



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 110 V AC, 50 Hz,
auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
product extension	
• function module for communication	No
• auxiliary switch	Yes
power loss [W] for rated value of the current	
• at AC in hot operating state	17.1 W
• at AC in hot operating state per pole	5.7 W
• without load current share typical	6 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
• 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
shock resistance at rectangular impulse	
• at AC	11.8g / 5 ms, 7.4g / 10 ms
shock resistance with sine pulse	
• at AC	18.5g / 5 ms, 11.6g / 10 ms
mechanical service life (operating cycles)	
• 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
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2014
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Environmental footprint	

Environmental Product Declaration(EPD)	Yes
Global Warming Potential [CO2 eq] total	236 kg
Global Warming Potential [CO2 eq] during manufacturing	4.11 kg
Global Warming Potential [CO2 eq] during operation	233 kg
Global Warming Potential [CO2 eq] after end of life	-0.635 kg
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	90 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	90 A
— up to 690 V at ambient temperature 60 °C rated value	80 A
• at AC-3	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-3e	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-4 at 400 V rated value	55 A
• at AC-5a up to 690 V rated value	79.2 A
• at AC-5b up to 400 V rated value	66.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	70 A
— up to 400 V for current peak value n=20 rated value	70 A
— up to 500 V for current peak value n=20 rated value	70 A
— up to 690 V for current peak value n=20 rated value	58 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	46.7 A
— up to 400 V for current peak value n=30 rated value	46.7 A
— up to 500 V for current peak value n=30 rated value	46.7 A
— up to 690 V for current peak value n=30 rated value	46.7 A
minimum cross-section in main circuit at maximum AC-1 rated value	35 mm²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	30 A
• at 690 V rated value	24 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 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	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 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	

<div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div>	55 A
	55 A
	55 A
	45 A
	2.9 A
	1.4 A
<div>● at 1 current path at DC-3 at DC-5</div>	
<div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div>	35 A
	6 A
	1 A
	0.1 A
	0.06 A
<div>● with 2 current paths in series at DC-3 at DC-5</div>	
<div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div>	55 A
	45 A
	25 A
	5 A
	0.27 A
	0.16 A
<div>● with 3 current paths in series at DC-3 at DC-5</div>	
<div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div>	55 A
	55 A
	55 A
	25 A
	0.6 A
	0.35 A
<div>operating power</div>	
<div>● at AC-2 at 400 V rated value</div>	37 kW
<div>● at AC-3</div>	
<div><div>— at 230 V rated value</div><div>— at 400 V rated value</div><div>— at 500 V rated value</div><div>— at 690 V rated value</div></div>	22 kW
	37 kW
	37 kW
	45 kW
<div>● at AC-3e</div>	
<div><div>— at 230 V rated value</div><div>— at 400 V rated value</div><div>— at 500 V rated value</div><div>— at 690 V rated value</div></div>	22 kW
	37 kW
	37 kW
	45 kW
<div>operating power for approx. 200000 operating cycles at AC-4</div>	
<div>● at 400 V rated value</div>	15.8 kW
<div>● at 690 V rated value</div>	21.8 kW
<div>operating apparent power at AC-6a</div>	
<div>● up to 230 V for current peak value n=20 rated value</div>	27.8 kVA
<div>● up to 400 V for current peak value n=20 rated value</div>	48.4 kVA
<div>● up to 500 V for current peak value n=20 rated value</div>	60.6 kVA
<div>● up to 690 V for current peak value n=20 rated value</div>	69.3 kVA
<div>operating apparent power at AC-6a</div>	
<div>● up to 230 V for current peak value n=30 rated value</div>	18.6 kVA
<div>● up to 400 V for current peak value n=30 rated value</div>	32.3 kVA
<div>● up to 500 V for current peak value n=30 rated value</div>	40.4 kVA
<div>● up to 690 V for current peak value n=30 rated value</div>	55.8 kVA
<div>short-time withstand current in cold operating state up to 40 °C</div>	
<div>● limited to 1 s switching at zero current maximum</div>	1 298 A; Use minimum cross-section acc. to AC-1 rated value
<div>● limited to 5 s switching at zero current maximum</div>	898 A; Use minimum cross-section acc. to AC-1 rated value
<div>● limited to 10 s switching at zero current maximum</div>	640 A; Use minimum cross-section acc. to AC-1 rated value
<div>● limited to 30 s switching at zero current maximum</div>	414 A; Use minimum cross-section acc. to AC-1 rated value
<div>● limited to 60 s switching at zero current maximum</div>	333 A; Use minimum cross-section acc. to AC-1 rated value
<div>no-load switching frequency</div>	
<div>● at AC</div>	5 000 1/h

operating frequency	
• at AC-1 maximum	700 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	500 1/h
• at AC-3e maximum	500 1/h
• at AC-4 maximum	150 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	110 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 ... 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	190 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.72
apparent holding power of magnet coil at AC	
• at 50 Hz	16 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.37
closing delay	
• at AC	10 ... 80 ms
opening delay	
• at AC	10 ... 18 ms
arcing time	10 ... 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
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
operational current at AC-15	
• 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
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
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	65 A
• at 600 V rated value	62 A
yielded mechanical performance [hp]	
• for single-phase AC motor	

