



power contactor, AC-3e/AC-3 225 A, 110 kW / 400 V AC (50-60 Hz) / DC U<sub>c</sub>: 96-127 V PLC input 24 V DC 3-pole, auxiliary contacts 1 NO + 1 NC drive: electronic main circuit: busbar control and auxiliary circuit: screw terminal with remaining lifetime indicator

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Power contactor
<b>product type designation</b>	3RT1
<b>General technical data</b>	
<b>size of contactor</b>	S10
<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	51 W
• at AC in hot operating state per pole	17 W
• without load current share typical	3.4 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	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	500 V
<b>surge voltage resistance</b>	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
<b>shock resistance at rectangular impulse</b>	
• at AC	8,5 g / 5 ms, 4,2 g / 10 ms
• at DC	8,5 g / 5 ms, 4,2 g / 10 ms
<b>shock resistance with sine pulse</b>	
• at AC	13,4 g / 5 ms, 6,5 g / 10 ms
• at DC	13,4 g / 5 ms, 6,5 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>	05/01/2012
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1
<b>Net Weight</b>	7.18 kg
<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 %
<b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>	95 %
<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>number of NC contacts for main contacts</b>	0
<b>operating voltage</b>	
• at AC-3 rated value maximum	1 000 V
• at AC-3e rated value maximum	1 000 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	275 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	275 A
— up to 690 V at ambient temperature 60 °C rated value	250 A
— up to 1000 V at ambient temperature 40 °C rated value	100 A
— up to 1000 V at ambient temperature 60 °C rated value	100 A
• at AC-3	
— at 400 V rated value	225 A
— at 500 V rated value	225 A
— at 690 V rated value	225 A
— at 1000 V rated value	68 A
• at AC-3e	
— at 400 V rated value	225 A
— at 500 V rated value	225 A
— at 690 V rated value	225 A
— at 1000 V rated value	68 A
• at AC-4 at 400 V rated value	195 A
• at AC-5a up to 690 V rated value	242 A
• at AC-5b up to 400 V rated value	186 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	225 A
— up to 400 V for current peak value n=20 rated value	225 A
— up to 500 V for current peak value n=20 rated value	225 A
— up to 690 V for current peak value n=20 rated value	225 A
— up to 1000 V for current peak value n=20 rated value	68 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	172 A
— up to 400 V for current peak value n=30 rated value	172 A
— up to 500 V for current peak value n=30 rated value	172 A
— up to 690 V for current peak value n=30 rated value	172 A
— up to 1000 V for current peak value n=30 rated value	68 A
minimum cross-section in main circuit at maximum AC-1 rated value	150 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	96 A
• at 690 V rated value	85 A
<b>operational current</b>	
• at 1 current path at DC-1	
— at 24 V rated value	200 A

— at 60 V rated value	200 A
— at 110 V rated value	18 A
— at 220 V rated value	3.4 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.5 A
<b>• with 2 current paths in series at DC-1</b>	
— at 24 V rated value	200 A
— at 60 V rated value	200 A
— at 110 V rated value	200 A
— at 220 V rated value	20 A
— at 440 V rated value	3.2 A
— at 600 V rated value	1.6 A
<b>• with 3 current paths in series at DC-1</b>	
— at 24 V rated value	200 A
— at 60 V rated value	200 A
— at 110 V rated value	200 A
— at 220 V rated value	200 A
— at 440 V rated value	11 A
— at 600 V rated value	4 A
<b>• at 1 current path at DC-3 at DC-5</b>	
— at 24 V rated value	200 A
— at 60 V rated value	7.5 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.17 A
— at 600 V rated value	0.12 A
<b>• with 2 current paths in series at DC-3 at DC-5</b>	
— at 24 V rated value	200 A
— at 60 V rated value	200 A
— at 110 V rated value	200 A
— at 220 V rated value	2.5 A
— at 440 V rated value	0.65 A
— at 600 V rated value	0.37 A
<b>• with 3 current paths in series at DC-3 at DC-5</b>	
— at 24 V rated value	200 A
— at 60 V rated value	200 A
— at 110 V rated value	200 A
— at 220 V rated value	200 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
<b>operating power</b>	
<b>• at AC-3</b>	
— at 230 V rated value	55 kW
— at 400 V rated value	110 kW
— at 500 V rated value	160 kW
— at 690 V rated value	200 kW
— at 1000 V rated value	90 kW
<b>• at AC-3e</b>	
— at 230 V rated value	55 kW
— at 400 V rated value	110 kW
— at 500 V rated value	160 kW
— at 690 V rated value	200 kW
— at 1000 V rated value	90 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
<b>• at 400 V rated value</b>	54 kW
<b>• at 690 V rated value</b>	82 kW
<b>operating apparent power at AC-6a</b>	
<b>• up to 230 V for current peak value n=20 rated value</b>	90 kVA
<b>• up to 400 V for current peak value n=20 rated value</b>	150 kVA

