SIEMENS

Data sheet 3RT1054-6NP38-0PA5

Power contactor, AC-3 115 A, 55 kW / 400 V AC/DC operation 200-277 V UC Auxiliary contacts 2 NO + 2 NC solid-state-compatible, 3-pole, Size S6, Busbar connections, Drive: electronic, with PLC interface 24 V DC

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	21 W
• at AC in hot operating state per pole	7 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

protection class IP	
• on the front	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00
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 electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
reference code acc. to DIN EN 81346-2	Q

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

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
operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	160 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 60 °C rated value	140 A
— up to 1000 V at ambient temperature 40 °C rated value	80 A
— up to 1000 V at ambient temperature 60 °C rated value	80 A
• at AC-3	
— at 400 V rated value	115 A
— at 500 V rated value	115 A

— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	140 A
• at AC-5b up to 400 V rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	115 A
— up to 400 V for current peak value n=20 rated value	115 A
— up to 500 V for current peak value n=20 rated value	115 A
— up to 690 V for current peak value n=20 rated value	115 A
— up to 1000 V for current peak value n=20 rated value	53 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	98 A
— up to 400 V for current peak value n=30 rated value	98 A
— up to 500 V for current peak value n=30 rated value	98 A
— up to 690 V for current peak value n=30 rated value	98 A
— up to 1000 V for current peak value n=30 rated value	53 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	70 mm²
operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	54 A
• at 690 V rated value	48 A
operating 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
operating 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	37 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	110 kW
— at 1000 V rated value	75 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	29 kW
• at 690 V rated value	48 kW
operating apparent output at AC-6a	
• up to 230 V for current peak value n=20 rated value	40 000 kV·A

• up to 400 V for current peak value n=20 rated value	80 000 V·A
• up to 500 V for current peak value n=20 rated value	100 000 V·A
• up to 690 V for current peak value n=20 rated value	130 000 V·A
• up to 1000 V for current peak value n=20 rated value	90 000 V·A
operating apparent output at AC-6a	
• up to 230 V for current peak value n=30 rated value	30 000 V·A
• up to 400 V for current peak value n=30 rated value	60 000 V·A
• up to 500 V for current peak value n=30 rated value	80 000 V·A
• up to 690 V for current peak value n=30 rated value	110 000 V·A
• up to 1000 V for current peak value n=30 rated value	90 000 V·A
short-time withstand current in cold operating state up to 40 °C	
• limited to 1 s switching at zero current maximum	2 565 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	1 654 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	1 170 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	729 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	572 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	400 1/h
• at AC-3 maximum	1 000 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
operating current at AC-12 maximum	10 A
operating 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
operating 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
operating 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 three-phase AC motor	
• at 480 V rated value	124 A
• at 600 V rated value	125 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 230 V rated value	25 hp
• for three-phase AC motor	
— at 200/208 V rated value	40 hp
— at 220/230 V rated value	50 hp
— at 460/480 V rated value	100 hp
— at 575/600 V rated value	125 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: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 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
mounting type	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 current 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 conductors for main contacts	4 ... 250 kcmil
connectable conductor cross-section for main contacts	
• stranded	25 ... 120 mm²

connectable conductor cross-section for auxiliary contacts	
• single or multi-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)
— single or multi-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)
• type of connectable conductor cross-sections at AWG conductors 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

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 against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529
suitability for use safety-related switching OFF	Yes

Certificates/ approvals

General Product Approval				EMC	Declaration of Conformity
CCC	CSA	UL	EAC	RCM	EG-Konf.

Declaration of Conformity	Test Certificates		Marine / Shipping		other
Miscellaneous	Special Test Certificate	Type Test Certificates/Test Report	ABS	RMRS	Miscellaneous

other	Railway
Confirmation	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=3RT1054-6NP38-0PA5

