3RT2025-4XB40-0LA2

## **Data sheet**



traction contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 24 V DC, 0.7-1.25\* Us, electronic drive, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, ring cable lug connection, size: S0

product brand name	SIRIUS
product designation	Power contactor
design of the product	With extended operating range
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	2.7 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.9 W
<ul> <li>without load current share typical</li> </ul>	0.8 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	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
shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 10 ms
mechanical service life (operating cycles)	
of contactor typical	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
during operation	-40 +70 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	

3 690 V 690 V 40 A 40 A 35 A 17 A 17 A 17 A 13 A 15.5 A 10 mm <sup>2</sup> 10 mm <sup>2</sup>
690 V  40 A  40 A  35 A  17 A  17 A  17 A  17 A  13 A  15.5 A  10 mm²  10 mm²
690 V  40 A  40 A  35 A  17 A  17 A  17 A  17 A  13 A  15.5 A  10 mm²  10 mm²
40 A  40 A  35 A  17 A  17 A  17 A  13 A  15.5 A  10 mm <sup>2</sup> 10 mm <sup>2</sup>
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10 mm <sup>2</sup> 10 mm <sup>2</sup>
10 mm²
10 mm²
7 7 A
7 7 A
7.7 A
35 A
4.5 A
1 A
0.4 A
0.25 A
35 A
35 A
5 A
1 A
0.8 A
35 A
35 A
35 A
2.9 A
1.4 A
20 A
2.5 A
1A
0.09 A
0.06 A
05.4
35 A
15 A
3 A
0.27 A
0.16 A

