



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC Uc: 200-220 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: box terminal control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
General technical data	
size of contactor	S6
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	21 W
• at AC in hot operating state per pole	7 W
• without load current share typical	5.2 W
type of calculation of power loss current-dependent	quadratic
insulation voltage	
• 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
surge voltage resistance	
• 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
shock resistance at rectangular impulse	
• at AC	8,5 g / 5 ms, 4,2 g / 10 ms
• at DC	8,5 g / 5 ms, 4,2 g / 10 ms
shock resistance with sine pulse	
• at AC	13,4 g / 5 ms, 6,5 g / 10 ms
• at DC	13,4 g / 5 ms, 6,5 g / 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 Prohibition (day/month/year)	05/01/2012
Net Weight	3.48 kg
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 %
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
operating voltage	
• at AC-3 rated value maximum	1 000 V
• at AC-3e rated value maximum	1 000 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	160 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 60 °C rated value	140 A
— up to 1000 V at ambient temperature 40 °C rated value	80 A
— up to 1000 V at ambient temperature 60 °C rated value	80 A
• at AC-3	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-3e	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	140 A
• at AC-5b up to 400 V rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	115 A
— up to 400 V for current peak value n=20 rated value	115 A
— up to 500 V for current peak value n=20 rated value	115 A
— up to 690 V for current peak value n=20 rated value	115 A
— up to 1000 V for current peak value n=20 rated value	53 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	98 A
— up to 400 V for current peak value n=30 rated value	98 A
— up to 500 V for current peak value n=30 rated value	98 A
— up to 690 V for current peak value n=30 rated value	98 A
— up to 1000 V for current peak value n=30 rated value	53 A
minimum cross-section in main circuit at maximum AC-1 rated value	70 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	54 A
• at 690 V rated value	48 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	160 A
— at 60 V rated value	160 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
● with 2 current paths in series at DC-1	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	20 A
— at 440 V rated value	3.2 A
— at 600 V rated value	1.6 A
● with 3 current paths in series at DC-1	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	11.5 A
— at 600 V rated value	4 A
● at 1 current path at DC-3 at DC-5	
— at 24 V rated value	160 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
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 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
● with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
operating power	
● at AC-3	
— at 230 V rated value	37 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	110 kW
— at 1000 V rated value	75 kW
● at AC-3e	
— at 230 V rated value	37 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	110 kW
— at 1000 V rated value	75 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	29 kW
● at 690 V rated value	48 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	40 kVA
● up to 400 V for current peak value n=20 rated value	80 kVA
● up to 500 V for current peak value n=20 rated value	100 kVA

• up to 690 V for current peak value n=20 rated value • up to 1000 V for current peak value n=20 rated value	130 kVA 90 kVA
operating apparent power at AC-6a • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 1000 V for current peak value n=30 rated value	30 kVA 60 kVA 80 kVA 110 kVA 90 kVA
short-time 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 60 s switching at zero current maximum	2 565 A; Use minimum cross-section acc. to AC-1 rated value 1 654 A; Use minimum cross-section acc. to AC-1 rated value 1 170 A; Use minimum cross-section acc. to AC-1 rated value 729 A; Use minimum cross-section acc. to AC-1 rated value 572 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency • at AC • at DC	2 000 1/h 2 000 1/h
operating frequency • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e — maximum • at AC-4 maximum	800 1/h 400 1/h 1 000 1/h 1 000 1/h 130 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC • at 50 Hz rated value • at 60 Hz rated value	200 ... 220 V 200 ... 220 V
control supply voltage at DC rated value	200 ... 220 V
operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value	0.8 1.1
operating range factor control supply voltage rated value of magnet coil at AC • at 50 Hz • at 60 Hz	0.8 ... 1.1 0.8 ... 1.1
design of the surge suppressor	with varistor
apparent pick-up power • at minimum rated control supply voltage at AC — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC — at 60 Hz — at 50 Hz	250 VA 250 VA 300 VA 300 VA
apparent pick-up power of magnet coil at AC • at 50 Hz • at 60 Hz	300 VA 300 VA
inductive power factor with closing power of the coil • at 50 Hz • at 60 Hz	0.9 0.9
apparent holding power • at minimum rated control supply voltage at DC • at maximum rated control supply voltage at DC	4.3 VA 5.2 VA
apparent holding power • at minimum rated control supply voltage at AC — at 50 Hz — at 60 Hz	4.8 VA 4.8 VA

