



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 24 V DC, 0.7-1.25\* U<sub>c</sub>, with plugged-in varistor, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, frame size: S0, suitable for PLC outputs, no auxiliary switch can be added

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Power contactor
<b>product type designation</b>	3RT2
<b>General technical data</b>	
<b>size of contactor</b>	S0
<b>product extension</b>	
• function module for communication	No
• auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	0.6 W
• at AC in hot operating state per pole	0.2 W
• without load current share typical	4.5 W
<b>type of calculation of power loss current-dependent</b>	quadratic
<b>insulation voltage</b>	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
<b>surge voltage resistance</b>	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
<b>shock resistance at rectangular impulse</b>	
• at DC	10g / 5 ms, 7,5g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	15 g / 5 ms, 10 g / 10 ms
<b>mechanical service life (operating cycles)</b>	
• of contactor typical	10 000 000
• 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
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (day/month/year)</b>	10/01/2009
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1
<b>Net Weight</b>	622 g
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %

relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
<b>operating voltage</b>	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	40 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	40 A
— up to 690 V at ambient temperature 60 °C rated value	35 A
• at AC-3	
— at 400 V rated value	9 A
— at 500 V rated value	9 A
— at 690 V rated value	9 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	9 A
— at 690 V rated value	9 A
• at AC-4 at 400 V rated value	8.5 A
• at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	7.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	11.4 A
— up to 400 V for current peak value n=20 rated value	11.4 A
— up to 500 V for current peak value n=20 rated value	9.1 A
— up to 690 V for current peak value n=20 rated value	9 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
— up to 500 V for current peak value n=30 rated value	6.1 A
— up to 690 V for current peak value n=30 rated value	6.1 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm <sup>2</sup>
<b>operational 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>operational current</b>	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	20 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	35 A

— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
<b>● at 1 current path at DC-3 at DC-5</b>	
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
<b>● with 2 current paths in series at DC-3 at DC-5</b>	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
<b>● with 3 current paths in series at DC-3 at DC-5</b>	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
<b>operating power</b>	
<b>● at AC-2 at 400 V rated value</b>	4 kW
<b>● at AC-3</b>	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
<b>● at AC-3e</b>	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
<b>● at 400 V rated value</b>	2 kW
<b>● at 690 V rated value</b>	2.5 kW
<b>operating apparent power at AC-6a</b>	
<b>● up to 230 V for current peak value n=20 rated value</b>	4.5 kVA
<b>● up to 400 V for current peak value n=20 rated value</b>	7.8 kVA
<b>● up to 500 V for current peak value n=20 rated value</b>	7.8 kVA
<b>● up to 690 V for current peak value n=20 rated value</b>	10.7 kVA
<b>operating apparent power at AC-6a</b>	
<b>● up to 230 V for current peak value n=30 rated value</b>	3 kVA
<b>● up to 400 V for current peak value n=30 rated value</b>	5.2 kVA
<b>● up to 500 V for current peak value n=30 rated value</b>	5.2 kVA
<b>● up to 690 V for current peak value n=30 rated value</b>	7.2 kVA
<b>short-time withstand current in cold operating state up to 40 °C</b>	
<b>● limited to 1 s switching at zero current maximum</b>	170 A; Use minimum cross-section acc. to AC-1 rated value
<b>● limited to 5 s switching at zero current maximum</b>	170 A; Use minimum cross-section acc. to AC-1 rated value
<b>● limited to 10 s switching at zero current maximum</b>	140 A; Use minimum cross-section acc. to AC-1 rated value
<b>● limited to 30 s switching at zero current maximum</b>	104 A; Use minimum cross-section acc. to AC-1 rated value
<b>● limited to 60 s switching at zero current maximum</b>	88 A; Use minimum cross-section acc. to AC-1 rated value

<b>no-load switching frequency</b>	
• at DC	1 500 1/h
<b>operating frequency</b>	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	1 000 1/h
• at AC-3 maximum	1 000 1/h
• at AC-3e	
— maximum	1 000 1/h
• at AC-4 maximum	300 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC rated value</b>	24 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.7
• full-scale value	1.25
<b>design of the surge suppressor</b>	with varistor
<b>closing power of magnet coil at DC</b>	4.5 W
<b>holding power of magnet coil at DC</b>	4.5 W
<b>closing delay</b>	
• at DC	52 ... 270 ms
<b>opening delay</b>	
• at DC	15 ... 21 ms
<b>arcing time</b>	10 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2
<b>Auxiliary circuit</b>	
number of NC contacts for auxiliary contacts instantaneous contact	1
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	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	1 hp