	— at 24 V rated value	35 A
	— at 110 V rated value	35 A
	— at 220 V rated value	10 A
Operating power	— at 440 V rated value	0.6 A
eat AC-2 at 400 V rated value	— at 600 V rated value	0.6 A
- at 230 V rated value	operating power	
at 230 V rated value	<ul> <li>at AC-2 at 400 V rated value</li> </ul>	7.5 kW
	• at AC-3	
- at 500 V rated value	— at 230 V rated value	4 kW
at 880 V rated value at 1230 V rated val	— at 400 V rated value	7.5 kW
al AC-3e  al 230 V rated value  at 400 V rated value  at 600 V rated value  operating power for approx. 200000 operating cycles at AC-4  at 400 V rated value  short-time withstand current in cold operating state up to 40°C  initiated to 1 s switching at zero current maximum  initiated to 1 s switching at zero current maximum  initiated to 1 s switching at zero current maximum  initiated to 1 s switching at zero current maximum  initiated to 1 s switching at zero current maximum  initiated to 10 s switching at zero current maximum  initiated to 10 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 s switching at zero current maximum  initiated to 60 switching at zero current value  into 00 th	— at 500 V rated value	7.5 kW
	— at 690 V rated value	11 kW
	• at AC-3e	
	— at 230 V rated value	4 kW
	— at 400 V rated value	7.5 kW
operating power for approx. 200000 operating cycles at AC-4  at 400 V rated value at 809 V rated value at 809 V rated value binot-time withstand current in cold operating state up to 40 °C  imited to 1 s switching at zero current maximum imited to 5 s switching at zero current maximum imited to 50 s switching at zero current maximum imited to 50 s switching at zero current maximum imited to 50 s switching at zero current maximum imited to 60 s switching at zero current maximum imited to 60 s switching at zero current maximum imited to 60 s switching at zero current maximum to limited to 60 s switching at zero current maximum at limited to 60 s switching at zero current maximum no-load switching frequency at DC  1500 1/h  porating frequency at AC-1 maximum 1000 1/h 10		
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• at 690 V rated value  short-line withstand current in cold operating state up to 40 °C  • limited to 1 s switching at zero current maximum  • limited to 5 s switching at zero current maximum  • limited to 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • limited to 50 s switching at zero current maximum  • limited to 50 s switching at zero current maximum  • limited to 50 s switching at zero current maximum  • limited to 50 s switching at zero current maximum  • limited to 50 s switching at zero current maximum  no-load switching frequency  • at DC  1 500 1/h  operating frequency  • at AC-1 maximum  • at AC-2 maximum  • at AC-2 maximum  • at AC-3 maximum  • at AC-2 a maximum  • at AC-3 a maximum  • at AC-3 e maximum  • at AC-4 maximum  • at AC-3 e maximum  • at AC-3 e maximum  • at AC-4 maximum  • at AC-3 e maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-4 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-4 maximum  • at AC-4 maximum  • at AC-4 maximum  • at AC-5 maximum  • at AC-5 maximum  • at AC-6 maximum  • at AC-8 maximum  • at AC-9 maximum  • at AC-9 maximum  • at AC-1 maximum  • at AC-1 maximum  • at AC-2 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-3 maximum  • at AC-4 maximum  • at AC-2 maximum  • at AC-2 maximum  • at AC-2 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 maximum  • at		
short-time withstand current in cold operating state up to 40 °C  ilmited to 1 s switching at zero current maximum  ilmited to 5 s switching at zero current maximum  ilmited to 30 s switching at zero current maximum  ilmited to 40 switc	• at 400 V rated value	3.5 kW
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Imitled to 5 s switching at zero current maximum   139 Å; Use minimum cross-section acc. to AC-1 rated value   118 Å; Use minimum cross-section acc. to AC-1 rated value   140 Å; Use minimum cross-section acc. to AC-1 rated value   140 Å; Use minimum cross-section acc. to AC-1 rated value   140 Å; Use minimum cross-section acc. to AC-1 rated value   150 Å; Use m	• limited to 1 s switching at zero current maximum	225 A; Use minimum cross-section acc. to AC-1 rated value
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Illimited to 30 s switching at zero current maximum   140 A; Use minimum cross-section acc. to AC-1 rated value   115 A; Use minimum cross-section acc. to AC-1 rated value   115 A; Use minimum cross-section acc. to AC-1 rated value   115 A; Use minimum cross-section acc. to AC-1 rated value   1500 1/h	-	
Illimited to 60 s switching at zero current maximum   115 A; Use minimum cross-section acc. to AC-1 rated value   no-load switching frequency	-	
no-load switching frequency  at DC  operating frequency  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-3 emaximum  1 000 1/h  at AC-4 maximum  300 1/h  Ratings for railway applications  thermal current (th) up to 690 V  up to 40 °C according to IEC 60077 rated value  40 A  up to 70 °C according to IEC 60077 rated value  30 A  Control circuit/ Control  type of voltage  DC  control supply voltage at DC  rated value  operating range factor control supply voltage rated value of magnet coil at DC  initial value  full-scale value  1,25  design of the surge suppressor  inrush current peak  3 A  duration of inrush current peak  0,52 A  duration of locked-rotor current  180 ms  holding current mean value  closing power of magnet coil at DC  closing delay	-	
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		1 000 1/11
at AC-2 maximum at AC-3 maximum at AC-3 maximum at AC-3 examimum at AC-4 maximum at AC-4 examimum at AC-4 examimum at AC-4 examimum at AC-4 maximum at AC		1 000 1/b
at AC-3 maximum at AC-3e maximum at AC-2e at AC-3e maximum at AC-4e maximum at AC-3e maximum at AC-4e maximum at AC-3e maximum at AC-3e maximum at AC-4e maximum at AC-3e maximum at AC-4e maximum at AC-3e maximum at AC-4e Maximum at A		
at AC-3e maximum at AC-3e maximum at AC-2 at AC-3e maximum at AC-4 maximum 300 1/h  Ratings for rallway applications  thermal current (lth) up to 690 V  up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value 30 A  Control circuit/ Control  type of voltage type of voltage of the control supply voltage Control supply voltage at DC  rated value operating range factor control supply voltage rated value of magnet coil at DC initial value 0.7  full-scale value 1.25  design of the surge suppressor inrush current peak 3 A A  duration of inrush current peak 0.3 A  locked-rotor current mean value 0.52 A  duration of locked-rotor current 180 ms  holding current mean value 45 mA  closing power of magnet coil at DC holding power of magnet coil at DC holding power of magnet coil at DC holding power of magnet coil at DC Losing delay		