<ul style="list-style-type: none"> <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> <li>● up to 1000 V for current peak value n=20 rated value</li> </ul>	190 kVA 260 kVA 110 kVA
<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> <li>● up to 1000 V for current peak value n=30 rated value</li> </ul>	60 kVA 110 kVA 140 kVA 200 kVA 110 kVA
<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>	4 000 A; Use minimum cross-section acc. to AC-1 rated value 2 807 A; Use minimum cross-section acc. to AC-1 rated value 2 082 A; Use minimum cross-section acc. to AC-1 rated value 1 397 A; Use minimum cross-section acc. to AC-1 rated value 1 144 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 AC</li> <li>● at DC</li> </ul>	1 000 1/h 1 000 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-3e <ul style="list-style-type: none"> <li>— maximum</li> </ul> </li> <li>● at AC-4 maximum</li> </ul>	750 1/h 250 1/h 500 1/h 500 1/h 130 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC/DC
<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>	96 ... 127 V 96 ... 127 V
<b>control supply voltage at DC rated value</b>	96 ... 127 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>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>	0.8 ... 1.1 0.8 ... 1.1
<b>type of PLC-control input according to IEC 60947-1</b>	Type 2
<b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>	20 mA
<b>voltage at PLC-control input rated value</b>	24 V
<b>operating range factor of the voltage at PLC-control input</b>	0.8 ... 1.1
<b>design of the surge suppressor</b>	with varistor
<b>apparent pick-up power</b> <ul style="list-style-type: none"> <li>● at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> <li>● at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 60 Hz</li> <li>— at 50 Hz</li> </ul> </li> </ul>	400 VA 400 VA 530 VA 530 VA
<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>	530 VA 530 VA
<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 0.8
<b>apparent holding power</b>	

<ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at DC</li> </ul>	2.8 VA
<ul style="list-style-type: none"> <li>• at maximum rated control supply voltage at DC</li> </ul>	3.4 VA
<b>apparent holding power</b>	
<ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul>	5.5 VA 5.5 VA
<ul style="list-style-type: none"> <li>• at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul>	8.5 VA 8.5 VA
<b>inductive power factor with the holding power of the coil</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>	0.5
<ul style="list-style-type: none"> <li>• at 60 Hz</li> </ul>	0.4
<b>closing power of magnet coil at DC</b>	580 W
<b>holding power of magnet coil at DC</b>	3.4 W
<b>closing delay</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	45 ... 80 ms
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	45 ... 80 ms
<b>opening delay</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	80 ... 100 ms
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	80 ... 100 ms
<b>arcing time</b>	10 ... 15 ms
<b>control version of the switch operating mechanism</b>	PLC-IN or Standard A1 - A2 (adjustable)
<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>	
<ul style="list-style-type: none"> <li>• at 230 V rated value</li> </ul>	6 A
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	3 A
<ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	1 A
<b>operational current at DC-12</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>	6 A
<ul style="list-style-type: none"> <li>• at 60 V rated value</li> </ul>	6 A
<ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>	3 A
<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	1 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	0.15 A
<b>operational current at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 60 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>	1 A
<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	0.9 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	0.3 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>	180 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	192 A
<b>yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for 3-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> </ul> </li> </ul>	60 hp 75 hp 150 hp

