SIEMENS

Data sheet 3RT1066-6NP36



Power contactor, AC-3 300 A, 160 kW / 400 V AC (50-60 Hz) / DC operation 200-277 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, Size S10 Busbar connections Drive: electronic with PLC interface 24 V DC screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
eneral 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	66 W
• per pole	22 W
power loss [W] for rated value of the current without load current share typical	3.4 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
mbient conditions	
nstallation 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 %

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	1 000 V
at AC-1 at 400 V at ambient temperature 40 °C rated value	330 A
• at AC-1	
— up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	330 A
 up to 690 V at ambient temperature 60 °C rated value 	300 A
 up to 1000 V at ambient temperature 40 °C rated value 	150 A
— up to 1000 V at ambient temperature 60 °C rated value	150 A
• at AC-3	
— at 400 V rated value	300 A
— at 500 V rated value	300 A
— at 690 V rated value	280 A
— at 1000 V rated value	95 A
 at AC-4 at 400 V rated value 	280 A
 at AC-5a up to 690 V rated value 	290 A
• at AC-5b up to 400 V rated value	249 A
• at AC-6a	
 up to 230 V for current peak value n=20 rated value 	292 A
 up to 400 V for current peak value n=20 rated value 	292 A
 up to 500 V for current peak value n=20 rated value 	292 A
 up to 690 V for current peak value n=20 rated value 	280 A
— up to 1000 V for current peak value n=20 rated value	95 A
• at AC-6a	
 up to 230 V for current peak value n=30 rated value 	195 A
— up to 400 V for current peak value n=30 rated value	195 A
— up to 500 V for current peak value n=30 rated value	195 A
— up to 690 V for current peak value n=30 rated value	195 A
— up to 1000 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1	95 A
rated value	100 111111
operational current for approx. 200000 operating cycles at AC-4	407.4
• at 400 V rated value	125 A
at 690 V rated value	115 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	300 A
— at 110 V rated value	33 A
— at 220 V rated value	3.8 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	300 A

— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	4 A
— at 600 V rated value	2 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	11 A
— at 600 V rated value	5.2 A
operational current	0.2 A
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	300 A
— at 110 V rated value	3 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.18 A
— at 600 V rated value	0.125 A
with 2 current paths in series at DC-3 at DC-5	0.120 A
— at 24 V rated value	300 A
— at 110 V rated value	300 A
— at 220 V rated value	2.5 A
— at 440 V rated value — at 440 V rated value	0.65 A
— at 600 V rated value	0.37 A
	0.57 A
 with 3 current paths in series at DC-3 at DC-5 — at 24 V rated value 	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
	1.4 A
— at 440 V rated value — at 600 V rated value	0.75 A
	0.75 A
operating power • at AC-3	
— at 230 V rated value	00 1444
***************************************	90 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 690 V rated value	250 kW
— at 1000 V rated value operating power for approx. 200000 operating cycles	132 kW
at AC-4	
at 400 V rated value	71 kW
at 690 V rated value	112 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	110 000 kV·A
up to 400 V for current peak value n=20 rated value	200 000 V·A
up to 500 V for current peak value n=20 rated value	250 000 V·A
up to 690 V for current peak value n=20 rated value	330 000 V·A
up to 1000 V for current peak value n=20 rated value	160 000 V·A
operating apparent power at AC-6a	
up to 230 V for current peak value n=30 rated value	70 000 V·A
• up to 400 V for current peak value n=30 rated value	130 000 V·A
• up to 500 V for current peak value n=30 rated value	160 000 V·A
up to 690 V for current peak value n=30 rated value	230 000 V·A
• up to 1000 V for current peak value n=30 rated	160 000 V·A
value short-time withstand current in cold operating state	
up to 40 °C	
 limited to 1 s switching at zero current maximum 	5 524 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	4 579 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	3 153 A; Use minimum cross-section acc. to AC-1 rated value
•	

 limited to 30 s switching at zero current maximum 	1 883 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	1 445 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 	750 1/h
 at AC-2 maximum 	250 1/h
• at AC-3 maximum	500 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
input	
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	530 V·A
● at 60 Hz	530 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	5 V·A
● at 60 Hz	5 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	580 W
holding power of magnet coil at DC	3.4 W
closing delay	
• at AC	45 80 ms
• at DC	45 80 ms
opening delay	
• at AC	80 100 ms
• at DC	80 100 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	2
instantaneous contact	

operational current at AC-12 maximum	10 A
operational current at AC-15	
 at 230 V rated value 	6 A
 at 400 V rated value 	3 A
 at 500 V rated value 	2 A
at 690 V rated value	1 A
operational current at DC-12	
 at 24 V rated value 	10 A
at 48 V rated value	6 A
at 60 V rated value	6 A
at 110 V rated value	3 A
at 125 V rated value	2 A
at 220 V rated value	1 A
at 600 V rated value	0.15 A
	0.13 A
operational current at DC-13	40.0
• at 24 V rated value	10 A
at 48 V rated value	2 A
at 60 V rated value	2 A
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	302 A
at 600 V rated value	289 A
yielded mechanical performance [hp]	
• for 3-phase AC motor	
•	400 hm
— at 200/208 V rated value	100 hp
— at 220/230 V rated value	125 hp
— at 460/480 V rated value	250 hp
— at 575/600 V rated value	300 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: 500 A (690 V, 100 kA)
with type of assignment 2 required	gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415
war type or accignment 2 required	V, 50 kA)
 for short-circuit protection of the auxiliary switch 	gG: 10 A (500 V, 1 kA)
required	
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	210 mm
width	145 mm
depth	202 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	
— forwards	20 mm
— upwards	10 mm

at the acide	40
— 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	25 mm
thickness of connection bar	6 mm
diameter of holes	11 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	2/0 500 kcmil
connectable conductor cross-section for main contacts	
stranded	70 240 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 4 mm²
 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







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Functional Safety/Safety of Test Certificates Machinery	Marine / Shipping
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Type Examination Certificate Special Test Certificate

Type Test Certificates/Test Report







other Railway

<u>Confirmation</u> <u>Miscellaneous</u> <u>Miscellaneous</u> <u>Confirmation</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=3RT1066-6NP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6NP36

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6NP36

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

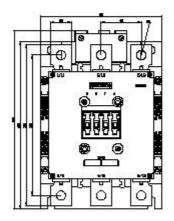
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6NP36&lang=en

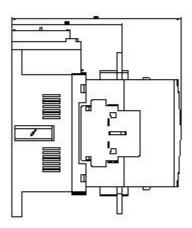
Characteristic: Tripping characteristics, I2t, Let-through current

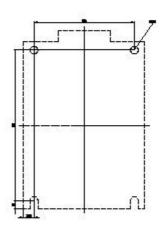
https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6NP36/char

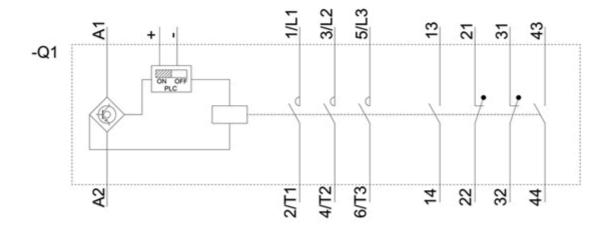
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6NP36&objecttype=14&gridview=view1









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