



power contactor, AC-3 185 A, 90 kW / 400 V AC (50-60 Hz) / DC operation
96-127 V AC/DC auxiliary contacts 2 NO + 2 NC 3-pole, frame size S6
busbar connections drive: electronic with PLC interface 24 V DC spring-
loaded terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
General technical data	
size of contactor	S6
product extension	
<ul style="list-style-type: none"> function module for communication auxiliary switch 	<p>No</p> <p>Yes</p>
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> at AC in hot operating state at AC in hot operating state per pole without load current share typical 	<p>39 W</p> <p>13 W</p> <p>2.8 W</p>
insulation voltage	
<ul style="list-style-type: none"> of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value 	<p>1 000 V</p> <p>500 V</p>
surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value 	<p>8 kV</p> <p>6 kV</p>
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
<ul style="list-style-type: none"> at AC at DC 	<p>8,5g / 5 ms, 4,2g / 10 ms</p> <p>8,5g / 5 ms, 4,2g / 10 ms</p>
shock resistance with sine pulse	
<ul style="list-style-type: none"> at AC at DC 	<p>13,4g / 5 ms, 6,5g / 10 ms</p> <p>13,4g / 5 ms, 6,5g / 10 ms</p>
mechanical service life (switching cycles)	
<ul style="list-style-type: none"> of contactor typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical 	<p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p>
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/01/2012
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul style="list-style-type: none"> during operation during storage 	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>

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
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	215 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	215 A
— up to 690 V at ambient temperature 60 °C rated value	185 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	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-3e	
— at 400 V rated value	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-4 at 400 V rated value	160 A
• at AC-5a up to 690 V rated value	189 A
• at AC-5b up to 400 V rated value	153 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	157 A
— up to 400 V for current peak value n=20 rated value	157 A
— up to 500 V for current peak value n=20 rated value	157 A
— up to 690 V for current peak value n=20 rated value	157 A
— up to 1000 V for current peak value n=20 rated value	65 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	105 A
— up to 400 V for current peak value n=30 rated value	105 A
— up to 500 V for current peak value n=30 rated value	105 A
— up to 690 V for current peak value n=30 rated value	105 A
— up to 1000 V for current peak value n=30 rated value	65 A
minimum cross-section in main circuit at maximum AC-1 rated value	95 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	81 A
• at 690 V rated value	65 A
operational current	
• at 1 current path at DC-1	

— at 24 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 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 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 110 V rated value	2.5 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 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 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	55 kW
— at 400 V rated value	90 kW
— at 500 V rated value	132 kW
— at 690 V rated value	160 kW
— at 1000 V rated value	90 kW
• at AC-3e	
— at 230 V rated value	55 kW
— at 400 V rated value	90 kW
— at 500 V rated value	132 kW
— at 690 V rated value	160 kW
— at 1000 V rated value	90 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	45 kW
• at 690 V rated value	65 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	60 000 kVA
• up to 400 V for current peak value n=20 rated value	100 000 VA
• up to 500 V for current peak value n=20 rated value	130 000 VA
• up to 690 V for current peak value n=20 rated value	180 000 VA
• up to 1000 V for current peak value n=20 rated value	110 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	40 000 VA

<ul style="list-style-type: none"> • 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 	<p>70 000 VA 90 000 VA 120 000 VA 110 000 VA</p>
short-time withstand current in cold operating state up to 40 °C <ul style="list-style-type: none"> • 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 	<p>2 900 A; Use minimum cross-section acc. to AC-1 rated value 2 084 A; Use minimum cross-section acc. to AC-1 rated value 1 480 A; Use minimum cross-section acc. to AC-1 rated value 968 A; Use minimum cross-section acc. to AC-1 rated value 801 A; Use minimum cross-section acc. to AC-1 rated value</p>
no-load switching frequency <ul style="list-style-type: none"> • at AC • at DC 	<p>1 000 1/h 1 000 1/h</p>
operating frequency <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e maximum • at AC-4 maximum 	<p>800 1/h 300 1/h 750 1/h 750 1/h 130 1/h</p>
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	<p>96 ... 127 V 96 ... 127 V</p>
control supply voltage at DC <ul style="list-style-type: none"> • rated value 	96 ... 127 V
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
operating range factor control supply voltage rated value of magnet coil at DC <ul style="list-style-type: none"> • initial value • full-scale value 	<p>0.8 1.1</p>
operating range factor control supply voltage rated value of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>0.8 ... 1.1 0.8 ... 1.1</p>
design of the surge suppressor	with varistor
apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>280 VA 280 VA</p>
inductive power factor with closing power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>0.8 0.8</p>
apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>4.4 VA 4.4 VA</p>
inductive power factor with the holding power of the coil <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>0.5 0.5</p>
closing power of magnet coil at DC	320 W
holding power of magnet coil at DC	2.8 W
closing delay <ul style="list-style-type: none"> • at AC • at DC 	<p>35 ... 75 ms 35 ... 75 ms</p>
opening delay	

