

Power contactor, AC-3 9 A, 4 kW / 400 V 1 NO, 230 V AC, 50 / 60 Hz  
3-pole, Size 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
Power loss [W] for rated value of the current	
• at AC in hot operating state	2.1 W
• at AC in hot operating state per pole	0.7 W
Power loss [W] for rated value of the current without load current share typical	4.2 W
Surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation	
• between coil and main contacts acc. to EN 60947-1	400 V

<ul style="list-style-type: none"> <li>• protection class IP on the front</li> </ul>	IP20
<ul style="list-style-type: none"> <li>• Protection class IP of the terminal</li> </ul>	IP20
<b>Shock resistance at rectangular impulse</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	6,7g / 5 ms, 4,2g / 10 ms
<b>Shock resistance with sine pulse</b>	
<ul style="list-style-type: none"> <li>• at AC</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>Reference code acc. to DIN EN 81346-2</b>	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> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul> </li> </ul>	22 A 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> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	9 A 7.7 A 6.7 A
<ul style="list-style-type: none"> <li>• at AC-4 at 400 V rated value</li> </ul>	8.5 A
<ul style="list-style-type: none"> <li>• at AC-5a up to 690 V rated value</li> </ul>	19.4 A
<ul style="list-style-type: none"> <li>• at AC-5b up to 400 V rated value</li> </ul>	7.4 A
<ul style="list-style-type: none"> <li>• at AC-6a</li> </ul>	

— up to 230 V for current peak value n=20 rated value	5.3 A
— up to 400 V for current peak value n=20 rated value	5.3 A
— up to 500 V for current peak value n=20 rated value	5.3 A
— up to 690 V for current peak value n=20 rated value	5 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	3.5 A
— up to 400 V for current peak value n=30 rated value	3.5 A
— up to 500 V for current peak value n=30 rated value	3.6 A
— up to 690 V for current peak value n=30 rated value	3.3 A
<b>Minimum cross-section in main circuit</b>	
• at maximum AC-1 rated value	4 mm <sup>2</sup>
<b>Operating current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
<b>Operating current</b>	
• 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	
— 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>	

<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-2 at 400 V rated value</li> <li>• at AC-3               <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> </li> </ul>	<p>4 kW</p> <p>2.2 kW</p> <p>4 kW</p> <p>4 kW</p> <p>5.5 kW</p>
<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>Operating apparent output at AC-6a</b> <ul style="list-style-type: none"> <li>• up to 230 V for current peak value n=20 rated value</li> <li>• up to 400 V for current peak value n=20 rated value</li> <li>• up to 500 V for current peak value n=20 rated value</li> <li>• up to 690 V for current peak value n=20 rated value</li> </ul>	<p>2 kV·A</p> <p>3.6 kV·A</p> <p>4.6 kV·A</p> <p>5.9 kV·A</p>
<b>Operating apparent output at AC-6a</b> <ul style="list-style-type: none"> <li>• up to 230 V for current peak value n=30 rated value</li> <li>• up to 400 V for current peak value n=30 rated value</li> <li>• up to 500 V for current peak value n=30 rated value</li> <li>• up to 690 V for current peak value n=30 rated value</li> </ul>	<p>1.3 kV·A</p> <p>2.4 kV·A</p> <p>3.1 kV·A</p> <p>4 kV·A</p>
<b>Short-time withstand current in cold operating state up to 40 °C</b>	

<ul style="list-style-type: none"> <li>• limited to 1 s switching at zero current maximum</li> <li>• limited to 5 s switching at zero current maximum</li> <li>• limited to 10 s switching at zero current maximum</li> <li>• limited to 30 s switching at zero current maximum</li> <li>• limited to 60 s switching at zero current maximum</li> </ul>	<p>155 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>111 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>86 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>66 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>55 A; Use minimum cross-section acc. to AC-1 rated value</p>
<b>No-load switching frequency</b>	
<ul style="list-style-type: none"> <li>• at AC</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>
<b>Control circuit/ Control</b>	
<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>	<p>230 V</p> <p>230 V</p>
<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>	<p>0.8 ... 1.1</p> <p>0.85 ... 1.1</p>
<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>	<p>27 V·A</p> <p>24.3 V·A</p>
<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>	<p>0.8</p> <p>0.75</p>
<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>	<p>4.2 V·A</p> <p>3.3 V·A</p>
<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>	<p>0.25</p> <p>0.25</p>
<b>Closing delay</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	9 ... 35 ms
<b>Opening delay</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	3.5 ... 14 ms

