

CONTACTOR, AC-3, 4KW/400V, 1NO, DC 24V, 3-POLE, SZ S00  
SPRING-LOADED TERMINAL



|   |                           |
|---|---------------------------|
| product brandname                                   | 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                       |
| Insulation voltage                                  |                           |
| • rated value                                       | 690 V                     |
| Surge voltage resistance rated value                | 6 kV                      |
| maximum permissible voltage for safe isolation      |                           |
| • between coil and main contacts acc. to EN 60947-1 | 400 V                     |
| Protection class IP                                 |                           |
| • on the front                                      | IP20                      |
| • of the terminal                                   | IP20                      |
| Shock resistance at rectangular impulse             |                           |
| • at DC   | 6,7g / 5 ms, 4,2g / 10 ms |

|   |                            |
|---|----------------------------|
| <b>Shock resistance with sine pulse</b>   |                            |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>   | 10,5g / 5 ms, 6,6g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>   |                            |
| <ul style="list-style-type: none"> <li>• of contactor typical</li> </ul>  | 30 000 000                 |
| <ul style="list-style-type: none"> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> </ul> | 5 000 000                  |
| <ul style="list-style-type: none"> <li>• of the contactor with added auxiliary switch block typical</li> </ul>                        | 10 000 000                 |

### Ambient conditions

|  |                |
|--|----------------|
| <b>Ambient temperature</b>   |                |
| <ul style="list-style-type: none"> <li>• during operation</li> </ul> | -25 ... +60 °C |
| <ul style="list-style-type: none"> <li>• during storage</li> </ul>   | -55 ... +80 °C |

### Main circuit

|   |                     |
|---|---------------------|
| <b>Number of poles for main current circuit</b>   | 3                   |
| <b>Number of NO contacts for main contacts</b>  | 3                   |
| <b>Operating voltage</b>  |                     |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>   | 690 V               |
| <b>Operating current</b>  |                     |
| <ul style="list-style-type: none"> <li>• at AC-1 at 400 V <ul style="list-style-type: none"> <li>— at ambient temperature 40 °C rated value</li> </ul> </li> </ul>    | 22 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> | 22 A                |
| <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul>  | 20 A                |
| <ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>  | 9 A                 |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>                                 | 9 A                 |
| <ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>  | 7.7 A               |
| <ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>  | 6.7 A               |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>  |                     |
| <ul style="list-style-type: none"> <li>• at 60 °C minimum permissible</li> </ul>  | 2.5 mm <sup>2</sup> |
| <ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>  | 4 mm <sup>2</sup>   |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b>  |                     |
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>  | 4.1 A               |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>  | 3.3 A               |
| <b>Operating current</b>  |                     |
| <ul style="list-style-type: none"> <li>• at 1 current path at DC-1 <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>— at 110 V rated value</li> </ul>  | 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 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 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    |
| <b>Operating current</b>                         |        |
| • at 1 current path at DC-3 at DC-5              |        |
| — at 24 V rated value                            | 20 A   |
| — at 110 V rated value                           | 0.1 A  |
| • with 2 current paths in series at DC-3 at DC-5 |        |
| — at 24 V rated value                            | 20 A   |
| — at 110 V rated value                           | 0.35 A |
| • with 3 current paths in series at DC-3 at DC-5 |        |
| — 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  |
| <b>Operating power</b>                           |        |
| • at AC-1  |        |
| — at 230 V rated value                           | 7.5 kW |
| — at 230 V at 60 °C rated value                  | 7.5 kW |
| — at 400 V rated value                           | 13 kW  |
| — at 400 V at 60 °C rated value                  | 13 kW  |
| — at 690 V rated value                           | 22 kW  |
| — at 690 V at 60 °C rated value                  | 22 kW  |
| • at AC-2 at 400 V rated value                   | 4 kW   |
| • at AC-3  |        |
| — at 230 V rated value                           | 2.2 kW |
| — at 400 V rated value                           | 4 kW   |
| — at 690 V rated value                           | 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>   | <p>2 kW</p> <p>2.5 kW</p>                                     |
| <b>Thermal short-time current limited to 10 s</b>  | 72 A  |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>  | 0.7 W   |
| <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-4 maximum</li> </ul> | <p>1 000 1/h</p> <p>750 1/h</p> <p>750 1/h</p> <p>250 1/h</p> |

