



power contactor, AC-3e/AC-3 225 A, 110 kW / 400 V AC (50-60 Hz) / DC U_c: 23-26 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: busbar 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	S10
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	51 W
• at AC in hot operating state per pole	17 W
• without load current share typical	7.4 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
SVHC substance name	Lead CAS-No. 7439-92-1 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5

	Melamine CAS-No. 108-78-1
Net Weight	6.56 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	275 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	275 A
— up to 690 V at ambient temperature 60 °C rated value	250 A
— up to 1000 V at ambient temperature 40 °C rated value	100 A
— up to 1000 V at ambient temperature 60 °C rated value	100 A
• at AC-3	
— at 400 V rated value	225 A
— at 500 V rated value	225 A
— at 690 V rated value	225 A
— at 1000 V rated value	68 A
• at AC-3e	
— at 400 V rated value	225 A
— at 500 V rated value	225 A
— at 690 V rated value	225 A
— at 1000 V rated value	68 A
• at AC-4 at 400 V rated value	195 A
• at AC-5a up to 690 V rated value	242 A
• at AC-5b up to 400 V rated value	186 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	225 A
— up to 400 V for current peak value n=20 rated value	225 A
— up to 500 V for current peak value n=20 rated value	225 A
— up to 690 V for current peak value n=20 rated value	225 A
— up to 1000 V for current peak value n=20 rated value	68 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	172 A
— up to 400 V for current peak value n=30 rated value	172 A
— up to 500 V for current peak value n=30 rated value	172 A
— up to 690 V for current peak value n=30 rated value	172 A
— up to 1000 V for current peak value n=30 rated value	68 A
minimum cross-section in main circuit at maximum AC-1 rated value	150 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	96 A
• at 690 V rated value	85 A

operational current	
● at 1 current path at DC-1 — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● with 2 current paths in series at DC-1 — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● with 3 current paths in series at DC-1 — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● at 1 current path at DC-3 at DC-5 — at 24 V rated value — at 60 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value ● with 3 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value	200 A 200 A 18 A 3.4 A 0.8 A 0.5 A 200 A 200 A 200 A 20 A 3.2 A 1.6 A 200 A 200 A 200 A 200 A 11 A 4 A 200 A 7.5 A 0.6 A 0.17 A 0.12 A 200 A 200 A 200 A 2.5 A 0.65 A 0.37 A 200 A 200 A 200 A 200 A 1.4 A 0.75 A
operating power	
● at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value ● at AC-3e — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value	55 kW 110 kW 160 kW 200 kW 90 kW 55 kW 110 kW 160 kW 200 kW 90 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value ● at 690 V rated value	54 kW 82 kW

operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	90 kVA
• up to 400 V for current peak value n=20 rated value	150 kVA
• up to 500 V for current peak value n=20 rated value	190 kVA
• up to 690 V for current peak value n=20 rated value	260 kVA
• up to 1000 V for current peak value n=20 rated value	110 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	60 kVA
• up to 400 V for current peak value n=30 rated value	110 kVA
• up to 500 V for current peak value n=30 rated value	140 kVA
• up to 690 V for current peak value n=30 rated value	200 kVA
• up to 1000 V for current peak value n=30 rated value	110 kVA
short-time withstand current in cold operating state up to 40 °C	
• limited to 1 s switching at zero current maximum	4 000 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	2 807 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	2 082 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	1 397 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	1 144 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	2 000 1/h
• at DC	2 000 1/h
operating frequency	
• at AC-1 maximum	750 1/h
• at AC-2 maximum	250 1/h
• at AC-3 maximum	500 1/h
• at AC-3e — maximum	500 1/h
• at AC-4 maximum	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	23 ... 26 V
• at 60 Hz rated value	23 ... 26 V
control supply voltage at DC rated value	23 ... 26 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.8
• full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	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	490 VA
— at 60 Hz	490 VA
• at maximum rated control supply voltage at AC — at 60 Hz	590 VA
— at 50 Hz	590 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	590 VA
• at 60 Hz	590 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.9
• at 60 Hz	0.9
apparent holding power	
• at minimum rated control supply voltage at DC	6.1 VA
• at maximum rated control supply voltage at DC	7.4 VA