<b>Arcing time</b>	10 ... 15 ms
<b>Control version of the switch operating mechanism</b>	Standard A1 - A2
<b>Auxiliary circuit</b>	
<b>Number of NO contacts for auxiliary contacts</b>	
• instantaneous contact	1
Operating current at AC-12 maximum	10 A
<b>Operating current at AC-15</b>	
• at 230 V rated value	10 A
• at 400 V rated value	3 A
• at 500 V rated value	2 A
• at 690 V rated value	1 A
<b>Operating current at DC-12</b>	
• at 24 V rated value	10 A
• at 48 V rated value	6 A
• at 60 V rated value	6 A
• at 110 V rated value	3 A
• at 125 V rated value	2 A
• at 220 V rated value	1 A
• at 600 V rated value	0.15 A
<b>Operating current at DC-13</b>	
• at 24 V rated value	10 A
• at 48 V rated value	2 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
• at 600 V rated value	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>Full-load current (FLA) for three-phase AC motor</b>	
• at 480 V rated value	7.6 A
• at 600 V rated value	9 A
<b>Yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
• for three-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	A600 / Q600
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### 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>	<p>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</p> <p>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>

### 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>	58 mm
<b>Width</b>	45 mm
<b>Depth</b>	73 mm
<b>Required spacing</b>	
• with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— 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

### Connections/ Terminals

• Type of electrical connection for main current circuit	screw-type terminals
• Type of electrical connection for auxiliary and control current circuit	screw-type terminals

<ul style="list-style-type: none"> <li>• Type of electrical connection at contactor for auxiliary contacts</li> </ul>	Screw-type terminals
<ul style="list-style-type: none"> <li>• Type of electrical connection of magnet coil</li> </ul>	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> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 4 mm <sup>2</sup> 0.5 ... 4 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup>
<b>Connectable conductor cross-section for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• single or multi-stranded</li> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 4 mm <sup>2</sup> 0.5 ... 2.5 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
<b>AWG number as coded connectable conductor cross section</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary contacts</li> </ul>	20 ... 12 20 ... 12

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 % 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; 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
Suitability for use safety-related switching OFF	Yes

### Certificates/ approvals



General Product Approval	EMC
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[KC](#)



Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping
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other
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[Confirmation](#)



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

<https://www.siemens.com/ic10>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2016-1AP01>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1AP01>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AP01>

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

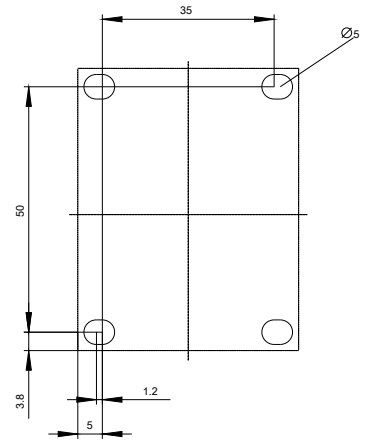
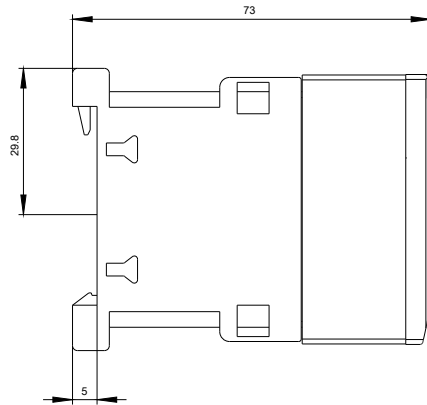
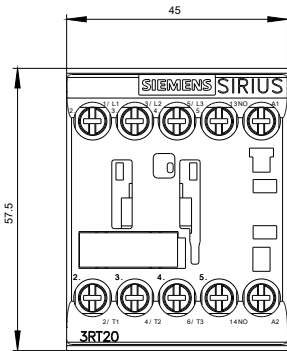
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-1AP01&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1AP01&lang=en)