<div><div>— at 110/120 V rated value</div><div>— at 230 V rated value</div><div>• for 3-phase AC motor</div><div><div>— at 200/208 V rated value</div><div>— at 220/230 V rated value</div><div>— at 460/480 V rated value</div><div>— at 575/600 V rated value</div></div></div>	<div>5 hp</div> <div>15 hp</div> <div>20 hp</div> <div>25 hp</div> <div>50 hp</div> <div>60 hp</div>
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
<div><div>• for short-circuit protection of the main circuit</div><div><div>— with type of coordination 1 required</div><div>— with type of assignment 2 required</div></div><div>• for short-circuit protection of the auxiliary switch required</div></div>	<div>gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)</div> <div>gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)</div> <div>gG: 10 A (500 V, 1 kA)</div>
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
height	114 mm
width	55 mm
depth	130 mm
required spacing	
<div><div>• with side-by-side mounting</div><div><div>— forwards</div><div>— upwards</div><div>— downwards</div><div>— at the side</div></div><div>• for grounded parts</div><div><div>— forwards</div><div>— upwards</div><div>— at the side</div><div>— downwards</div></div><div>• for live parts</div><div><div>— forwards</div><div>— upwards</div><div>— downwards</div><div>— at the side</div></div></div>	<div>10 mm</div> <div>10 mm</div> <div>10 mm</div> <div>0 mm</div> <div>10 mm</div> <div>10 mm</div> <div>6 mm</div> <div>10 mm</div> <div>10 mm</div> <div>10 mm</div> <div>6 mm</div>
Connections/ Terminals	
type of electrical connection	
<div><div>• for main current circuit</div><div>• for auxiliary and control circuit</div><div>• at contactor for auxiliary contacts</div><div>• of magnet coil</div></div>	<div>screw-type terminals</div> <div>screw-type terminals</div> <div>Screw-type terminals</div> <div>Screw-type terminals</div>
type of connectable conductor cross-sections	
<div><div>• for main contacts</div><div><div>— solid or stranded</div><div>— finely stranded with core end processing</div></div><div>• for AWG cables for main contacts</div></div>	<div>2x (1 ... 35 mm²), 1x (1 ... 50 mm²)</div> <div>2x (1 ... 25 mm²), 1x (1 ... 35 mm²)</div> <div>2x (18 ... 2), 1x (18 ... 1)</div>
connectable conductor cross-section for main contacts	
<div>• finely stranded with core end processing</div>	1 ... 35 mm²
connectable conductor cross-section for auxiliary contacts	
<div><div>• solid or stranded</div><div>• finely stranded with core end processing</div></div>	<div>0.5 ... 2.5 mm²</div> <div>0.5 ... 2.5 mm²</div>
type of connectable conductor cross-sections	
<div><div>• for auxiliary contacts</div><div><div>— solid or stranded</div><div>— finely stranded with core end processing</div></div><div>• for AWG cables for auxiliary contacts</div></div>	<div>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</div> <div>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</div> <div>2x (20 ... 16), 2x (18 ... 14)</div>
AWG number as coded connectable conductor cross section	

• for main contacts	18 ... 1
• for auxiliary contacts	20 ... 14
Safety related data	
product function	
• 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
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	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
Approvals Certificates	
General Product Approval	



Confirmation



KC

General Product Ap- proval	EMV	Functional Saftey	Test Certificates	Marine / Shipping
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[Type Examination Cer-
tificate](#)

[Special Test Certific-
ate](#)

[Type Test Certific-
ates/Test Report](#)



Marine / Shipping	other
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[Confirmation](#)

other	Railway	Dangerous goods	Environment
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[Confirmation](#)

[Special Test Certific-
ate](#)

[Transport Information](#)



[Environmental Con-
firmations](#)

Further information

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=3RT2038-1AF00>
Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-1AF00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AF00>

