

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



Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT2
<b>General technical data</b>	
Size of contactor	S00
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
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
<b>Equipment marking</b>	
<ul style="list-style-type: none"> <li>• acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</li> </ul>	K
<ul style="list-style-type: none"> <li>• acc. to DIN EN 61346-2</li> </ul>	Q

### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	2 000 m
<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> <li>• at 690 V rated value</li> </ul>	<p>4.1 A</p> <p>3.3 A</p>
<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> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>• with 2 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>• with 3 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	<p>20 A</p> <p>2.1 A</p> <p>0.8 A</p> <p>0.6 A</p> <p>0.6 A</p> <p>20 A</p> <p>12 A</p> <p>1.6 A</p> <p>0.8 A</p> <p>0.7 A</p> <p>20 A</p> <p>20 A</p> <p>20 A</p> <p>1.3 A</p> <p>1 A</p>
<b>Operating current</b>	
<ul style="list-style-type: none"> <li>• at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>• with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>• with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	<p>20 A</p> <p>0.1 A</p> <p>20 A</p> <p>0.35 A</p> <p>20 A</p> <p>20 A</p> <p>1.5 A</p> <p>0.2 A</p> <p>0.2 A</p>
<b>Operating power</b>	
<ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 230 V at 60 °C rated value</li> <li>— at 400 V rated value</li> <li>— at 400 V at 60 °C rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	<p>7.5 kW</p> <p>7.5 kW</p> <p>13 kW</p> <p>13 kW</p> <p>22 kW</p>

<ul style="list-style-type: none"> <li>— at 690 V at 60 °C rated value</li> </ul>	22 kW
<ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>	4 kW
<ul style="list-style-type: none"> <li>• at AC-3</li> </ul>	
<ul style="list-style-type: none"> <li>— at 230 V rated value</li> </ul>	2.2 kW
<ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul>	4 kW
<ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>	4 kW
<ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>	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> </ul>	2 kW
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	2.5 kW
<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> </ul>	1 000 1/h
<ul style="list-style-type: none"> <li>• at AC-2 maximum</li> </ul>	750 1/h
<ul style="list-style-type: none"> <li>• at AC-3 maximum</li> </ul>	750 1/h
<ul style="list-style-type: none"> <li>• at AC-4 maximum</li> </ul>	250 1/h

#### 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>Operating range factor control supply voltage rated value of magnet coil at DC</b>	
<ul style="list-style-type: none"> <li>• initial value</li> </ul>	0.8
<ul style="list-style-type: none"> <li>• Full-scale value</li> </ul>	1.1
<b>Closing power of magnet coil at DC</b>	4 W
<b>Holding power of magnet coil at DC</b>	4 W
<b>Closing delay</b>	
<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>Control version of the switch operating mechanism</b>	Standard A1 - A2
<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> </ul>	3 mA
<ul style="list-style-type: none"> <li>• at DC at 24 V maximum permissible</li> </ul>	10 mA

#### Auxiliary circuit

<b>Number of NO contacts</b>	
<ul style="list-style-type: none"> <li>• <b>for auxiliary contacts</b> <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>	10 A 3 A 2 A 1 A
<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>	10 A 6 A 6 A 3 A 2 A 1 A 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 2 A 2 A 1 A 0.9 A 0.3 A 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 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 1 hp 2 hp 3 hp 5 hp 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 gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 20 A fuse gG: 10 A
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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> <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 Yes
<b>Height</b>	58 mm
<b>Width</b>	45 mm
<b>Depth</b>	73 mm
<b>Required spacing</b> <ul style="list-style-type: none"> <li>• for grounded parts <ul style="list-style-type: none"> <li>— at the side</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— at the side</li> </ul> </li> </ul>	6 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>	screw-type terminals 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>— solid</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul>	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 16), 2x (18 ... 14), 2x 12
<b>Connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>	0.5 ... 4 mm <sup>2</sup> 0.5 ... 4 mm <sup>2</sup>
<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> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul>	2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 16), 2x (18 ... 14), 2x 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

<b>General Product Approval</b>	<b>Functional Safety/Safety of Machinery</b>
 CCC	 CSA
 UL	 EAC
	<a href="#">KC</a> <a href="#">Type Examination</a>


<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>Marine / Shipping</b>
 EG-Konf.	<a href="#">Type Test Certificates/Test Report</a> <a href="#">Special Test Certificate</a> <a href="#">Miscellaneous</a>	 ABS
		 BUREAU VERITAS