at AC-2 at AC-3e maximum at AC-4 maximum at A		
• at AC-4 maximum  Ratings for railway applications  thermal current (tith) up to 690 V  • up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value  • up to 70 °C according to IEC 60077 rated value  20 A  Control circuit/ Control  type of voltage  type of voltage of the control supply voltage  control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value  design of the surge suppressor  inrush current peak  duration of inrush current peak  duration of inrush current peak  locked-rotor current mean value  locked-rotor current mean value  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay		
thermal current (Ith) up to 690 V  • up to 40 °C according to IEC 60077 rated value 40 A  • up to 70 °C according to IEC 60077 rated value 30 A  Control circuit/ Control  type of voltage 5 the control supply voltage 5 DC  control supply voltage at DC  • rated value 24 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value 1.25  design of the surge suppressor with varistor inrush current peak 3 A  duration of inrush current peak 3.3 A  duration of locked-rotor current mean value 0.52 A  duration of locked-rotor current 180 ms  holding current mean value 45 mA  closing power of magnet coil at DC 6.7 W  holding power of magnet coil at DC 1.4 W  closing delay		
thermal current (Ith) up to 690 V  • up to 40 °C according to IEC 60077 rated value 40 A  • up to 70 °C according to IEC 60077 rated value 30 A  Control circuit/ Control  type of voltage DC  type of voltage DC  control supply voltage at DC  • rated value 24 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value 0.7  • full-scale value 1.25  design of the surge suppressor with varistor  inrush current peak 3 A  duration of inrush current peak 0.52 A  duration of locked-rotor current 180 ms  holding current mean value 45 mA  closing power of magnet coil at DC 6.7 W  holding power of magnet coil at DC 1.4 W  closing delay		300 1/11
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up to 70 °C according to IEC 60077 rated value  Control circuit/ Control  type of voltage  type of voltage  type of voltage of the control supply voltage  control supply voltage at DC  rated value  operating range factor control supply voltage rated value of magnet coil at DC  initial value  full-scale value  of tull-scale value  of tull-scale value  design of the surge suppressor  inrush current peak  duration of inrush current peak  locked-rotor current mean value  occupant of locked-rotor current  180 ms  holding current mean value  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay		40.4
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type of voltage of the control supply voltage  control supply voltage at DC  orated value  operating range factor control supply voltage rated value of magnet coil at DC  oratical value  ora		
control supply voltage at DC  ● rated value  operating range factor control supply voltage rated value of magnet coil at DC  ● initial value  O.7  ● full-scale value  design of the surge suppressor  inrush current peak  duration of inrush current peak  locked-rotor current mean value  locked-rotor current peak  duration of locked-rotor current  180 ms  holding current mean value  Closing power of magnet coil at DC  holding power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay		
<ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>inrush current peak</li> <li>duration of inrush current peak</li> <li>locked-rotor current mean value</li> <li>locked-rotor current peak</li> <li>0.52 A</li> <li>duration of locked-rotor current</li> <li>180 ms</li> <li>holding current mean value</li> <li>45 mA</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>1.4 W</li> </ul>		DC
operating range factor control supply voltage rated value of magnet coil at DC  initial value  full-scale value  1.25  design of the surge suppressor  inrush current peak  3 A  duration of inrush current peak  locked-rotor current mean value  0.3 A  locked-rotor current peak  0.52 A  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W		
magnet coil at DC  ● initial value  0.7  • full-scale value  1.25  design of the surge suppressor  inrush current peak  3 A  duration of inrush current peak  locked-rotor current mean value  0.3 A  locked-rotor current peak  0.52 A  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay		24 V
• full-scale value		
design of the surge suppressor  inrush current peak  duration of inrush current peak  locked-rotor current mean value  locked-rotor current peak  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay	• initial value	0.7
inrush current peak  duration of inrush current peak  locked-rotor current mean value  locked-rotor current peak  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay	• full-scale value	1.25
duration of inrush current peak  locked-rotor current mean value  locked-rotor current peak  locked-rotor current peak  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay	design of the surge suppressor	with varistor
locked-rotor current mean value  locked-rotor current peak  duration of locked-rotor current  180 ms  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay	inrush current peak	3 A
locked-rotor current peak duration of locked-rotor current 180 ms holding current mean value 45 mA closing power of magnet coil at DC holding power of magnet coil at DC 1.4 W closing delay	duration of inrush current peak	30 μs
duration of locked-rotor current  holding current mean value  45 mA  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay	locked-rotor current mean value	0.3 A
holding current mean value  closing power of magnet coil at DC  holding power of magnet coil at DC  1.4 W  closing delay	locked-rotor current peak	0.52 A
closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  6.7 W  1.4 W	duration of locked-rotor current	180 ms
holding power of magnet coil at DC 1.4 W closing delay	holding current mean value	45 mA
closing delay	closing power of magnet coil at DC	6.7 W
	holding power of magnet coil at DC	1.4 W
100	closing delay	
● at DC 50 75 ms	• at DC	50 75 ms

