 10 A (690 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 |
| fastening method side-by-side mounting   | Yes  |
| <b>fastening method</b>  | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715   |
| <b>height</b>  | 140 mm   |
| <b>width</b>   | 96 mm  |
| <b>depth</b>   | 152 mm   |
| <b>required spacing</b>  |  |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— at the side 10 mm</li> <li>— downwards 10 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul> |  |
| <b>Connections/ Terminals</b>  |  |
| <b>type of electrical connection</b>   |  |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>   | screw-type terminals<br>screw-type terminals<br>Screw-type terminals<br>Screw-type terminals   |
| <b>type of connectable conductor cross-sections</b>  |  |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— stranded 2x (6 ... 16 mm<sup>2</sup>), 2x (10 ... 50 mm<sup>2</sup>), 1x (10 ... 70 mm<sup>2</sup>)</li> <li>— solid or stranded 2x (2.5 ... 16 mm<sup>2</sup>), 2x (6 ... 16 mm<sup>2</sup>), 2x (10 ... 50 mm<sup>2</sup>), 1x (10 ... 70 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (2.5 ... 35 mm<sup>2</sup>), 1x (2.5 ... 50 mm<sup>2</sup>)</li> </ul> </li> <li>• for AWG cables for main contacts 2x (10 ... 1/0), 1x (10 ... 2/0)</li> </ul>               |  |
| <b>connectable conductor cross-section for main contacts</b>   |  |
| <ul style="list-style-type: none"> <li>• solid 2.5 ... 16 mm<sup>2</sup></li> <li>• solid or stranded 4 ... 70 mm<sup>2</sup></li> <li>• stranded 6 ... 70 mm<sup>2</sup></li> <li>• finely stranded with core end processing 2.5 ... 50 mm<sup>2</sup></li> </ul>   |  |
| <b>connectable conductor cross-section for auxiliary contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• solid or stranded 0.5 ... 2.5 mm<sup>2</sup></li> <li>• finely stranded with core end processing 0.5 ... 2.5 mm<sup>2</sup></li> </ul>  |  |
| <b>type of connectable conductor cross-sections</b>  |  |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</li> <li>— solid or stranded 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</li> </ul> </li> <li>• for AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14)</li> </ul>   |  |
| <b>AWG number extended as coded connectable conductor cross section for main contacts</b>  | 10 ... 2/0   |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>  | 20 ... 14  |
| <b>Safety related data</b>   |  |
| <b>product function</b>  |  |
| <ul style="list-style-type: none"> <li>• mirror contact according to IEC 60947-4-1</li> <li>• positively driven operation according to IEC 60947-5-1</li> </ul>  | Yes<br>No  |
| 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 |
| <b>Communication/ Protocol</b>                          |  |
| product function bus communication                      | No   |
| <b>Approvals Certificates</b>                           |  |
| General Product Approval                                |  |