**Marine / Shipping**

 GL	 LRS	 PRS	 RINA	 RMRS	 DNV-GL
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**other**

[Confirmation](#)



VDE

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=3RT2016-1BB41>

**Cax online generator**

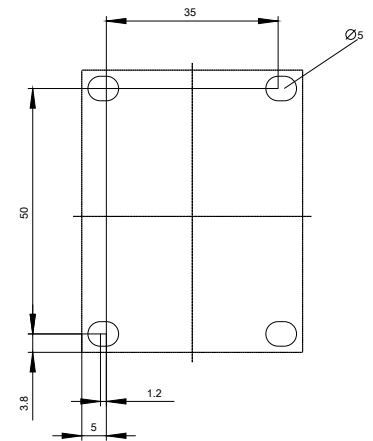
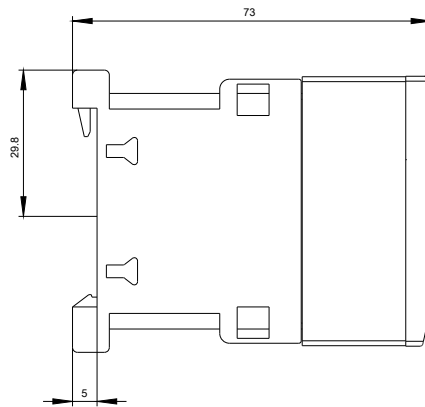
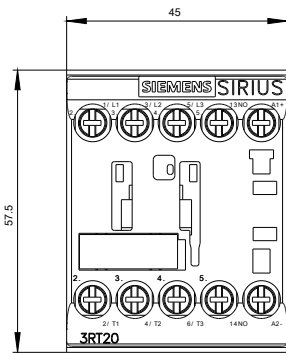
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1BB41>

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

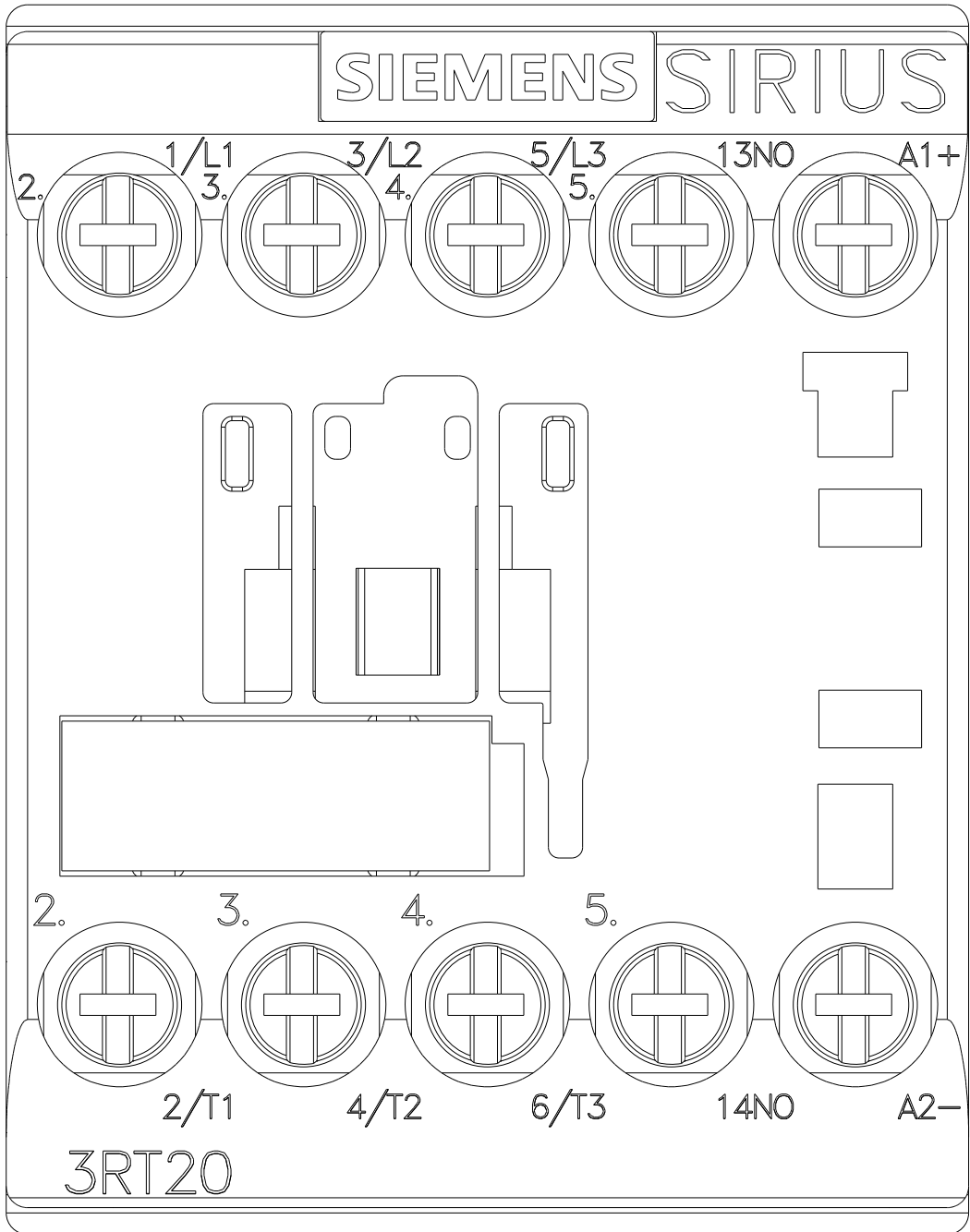
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BB41>