<ul style="list-style-type: none"> • at AC 	80 ... 90 ms
<ul style="list-style-type: none"> • at DC 	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	
<ul style="list-style-type: none"> • at 230 V rated value 	6 A
<ul style="list-style-type: none"> • at 400 V rated value 	3 A
<ul style="list-style-type: none"> • at 500 V rated value 	2 A
<ul style="list-style-type: none"> • at 690 V rated value 	1 A
operational current at DC-12	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	6 A
<ul style="list-style-type: none"> • at 60 V rated value 	6 A
<ul style="list-style-type: none"> • at 110 V rated value 	3 A
<ul style="list-style-type: none"> • at 125 V rated value 	2 A
<ul style="list-style-type: none"> • at 220 V rated value 	1 A
<ul style="list-style-type: none"> • at 600 V rated value 	0.15 A
operational current at DC-13	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	2 A
<ul style="list-style-type: none"> • at 60 V rated value 	2 A
<ul style="list-style-type: none"> • at 110 V rated value 	1 A
<ul style="list-style-type: none"> • at 125 V rated value 	0.9 A
<ul style="list-style-type: none"> • at 220 V rated value 	0.3 A
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 480 V rated value 	180 A
<ul style="list-style-type: none"> • at 600 V rated value 	192 A
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 230 V rated value 	30 hp
<ul style="list-style-type: none"> • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value 	60 hp
<ul style="list-style-type: none"> — at 220/230 V rated value 	75 hp
<ul style="list-style-type: none"> — at 460/480 V rated value 	150 hp
<ul style="list-style-type: none"> — at 575/600 V rated value 	200 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required 	gG: 355 A (690 V, 100 kA) gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50 kA)
<ul style="list-style-type: none"> • for short-circuit protection of the auxiliary switch required 	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	screw fixing
<ul style="list-style-type: none"> • side-by-side mounting 	Yes
height	172 mm
width	120 mm
depth	170 mm

required spacing	
<ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 0 mm ● for grounded parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — at the side 10 mm — downwards 10 mm ● for live parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm 	
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> ● for main current circuit Connection bar ● for auxiliary and control circuit spring-loaded terminals ● at contactor for auxiliary contacts Spring-type terminals ● of magnet coil Spring-type terminals 	
width of connection bar	17 mm
thickness of connection bar	3 mm
diameter of holes	9 mm
number of holes	1
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> ● at AWG cables for main contacts 4 ... 250 kcmil 	
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> ● stranded 25 ... 120 mm² 	
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> ● 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	
<ul style="list-style-type: none"> ● for auxiliary contacts <ul style="list-style-type: none"> — 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) ● at AWG cables for auxiliary contacts 2x (24 ... 14) 	
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> ● for auxiliary contacts 24 ... 14 	
Safety related data	
product function	
<ul style="list-style-type: none"> ● mirror contact according to IEC 60947-4-1 Yes ● positively driven operation according to IEC 60947-5-1 No 	
B10 value with high demand rate according to SN 31920	1 000 000
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
suitability for use	
<ul style="list-style-type: none"> ● safety-related switching OFF Yes 	
Certificates/ approvals	
General Product Approval	



[Confirmation](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates		
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[Type Examination Certificate](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

Marine / Shipping	other				
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[Miscellaneous](#)

other	Railway			
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[Confirmation](#)

[Confirmation](#)

[Miscellaneous](#)

[Special Test Certificate](#)

Further information

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=3RT1056-2NF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-2NF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-2NF36>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-2NF36&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-2NF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-2NF36&objecttype=14&gridview=view1>

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