

CONTACTOR, AC-3, 5.5KW/400V, 2NO+2NC AC110V 50HZ/120V  
60HZ 3-POLE, SZ S00 SCREW TERMINAL PERMANENT AUX.  
SWITCH FOR SUVA APPLICATIONS



product brand name	SIRIUS
Product designation	3RT2 contactor
<b>General technical data:</b>	
Size of contactor	S00
Product expansion	
• function module for communication	No
• Auxiliary switch	No
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
Degree of pollution	3
Shock resistance	
• at rectangular impulse	

<ul style="list-style-type: none"> <li>— at AC</li> <li>• with sine pulse</li> <li>— at AC</li> </ul>	<p>7,3g / 5 ms, 4,7g / 10 ms</p> <p>11,4g / 5 ms, 7,3g / 10 ms</p>
<b>Mechanical service life (switching cycles)</b> <ul style="list-style-type: none"> <li>• of contactor typical</li> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> <li>• of the contactor with added auxiliary switch block typical</li> </ul>	<p>30 000 000</p> <p>5 000 000</p> <p>10 000 000</p>

#### Ambient conditions:

<b>Installation altitude at height above sea level maximum</b>	2 000 m
<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>

#### Main circuit:

<b>Number of NO contacts for main contacts</b>	3
<b>Number of NC contacts for main contacts</b>	0
<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> <li>• at AC-1 up to 690 V <ul style="list-style-type: none"> <li>— at ambient temperature 40 °C rated value</li> <li>— at ambient temperature 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> <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>	<p>22 A</p> <p>22 A</p> <p>20 A</p> <p>12 A</p> <p>12 A</p> <p>9.2 A</p> <p>6.7 A</p>
<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> <li>• at 40 °C minimum permissible</li> </ul>	<p>2.5 mm<sup>2</sup></p> <p>4 mm<sup>2</sup></p>
<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> </ul> </li> </ul>	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>	
• 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 110 V rated value	0.35 A
— at 24 V rated value	20 A
• with 3 current paths in series at DC-3 at DC-5	
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 24 V rated value	20 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	5.5 kW
• at AC-3	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW

— at 690 V rated value	5.5 kW
<b>Operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	2 kW
• at 690 V rated value	2.5 kW
<b>Thermal short-time current limited to 10 s</b>	90 A
<b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>	1.2 W
<b>No-load switching frequency</b>	
• at AC	10 000 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

<b>Control circuit/ Control:</b>	
<b>Type of voltage of the control supply voltage</b>	AC
<b>Control supply voltage at AC</b>	
• at 50 Hz rated value	110 V
• at 60 Hz rated value	120 V
<b>Operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.85 ... 1.1
<b>Apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	37 V·A
• at 60 Hz	33 V·A
<b>Inductive power factor with closing power of the coil</b>	
• at 50 Hz	0.8
• at 60 Hz	0.75
<b>Apparent holding power of magnet coil at AC</b>	
• at 50 Hz	5.7 V·A
• at 60 Hz	4.4 V·A
<b>Inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.25
• at 60 Hz	0.25
<b>Closing delay</b>	
• at AC	8 ... 33 ms
<b>Opening delay</b>	
• at AC	4 ... 15 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>4 mA</p> <p>10 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>	2
<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>	2
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>6 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>6 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> <li>• yielded mechanical performance [hp] for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> </ul> </li> </ul>	<p>11 A</p> <p>11 A</p> <p>0.5 hp</p>

— at 230 V rated value	2 hp
• Yielded mechanical performance [hp] for three-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 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 assignment 1 required	gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 50 A
— with type of assignment 2 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 25 A
• for short-circuit protection of the auxiliary switch required	fuse gL/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 50022
• Side-by-side mounting	Yes
<b>Height</b>	58 mm
<b>Width</b>	45 mm
<b>Depth</b>	117 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>	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>— 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 (20 ... 16), 2x (18 ... 14), 2x 12
<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 with high demand rate acc. to SN 31920</b>	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> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul>	Yes Yes
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y

### Certificates/approvals

General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
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[KTL](#)

[Baumusterbescheinigung](#)



Test Certificates	Shipping Approval
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[spezielle Prüfbescheinigungen](#)

[Typprüfbescheinigung/Werkszeugnis](#)



Shipping Approval	other
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[Umweltbestätigung](#)

[Bestätigungen](#)

other
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### 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=3RT20171AK643MA0>

**Cax online generator**

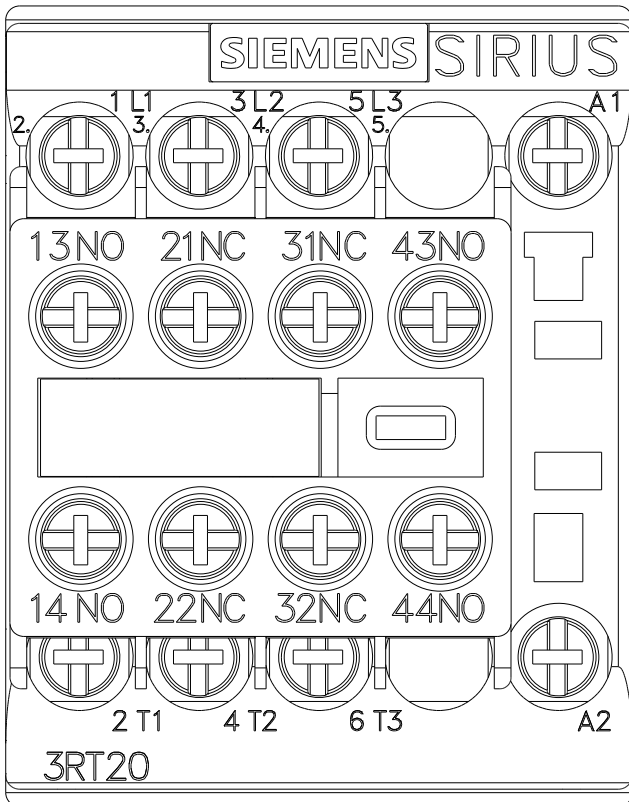
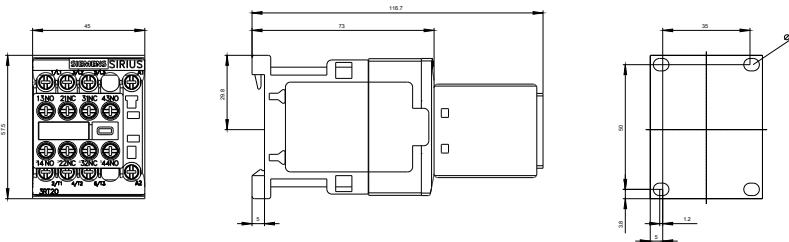
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20171AK643MA0>

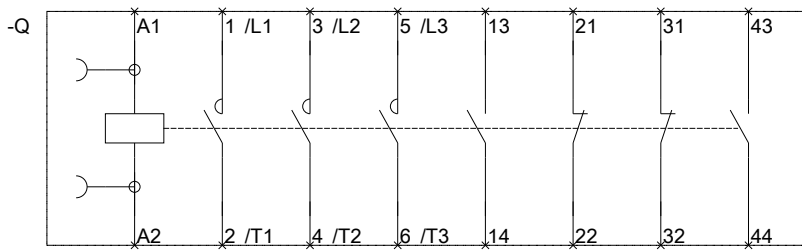
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT20171AK643MA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT20171AK643MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20171AK643MA0&lang=en)





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