### Control circuit/ Control

|   |                          |
|---|--------------------------|
| <b>Type of voltage of the control supply voltage</b>  | DC                       |
| <b>Control supply voltage at DC</b>   |                          |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>   | 24 V                     |
| <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>  |                          |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>   | 30 ... 100 ms            |
| <b>Opening delay</b>  |                          |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>   | 7 ... 13 ms              |
| <b>Arcing time</b>  | 10 ... 15 ms             |
| <b>Residual current of the electronics for control with signal &lt;0&gt;</b>  |                          |
| <ul style="list-style-type: none"> <li>• at AC at 230 V maximum permissible</li> <li>• at DC at 24 V maximum permissible</li> </ul> | <p>3 mA</p> <p>10 mA</p> |

### Auxiliary circuit

|  |  |
|--|--|
| <b>Number of NO contacts</b>   |  |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>                    | 1  |
| <b>Operating current at AC-12 maximum</b>  | 10 A   |
| <b>Operating 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> | <p>10 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> |
| <b>Operating 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> </ul>   | <p>10 A</p> <p>6 A</p>                       |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <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>   | 6 A<br>3 A<br>2 A<br>1 A<br>0.15 A                   |
| <b>Operating 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 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>2 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)      |

### UL/CSA ratings

|   |   |
|---|---|
| <b>Full-load current (FLA) for three-phase AC motor</b>   |   |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>  | 7.6 A<br>9 A                                      |
| <b>Yielded mechanical performance [hp]</b>  |   |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor           <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for three-phase AC motor           <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul> | 0.33 hp<br>1 hp<br>2 hp<br>3 hp<br>5 hp<br>7.5 hp |
| <b>Contact rating of auxiliary contacts according to UL</b>   | A600 / Q600                                       |

### Short-circuit protection

|   |   |
|---|---|
| <b>Design of the fuse link</b>  |   |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit           <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul> | gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 35 A<br>gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 20 A<br>fuse gG: 10 A |

### Installation/ mounting/ dimensions

|                          |  |
|--------------------------|--|
| <b>Mounting position</b> | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| <b>Mounting type</b>     | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715   |

|                         |       |
|-------------------------|-------|
| • Side-by-side mounting | Yes   |
| <b>Height</b>           | 70 mm |
| <b>Width</b>            | 45 mm |
| <b>Depth</b>            | 73 mm |
| <b>Required spacing</b> |       |
| • for grounded parts    |       |
| — at the side           | 6 mm  |
| • for live parts        |       |
| — at the side           | 6 mm  |

### Connections/Terminals

|   |                                   |
|---|-----------------------------------|
| <b>Type of electrical connection</b>                |                                   |
| • for main current circuit                          | spring-loaded terminals           |
| • for auxiliary and control current circuit         | spring-loaded terminals           |
| <b>Type of connectable conductor cross-sections</b> |                                   |
| • for main contacts                                 |                                   |
| — solid   | 2x (0.5 ... 4 mm <sup>2</sup> )   |
| — single or multi-stranded                          | 2x (0,5 ... 4 mm <sup>2</sup> )   |
| — finely stranded with core end processing          | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| — finely stranded without core end processing       | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • at AWG conductors for main contacts               | 2x (20 ... 12)                    |
| <b>Type of connectable conductor cross-sections</b> |                                   |
| • for auxiliary contacts                            |                                   |
| — single or multi-stranded                          | 2x (0,5 ... 4 mm <sup>2</sup> )   |
| — finely stranded with core end processing          | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| — finely stranded without core end processing       | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • at AWG conductors for auxiliary contacts          | 2x (20 ... 12)                    |

### Safety related data

|   |                 |
|---|-----------------|
| <b>B10 value</b>  |                 |
| • with high demand rate acc. to SN 31920                                  | 1 000 000       |
| <b>Proportion of dangerous failures</b>                                   |                 |
| • with low demand rate acc. to SN 31920                                   | 40 %            |
| • with high demand rate acc. to SN 31920                                  | 73 %            |
| <b>Failure rate [FIT]</b>   |                 |
| • with low demand rate acc. to SN 31920                                   | 100 FIT         |
| <b>Product function</b>   |                 |
| • Mirror contact acc. to IEC 60947-4-1                                    | Yes; with 3RH29 |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y            |
| <b>Protection against electrical shock</b>                                | finger-safe     |

## Certificates/approvals

|                          |                                       |
|--------------------------|---------------------------------------|
| General Product Approval | Functional Safety/Safety of Machinery |
|--------------------------|---------------------------------------|



[KC](#)



