

CONTACTOR, AC-3, 18.5KW/400V, 1NO+1NC, AC 230V 50HZ, 3-POLE, SZ S0 SPRING-LOADED TERMINAL



|                          |                 |
|--------------------------|-----------------|
| product brandname        | SIRIUS          |
| Product designation      | Power contactor |
| Product type designation | 3RT2            |

| General technical data                              |       |
|---|-------|
| Size of contactor                                   | S0    |
| Product extension                                   |       |
| • function module for communication                 | No    |
| • Auxiliary switch                                  | Yes   |
| Insulation voltage                                  |       |
| • rated value                                       | 690 V |
| Degree of pollution                                 | 3     |
| 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             |       |

|   |                            |
|---|----------------------------|
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 8,3g / 5 ms, 5,3g / 10 ms  |
| <b>Shock resistance with sine pulse</b>   |                            |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 13,5g / 5 ms, 8,3g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>   |                            |
| <ul style="list-style-type: none"> <li>• of contactor typical</li> </ul>  | 10 000 000                 |
| <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>    | 50 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> | 50 A               |
| <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul>  | 42 A               |
| <ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>  | 38 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>                                 | 38 A               |
| <ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>  | 32 A               |
| <ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>  | 21 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>  | 10 mm <sup>2</sup> |
| <ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>  | 10 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>  | 12 A               |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>  | 12 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>                | 35 A               |

|  |         |
|--|---------|
| — at 110 V rated value                           | 4.5 A   |
| — at 220 V rated value                           | 1 A     |
| — at 440 V rated value                           | 0.4 A   |
| — at 600 V rated value                           | 0.25 A  |
| • with 2 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 5 A     |
| — at 440 V rated value                           | 1 A     |
| — at 600 V rated value                           | 0.8 A   |
| • with 3 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 35 A    |
| — at 440 V rated value                           | 2.9 A   |
| — at 600 V rated value                           | 1.4 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                           | 2.5 A   |
| — at 220 V rated value                           | 1 A     |
| — at 440 V rated value                           | 0.09 A  |
| — at 600 V rated value                           | 0.06 A  |
| • with 2 current paths in series at DC-3 at DC-5 |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 15 A    |
| — at 220 V rated value                           | 3 A     |
| — at 440 V rated value                           | 0.27 A  |
| — at 600 V rated value                           | 0.16 A  |
| • with 3 current paths in series at DC-3 at DC-5 |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 10 A    |
| — at 440 V rated value                           | 0.6 A   |
| — at 600 V rated value                           | 0.6 A   |
| <b>Operating power</b>                           |         |
| • at AC-1  |         |
| — at 230 V rated value                           | 16 kW   |
| — at 230 V at 60 °C rated value                  | 15.5 kW |
| — at 400 V rated value                           | 28 kW   |
| — at 400 V at 60 °C rated value                  | 27.5 kW |

|   |           |
|---|-----------|
| — at 690 V rated value  | 48 kW     |
| — at 690 V at 60 °C rated value   | 47.5 kW   |
| • at AC-2 at 400 V rated value  | 18.5 kW   |
| <b>• at AC-3</b>  |           |
| — at 230 V rated value  | 11 kW     |
| — at 400 V rated value  | 18.5 kW   |
| — at 690 V rated value  | 18.5 kW   |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |           |
| • at 400 V rated value  | 6 kW      |
| • at 690 V rated value  | 10.3 kW   |
| <b>Thermal short-time current limited to 10 s</b>   | 304 A     |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 3.8 W     |
| <b>No-load switching frequency</b>  |           |
| • at AC   | 5 000 1/h |
| <b>Operating frequency</b>  |           |
| • at AC-1 maximum   | 1 000 1/h |
| • at AC-2 maximum   | 750 1/h   |
| • at AC-3 maximum   | 750 1/h   |
| • at AC-4 maximum   | 250 1/h   |

