



power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NO, 24 V DC 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	3.6 W
• per pole	1.2 W
power loss [W] for rated value of the current without load current share typical	4 W
insulation voltage	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
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
shock resistance at rectangular impulse	
• at DC	7.3g / 5 ms, 4.7g / 10 ms
shock resistance with sine pulse	
• at DC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (switching cycles)	
• of contactor typical	30 000 000
• of the contactor with added electronically optimized auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2009
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C acc. to IEC 60068-2-30	95 %

<b>maximum</b>	
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3
<b>operating voltage at AC-3 rated value maximum</b>	690 V
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at AC-1 at 400 V at ambient temperature 40 °C rated value</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-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>	12 A
<ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>	9.2 A
<ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>	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>	9.9 A
<ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=20 rated value</li> </ul> </li> </ul>	7.2 A
<ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=20 rated value</li> </ul>	7.2 A
<ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=20 rated value</li> </ul>	7.2 A
<ul style="list-style-type: none"> <li>— up to 690 V for current peak value n=20 rated value</li> </ul>	6.7 A
<ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=30 rated value</li> </ul> </li> </ul>	4.8 A
<ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=30 rated value</li> </ul>	4.8 A
<ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=30 rated value</li> </ul>	4.8 A
<ul style="list-style-type: none"> <li>— up to 690 V for current peak value n=30 rated value</li> </ul>	4.8 A
<b>minimum cross-section in main circuit at maximum AC-1 rated value</b>	4 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	4.1 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	3.3 A
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• <b>at 1 current path at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul>	2.1 A
<ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul>	0.8 A
<ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul>	0.6 A
<ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul>	0.6 A
<ul style="list-style-type: none"> <li>• <b>with 2 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul>	12 A
<ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul>	1.6 A
<ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul>	0.8 A
<ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul>	0.7 A
<ul style="list-style-type: none"> <li>• <b>with 3 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul>	1.3 A
<ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul>	1 A

<ul style="list-style-type: none"> <li>• <b>at 1 current path at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>• <b>with 2 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>• <b>with 3 current paths in series at DC-3 at DC-5</b> <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>	20 A 0.1 A  20 A 0.35 A  20 A 20 A 1.5 A 0.2 A 0.2 A
<b>operating power</b> <ul style="list-style-type: none"> <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>	3 kW 5.5 kW 5.5 kW 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> <li>• at 690 V rated value</li> </ul>	2 kW 2.5 kW
<b>operating apparent power 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>	2.8 kV·A 4.9 kV·A 6.2 kV·A 8 kV·A
<b>operating apparent power 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>	1.9 kV·A 3.3 kV·A 4.1 kV·A 5.7 kV·A
<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>	200 A; Use minimum cross-section acc. to AC-1 rated value 123 A; Use minimum cross-section acc. to AC-1 rated value 96 A; Use minimum cross-section acc. to AC-1 rated value 74 A; Use minimum cross-section acc. to AC-1 rated value 61 A; Use minimum cross-section acc. to AC-1 rated value
<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> <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
<b>Control circuit/ Control</b>	
<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> <li>• full-scale value</li> </ul>	0.8 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>Auxiliary circuit</b>	
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
<b>operational 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>operational 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>operational 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 3-phase AC motor</b>	
• at 480 V rated value	11 A
• at 600 V rated value	11 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	0.5 hp
— at 230 V rated value	2 hp
• for 3-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
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
— with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
<b>Installation/ mounting/ dimensions</b>	
<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>fastening method</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
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— solid or stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• at AWG cables for main contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12
<b>connectable conductor cross-section for main contacts</b>	
• solid	0.5 ... 4 mm <sup>2</sup>
• stranded	0.5 ... 4 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	
• solid or stranded	0.5 ... 4 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• at AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12
<b>AWG number as coded connectable conductor cross section</b>	
• for main contacts	20 ... 12
• for auxiliary contacts	20 ... 12
<b>Safety related data</b>	
B10 value 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 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>protection class IP on the front acc. to IEC 60529</b>	IP20
<b>touch protection on the front acc. to IEC 60529</b>	finger-safe, for vertical contact from the front
<b>suitability for use</b>	
• safety-related switching OFF	Yes
<b>Certificates/ approvals</b>	
<b>General Product Approval</b>	



[Confirmation](#)



[KC](#)



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



[UK Declaration of Conformity](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Test Certificates	Marine / Shipping
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[Miscellaneous](#)



Marine / Shipping	other	Dangerous Good
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[Confirmation](#)



[Transport Information](#)

#### Further information

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=3RT2017-1BB41>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-1BB41>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1BB41>