[Type Examination](#)

|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Shipping Approval |
|---------------------------|-------------------|-------------------|



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Miscellaneous](#)



|                   |       |
|-------------------|-------|
| Shipping Approval | other |
|-------------------|-------|



[Confirmation](#)

|       |
|-------|
| other |
|-------|

[Environmental Confirmations](#)



## Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2016-2BB41>

**Cax online generator**

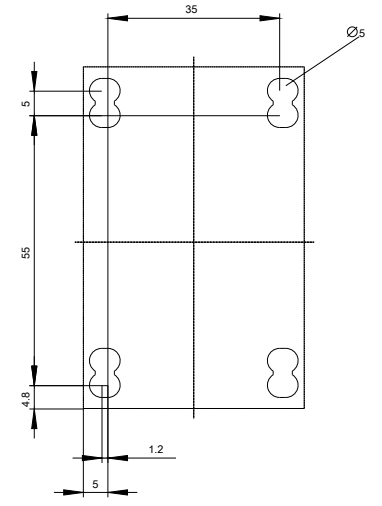
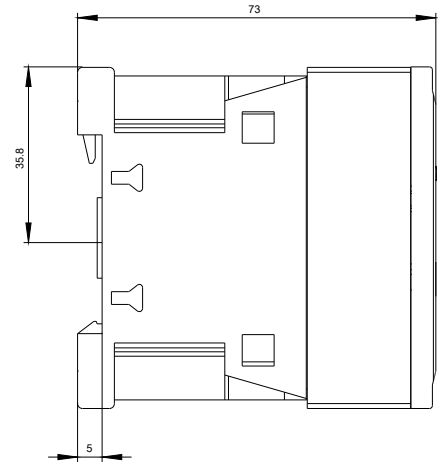
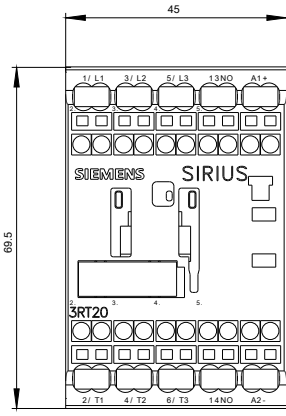
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-2BB41>

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

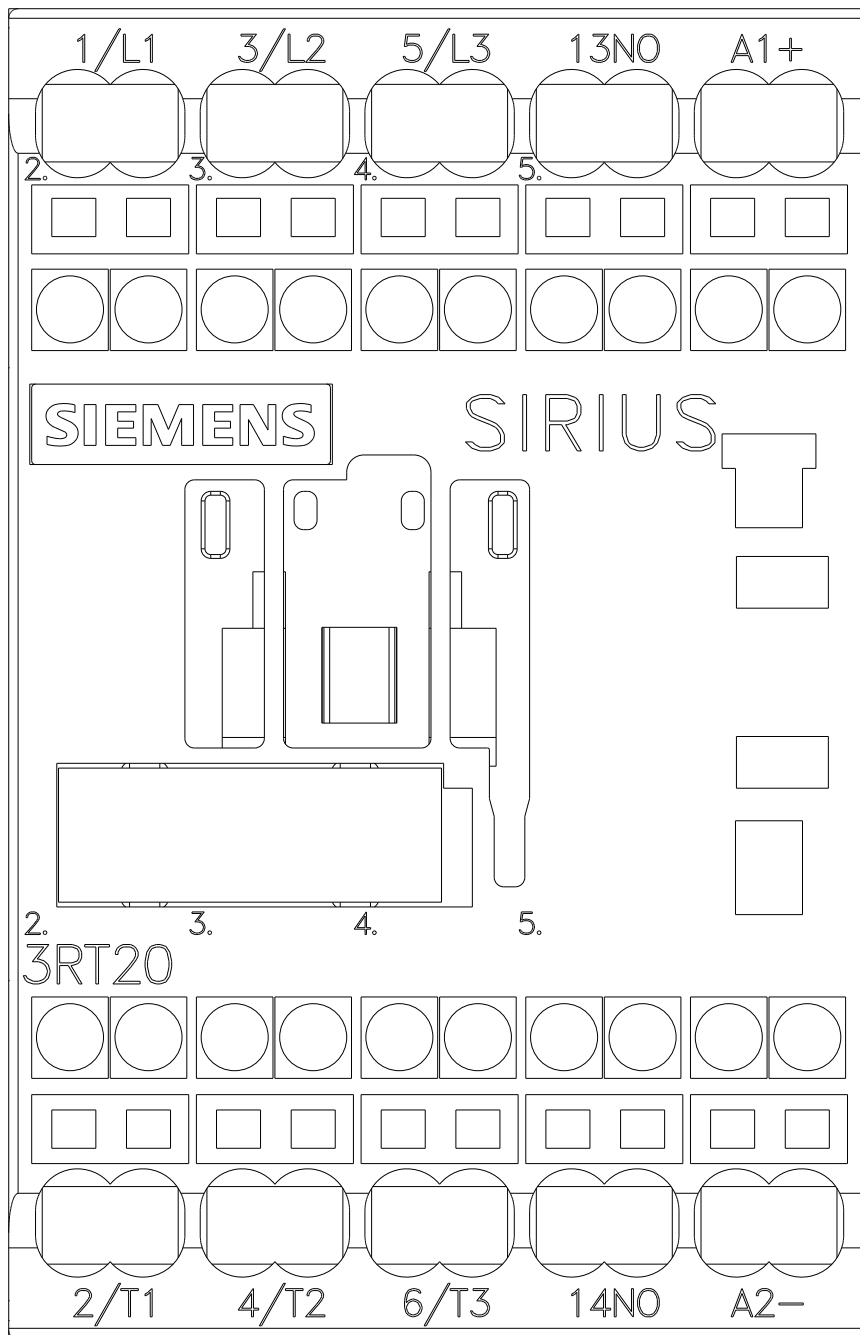
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2BB41>

