## **SIEMENS**

Data sheet 3RT1054-6NB36



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: busbar 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	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	21 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	7 W
<ul> <li>without load current share typical</li> </ul>	2.8 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	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 protective separation 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
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	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
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 Lead titanium zirconium oxide - 12626-81-2 Perfluorobutane sulfonic acid (PFBS) and its salts
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 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
<ul> <li>up to 1000 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> </ul>	80 A
— 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	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	115 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	115 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	115 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	115 A
<ul> <li>up to 1000 V for current peak value n=20 rated value</li> </ul>	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
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 24 v rated value  — at 60 V rated value	160 A
— at 110 V rated value	18 A 3.4 A
— at 220 V rated value — at 440 V rated value	3.4 A 0.8 A
	0.5 A
— at 600 V rated value	U.U A

<ul> <li>with 2 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— 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
— 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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-	
at 400 V rated value	29 kW
at 690 V rated value  operating apparent power at AC-6a	48 kW
	40,000 12/4
<ul> <li>up to 230 V for current peak value n=20 rated value</li> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	40 000 kVA 80 000 VA
· · · · · · · · · · · · · · · · · · ·	
up to 500 V for current peak value n=20 rated value      up to 600 V for current peak value n=20 rated value	100 000 VA
up to 690 V for current peak value n=20 rated value     up to 1000 V for current peak value n=20 rated value	130 000 VA
up to 1000 V for current peak value n=20 rated value	90 000 VA
operating apparent power at AC-6a	30,000 \/A
up to 230 V for current peak value n=30 rated value	30 000 VA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	60 000 VA 80 000 VA
- ap to 500 v for current peak value 11-30 fateu value	00 000 YA

• 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 value	90 000 VA
short-time with stand current in cold operating state up to 40 $^{\circ}\text{C}$	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	2 565 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	1 654 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	1 170 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	729 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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 50 Hz rated value     at 60 Hz rated value	21 27.3 V
	21 21.0 V
control supply voltage at DC rated value	21 27.3 V
operating range factor control supply voltage rated value of magnet coil at DC	21 21.3 V
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
type of PLC-control input according to IEC 60947-1	Type 2
consumed current at PLC-control input according 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
design of the surge suppressor	with varistor
apparent pick-up power	
<ul> <li>at minimum rated control supply voltage at AC</li> </ul>	
— at 50 Hz	190 VA
— at 60 Hz	190 VA
<ul> <li>at maximum rated control supply voltage at AC</li> </ul>	
— at 60 Hz	280 VA
— at 50 Hz	280 VA
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	
at minimum rated control supply voltage at DC	2.1 VA
at maximum rated control supply voltage at DC	2.8 VA
apparent holding power	
at minimum rated control supply voltage at AC	
— at 50 Hz	3.5 VA
— at 60 Hz	3.5 VA
at maximum rated control supply voltage at AC	
— at 50 Hz	4.8 VA
— at 60 Hz	4.8 VA
— at 00 112	T.U VA

