SIEMENS

Data sheet 3RT1056-2NP36

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 Spring-type 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 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
● 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
● 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 °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-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 mm²
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
operational current	
● 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
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	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 value	110 000 V·A
short-time withstand current in cold operating state 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
● limited to 30 s switching at zero current maximum	968 A; Use minimum cross-section acc. to AC-1 rated value
● limited 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 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	
● 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
inductive power factor with closing power of the coil	
● at 50 Hz	0.8
apparent holding power of magnet coil at AC	
● at 50 Hz	4.4 V·A
inductive power factor with the holding power of the coil	
● 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	
● 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 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	
● 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
operational current at DC-13	
● 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	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, 100 kA), BS88: 315 A (415 V, 50 kA)
● 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
● 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	
— 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	spring-loaded terminals
• at contactor for auxiliary contacts	Spring-type terminals
• of magnet coil	Spring-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	0.25 ... 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	
• for auxiliary contacts	
— 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 for auxiliary contacts	24 ... 14
Safety related data	
B10 value with high demand rate acc. to SN 31920	1 000 000
product function	
• mirror contact acc. to IEC 60947-4-1	Yes
• 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
CSA	CCC	UL	KC	EAC	RCM

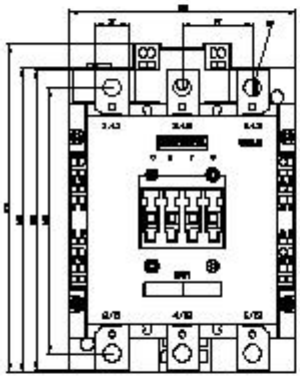
Declaration of Conformity		Test Certificates		Marine / Shipping	
EG-Konf.	Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate	ABS	RMRS

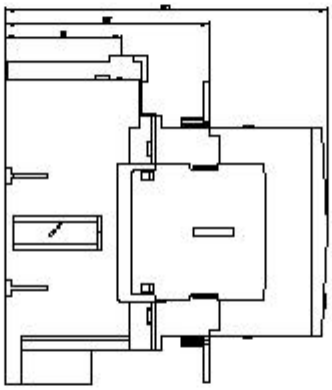
Marine / Shipping	other	Railway

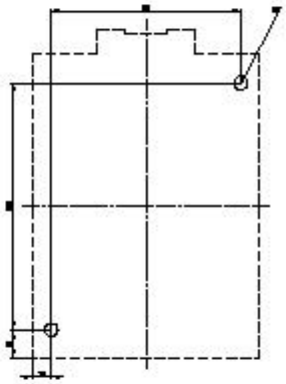
Miscellaneous | Confirmation | Confirmation | Miscellaneous | Special Test Certificate

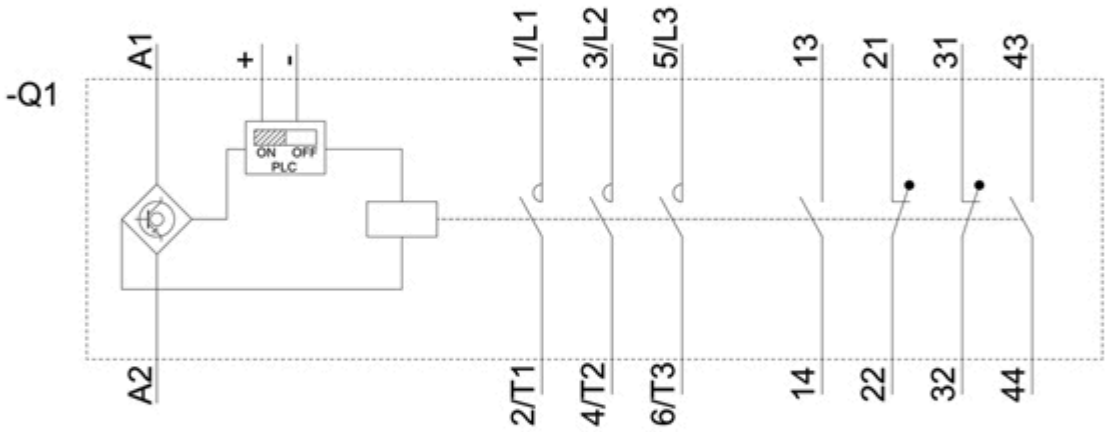
Further information

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=3RT1056-2NP36
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-2NP36
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-2NP36
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-2NP36&lang=en
Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-2NP36/char
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-2NP36&objecttype=14&gridview=view1









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