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

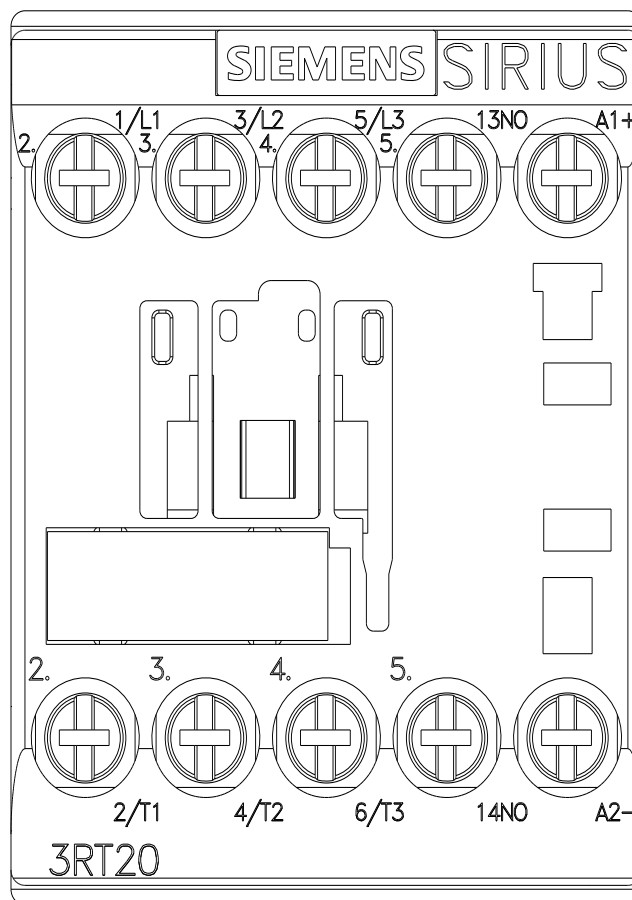
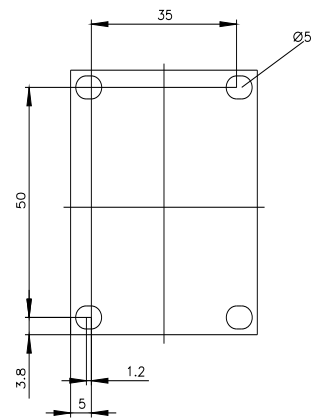
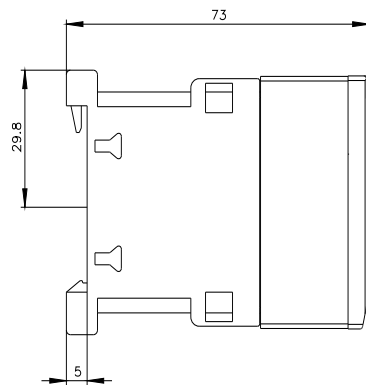
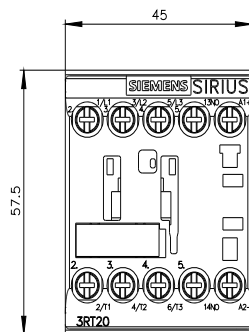
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-1BB41&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-1BB41&lang=en)

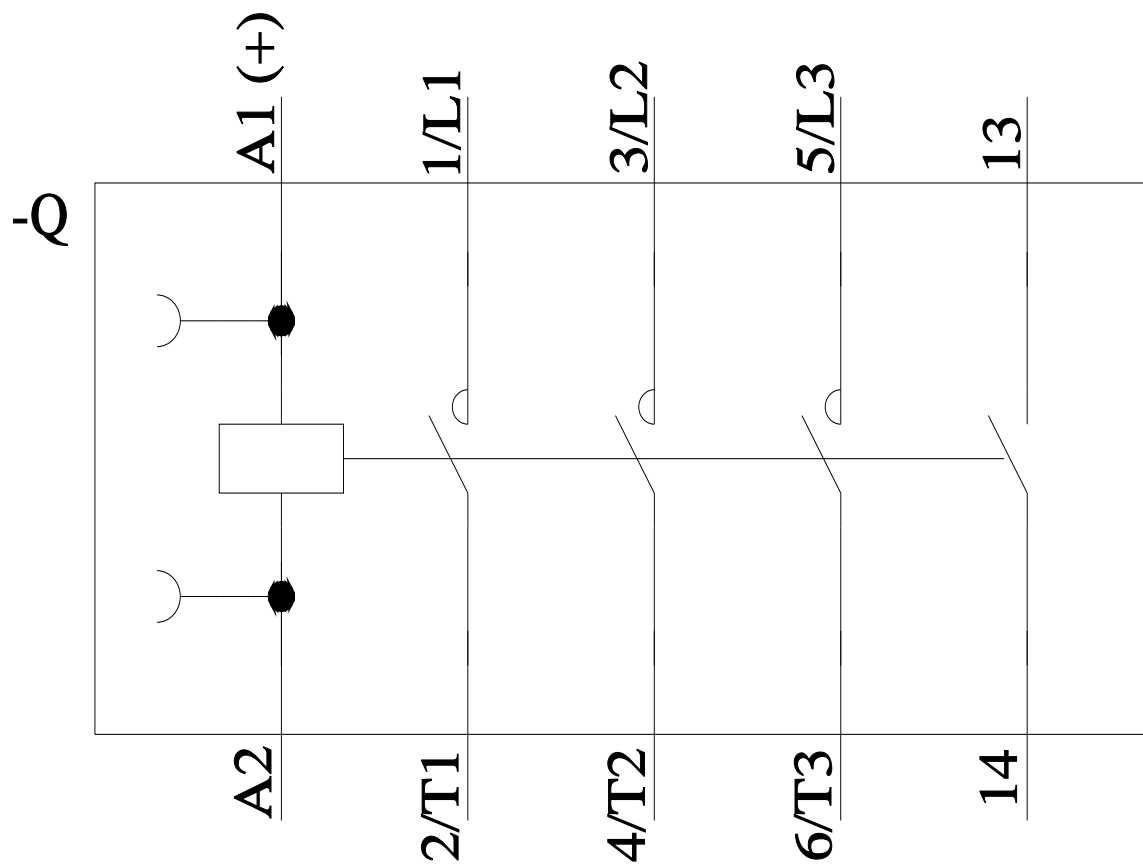
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1BB41/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1BB41&objecttype=14&gridview=view1>





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