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

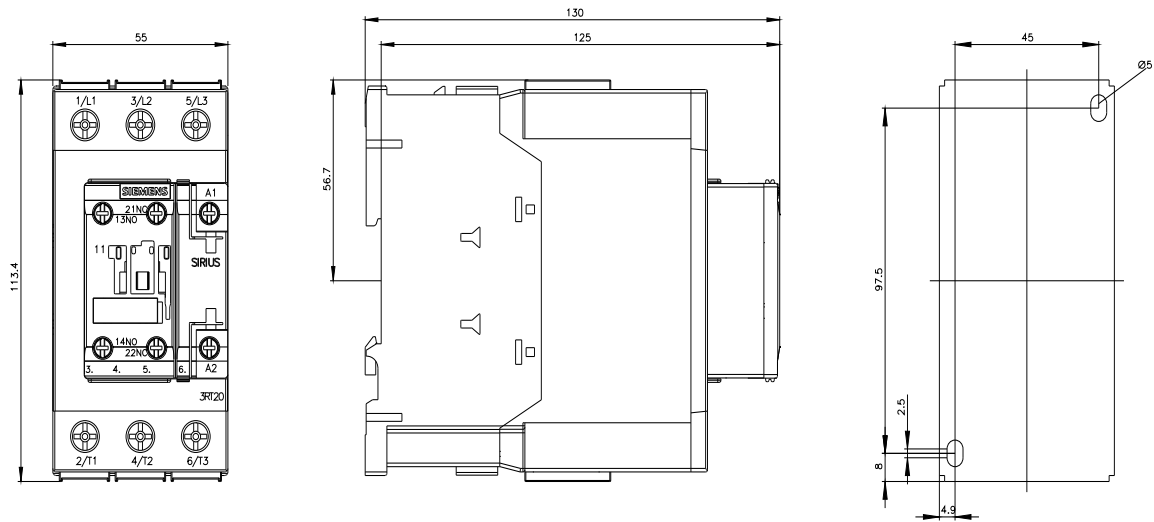
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-1AF00&lang=en

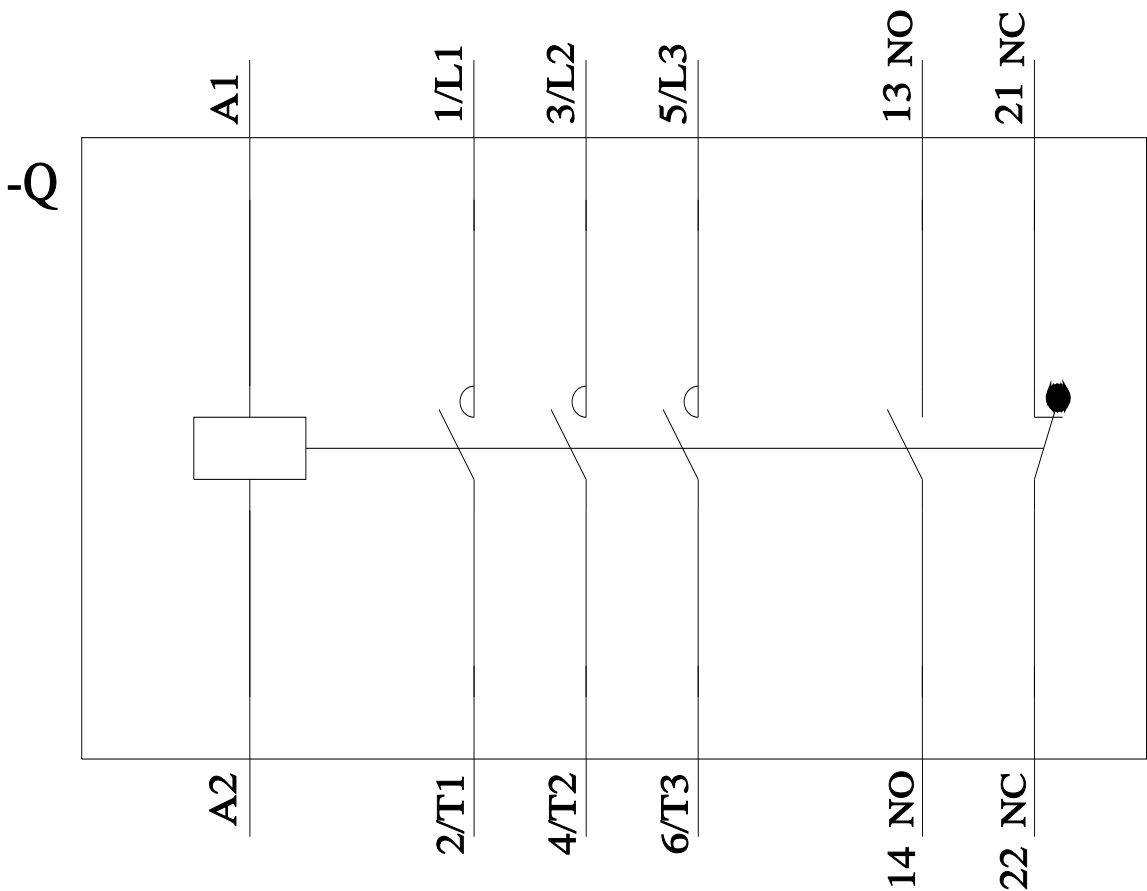
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AF00/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-1AF00&objecttype=14&gridview=view1>





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