



traction contactor, AC-3e/AC-3, 16 A, 7.5 kW / 400 V, 3-pole, 24-34 V DC, 0.7-1.25\* U<sub>c</sub>, solid-state operating mechanism, with integrated varistor, auxiliary contacts: 1 NC, spring-loaded terminal, frame size: S00, suspended mounting position

<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>	S00
<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	6.6 W
• at AC in hot operating state per pole	2.2 W
• without load current share typical	0.7 W
<b>type of calculation of power loss depending on pole</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	6,7g / 5 ms, 4,2g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	10,5g / 5 ms, 6,6g / 10 ms
<b>mechanical service life (operating cycles)</b>	
• 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
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibition (Date)</b>	10/01/2009
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7
<b>Weight</b>	0.309 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	

<ul style="list-style-type: none"> <li>• during operation</li> </ul>	-40 ... +70 °C
<ul style="list-style-type: none"> <li>• during storage</li> </ul>	-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>	
<ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>	690 V
<ul style="list-style-type: none"> <li>• at AC-3e rated value maximum</li> </ul>	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-2 at 400 V rated value</li> </ul>	16 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>	16 A
<ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>	12.4 A
<ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>	8.9 A
<ul style="list-style-type: none"> <li>• at AC-3e <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>	16 A
<ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>	12.4 A
<ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>	8.9 A
<ul style="list-style-type: none"> <li>• at AC-4 at 400 V rated value</li> </ul>	11.5 A
<b>minimum cross-section in main circuit</b>	
<ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> </ul>	4 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at maximum I<sub>th</sub> rated value</li> </ul>	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>	5.5 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	4.4 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> </ul> </li> </ul>	20 A
<ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul>	0.1 A
<ul style="list-style-type: none"> <li>• <b>with 2 current paths in series at DC-3 at DC-5</b></li> </ul>	

— at 24 V rated value	20 A
— at 110 V rated value	0.35 A
<b>• with 3 current paths in series at DC-3 at DC-5</b>	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
<b>operating power</b>	
• at AC-2 at 400 V rated value	7.5 kW
• at AC-3	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	7.5 kW
• at AC-3e	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	7.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	2.5 kW
• at 690 V rated value	3.5 kW
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• limited to 1 s switching at zero current maximum	300 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	169 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	128 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	92 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	74 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-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	22 A
• up to 70 °C according to IEC 60077 rated value	18 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>	24 ... 34 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>inrush current peak</b>	2.3 A
<b>duration of inrush current peak</b>	50 µs
<b>locked-rotor current mean value</b>	0.18 A
<b>locked-rotor current peak</b>	0.18 A
<b>duration of locked-rotor current</b>	250 ms
<b>holding current mean value</b>	40 mA
<b>closing power of magnet coil at DC</b>	4 W
<b>holding power of magnet coil at DC</b>	0.95 W
<b>closing delay</b>	
• at DC	30 ... 70 ms
<b>opening delay</b>	

• at DC	25 ... 45 ms
<b>arcing time</b>	10 ... 15 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
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>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	14 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	1 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	5 hp
— at 460/480 V rated value	10 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>	
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: 50 A (690 V, 100 kA), aM: 25 A (690 V, 100 kA), BS88: 50 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 (690 V, 1 kA)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	hanging, on horizontal 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 50022
<b>height</b>	70 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

#### Connections/ Terminals

<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 (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 ... 4 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• for AWG cables for main contacts	2x (20 ... 12)
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 4 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• for AWG cables for auxiliary contacts	2x (20 ... 12)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	20 ... 12
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	20 ... 12

#### Safety related data

<b>product function</b>	
• mirror contact according to IEC 60947-4-1	Yes
• positively driven operation according to IEC 60947-5-1	No
• suitable for safety function	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>	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	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
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

#### Communication/ Protocol

product function bus communication No

Approvals Certificates

General Product Approval



[KC](#)

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

[Special Test Certificate](#)



Maritime application	other
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[Miscellaneous](#)

other	Railway	Dangerous goods	Environment
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[Confirmation](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Transport Information](#)

[Environmental Confirmations](#)

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=3RT2018-2XB42-2LA2>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-2XB42-2LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2XB42-2LA2>

