

power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 24 V AC, 50 Hz, auxiliary contacts: 1 NO + 1 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded 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	12 W
• at AC in hot operating state per pole	4 W
• without load current share typical	6 W
type of calculation of power loss current-dependent	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	11.8 g / 5 ms, 7.4 g / 10 ms
shock resistance with sine pulse	
• at AC	18.5 g / 5 ms, 11.6 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)	10/01/2014
Net Weight	0.986 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	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	70 A
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value	70 A 60 A
• at AC-3 — at 400 V rated value — at 500 V rated value — at 690 V rated value	51 A 51 A 24 A
• at AC-3e — at 400 V rated value — at 500 V rated value — at 690 V rated value	51 A 51 A 24 A
• at AC-4 at 400 V rated value	41 A
• at AC-5a up to 690 V rated value	61.6 A
• at AC-5b up to 400 V rated value	41.5 A
• at AC-6a — up to 230 V for current peak value n=20 rated value — up to 400 V for current peak value n=20 rated value — up to 500 V for current peak value n=20 rated value — up to 690 V for current peak value n=20 rated value	43.2 A 43.2 A 43.2 A 24 A
• 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	28.8 A 28.8 A 28.8 A 24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24 A
• at 690 V rated value	20 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	55 A 23 A 4.5 A 1 A 0.4 A 0.25 A
• 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	55 A 45 A 45 A 5 A 1 A 0.8 A
• 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	55 A 55 A 55 A 45 A 2.9 A 1.4 A
• 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	35 A 6 A 1 A

— at 440 V rated value — at 600 V rated value	0.1 A 0.06 A
● 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	55 A 45 A 25 A 5 A 0.27 A 0.16 A 55 A 55 A 55 A 25 A 0.6 A 0.35 A
operating power ● at AC-2 at 400 V rated value ● at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 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	22 kW 15 kW 22 kW 30 kW 22 kW 15 kW 22 kW 30 kW 22 kW
operating power for approx. 200000 operating cycles at AC-4 ● at 400 V rated value ● at 690 V rated value	12.6 kW 18.2 kW
operating apparent power at AC-6a ● up to 230 V for current peak value n=20 rated value ● up to 400 V for current peak value n=20 rated value ● up to 500 V for current peak value n=20 rated value ● up to 690 V for current peak value n=20 rated value	17.2 kVA 29.9 kVA 37.4 kVA 28.6 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	11.4 kVA 19.9 kVA 24.9 kVA 28.6 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	937 A; Use minimum cross-section acc. to AC-1 rated value 697 A; Use minimum cross-section acc. to AC-1 rated value 468 A; Use minimum cross-section acc. to AC-1 rated value 282 A; Use minimum cross-section acc. to AC-1 rated value 229 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency ● at AC	5 000 1/h
operating frequency ● at AC-1 maximum ● at AC-2 maximum ● at AC-3 maximum ● at AC-3e — maximum ● at AC-4 maximum	1 000 1/h 600 1/h 800 1/h 800 1/h 250 1/h
Control circuit/ Control	

type of voltage of the control supply voltage	AC
control supply voltage at AC • at 50 Hz rated value	24 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 • at 400 V rated value • at 500 V rated value • at 690 V rated value	10 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	52 A 52 A
yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value — 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	3 hp 10 hp 15 hp 15 hp 40 hp

— at 575/600 V rated value	50 hp
contact rating of auxiliary contacts according to UL	A600 / P600
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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) gG: 80 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 63 A (415 V, 80 kA) 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 side-by-side mounting	Yes
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	
• 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	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 6 mm
Connections/ Terminals	
type of electrical connection	
• for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil	screw-type terminals spring-loaded terminals Spring-type terminals Spring-loaded terminal
type of connectable conductor cross-sections	
• for main contacts — solid or stranded — finely stranded with core end processing • for AWG cables for main contacts	2x (1 ... 35 mm²), 1x (1 ... 50 mm²) 2x (1 ... 25 mm²), 1x (1 ... 35 mm²) 2x (18 ... 2), 1x (18 ... 1)
connectable conductor cross-section for main contacts	
• finely stranded with core end processing	1 ... 35 mm²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded • finely stranded with core end processing • finely stranded without core end processing	0.5 ... 2.5 mm² 0.5 ... 1.5 mm² 0.5 ... 2.5 mm²
type of connectable conductor cross-sections	
• for auxiliary contacts — solid or stranded — finely stranded with core end processing — finely stranded without core end processing • for AWG cables for auxiliary contacts	2x (0.5 ... 2.5 mm²) 2x (0.5 ... 1.5 mm²) 2x (0.5 ... 2.5 mm²) 2x (20 ... 14)
AWG number as coded connectable conductor cross section for main contacts	18 ... 1

AWG number as coded connectable conductor cross section 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			
Environmental Product Declaration			
• 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	
• global warming potential [CO2 eq] / total		236 kg	
Environment		General Product Approval	
Environmental Confirmations		    	
General Product Approval		EMV	Test Certificates
   		Special Test Certificate	Type Test Certificates/Test Report
Maritime application			
     			
Maritime application		other	
		Miscellaneous Confirmation Confirmation  Special Test Certificate	
Dangerous goods			

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=3RT2036-3AB00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3AB00>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3AB00&lang=en

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-3AB00>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

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