| Control circuit/ Control  |              |
|---|--------------|
| <b>Type of voltage of the control supply voltage</b>                                  | AC           |
| <b>Control supply voltage at AC</b>   |              |
| • at 50 Hz rated value  | 230 V        |
| <b>Operating range factor control supply voltage rated value of magnet coil at AC</b> |              |
| • at 50 Hz  | 0.8 ... 1.1  |
| <b>Apparent pick-up power of magnet coil at AC</b>                                    |              |
| • at 50 Hz  | 77 V·A       |
| <b>Inductive power factor with closing power of the coil</b>                          |              |
| • at 50 Hz  | 0.82         |
| <b>Apparent holding power of magnet coil at AC</b>                                    |              |
| • at 50 Hz  | 9.8 V·A      |
| <b>Inductive power factor with the holding power of the coil</b>                      |              |
| • at 50 Hz  | 0.25         |
| <b>Closing delay</b>  |              |
| • at AC   | 8 ... 40 ms  |
| <b>Opening delay</b>  |              |
| • at AC   | 4 ... 16 ms  |
| <b>Arcing time</b>  | 10 ... 10 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>7 mA</p> <p>16 mA</p> |

### Auxiliary circuit

|   |   |
|---|---|
| <b>Number of NC 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>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   |
| Operating current at AC-12 maximum  | 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> <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> | <p>10 A</p> <p>6 A</p> <p>6 A</p> <p>3 A</p> <p>2 A</p> <p>1 A</p> <p>0.15 A</p>    |
| <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> | <p>10 A</p> <p>2 A</p> <p>2 A</p> <p>1 A</p> <p>0.9 A</p> <p>0.3 A</p> <p>0.1 A</p> |
| <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>  | <p>34 A</p> <p>27 A</p> |
| <b>Yielded mechanical performance [hp]</b>  |                         |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> </ul> </li> </ul> | 3 hp                    |

|   |             |
|---|-------------|
| — at 230 V rated value                                      | 5 hp        |
| • for three-phase AC motor                                  |             |
| — at 200/208 V rated value                                  | 10 hp       |
| — at 220/230 V rated value                                  | 10 hp       |
| — at 460/480 V rated value                                  | 25 hp       |
| — at 575/600 V rated value                                  | 25 hp       |
| <b>Contact rating of auxiliary contacts according to UL</b> | A600 / Q600 |

### Short-circuit protection

|   |  |
|---|--|
| <b>Design of the fuse link</b>                                  |  |
| • for short-circuit protection of the main circuit              |  |
| — with type of coordination 1 required                          | gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 125 A |
| — with type of assignment 2 required                            | gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 50 A  |
| • for short-circuit protection of the auxiliary switch required | 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>                | 102 mm   |
| <b>Width</b>                 | 45 mm  |
| <b>Depth</b>                 | 97 mm  |
| <b>Required spacing</b>      |  |
| • with side-by-side mounting |  |
| — forwards                   | 0 mm   |
| — Backwards                  | 0 mm   |
| — upwards                    | 0 mm   |
| — downwards                  | 0 mm   |
| — at the side                | 0 mm   |
| • for grounded parts         |  |
| — forwards                   | 0 mm   |
| — Backwards                  | 0 mm   |
| — upwards                    | 0 mm   |
| — at the side                | 6 mm   |
| — downwards                  | 0 mm   |
| • for live parts             |  |
| — forwards                   | 0 mm   |
| — Backwards                  | 0 mm   |
| — upwards                    | 0 mm   |

- downwards
- at the side

0 mm  
6 mm

## Connections/Terminals

|  |   |
|--|---|
| <b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>   | spring-loaded terminals<br>spring-loaded 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>— solid</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul> | 2x (1 ... 10 mm <sup>2</sup> )<br>2x (1 ... 10 mm <sup>2</sup> )<br>2x (1 ... 6 mm <sup>2</sup> )<br>2x (1 ... 6 mm <sup>2</sup> )<br>2x (18 ... 8) |
| <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>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul>        | 2x (0,5 ... 2,5 mm <sup>2</sup> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> )<br>2x (0.5 ... 2.5 mm <sup>2</sup> )<br>2x (20 ... 14)                       |