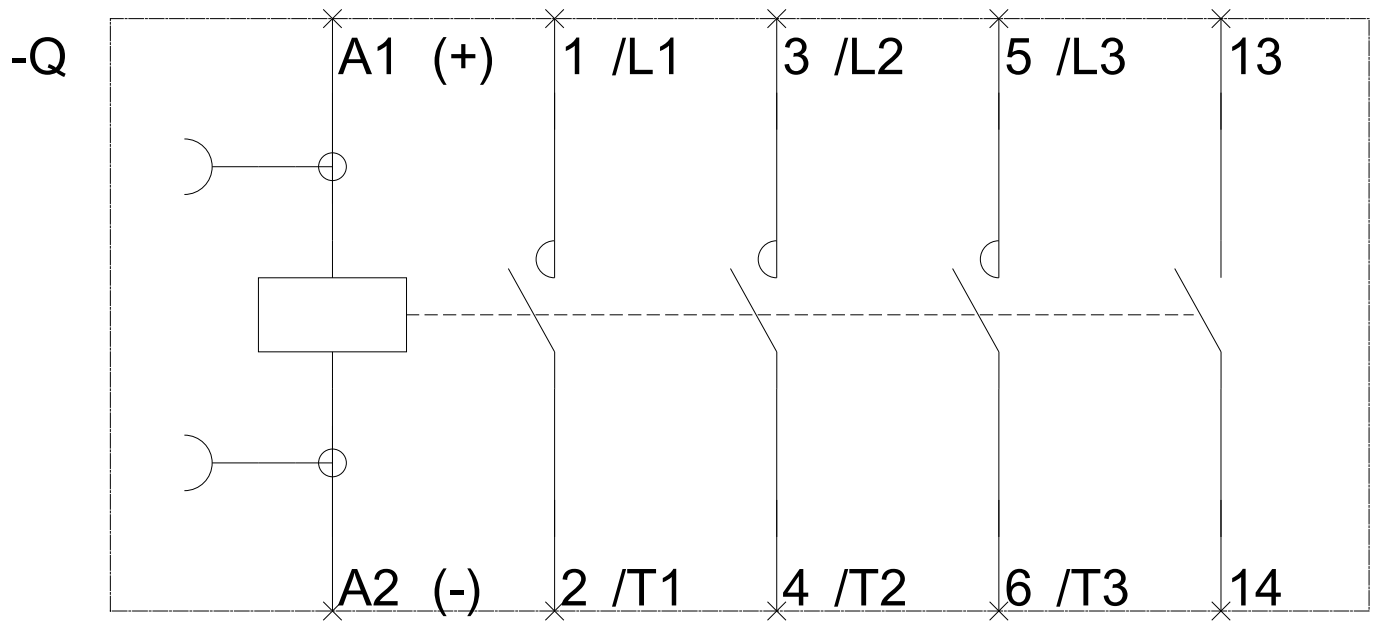
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-1BB41&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1BB41&lang=en)









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