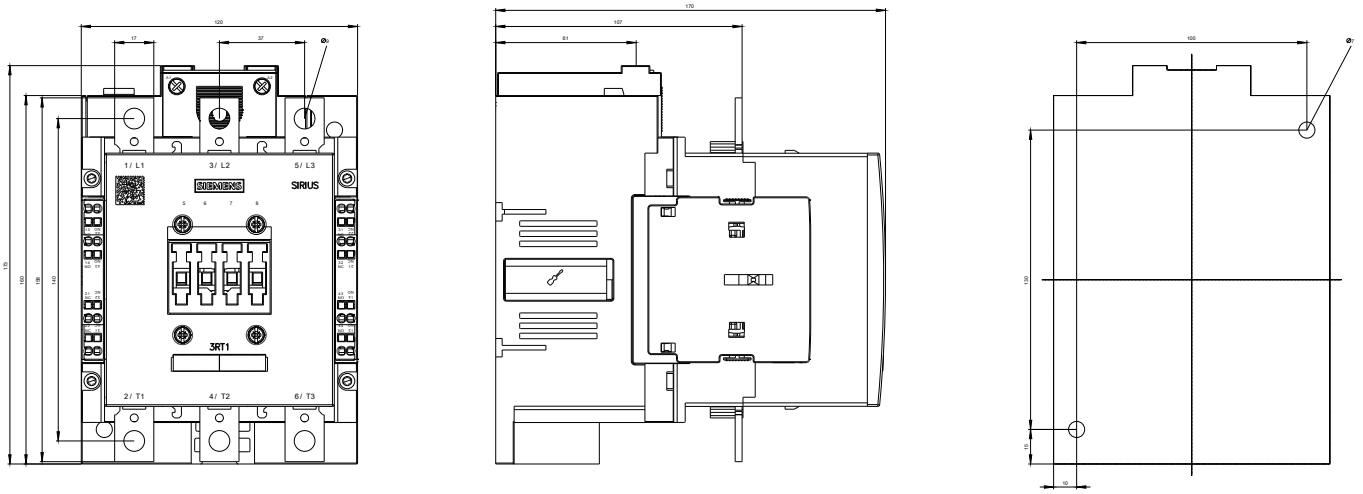
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-6NP38-0PA5

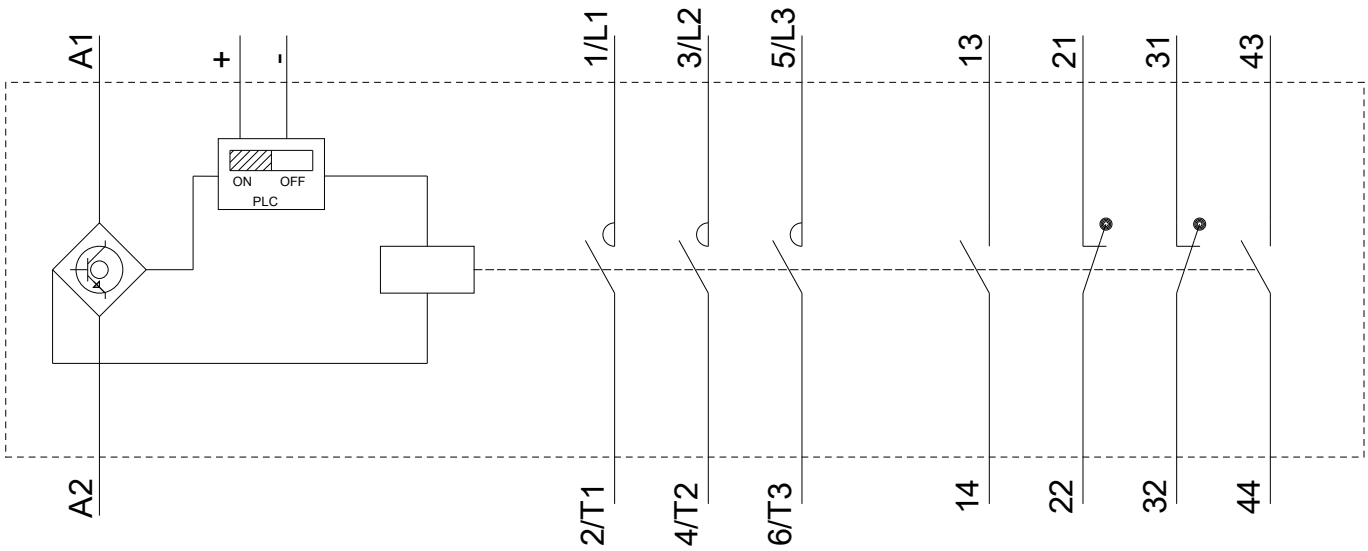
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6NP38-0PA5

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-6NP38-0PA5&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6NP38-0PA5/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-6NP38-0PA5&objecttype=14&gridview=view1





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