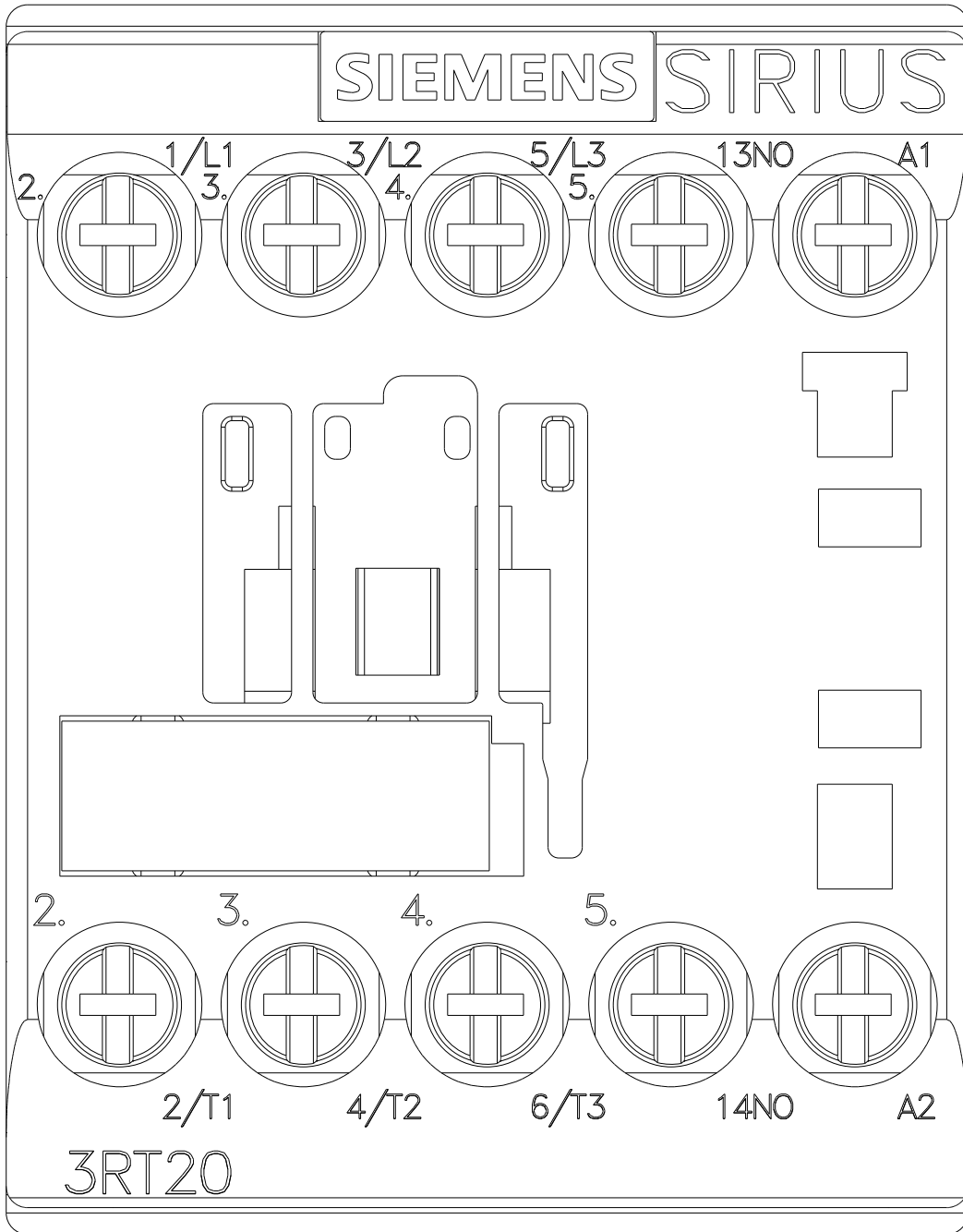
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

