

power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC Uc: 21-27.3 V PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main circuit: box terminal control and auxiliary circuit: spring-loaded 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	2.8 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 Prohibitance (day/month/year)	05/01/2012
SVHC substance name	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
Net Weight	3.7 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	130 kVA
● up to 1000 V for current peak value n=20 rated value	90 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	30 kVA
● up to 400 V for current peak value n=30 rated value	60 kVA
● up to 500 V for current peak value n=30 rated value	80 kVA
● up to 690 V for current peak value n=30 rated value	110 kVA
● up to 1000 V for current peak value n=30 rated value	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	1 000 1/h 1 000 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	21 ... 27.3 V 21 ... 27.3 V
control supply voltage at DC rated value	21 ... 27.3 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
type of PLC-control input according to IEC 60947-1	Type 2
consumed current at PLC-control input according to IEC 60947-1 maximum	20 mA
voltage at PLC-control input rated value	24 V
operating range factor of the voltage at PLC-control input	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	190 VA 190 VA 280 VA 280 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz • at 60 Hz	280 VA 280 VA
inductive power factor with closing power of the coil	
• at 50 Hz • at 60 Hz	0.8 0.8
apparent holding power	
• at minimum rated control supply voltage at DC • at maximum rated control supply voltage at DC	2.1 VA 2.8 VA
apparent holding power	
• at minimum rated control supply voltage at AC — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC — at 50 Hz — at 60 Hz	3.5 VA 3.5 VA 4.8 VA 4.8 VA
inductive power factor with the holding power of the coil	

• at 50 Hz • at 60 Hz	0.6 0.6
closing power of magnet coil at DC	320 W
holding power of magnet coil at DC	2.8 W
closing delay • at AC • at DC	35 ... 75 ms 35 ... 75 ms
opening delay • at AC • at DC	80 ... 90 ms 80 ... 90 ms
arcing time	10 ... 15 ms
control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)
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	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

for short-circuit protection of the auxiliary switch required	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 20 mm - upwards 10 mm - downwards 10 mm - at the side 0 mm - for grounded parts - forwards 20 mm - upwards 10 mm - at the side 10 mm - downwards 10 mm - for live parts - forwards 20 mm - upwards 10 mm - downwards 10 mm - at the side 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 spring-loaded terminals Spring-type terminals Spring-type terminals
type of connectable conductor cross-sections	
- for main contacts - stranded max. 1x 50, 1x 70 mm² - solid or stranded max. 1x 50, 1x 70 mm² - finely stranded with core end processing max. 1x 50, 1x 70 mm² - finely stranded without core end processing max. 1x 50, 1x 70 mm² - for AWG cables for main contacts 2x 1/0	
connectable conductor cross-section for main contacts	
- stranded 16 ... 70 mm² - finely stranded with core end processing 16 ... 70 mm² - finely stranded without core end processing 16 ... 70 mm²	
connectable conductor cross-section for auxiliary contacts	
- solid or stranded 0.25 ... 2.5 mm² - finely stranded with core end processing 0.25 ... 1.5 mm² - finely stranded without core end processing 0.25 ... 2.5 mm²	
type of connectable conductor cross-sections	
- for auxiliary contacts - solid 2x (0.25 ... 2.5 mm²) - solid or stranded 2x (0.25 ... 2.5 mm²) - finely stranded with core end processing 2x (0.25 ... 1.5 mm²) - finely stranded without core end processing 2x (0.25 ... 2.5 mm²) - for AWG cables for auxiliary contacts 2x (24 ... 14)	
AWG number as coded connectable conductor cross section for auxiliary contacts	24 ... 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; safety-related disconnection via A1 A2
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	
Environment	General Product Approval

[Environmental Con-
firmations](#)



General Product Approval	EMV	Functional Safety	Test Certificates	
 EG-Konf.		 RCM	Type Examination Certificate	Type Test Certificates/Test Report
				Special Test Certificate

Maritime application	other			
		Miscellaneous	Miscellaneous	Confirmation
				Confirmation

other	Railway		
	Miscellaneous	Special Test Certificate	

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=3RT1054-3NB36 Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-3NB36 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-3NB36&lang=en Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-3NB36>

Characteristic curves

https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>

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