— at 230 V rated value	1 hp
● for 3-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
<b>contact rating of auxiliary contacts according to UL</b>	A600 / P600
<b>UL File Number (CCN)</b>	E31519 (NLDX, NLDX7)
<b>Short-circuit protection</b>	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
<b>design of the fuse link</b>	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 63 A (690 V, 100 kA), aM: 32 A (690 V, 100 kA), BS88: 63 A (415 V, 80 kA)
— with type of coordination 2 required	gG: 25 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 25 A (415 V, 80 kA)
● 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
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
<b>height</b>	102 mm
<b>width</b>	45 mm
<b>depth</b>	107 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	spring-loaded terminals
● for auxiliary and control circuit	spring-loaded terminals
● at contactor for auxiliary contacts	Spring-type terminals
● of magnet coil	Spring-type terminals
<b>type of connectable conductor cross-sections</b>	
● for main contacts	
— solid	2x (1 ... 10 mm <sup>2</sup> )
— solid or stranded	2x (1 ... 10 mm <sup>2</sup> )
— finely stranded with core end processing	2x (1 ... 6 mm <sup>2</sup> )
— finely stranded without core end processing	2x (1 ... 6 mm <sup>2</sup> )
● for AWG cables for main contacts	2x (18 ... 8)
<b>connectable conductor cross-section for main contacts</b>	
● solid	1 ... 10 mm <sup>2</sup>
● stranded	1 ... 10 mm <sup>2</sup>
● finely stranded with core end processing	1 ... 6 mm <sup>2</sup>
● finely stranded without core end processing	1 ... 6 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	

<ul style="list-style-type: none"> <li>• solid or stranded</li> </ul>	0.5 ... 2.5 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 1.5 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• finely stranded without core end processing</li> </ul>	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>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• for AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 2.5 mm <sup>2</sup> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ) 2x (0.5 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 14)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	18 ... 8
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	20 ... 14

**Safety related data**

<b>product function</b>	
<ul style="list-style-type: none"> <li>• mirror contact according to IEC 60947-4-1</li> <li>• positively driven operation according to IEC 60947-5-1</li> <li>• suitable for safety function</li> </ul>	Yes No Yes
suitability for use safety-related switching OFF	Yes
<b>service life maximum</b>	20 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
<ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>	40 % 73 %
<b>B10 value with high demand rate according to SN 31920</b>	1 000 000
<b>failure rate [FIT] with low demand rate according to SN 31920</b>	100 FIT

ISO 13849

<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes

IEC 61508

<b>safety device type according to IEC 61508-2</b>	Type A
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Electrical Safety

<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

**Approvals Certificates**

Environmental Product Declaration

<ul style="list-style-type: none"> <li>• global warming potential [CO2 eq] / during manufacturing</li> <li>• global warming potential [CO2 eq] / during operation</li> <li>• global warming potential [CO2 eq] / after end of life</li> <li>• global warming potential [CO2 eq] / total</li> </ul>	2.65 kg 219 kg -0.639 kg 221 kg
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**Environment**      **General Product Approval**

[Environmental Confirmations](#)



**General Product Approval**      **EMV**      **Test Certificates**






[Special Test Certificate](#)

**Test Certificates**      **Maritime application**

[Type Test Certificates/Test Report](#)