• at maximum rated control supply voltage at AC — at 50 Hz — at 60 Hz	5.8 VA 5.8 VA
inductive power factor with the holding power of the coil • at 50 Hz • at 60 Hz	0.8 0.8
closing power of magnet coil at DC	360 W
holding power of magnet coil at DC	5.2 W
closing delay • at AC • at DC	20 ... 95 ms 20 ... 95 ms
opening delay • at AC • at DC	40 ... 60 ms 40 ... 60 ms
arcing time	10 ... 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	2
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value	6 A 3 A 2 A 1 A
operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 • at 600 V rated value	124 A 125 A
yielded mechanical performance [hp] • for single-phase AC motor — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value	25 hp 40 hp 50 hp 100 hp 125 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
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

design of the fuse link	
• for short-circuit protection of the main circuit — with type of coordination 1 required — with type of coordination 2 required • for short-circuit protection of the auxiliary switch required	gG: 355 A (690 V, 100 kA) gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA) gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	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
fastening method	screw fixing
height	172 mm
width	120 mm
depth	170 mm
required spacing	
• with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards — at the side	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
Connections/ Terminals	
type of electrical connection	
• for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil	box terminal screw-type terminals Screw-type terminals screw terminal
type of connectable conductor cross-sections	
• for main contacts — stranded — solid or stranded — finely stranded with core end processing — finely stranded without core end processing • for AWG cables for main contacts	max. 1x 50, 1x 70 mm ² max. 1x 50, 1x 70 mm ² max. 1x 50, 1x 70 mm ² max. 1x 50, 1x 70 mm ² 2x 1/0
connectable conductor cross-section for main contacts	
• stranded • finely stranded with core end processing • finely stranded without core end processing	16 ... 70 mm ² 16 ... 70 mm ² 16 ... 70 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded • finely stranded with core end processing	0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts — solid — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 1x 12
AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 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

Environmental Product Declaration	
• global warming potential [CO2 eq] / during manufacturing	17 kg
• global warming potential [CO2 eq] / during sales	0.901 kg
• global warming potential [CO2 eq] / during operation	363 kg
• global warming potential [CO2 eq] / after end of life	-2.28 kg
• global warming potential [CO2 eq] / total	379 kg

Environment	General Product Approval
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firmations](#)

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General Product Approval	EMV	Functional Safety
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other	Railway
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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=3RT1054-1AM36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AM36>

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

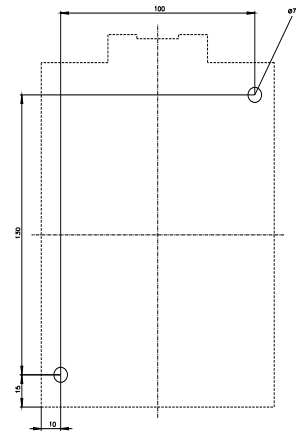
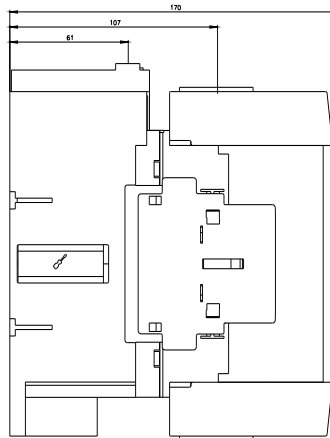
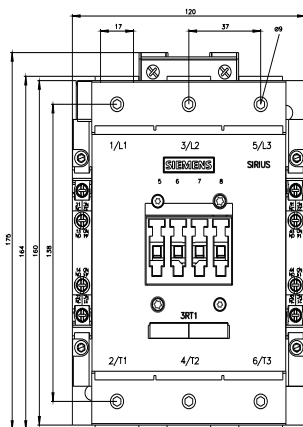
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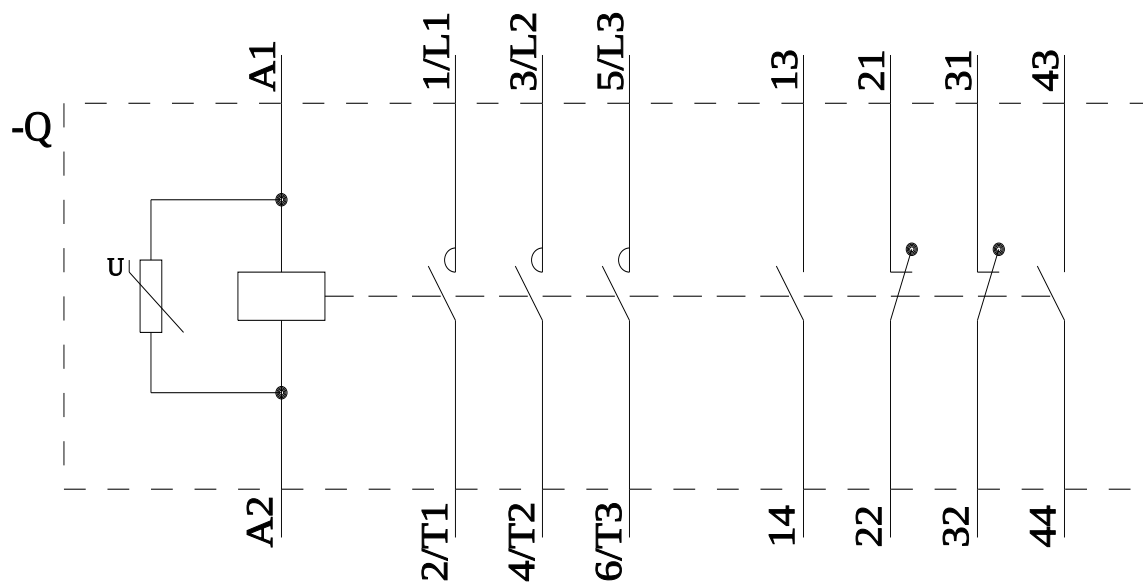
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Characteristic curves

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