inductive power factor with the holding power of the coil  • at 50 Hz  • at 60 Hz  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at AC  • at DC  opening delay  • at AC  • at DC  arcing time  control version of the switch operating mechanism  Auxiliary circuit	0.6 0.6 320 W 2.8 W  35 75 ms 35 75 ms  80 90 ms 80 90 ms 10 15 ms  PLC-IN or Standard A1 - A2 (adjustable)
at 60 Hz  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  at AC  at DC  opening delay  at AC  at DC  arcing time  control version of the switch operating mechanism	0.6 320 W 2.8 W 35 75 ms 35 75 ms 80 90 ms 80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
closing power of magnet coil at DC holding power of magnet coil at DC  closing delay	320 W 2.8 W 35 75 ms 35 75 ms 80 90 ms 80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
holding power of magnet coil at DC  closing delay  at AC  at DC  opening delay  at AC  at DC  orat DC  arcing time  control version of the switch operating mechanism	2.8 W  35 75 ms  35 75 ms  80 90 ms  80 90 ms  10 15 ms  PLC-IN or Standard A1 - A2 (adjustable)
closing delay	35 75 ms 35 75 ms 80 90 ms 80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
at AC at DC opening delay at AC at DC arcing time control version of the switch operating mechanism	35 75 ms  80 90 ms 80 90 ms 10 15 ms  PLC-IN or Standard A1 - A2 (adjustable)
at DC  opening delay  at AC  at DC  arcing time  control version of the switch operating mechanism	35 75 ms  80 90 ms 80 90 ms 10 15 ms  PLC-IN or Standard A1 - A2 (adjustable)
opening delay  • at AC  • at DC  arcing time  control version of the switch operating mechanism	80 90 ms 80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
at AC     at DC     arcing time     control version of the switch operating mechanism	80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
at DC     arcing time     control version of the switch operating mechanism	80 90 ms 10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
arcing time control version of the switch operating mechanism	10 15 ms PLC-IN or Standard A1 - A2 (adjustable)
control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)
Auxiliany circuit	2
Auxiliary Circuit	2
number of NC contacts for auxiliary contacts instantaneous contact	
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
<ul> <li>at 400 V rated value</li> </ul>	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	1A
• 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	1A
• 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 UL/CSA ratings	1 faulty switching per 100 million (17 V, 1 mA)
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	
<ul> <li>— with type of coordination 1 required</li> </ul>	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
• for short-circuit protection of the auxiliary switch required	kA) gG: 10 A (500 V, 1 kA)

nstallation/ 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	
fastening method 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		
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	
width of connection bar	17 mm	
thickness of connection bar	3 mm	
diameter of holes	9 mm	
number of holes	1	
type of connectable conductor cross-sections		
for 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 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)	
for 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		
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes	
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No	
suitability for use safety-related switching OFF	No	
B10 value with high demand rate according to SN 31920	1 000 000	
IEC 61508		
T1 value		
for proof test interval or service life according to IEC	20 a	
61508		

**Electrical Safety** 

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529

IP00; IP20 with box terminal/cover

finger-safe, for vertical contact from the front with box terminal/cover

Approvals Certificates

## **General Product Approval**









Confirmation



**General Product Approval** 

**Functional Saftey** 

**Test Certificates** 

Marine / Shipping

<u>KC</u>



Type Examination Certificate

Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping









**Miscellaneous** 

other

Confirmation

other

Railway

Confirmation

**Miscellaneous** 

**Special Test Certific-**

<u>ate</u>

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=3RT1054-6NB36

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT1054-6NB36}$ 

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

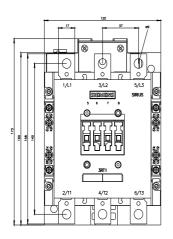
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6NB36

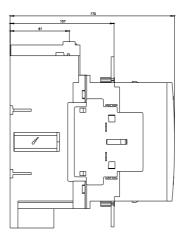
 $Image\ database\ (product\ images,\ 2D\ dimension\ drawings,\ 3D\ models,\ device\ circuit\ diagrams,\ EPLAN\ macros,\ ...)$ 

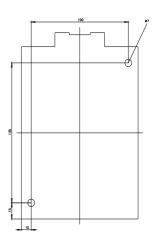
Characteristic: Tripping characteristics, I2t, Let-through current

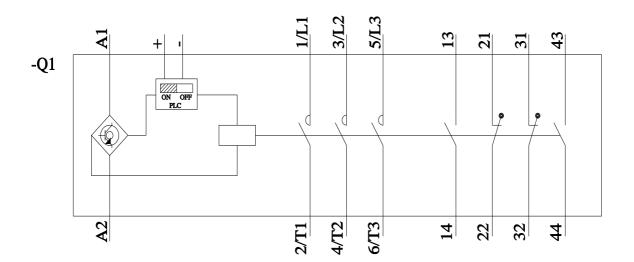
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-6NB36&objecttype=14&gridview=view1









last modified:

3/15/2024

3/15/2024