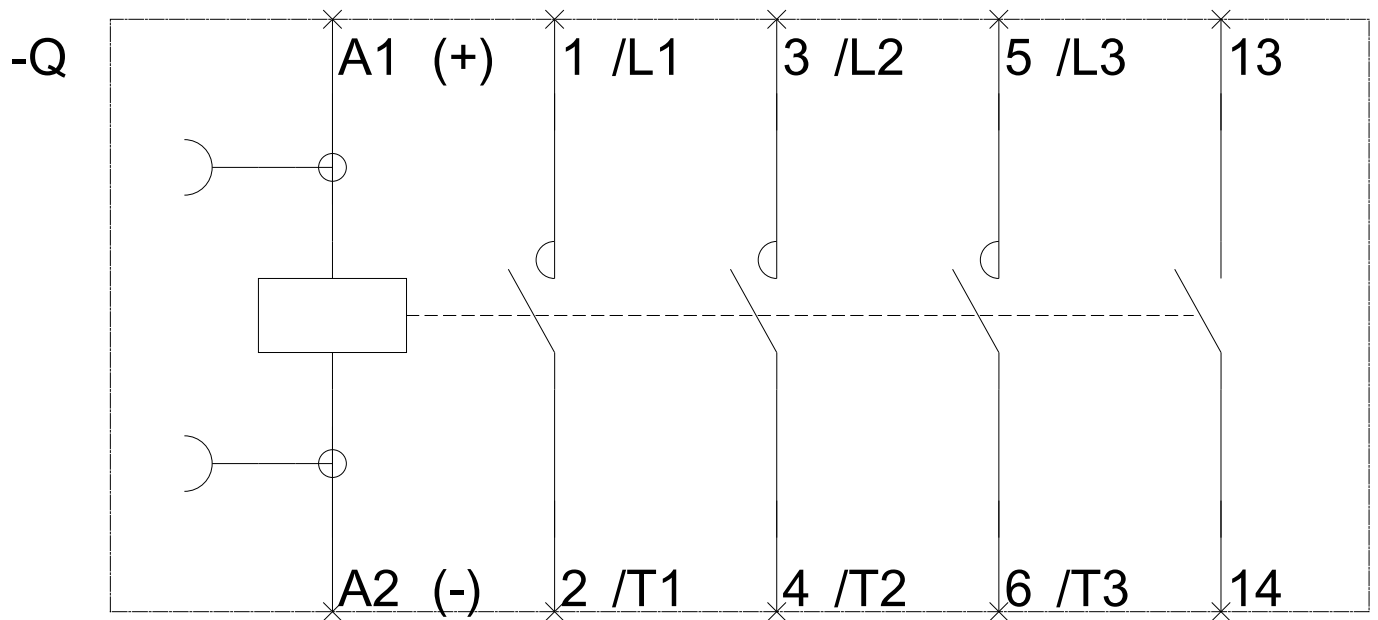
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-2BB41&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-2BB41&lang=en)









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