



Power contactor, AC-3 185 A, 90 kW / 400 V Coil AC 50/60 Hz and DC 96-127 V x (0.8-1.1) F-SPS input 24 V DC 3-pole size S6 Auxiliary contacts 2 NO + 2 NC permanently mounted 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
• per pole	13 W
power loss [W] for rated value of the current without load current share typical	2.8 W
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. 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 (switching 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 acc. to IEC 81346-2	Q
Substance Prohibition (Date)	01.03.2017 00:00:00
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
• ambient temperature during operation	-25 ... +60 °C
• ambient temperature during storage	-55 ... +80 °C
Main circuit	
number of poles for main current circuit	3

number of NO contacts for main contacts	3
<ul style="list-style-type: none"> operating voltage at AC-3 rated value maximum 	1 000 V
operational current	
<ul style="list-style-type: none"> at AC-1 at 400 V at ambient temperature 40 °C rated value 	215 A
<ul style="list-style-type: none"> at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value 	215 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 690 V at ambient temperature 60 °C rated value 	185 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 1000 V at ambient temperature 40 °C rated value 	100 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 1000 V at ambient temperature 60 °C rated value 	100 A
<ul style="list-style-type: none"> at AC-3 <ul style="list-style-type: none"> — at 400 V rated value 	185 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 500 V rated value 	185 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 690 V rated value 	170 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 1000 V rated value 	65 A
<ul style="list-style-type: none"> at AC-4 at 400 V rated value 	160 A
<ul style="list-style-type: none"> at AC-5a up to 690 V rated value 	189 A
<ul style="list-style-type: none"> at AC-5b up to 400 V rated value 	153 A
<ul style="list-style-type: none"> at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=20 rated value 	157 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 400 V for current peak value n=20 rated value 	157 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 500 V for current peak value n=20 rated value 	157 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 690 V for current peak value n=20 rated value 	157 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 1000 V for current peak value n=20 rated value 	65 A
<ul style="list-style-type: none"> at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=30 rated value 	105 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 400 V for current peak value n=30 rated value 	105 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 500 V for current peak value n=30 rated value 	105 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — up to 690 V for current peak value n=30 rated value 	105 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — 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	
<ul style="list-style-type: none"> at 400 V rated value 	81 A
<ul style="list-style-type: none"> at 690 V rated value 	65 A
operational current	
<ul style="list-style-type: none"> at 1 current path at DC-1 <ul style="list-style-type: none"> — at 24 V rated value 	160 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 110 V rated value 	18 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 220 V rated value 	3.4 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 440 V rated value 	0.8 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 600 V rated value 	0.5 A
<ul style="list-style-type: none"> with 2 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value 	160 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 110 V rated value 	160 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 220 V rated value 	20 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — at 440 V rated value 	3.2 A

<ul style="list-style-type: none"> — at 600 V rated value 	1.6 A
<ul style="list-style-type: none"> ● with 3 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	160 A 160 A 160 A 11.5 A 4 A
operational current	
<ul style="list-style-type: none"> ● at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	160 A 2.5 A 0.6 A 0.17 A 0.12 A
<ul style="list-style-type: none"> ● with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	160 A 160 A 2.5 A 0.65 A 0.37 A
<ul style="list-style-type: none"> ● with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	160 A 160 A 160 A 1.4 A 0.75 A
operating power	
<ul style="list-style-type: none"> ● at AC-2 at 400 V rated value 	90 kW
<ul style="list-style-type: none"> ● at AC-3 <ul style="list-style-type: none"> — 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 90 kW 132 kW 160 kW 90 kW
operating power for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> ● at 400 V rated value 	45 kW
<ul style="list-style-type: none"> ● at 690 V rated value 	65 kW
operating apparent power at AC-6a	
<ul style="list-style-type: none"> ● 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 ● up to 1000 V for current peak value n=20 rated value 	60 000 kV·A 100 000 V·A 130 000 V·A 180 000 V·A 110 000 V·A
operating apparent power at AC-6a	
<ul style="list-style-type: none"> ● 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 ● up to 1000 V for current peak value n=30 rated value 	40 000 V·A 70 000 V·A 90 000 V·A 120 000 V·A 110 000 V·A
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 	<p>1 000 1/h</p> <p>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-4 maximum 	<p>800 1/h</p> <p>300 1/h</p> <p>750 1/h</p> <p>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</p> <p>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 acc. to IEC 60947-1	Type 1
consumed current at PLC-control input acc. to IEC 60947-1 maximum	14 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</p> <p>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</p> <p>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 	280 V·A
inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.8
apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	4.4 V·A
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.5
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>60 ... 75 ms</p> <p>60 ... 75 ms</p>
opening delay	
<ul style="list-style-type: none"> • at AC • at DC 	<p>115 ... 130 ms</p> <p>115 ... 130 ms</p>
recovery time after power failure typical	2 s
arcing time	10 ... 15 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
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 • at 400 V rated value • at 500 V rated value 	<p>6 A</p> <p>3 A</p> <p>2 A</p>