## Safety related data

|   |              |
|---|--------------|
| <b>B10 value</b> <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>   | 1 000 000    |
| <b>Proportion of dangerous failures</b> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> <li>• with high demand rate acc. to SN 31920</li> </ul> | 40 %<br>73 % |
| <b>Failure rate [FIT]</b> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>   | 100 FIT      |
| <b>Product function</b> <ul style="list-style-type: none"> <li>• Mirror contact acc. to IEC 60947-4-1</li> </ul>  | Yes          |
| <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 | EMC |
|--------------------------|-----|



[KC](#)



|                                       |                           |                   |                   |
|---------------------------------------|---------------------------|-------------------|-------------------|
| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | Shipping Approval |
|---------------------------------------|---------------------------|-------------------|-------------------|

[Type Examination](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



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



[Environmental Confirmations](#)

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

[Confirmation](#)



### 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=3RT2028-2AP00>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2AP00>

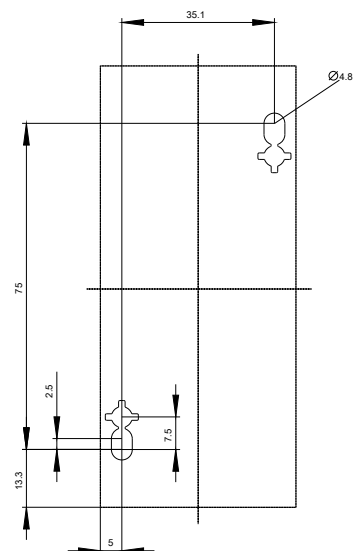
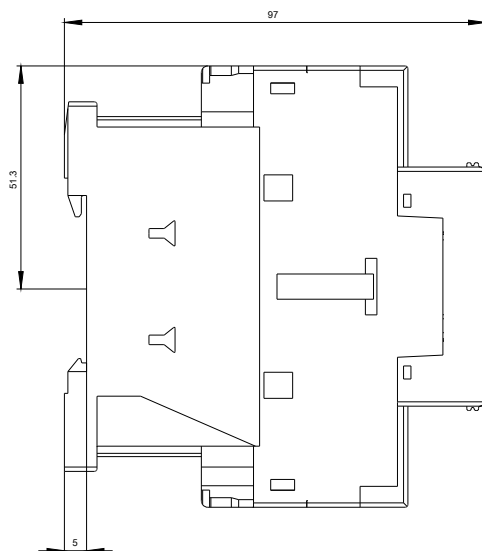
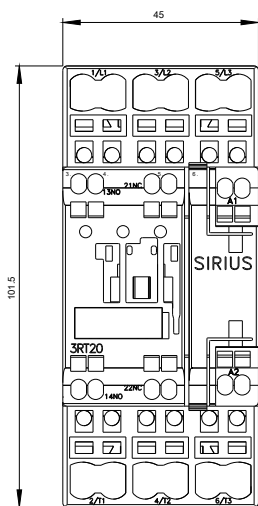
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