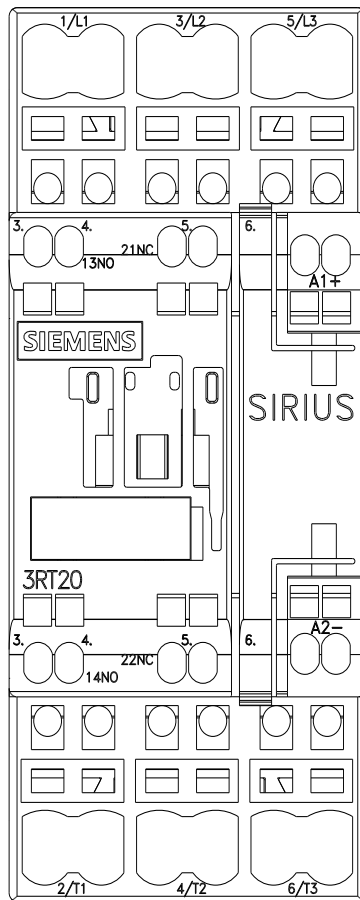
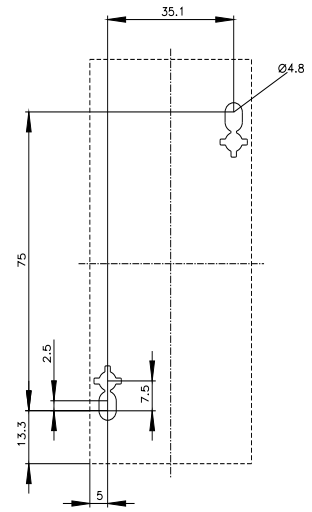
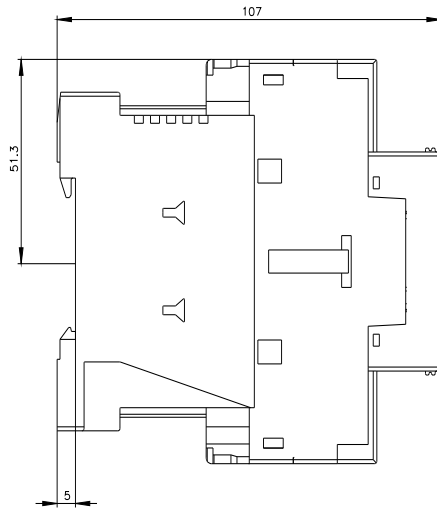
Maritime application	other	Railway
 RINA	 RMRS	<a href="#">Confirmation</a>
	<a href="#">Miscellaneous</a>	
		<a href="#">Special Test Certificate</a>

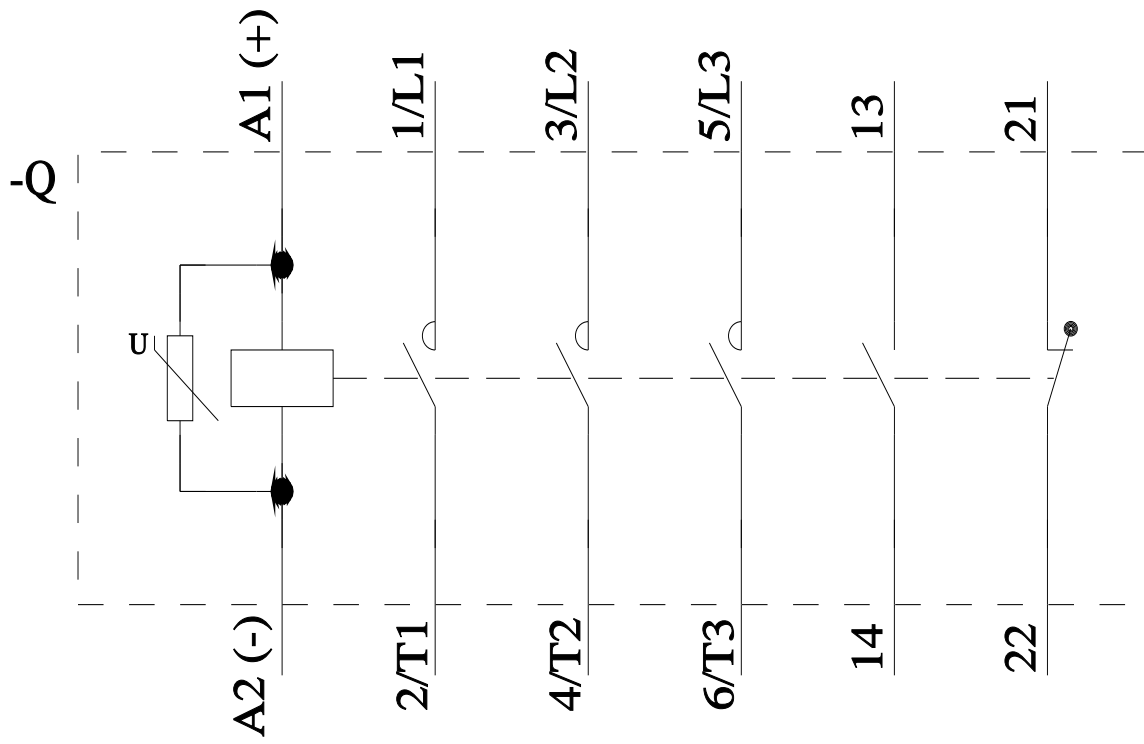
**Dangerous goods**

[Transport Information](#)

**Further information**

- Information on the packaging  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- Information for data generation and storage  
<https://support.industry.siemens.com/cs/ww/en/view/109995012>
- 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=3RT2023-2KB40>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-2KB40>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2023-2KB40&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2023-2KB40&lang=en)
- Cax online generator  
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2023-2KB40>
- Characteristic curves  
[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)





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