opening delay	
• at DC	30 50 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts	1
instantaneous contact	1
number of NO contacts for auxiliary contacts	1
instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	10 A
at 230 V rated value     at 400 V rated value	10 A 3 A
<ul><li>at 400 V rated value</li><li>at 500 V rated value</li></ul>	3 A 2 A
at 500 V rated value     at 690 V rated value	1 A
operational current at DC-12	
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
operational current at DC-13	
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
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	14 A
at 600 V rated value	17 A
yielded mechanical performance [hp]	
• for single-phase AC motor	4 ba
— at 110/120 V rated value	1 hp
— at 230 V rated value	3 hp
• for 3-phase AC motor	2 ha
<ul><li>— at 200/208 V rated value</li><li>— at 220/230 V rated value</li></ul>	3 hp 5 hp
— at 460/480 V rated value	10 hp
— at 460/460 V rated value  — at 575/600 V rated value	15 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
product function short circuit protection	No
design of the fuse link	
for short-circuit protection of the main circuit	
with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
with type of assignment 2 required	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
side-by-side mounting	Yes
height	91 mm
width	45 mm
depth	107 mm
•	

<ul> <li>with side-by-side mounting</li> </ul>	
— 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	
type of electrical connection	
for main current circuit	Ring cable lug connection
<ul> <li>for auxiliary and control circuit</li> </ul>	ring terminal lug connection
<ul> <li>at contactor for auxiliary contacts</li> </ul>	Ring cable lug connection
of magnet coil	Ring cable lug connection
Safety related data	
product function	
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
with high demand rate according to SN 31920	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 a
protection class IP on the front according to IEC 60529	IP00
Communication/ Protocol	
product function bus communication	No
Certificates/ approvals	

## **General Product Approval**





Confirmation



<u>KC</u>



**EMC** 

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

# Marine / Shipping













Marine / Shipping

other

Railway

Dangerous Good





#### Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

### Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT2025-4XB40-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-4XB40-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-4XB40-0LA2

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

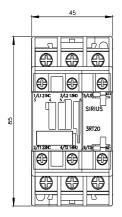
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2025-4XB40-0LA2&lang=en

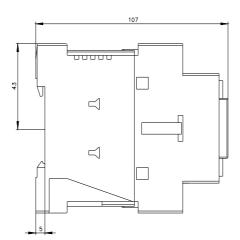
Characteristic: Tripping characteristics, I2t, Let-through current

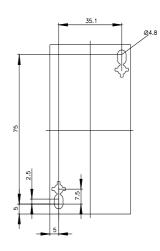
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-4XB40-0LA2/char

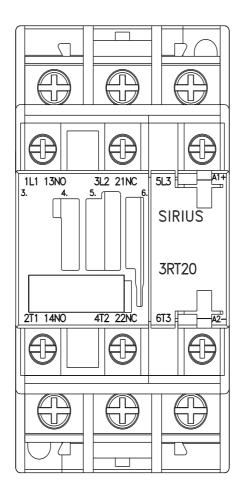
Further characteristics (e.g. electrical endurance, switching frequency)

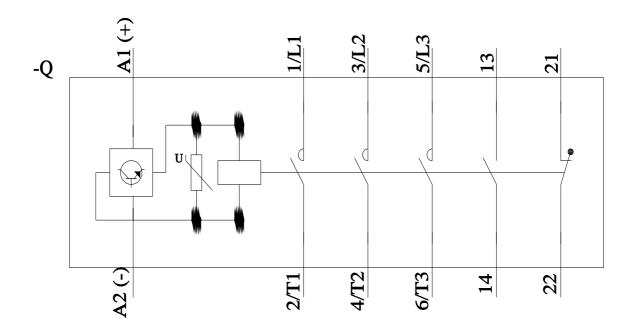
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-4XB40-0LA2&objecttype=14&gridview=view1











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