



CONTACTOR, AC-3, 4KW/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	
— at AC	6,7g / 5 ms, 4,2g / 10 ms
• with sine pulse	
— at AC	10,5g / 5 ms, 6,6g / 10 ms
Mechanical service life (switching cycles)	
• of the contactor typical	10 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000

- of the contactor with added auxiliary switch block typical

10 000 000

#### Ambient conditions:

<b>Installation altitude at height above sea level maximum</b>	2 000 m
<b>Ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C

#### 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>	
• at AC-3 Rated value maximum	690 V
<b>Operating current</b>	
• at AC-1 at 400 V	
— at ambient temperature 40 °C Rated value	22 A
• at AC-1 up to 690 V	
— at ambient temperature 40 °C Rated value	22 A
— at ambient temperature 60 °C Rated value	20 A
• at AC-2 at 400 V Rated value	9 A
• at AC-3	
— at 400 V Rated value	9 A
— at 500 V Rated value	7.7 A
— at 690 V Rated value	6.7 A
<b>Connectable conductor cross-section in main circuit at AC-1</b>	
• at 60 °C minimum permissible	2.5 mm <sup>2</sup>
• at 40 °C minimum permissible	4 mm <sup>2</sup>
<b>Operating current for ≥ 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>	
• with 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>	
• with 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	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 ≥ 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 restricted to 10 s</b>	72 A
<b>Active power loss 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 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>	1 000 1/h 750 1/h 750 1/h 250 1/h

#### Control circuit/ Control:

<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>	110 V 120 V
<b>Operating range factor control supply voltage rated value of the magnet coil at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	0.8 ... 1.1 0.85 ... 1.1
<b>Apparent pick-up power of the magnet coil at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	27 V·A 24.3 V·A
<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>	0.8 0.75
<b>Apparent holding power of the magnet coil at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	4.2 V·A 3.3 V·A
<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>	0.25 0.25
<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>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>	3 mA 10 mA

#### Auxiliary circuit:

<b>Number of NC contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts</li> <li>— instantaneous contact</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>	6 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>	6 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
<b>Contact reliability of the 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 the auxiliary contacts acc. to UL</b>	A600 / Q600

#### Short-circuit:

<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 assignment 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>	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A fuse gL/gG: 10 A
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<b>Installation/ mounting/ dimensions:</b>	
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<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 50022  Yes
<b>Height</b>	58 mm
<b>Width</b>	45 mm
<b>Depth</b>	116 mm
<b>Required spacing</b> <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 0 mm</li> <li>— downwards 0 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 0 mm</li> <li>— at the side 6 mm</li> <li>— downwards 0 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 0 mm</li> <li>— downwards 0 mm</li> <li>— at the side 6 mm</li> </ul> </li> </ul>	

<b>Connections/ Terminals:</b>	
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<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-section</b> <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— single or multi-stranded</li> </ul> </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>

<ul style="list-style-type: none"> <li>— finely stranded with core end processing</li> <li>• for AWG conductors for main contacts</li> </ul>	<p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (20 ... 16), 2x (18 ... 14), 2x 12</p>
<p><b>Type of connectable conductor cross-section</b></p> <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>• for AWG conductors for auxiliary contacts</li> </ul>	<p>2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>), 2x 4 mm<sup>2</sup></p> <p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (20 ... 16), 2x (18 ... 14), 2x 12</p>

<b>Safety related data:</b>	
<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>	<p>40 %</p> <p>73 %</p>
<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>	<p>Yes</p> <p>Yes</p>
<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	Test Certificates
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[Baumusterbescheinigung](#)



[spezielle Prüfbescheinigung](#)

Test Certificates	Shipping Approval
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[Typprüfbescheinigung/Werkszeugnis](#)



Shipping Approval	other
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[Umweltbestätigung](#)

[Bestätigungen](#)



Railway
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#### Further information

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

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

**Industry Mall (Online ordering system)**

<http://www.siemens.com/industrymall>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20161AK643MA0>

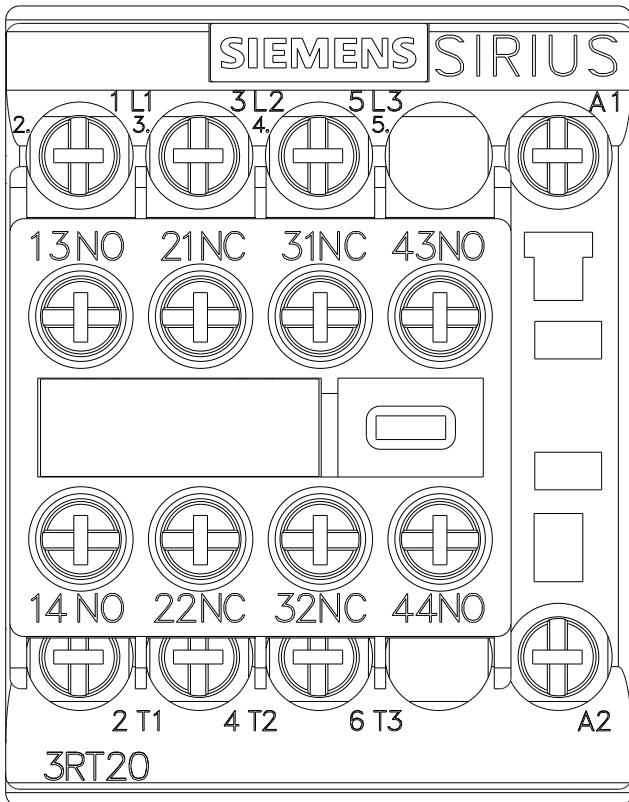
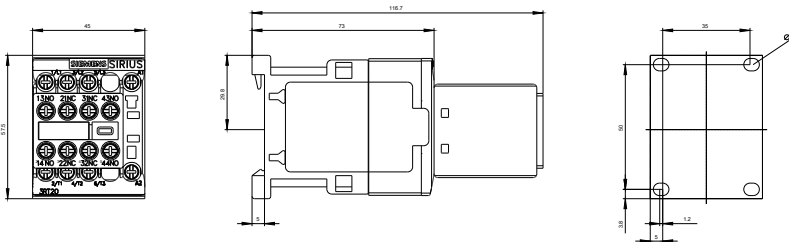
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

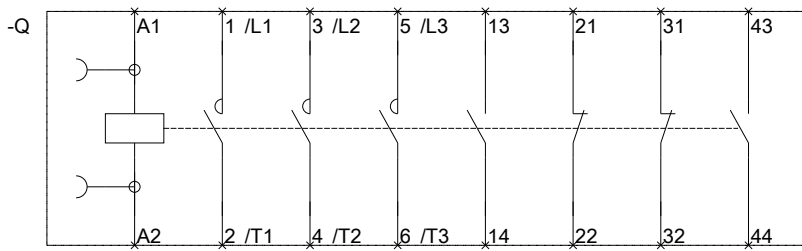
<https://support.industry.siemens.com/cs/ww/en/ps/3RT20161AK643MA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT20161AK643MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20161AK643MA0&lang=en)







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