<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 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> at 480 V rated value at 600 V rated value 	180 A 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 for 3-phase AC motor <ul style="list-style-type: none"> at 200/208 V rated value at 220/230 V rated value at 460/480 V rated value at 575/600 V rated value 	30 hp 60 hp 75 hp 150 hp 200 hp
contact rating of auxiliary contacts according to UL	A600 / P600
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 for short-circuit protection of the auxiliary switch required 	gG: 355 A (690 V, 100 kA) gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 100 kA), BS88: 315 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 <ul style="list-style-type: none"> side-by-side mounting 	screw fixing 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 upwards downwards at the side for grounded parts <ul style="list-style-type: none"> forwards upwards at the side downwards for live parts 	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm

— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm

Connections/ Terminals

width of connection bar	17 mm
thickness of connection bar	3 mm
diameter of holes	9 mm
number of holes	1
type of electrical connection <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil 	Connection bar screw-type terminals Screw-type terminals Screw-type terminals
type of connectable conductor cross-sections <ul style="list-style-type: none"> • at AWG cables for main contacts 	2x 1/0
connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • stranded 	25 ... 120 mm ²
connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing 	0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 1x 12
<ul style="list-style-type: none"> • AWG number as coded connectable conductor cross section for auxiliary contacts 	18 ... 14

Safety related data

safety device type acc. to IEC 61508-2	Type B
B10 value with high demand rate acc. to SN 31920	1 000 000
Safety Integrity Level (SIL) acc. to IEC 61508	2
SIL Claim Limit (subsystem) acc. to EN 62061	2
performance level (PL) acc. to EN ISO 13849-1	c
category acc. to EN ISO 13849-1	2
stop category acc. to DIN EN 60204-1	0
product function <ul style="list-style-type: none"> • mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 	Yes No
PFHD with high demand rate acc. to EN 62061	0.00000045 1/h
PFDavg with low demand rate acc. to IEC 61508	0.007
MTBF	75 y
hardware fault tolerance acc. to IEC 61508	0
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection class IP on the front acc. to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
suitability for use safety-related switching OFF	Yes

Certificates/ approvals

General Product Approval

EMC



KC



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

[Miscellaneous](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Confirmation](#)

other	Railway
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[Miscellaneous](#)

[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=3RT1056-6SF36-3PA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6SF36-3PA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6SF36-3PA0>

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

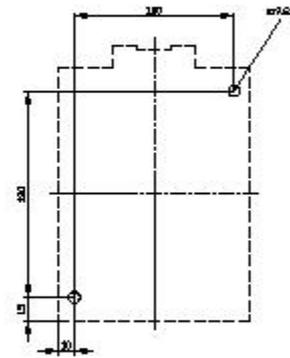
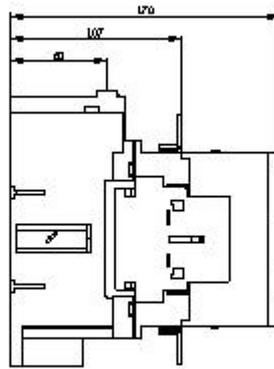
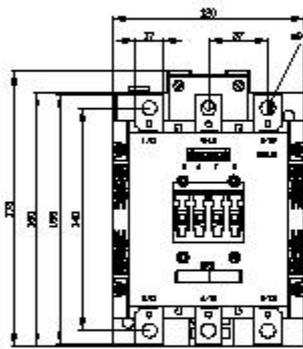
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6SF36-3PA0&lang=en

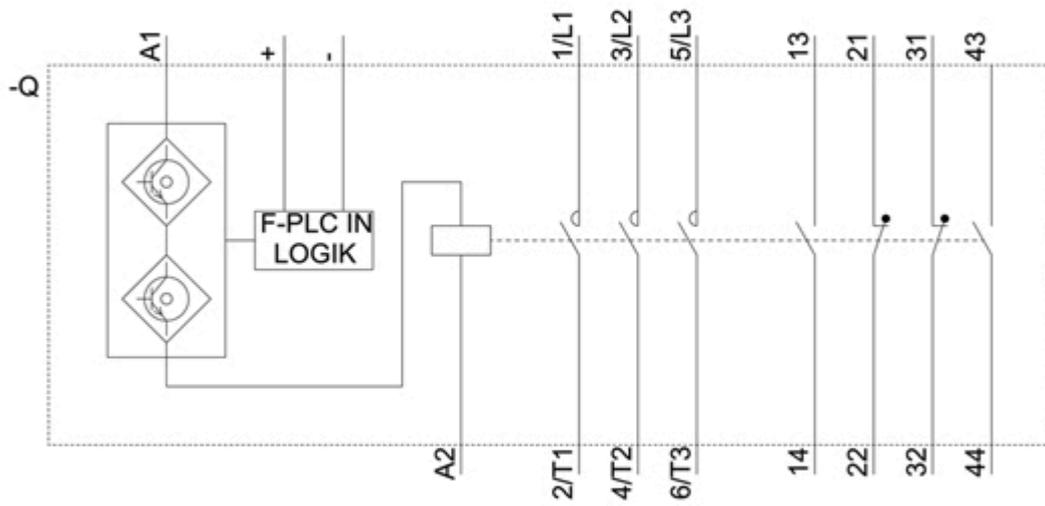
Characteristic: Tripping characteristics, I^t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6SF36-3PA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6SF36-3PA0&objecttype=14&gridview=view1>





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