



power contactor, AC-3e/AC-3 185 A, 90 kW / 400 V AC (50-60 Hz) / DC U_c: 440-480 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: busbar 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	39 W
• at AC in hot operating state per pole	13 W
• without load current share typical	5.2 W
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	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 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 (Date)	05/01/2012
SVHC substance name	Blei - 7439-92-1
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	95 %

maximum	
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 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	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
● up to 400 V for current peak value n=30 rated value	70 000 VA
● up to 500 V for current peak value n=30 rated value	90 000 VA
● up to 690 V for current peak value n=30 rated value	120 000 VA
● up to 1000 V for current peak value n=30 rated value	110 000 VA
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 	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
no-load switching frequency	
<ul style="list-style-type: none"> at AC at DC 	2 000 1/h 2 000 1/h
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 	800 1/h 300 1/h 750 1/h 750 1/h 130 1/h
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 	440 ... 480 V 440 ... 480 V
control supply voltage at DC rated value	
<ul style="list-style-type: none"> 	440 ... 480 V
operating range factor control supply voltage rated value of magnet coil at DC	
<ul style="list-style-type: none"> initial value full-scale value 	0.8 1.1
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 	0.8 ... 1.1 0.8 ... 1.1
design of the surge suppressor	with varistor
apparent pick-up power	
<ul style="list-style-type: none"> at minimum rated control supply voltage at AC <ul style="list-style-type: none"> at 50 Hz at 60 Hz at maximum rated control supply voltage at AC <ul style="list-style-type: none"> at 60 Hz at 50 Hz 	250 VA 250 VA 300 VA 300 VA
apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	300 VA 300 VA
inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	0.9 0.9
apparent holding power	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> at minimum rated control supply voltage at AC <ul style="list-style-type: none"> at 50 Hz at 60 Hz at maximum rated control supply voltage at AC <ul style="list-style-type: none"> at 50 Hz at 60 Hz 	4.8 VA 4.8 VA 5.8 VA 5.8 VA
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> at AC 	20 ... 95 ms

<ul style="list-style-type: none"> • at DC 	20 ... 95 ms
opening delay	
<ul style="list-style-type: none"> • at AC 	40 ... 60 ms
<ul style="list-style-type: none"> • at DC 	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	
<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
<ul style="list-style-type: none"> • fastening method 	screw fixing
<ul style="list-style-type: none"> • fastening method 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 screw-type terminals • at contactor for auxiliary contacts Screw-type terminals • of magnet coil Screw-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"> • for 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 0.5 ... 4 mm² • finely stranded with core end processing 0.5 ... 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 (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) — solid or stranded 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²) — finely stranded with core end processing 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) • for AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14), 1x 12 	
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for auxiliary contacts 18 ... 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 	
suitability for use safety-related switching OFF	Yes; applies only to contactor operating mechanism
B10 value with high demand rate according to SN 31920	1 000 000
IEC 61508	
T1 value	
<ul style="list-style-type: none"> • for proof test interval or service life according to IEC 61508 20 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	
General Product Approval	



[Confirmation](#)



General Product Approval	Functional Safety	Test Certificates		Marine / Shipping
--------------------------	-------------------	-------------------	--	-------------------

[KC](#)



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other			
-------------------	-------	--	--	--



[Confirmation](#)

[Miscellaneous](#)

other	Railway	Environment	
-------	---------	-------------	--

[Confirmation](#)

[Miscellaneous](#)

[Special Test Certificate](#)

[EPD Typ II/III \(with life cycle assessment\)](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT1056-6AR36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6AR36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6AR36>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6AR36&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6AR36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6AR36&objecttype=14&gridview=view1>