KC

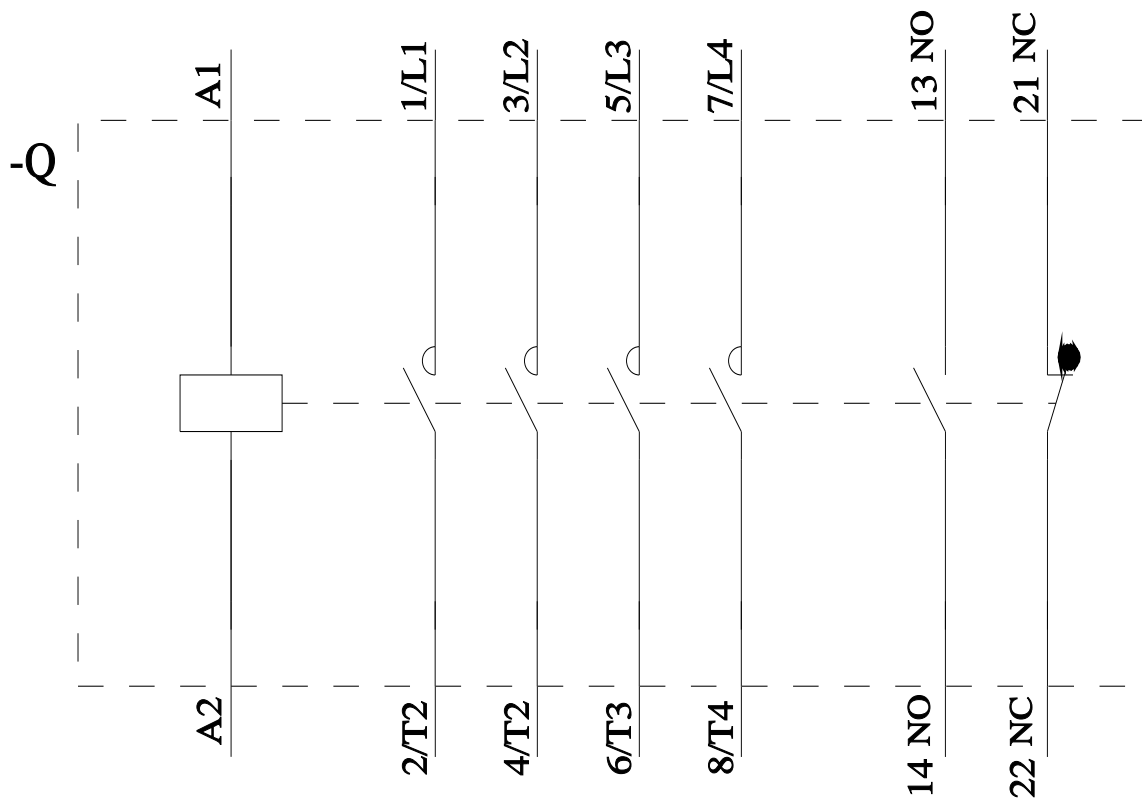


|     |  |  |
|-----|--|--|
| EMV | Test Certificates                                  | Maritime application                     |
|     | <a href="#">Type Test Certificates/Test Report</a> | <a href="#">Special Test Certificate</a> |
| RCM |  | ABS<br>DNV<br>LRS                        |

|                      |       |              |  |
|----------------------|-------|--------------|--|
| Maritime application | other | Railway      | Dangerous goods                          |
|                      |       |              | <a href="#">Transport Information</a>    |
| PRS                  | RMRS  | Confirmation | <a href="#">Special Test Certificate</a> |

|             |   |
|-------------|---|
| Environment |   |
|             | <a href="#">Environmental Confirmations</a> |
| EPD         |   |

|   |
|---|
| <b>Further information</b>  |
| <p>Information on the packaging<br/> <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a></p> <p>Information for data generation and storage<br/> <a href="https://support.industry.siemens.com/cs/ww/en/view/109995012">https://support.industry.siemens.com/cs/ww/en/view/109995012</a></p> <p>Information- and Downloadcenter (Catalogs, Brochures,...)<br/> <a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a></p> <p>Industry Mall (Online ordering system)<br/> <a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2346-1AL20">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2346-1AL20</a></p> <p>Cax online generator<br/> <a href="http://support.automation.siemens.com/WWW/CAXorder/default.aspx?lang=en&amp;mlfb=3RT2346-1AL20">http://support.automation.siemens.com/WWW/CAXorder/default.aspx?lang=en&amp;mlfb=3RT2346-1AL20</a></p> <p>Service&amp;Support (Manuals, Certificates, Characteristics, FAQs,...)<br/> <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20">https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20</a></p> <p>Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)<br/> <a href="http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1AL20&amp;lang=en">http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1AL20&amp;lang=en</a></p> <p>Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current<br/> <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20/char">https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20/char</a></p> <p>Further characteristics (e.g. electrical endurance, switching frequency)<br/> <a href="http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RT2346-1AL20&amp;objecttype=14&amp;gridview=view1">http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RT2346-1AL20&amp;objecttype=14&amp;gridview=view1</a></p> |



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