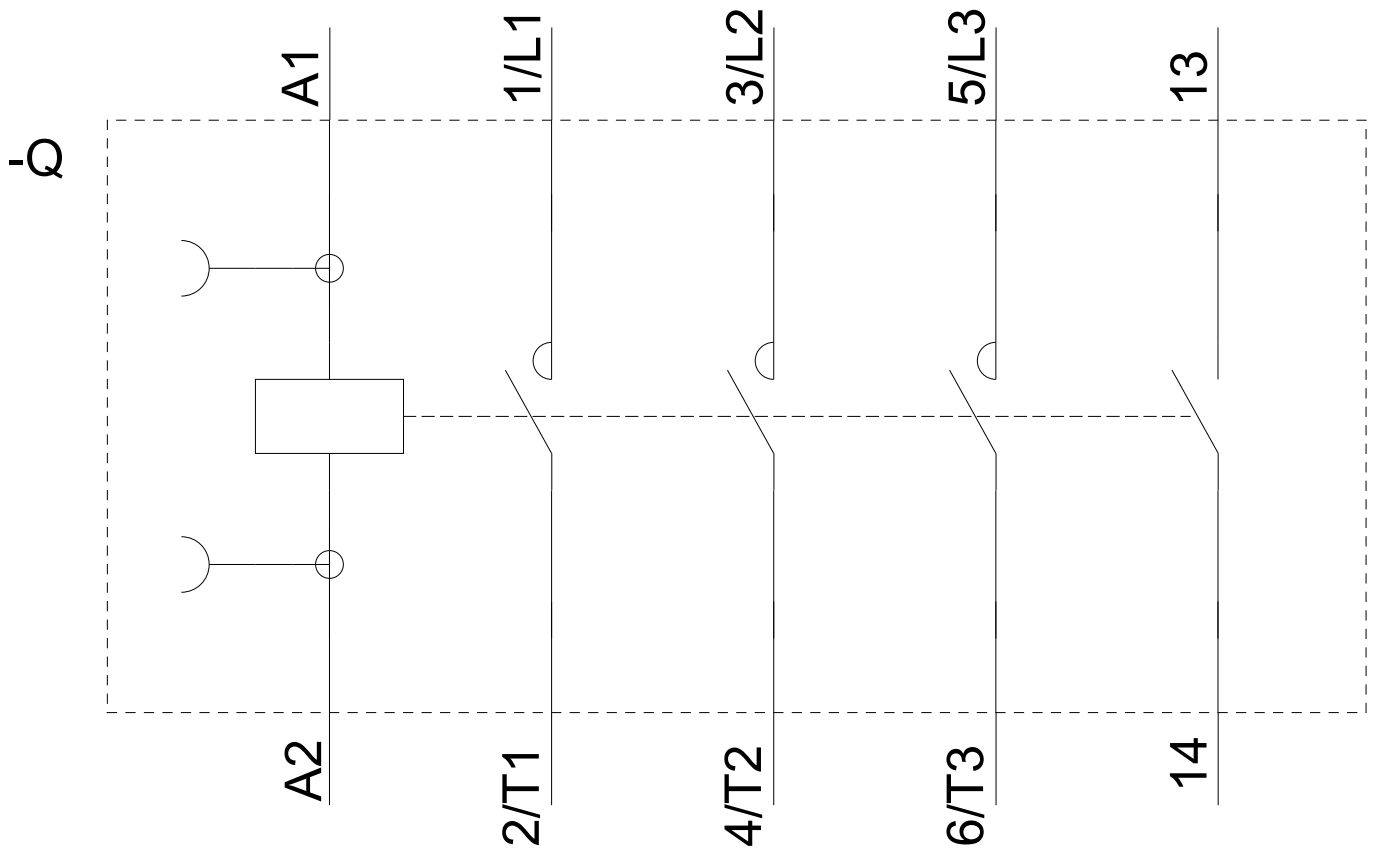
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AP01/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1AP01&objecttype=14&gridview=view1>







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