SIEMENS

Data sheet 3RT1054-1NB36



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC Uc: 21-27.3 V PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main circuit: box terminal 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 	21 W
 at AC in hot operating state per pole 	7 W
 without load current share typical 	2.8 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	1 000 V
 of auxiliary circuit with degree of pollution 3 rated value 	500 V
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 according 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 (operating 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 according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/01/2012
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 according to IEC 60068-2-30 maximum	95 %

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
 at AC-3e rated value maximum 	1 000 V
operational current	
at AC-1 at 400 V at ambient temperature 40 °C	160 A
rated value ■ at AC-1	
	160 A
 up to 690 V at ambient temperature 40 °C rated value 	100 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-3e	
— 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 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	54 A
at 690 V rated value	48 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	160 A
— at 60 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	400 A
— at 24 V rated value	160 A
— at 60 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	400 A
— at 24 V rated value	160 A
— at 60 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 4 A
— at 600 V rated value	4 A
 at 1 current path at DC-3 at DC-5 at 24 V rated value 	160 A
— at 60 V rated value	7.5 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 60 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 60 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
• at AC-3e	
— 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 400 V rated value at 690 V rated value	48 kW
operating apparent power at AC-6a	TO INV
• up to 230 V for current peak value n=20 rated value	40 000 kVA
 up to 400 V for current peak value n=20 rated value 	80 000 VA
 up to 500 V for current peak value n=20 rated value 	100 000 VA
up to 690 V for current peak value n=20 rated value rated value rated value	130 000 VA
up to 1000 V for current peak value n=20 rated value value	90 000 VA
operating apparent power at AC-6a	
up to 230 V for current peak value n=30 rated value	30 000 VA
up to 400 V for current peak value n=30 rated value	60 000 VA
 up to 500 V for current peak value n=30 rated value 	80 000 VA
• up to 690 V for current peak value n=30 rated value	110 000 VA
• up to 1000 V for current peak value n=30 rated	90 000 VA
value	

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-3e 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 21 ... 27.3 V • at 60 Hz rated value 21 ... 27.3 V control supply voltage at DC 21 ... 27.3 V • rated value type of PLC-control input according to IEC 60947-1 Type 2 consumed current at PLC-control input according to 20 mA IEC 60947-1 maximum 24 V voltage at PLC-control input rated value 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 with varistor design of the surge suppressor apparent pick-up power of magnet coil at AC • at 50 Hz 280 VA at 60 Hz 280 VA 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 4.8 VA 4.8 VA at 60 Hz inductive power factor with the holding power of the coil • at 50 Hz 0.6 • at 60 Hz 0.6 closing power of magnet coil at DC 320 W holding power of magnet coil at DC 2.8 W closing delay 35 ... 75 ms at AC at DC 35 ... 75 ms opening delay 80 ... 90 ms at AC 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	
operational current at AC-12 maximum	10 A
operational current at AC-15	10 /1
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	1A
	T A
operational current at DC-12	10 A
 at 24 V rated value 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	40.4
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 	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 3-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 coordination is required - with type of assignment 2 required	gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415
with type of assignment 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
mounting position	5
mounting position	surface +/- 22.5° tiltable to the front and back
fastening method	surface +/- 22.5° tiltable to the front and back screw fixing
fastening method	screw fixing
fastening method • side-by-side mounting	screw fixing Yes
fastening method • side-by-side mounting height	screw fixing Yes 172 mm
fastening method ■ side-by-side mounting height width	screw fixing Yes 172 mm 120 mm
fastening method • side-by-side mounting height width depth	screw fixing Yes 172 mm 120 mm
fastening method • side-by-side mounting height width depth required spacing	screw fixing Yes 172 mm 120 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm
fastening method • side-by-side mounting height width depth required spacing • with side-by-side mounting — forwards — upwards	screw fixing Yes 172 mm 120 mm 170 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm 20 mm 10 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm 20 mm 10 mm 10 mm 0 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm 20 mm 10 mm 10 mm 0 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm 20 mm 10 mm 0 mm 0 mm
fastening method	screw fixing Yes 172 mm 120 mm 170 mm 20 mm 10 mm 10 mm 0 mm

• for live parts 20 mm - forwards upwards 10 mm downwards 10 mm - at the side 10 mm **Connections/ Terminals** type of electrical connection • for main current circuit box terminal • for auxiliary and control circuit screw-type terminals • at contactor for auxiliary contacts Screw-type terminals

Screw-type terminals

• of magnet coil type of connectable conductor cross-sections for main contacts

stranded max. 1x 50, 1x 70 mm² solid or stranded max. 1x 50, 1x 70 mm² • finely stranded with core end processing max. 1x 50, 1x 70 mm² max. 1x 50, 1x 70 mm² finely stranded without core end processing

connectable conductor cross-section for main contacts

16 ... 70 mm² stranded 16 ... 70 mm² • finely stranded with core end processing • finely stranded without core end processing 16 ... 70 mm²

connectable conductor cross-section for auxiliary contacts

0.5 ... 4 mm² solid or stranded • 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) 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²) - solid or stranded - 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 according to IEC 60947-4-1 Yes No

• positively driven operation according to IEC 60947-

B10 value with high demand rate according to SN 31920 T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529 suitability for use

· safety-related switching OFF

1 000 000

20 a

IP20

finger-safe, for vertical contact from the front

Yes

Certificates/ approvals

General Product Approval





Confirmation



KC



Functional EMC Safety/Safety of **Declaration of Conformity Test Certificates** Machinery



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

Marine / Shipping

other











Confirmation

other

<u>Miscellaneous</u> <u>Miscellaneous</u> <u>Confirmation</u> <u>Special Test Certific-</u> <u>Vibration and Shock</u>

<u>ate</u>

Railway

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT1054-1NB36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-1NB36

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1NB36

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

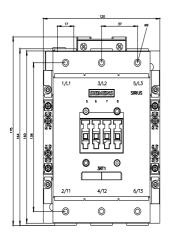
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-1NB36&lang=en

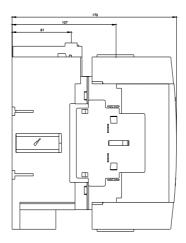
Characteristic: Tripping characteristics, I2t, Let-through current

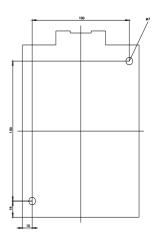
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1NB36/char

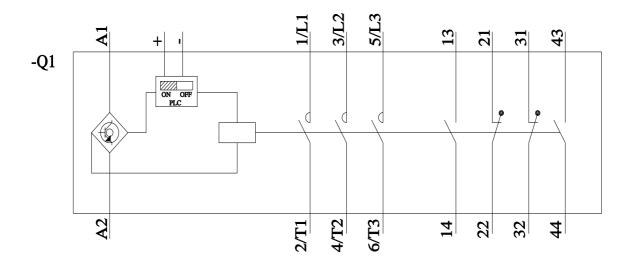
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-1NB36&objecttype=14&gridview=view1









last modified: 2/10/2023 **C**