— at 575/600 V rated value	200 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
<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>	
<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 coordination 2 required</li> </ul> </li> <li>● for short-circuit protection of the auxiliary switch required</li> <li>● for short-circuit protection of the RLT relay output required</li> </ul>	gG: 500 A (690 V, 100 kA) gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA) gG: 10 A (500 V, 1 kA) miniature fuse: 4 A FF (230 V, I <sub>k</sub> = 400 A)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw fixing
<b>height</b>	210 mm
<b>width</b>	165 mm
<b>depth</b>	202 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</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>● for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>● for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul>	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>● for main current circuit</li> <li>● for auxiliary and control circuit</li> <li>● at contactor for auxiliary contacts</li> <li>● of magnet coil</li> </ul>	Connection bar screw-type terminals Screw-type terminals Screw-type terminals
<b>width of connection bar</b>	25 mm
<b>thickness of connection bar</b>	6 mm
<b>diameter of holes</b>	11 mm
<b>number of holes</b>	1
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>● for AWG cables for main contacts</li> </ul>	2/0 ... 500 kcmil
<b>connectable conductor cross-section for main contacts</b>	
<ul style="list-style-type: none"> <li>● stranded</li> </ul>	70 ... 240 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	
<ul style="list-style-type: none"> <li>● solid or 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>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>● for AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), max. 2x (0.75 ... 4 mm <sup>2</sup> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), max. 2x (0.75 ... 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), 1x 12

AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 14
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**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; safety-related disconnection via A1 A2
<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
<b>ISO 13849</b>	
<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
<b>IEC 61508</b>	
<b>safety device type according to IEC 61508-2</b>	Type A
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP00; IP20 with box terminal/cover
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front with box terminal/cover

**Approvals Certificates**

Environment	General Product Approval
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[Environmental Confirmations](#)



General Product Approval	EMV	Functional Safety	Test Certificates
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[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Maritime application	other
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[Miscellaneous](#)

[Confirmation](#)

[Miscellaneous](#)

[Confirmation](#)

other	Railway
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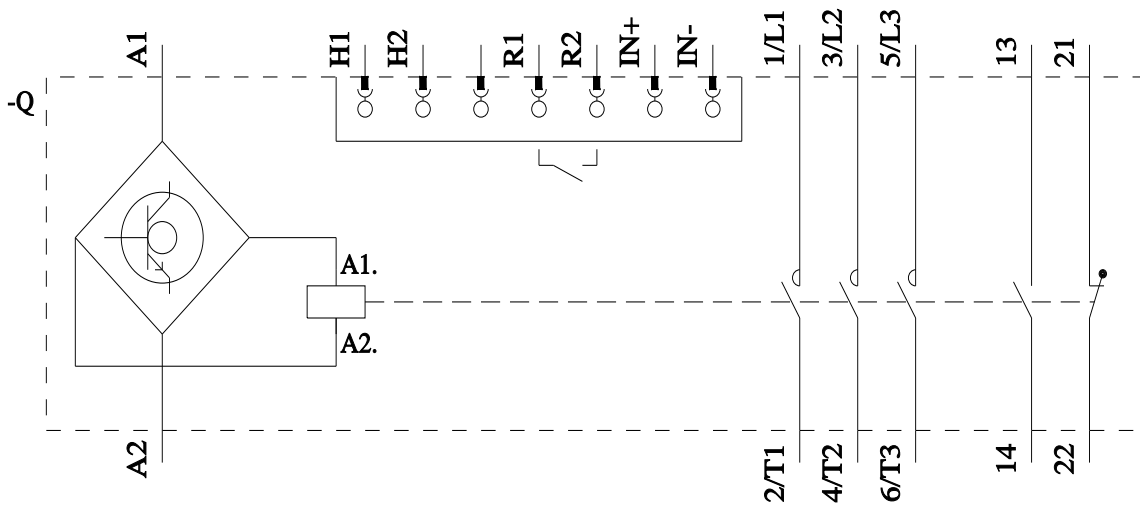
[Miscellaneous](#)

[Special Test Certificate](#)

**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)





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