SIEMENS

Data sheet 3RT1056-6NP36



Power contactor, AC-3 185 A, 90 kW / 400 V AC (50-60 Hz) / DC operation 200-277 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, Size S6 Busbar connections Drive: electronic with PLC interface 24 V DC screw 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	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 Prohibitance (Date)	01.05.2012 00:00:00
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 acc. to IEC 60068-2-30	95 %

many include	
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
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 $^{\circ}\text{C}$ 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 at AC-3 	100 A
— 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 • at AC-6a 	65 A
	105 A
— up to 230 V for current peak value n=30 rated value	
— up to 400 V for current peak value n=30 rated value	105 A 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	65 A
— up to 1000 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1	95 mm ²
rated value operational current for approx. 200000 operating	30 IIIII
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 440 V rated value — at 600 V rated value	0.5 A
	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
operational current	
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 24 V rated value — 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	400.4
— 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
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 kV·A
• up to 400 V for current peak value n=20 rated value	100 000 V·A
• up to 500 V for current peak value n=20 rated value	130 000 V·A
• up to 690 V for current peak value n=20 rated value	180 000 V·A
up to 1000 V for current peak value n=20 rated value value	110 000 V·A
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	40 000 V·A
• up to 400 V for current peak value n=30 rated value	70 000 V·A
• up to 500 V for current peak value n=30 rated value	90 000 V·A
• up to 690 V for current peak value n=30 rated value	120 000 V·A
up to 1000 V for current peak value n=30 rated up to 1000 V for current peak value n=30 rated	110 000 V A
value short-time withstand current in cold operating state	110 000 V A
up to 40 °C	
• limited to 1 s switching at zero current maximum	2 900 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	2 084 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	1 480 A; Use minimum cross-section acc. to AC-1 rated value
3	

 limited to 30 s switching at zero current maximum 	968 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	801 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	1 000 1/h
• at DC	1 000 1/h
operating frequency	
at AC-1 maximum	800 1/h
 at AC-2 maximum 	300 1/h
 at AC-3 maximum 	750 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 	200 277 V
• at 60 Hz rated value	200 277 V
control supply voltage at DC	
rated value	200 277 V
type of PLC-control input acc. to IEC 60947-1	Type 2
consumed current at PLC-control input acc. to IEC	20 mA
60947-1 maximum	
voltage at PLC-control input rated value	24 V
operating range factor of the voltage at PLC-control	0.8 1.1
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 of magnet coil at AC	
• at 50 Hz	280 V·A
• at 60 Hz	280 V·A
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
• at 60 Hz	0.8
apparent holding power of magnet coil at AC	
• at 50 Hz	4.4 V·A
• at 60 Hz	4.4 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.5
● at 60 Hz	0.5
closing power of magnet coil at DC	320 W
holding power of magnet coil at DC	2.8 W
closing delay	
• at AC	35 75 ms
• at DC	35 75 ms
opening delay	
• at AC	80 90 ms
• 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	2
instantaneous contact	
number of NO contacts for auxiliary contacts instantaneous contact	2

operational current at AC-12 maximum	10 A
operational current at AC-12 maximum operational current at AC-15	10 A
at 230 V rated value	6 A
at 400 V rated value	3 A
at 500 V rated value at 500 V rated value	2 A
at 690 V rated value at 690 V rated value	1 A
operational current at DC-12	TA .
• at 24 V rated value	10 A
at 48 V rated value at 48 V rated value	6 A
at 60 V rated value at 60 V rated value	6 A
at 110 V rated value at 110 V rated value	3 A
at 125 V rated value at 125 V rated value	2 A
at 220 V rated value at 220 V rated value	1A
at 600 V rated value	0.15 A
	0.15 A
operational current at DC-13 • at 24 V rated value	10 A
at 48 V rated value at 48 V rated value	2 A
	2 A
at 60 V rated value at 440 V rated value	
• 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 single-phase AC motor	
— at 230 V rated value	30 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 fuse link	
 for short-circuit protection of the main circuit 	
 — with type of coordination 1 required 	gG: 355 A (690 V, 100 kA)
 — with type of assignment 2 required 	gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415
for short-circuit protection of the auxiliary switch	V, 50 kA) gG: 10 A (500 V, 1 kA)
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
side-by-side mounting	Yes
height	172 mm
width	120 mm
depth	170 mm
required spacing	
with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
for grounded parts	
■ Ioi grounded parts	

— forwards	20 mm
— upwards	10 mm
— at the side	10 mm
downwards	10 mm
for live parts	
— 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	
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
type of connectable conductor cross-sections	
at AWG cables for main contacts	4 250 kcmil
connectable conductor cross-section for main	
contacts	
stranded	25 120 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 4 mm ²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— 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)
at AWG cables for auxiliary contacts	2x (20 16), 2x (18 14), 1x 12
AWG number as coded connectable conductor cross section	
for auxiliary contacts	18 14
Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
B10 value with high demand rate acc. to SN 31920	1 000 000
product function positively driven operation acc. to IEC 60947-5-1	No
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
- Samuel Photos	







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Type Examination Certificate Type Test Certificates/Test Report

Special Test Certificate







other Railway

<u>Confirmation</u> <u>Miscellaneous</u> <u>Confirmation</u> <u>Miscellaneous</u> <u>Special Test Certificate</u>

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=3RT1056-6NP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6NP36

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6NP36

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

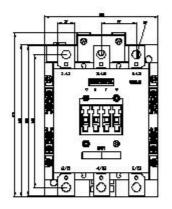
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6NP36&lang=en

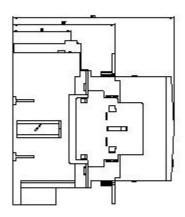
Characteristic: Tripping characteristics, I2t, Let-through current

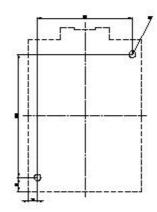
https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6NP36/char

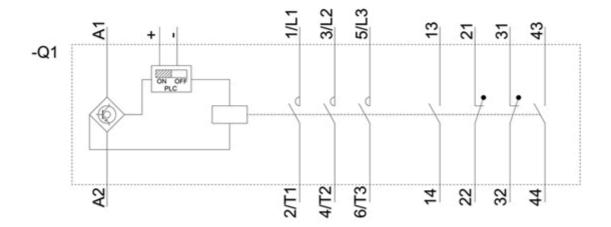
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6NP36&objecttype=14&gridview=view1









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