



traction contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 125 V DC, 0.7-1.25\*  
Uc, solid-state operating mechanism, with integrated varistor, auxiliary contacts: 1  
NO + 1 NC, spring-loaded terminal, frame size: S0

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Power contactor
<b>design of the product</b>	With extended operating range
<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	11.4 W
• at AC in hot operating state per pole	3.8 W
• without load current share typical	1.3 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 Prohibition (day/month/year)</b>	10/01/2009
<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>	0.586 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m

<b>ambient temperature</b>	
• during operation	-40 ... +70 °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>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	50 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-2 at 400 V rated value	38 A
• at AC-3	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-4 at 400 V rated value	22 A
<b>minimum cross-section in main circuit</b>	
• at maximum AC-1 rated value	10 mm <sup>2</sup>
• at maximum Ith rated value	10 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
<b>operational current</b>	
• <b>at 1 current path at DC-1</b>	
— at 24 V rated value	35 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
• <b>with 2 current paths in series at DC-1</b>	
— at 24 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
• <b>with 3 current paths in series at DC-1</b>	
— at 24 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 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 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 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>	
• at AC-2 at 400 V rated value	18.5 kW
• at AC-3	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
• at AC-3e	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	6 kW
• at 690 V rated value	10.3 kW
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• limited to 1 s switching at zero current maximum	593 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	341 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	199 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	162 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	750 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-3e	
— maximum	750 1/h
• at AC-2 at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h
<b>Ratings for railway applications</b>	
<b>thermal current (I<sub>th</sub>) up to 690 V</b>	
• up to 40 °C according to IEC 60077 rated value	50 A
• up to 70 °C according to IEC 60077 rated value	38 A
<b>Control circuit/ Control</b>	
<b>type of voltage</b>	DC
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC rated value</b>	125 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>duration of pickup current</b>	180 ms
<b>closing power of magnet coil at DC</b>	13.2 W
<b>holding power of magnet coil at DC</b>	1.3 W
<b>closing delay</b>	
• at DC	50 ... 75 ms
<b>opening delay</b>	
• at DC	30 ... 50 ms
<b>arcing time</b>	10 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2
<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	1
• instantaneous contact	1
<b>number of NO contacts for auxiliary contacts</b>	1
• instantaneous contact	1
<b>operational current at AC-12 maximum</b>	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>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	34 A
• at 600 V rated value	27 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 hp
— at 575/600 V rated value	25 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
<b>UL File Number (CCN)</b>	E31519 (NLDX, NLDX7)
<b>Short-circuit protection</b>	
<b>design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V</b>	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: 125 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)
— with type of coordination 2 required	gG: 50 A (690 V, 100 kA), aM: 25 A (690 V, 100 kA), BS88: 50 A (415 V, 80 kA)

- for short-circuit protection of the auxiliary switch required

gG: 10 A (690 V, 1 kA)

### 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
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>	
<ul style="list-style-type: none"> <li>• with side-by-side mounting           <ul style="list-style-type: none"> <li>— forwards 10 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts           <ul style="list-style-type: none"> <li>— forwards 10 mm</li> <li>— upwards 10 mm</li> <li>— at the side 6 mm</li> <li>— downwards 10 mm</li> </ul> </li> <li>• for live parts           <ul style="list-style-type: none"> <li>— forwards 10 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 6 mm</li> </ul> </li> </ul>	

### 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 circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>	spring-loaded terminals spring-loaded terminals Spring-type terminals Spring-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>— solid 2x (1 ... 10 mm<sup>2</sup>)</li> <li>— solid or stranded 2x (1 ... 10 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (1 ... 6 mm<sup>2</sup>)</li> <li>— finely stranded without core end processing 2x (1 ... 6 mm<sup>2</sup>)</li> </ul> </li> <li>• for AWG cables for main contacts 2x (18 ... 8)</li> </ul>	
<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 2x (0.5 ... 2.5 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (0.5 ... 1.5 mm<sup>2</sup>)</li> <li>— finely stranded without core end processing 2x (0.5 ... 2.5 mm<sup>2</sup>)</li> </ul> </li> <li>• for AWG cables for auxiliary contacts 2x (20 ... 14)</li> </ul>	
<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

failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
<b>Communication/ Protocol</b>	
product function bus communication	No

#### Approvals Certificates

Environment	General Product Approval
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[Environmental Conformations](#)



General Product Approval	EMV	Test Certificates
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[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

#### Maritime application



Maritime application	other	Railway
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[Confirmation](#)



[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

#### 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=3RT2028-2XG40-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2XG40-0LA2>

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

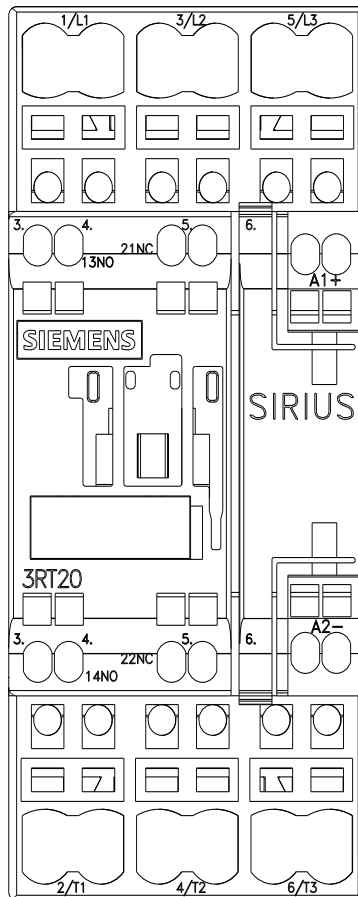
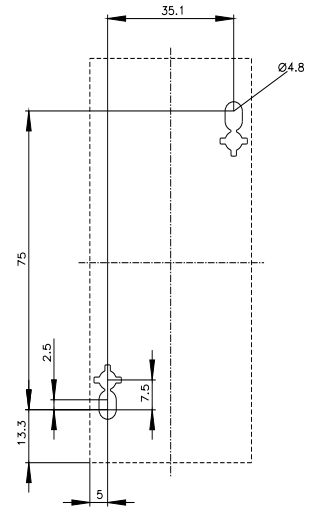
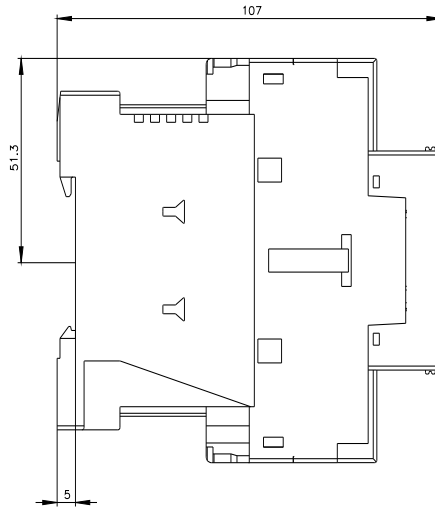
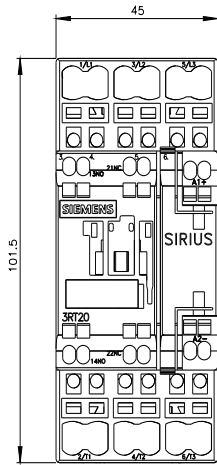
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Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2XG40-0LA2>

Characteristic curves

[https://curves.siemens.com/curves/<mmp\\_prod\\_noCOMP='HAUPT'></mmp\\_prod\\_no>](https://curves.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>)





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