apparent holding power	
• at minimum rated control supply voltage at AC	
— at 50 Hz	5.6 VA
— at 60 Hz	5.6 VA
• at maximum rated control supply voltage at AC	
— at 50 Hz	6.7 VA
— at 60 Hz	6.7 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.9
• at 60 Hz	0.9
closing power of magnet coil at DC	650 W
holding power of magnet coil at DC	7.4 W
closing delay	
• at AC	30 ... 95 ms
• at DC	30 ... 95 ms
opening delay	
• at AC	40 ... 80 ms
• at DC	40 ... 80 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	6 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	180 A
• at 600 V rated value	192 A
yielded mechanical performance [hp]	
• for 3-phase AC motor	
— at 200/208 V rated value	60 hp
— at 220/230 V rated value	75 hp
— at 460/480 V rated value	150 hp
— at 575/600 V rated value	200 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: 500 A (690 V, 100 kA) gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 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	210 mm
width	145 mm
depth	202 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	Connection bar spring-loaded terminals Spring-type terminals Spring-type terminals
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections for AWG cables for main contacts	2/0 ... 500 kcmil
connectable conductor cross-section for main contacts stranded	70 ... 240 mm²
connectable conductor cross-section for auxiliary contacts - solid or stranded - finely stranded with core end processing - finely stranded without core end processing	0.25 ... 2.5 mm² 0.25 ... 1.5 mm² 0.25 ... 2.5 mm²
type of connectable conductor cross-sections - for auxiliary contacts - solid - solid or stranded - finely stranded with core end processing - finely stranded without core end processing - for AWG cables for auxiliary contacts	2x (0.25 ... 2.5 mm²) 2x (0.25 ... 2.5 mm²) 2x (0.25 ... 1.5 mm²) 2x (0.25 ... 2.5 mm²) 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		
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	IP00; IP20 with box terminal/cover		
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover		
Approvals Certificates			
Environmental Product Declaration			
• global warming potential [CO2 eq] / during manufacturing	31.5 kg		
• global warming potential [CO2 eq] / during sales	2.6 kg		
• global warming potential [CO2 eq] / during operation	521 kg		
• global warming potential [CO2 eq] / after end of life	-7.22 kg		
• global warming potential [CO2 eq] / total	548 kg		
Environment	General Product Approval		
Environmental Confirmations      			
General Product Approval	EMV	Functional Safety	
    		Type Examination Certificate	
Test Certificates	Maritime application	other	
Special Test Certificate	Type Test Certificates/Test Report  	Miscellaneous Miscellaneous	
other	Railway		
Confirmation	Confirmation	Miscellaneous	Special Test Certificate

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=3RT1064-2AB36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1064-2AB36>

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

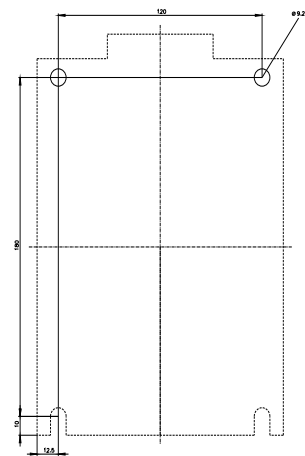
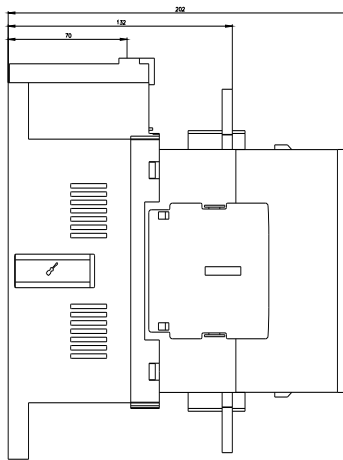
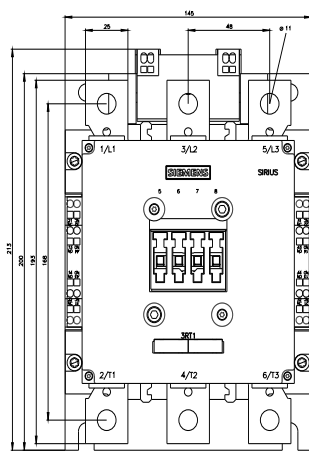
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Characteristic curves

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