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

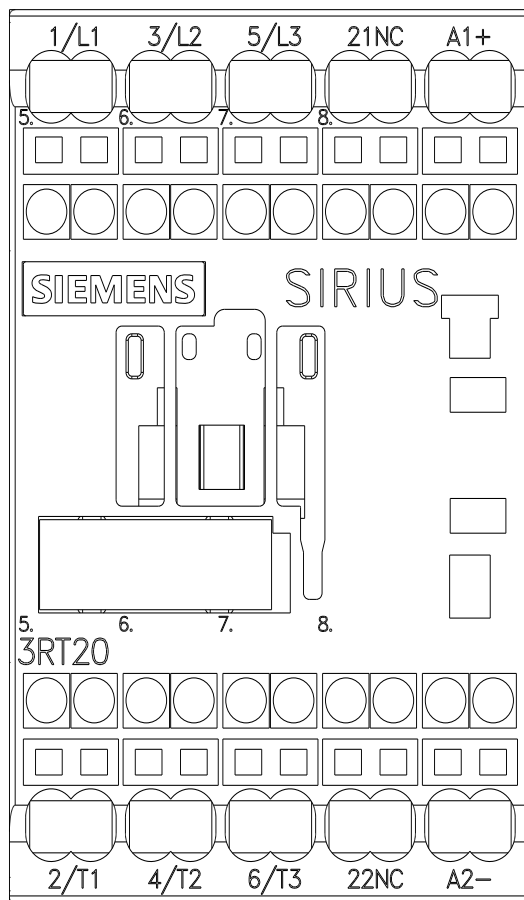
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2018-2XB42-2LA2&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2018-2XB42-2LA2&lang=en)

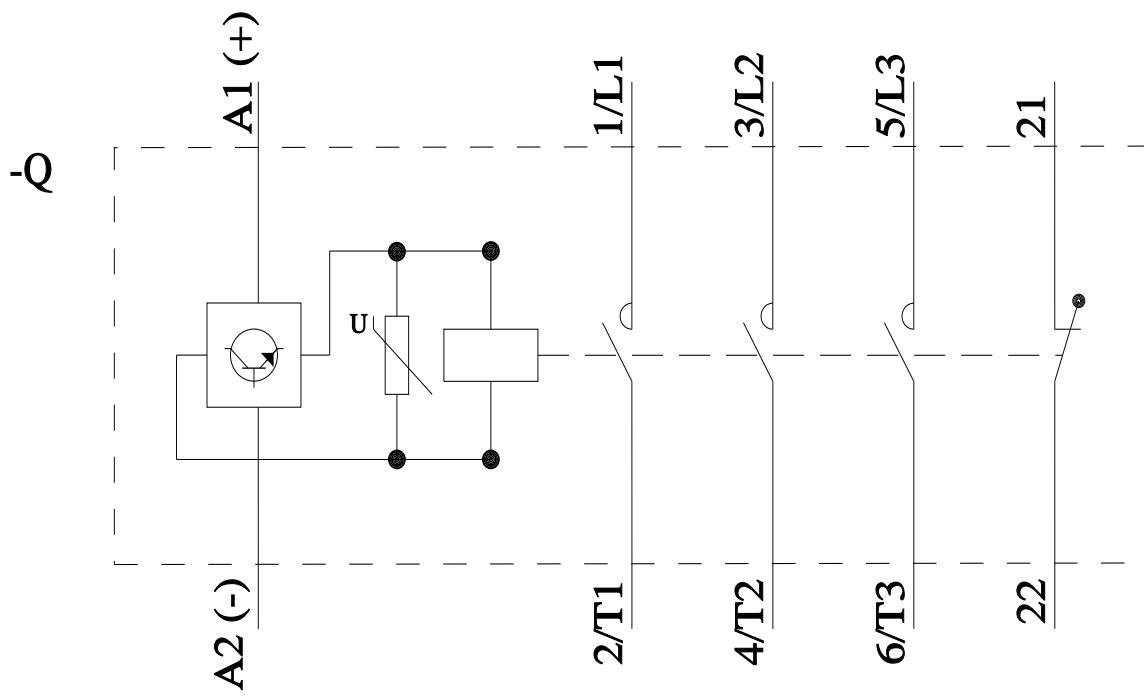
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2XB42-2LA2/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2018-2XB42-2LA2&objecttype=14&gridview=view1>





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