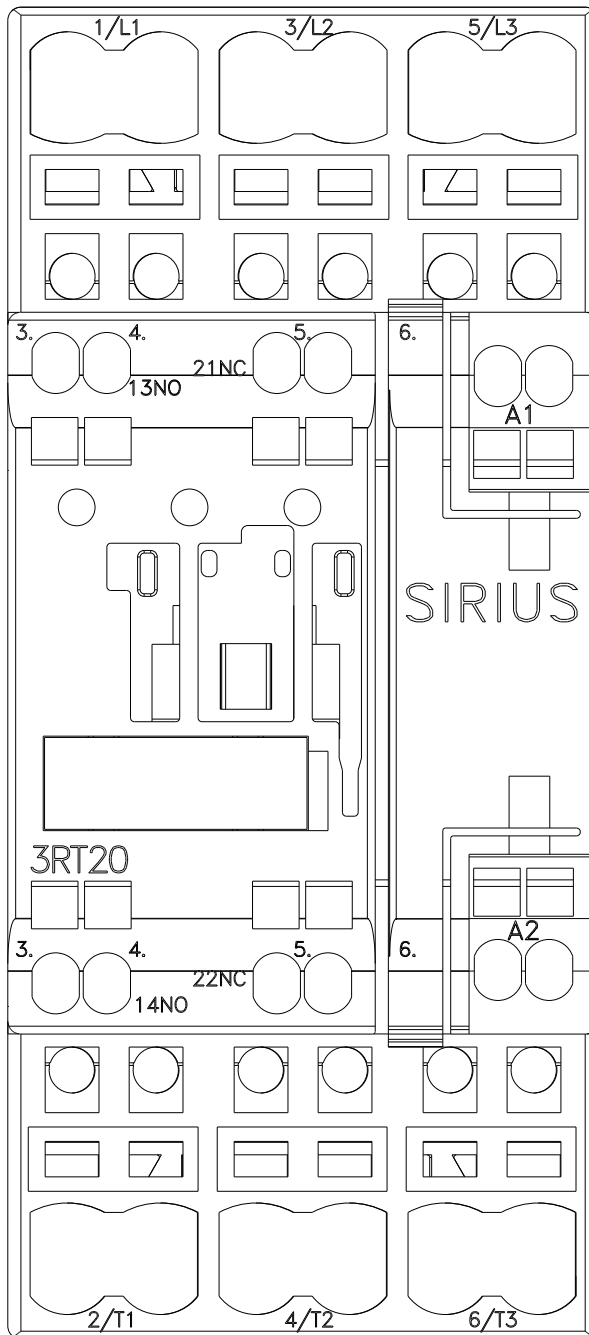
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2AP00>

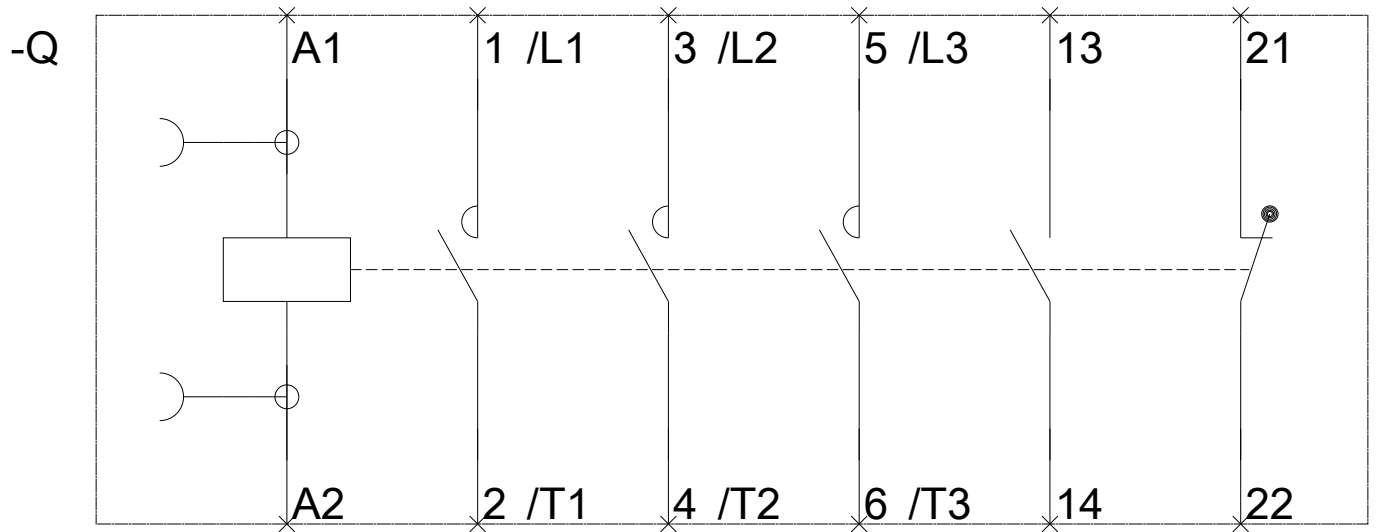
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2028-2AP00&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-2AP00&lang=en)









last modified:

06/20/2017