SIEMENS

Data sheet

3RT1054-1AP36



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC Uc: 220-240 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional 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 	5.2 W
type of calculation of power loss depending on pole	quadratic
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 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
 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	95 %

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
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
— up to 1000 V at ambient temperature 60 °C rated value	80 A
• at AC-3	44E 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	
 — 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 at AC-6a 	53 A
	98 A
 — up to 230 V for current peak value n=30 rated value — 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 53 A
— up to 1000 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated	53 A
value operational current for approx. 200000 operating cycles at	
AC-4 • at 400 V rated value	54 A
at 400 V rated value at 690 V rated value	54 A 48 A
operational current	
-	
at 1 current path at DC-1 — at 24 V rated value	160 A
	160 A
- at 60 V rated value	
- 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 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 	
— 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
• 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 	0.01 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	1.4 A
— at 600 V rated value	0.75 A
operating power	0.13 A
• 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	/ 5 KW
- at 230 V rated value	37 kW
— at 400 V rated value	55 kW
	75 kW
— at 500 V rated value — at 690 V rated value	13 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 power at AC-6a	
• 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	130 000 VA
• up to 1000 V for current peak value n=20 rated 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 value 	90 000 VA
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	2 000 1/h			
• at DC	2 000 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	220 240 V			
at 50 Hz rated value at 60 Hz rated value	220 240 V 220 240 V			
	220 270 V			
control supply voltage at DC rated value	220 240 V			
	220 240 V			
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				
 at minimum rated control supply voltage at AC 				
— at 50 Hz	250 VA			
— at 60 Hz	250 VA			
 at maximum rated control supply voltage at AC 				
— at 60 Hz	300 VA			
— at 50 Hz	300 VA			
apparent pick-up power of magnet coil at AC				
• at 50 Hz	300 VA			
• at 60 Hz	300 VA			
inductive power factor with closing power of the coil				
• at 50 Hz	0.9			
• at 60 Hz	0.9			
apparent holding power				
at minimum rated control supply voltage at DC	4.3 VA			
at maximum rated control supply voltage at DC	5.2 VA			
apparent holding power				
at minimum rated control supply voltage at AC				
— at 50 Hz	4.8 VA			
— at 60 Hz	4.8 VA			
at maximum rated control supply voltage at AC				
— at 50 Hz	5.8 VA			
— at 60 Hz	5.8 VA			
inductive power factor with the holding power of the coil				
• at 50 Hz	0.8			
• at 60 Hz	0.8			
closing power of magnet coil at DC	360 W			
holding power of magnet coil at DC	5.2 W			
closing delay	0.2 11			
• at AC	20 95 ms			
	20 00 1110			

• at DC	20 95 ms			
opening delay				
• at AC	40 60 ms			
• at DC	40 60 ms			
arcing time	10 15 ms			
control version of the switch operating mechanism	Standard A1 - A2			
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	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 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			
fastening method	screw fixing			
height	172 mm			
width	120 mm			
depth	170 mm			
required spacing				
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 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	box terminal		
 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			
for main contacts			
— stranded	max. 1x 50, 1x 70 mm ²		
— solid or stranded	max. 1x 50, 1x 70 mm ²		
— finely stranded with core end processing	max. 1x 50, 1x 70 mm ²		
 finely stranded with one end processing finely stranded without core end processing 	max. 1x 50, 1x 70 mm ²		
for AWG cables for main contacts	2x 1/0		
connectable conductor cross-section for main contacts			
stranded	16 70 mm²		
 finely stranded with core end processing 	16 70 mm ²		
 finely stranded with core end processing finely stranded without core end processing 	16 70 mm ²		
connectable conductor cross-section for auxiliary contacts	10 70 mm		
solid or stranded	0.5 4 mm²		
	0.5 4 mm ²		
finely stranded with core end processing	0.5 2.5 mm		
type of connectable conductor cross-sections for auxiliary contacts 			
	$2 \times (0.5 + 1.5 \text{ mm}^2) \times (0.75 + 2.5 \text{ mm}^2) = 2 \times (0.75 + 4.5 \text{ mm}^2)$		
- solid	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²), max. 2x (0.75 4 mm ²)		
— solid or stranded	2x (0,5 1,5 mm ²), 2x (0,75 2,5 mm ²), max. 2x (0,75 4 mm ²)		
— finely stranded with core end processing	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)		
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			
 mirror contact according to IEC 60947-4-1 	Yes		
 positively driven operation according to IEC 60947-5-1 	No		
suitability for use safety-related switching OFF	Yes; applies only to contactor operating mechanism		
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	IP20		
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front		
Approvals Certificates			
General Product Approval			

	UK CA	CE EG-Konf.	<u>Confirmation</u>		
General Product App	roval	EMV	Functional Saftey	Test Certificates	
KC	EAC	RCM	Type Examination Cer- tificate	Special Test Certific- ate	<u>Type Test Certific-</u> ates/Test Report
Marine / Shipping					other
ABS		Lloyd's Register us	PRS	RMRS	<u>Miscellaneous</u>
other			Railway	Environment	
<u>Confirmation</u>	<u>Miscellaneous</u>	<u>Confirmation</u>	Special Test Certific- ate	EPD	Environmental Con- firmations
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)					

Industry Mall (Online ordering system) https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1054-1AP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-1AP36

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

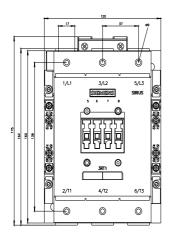
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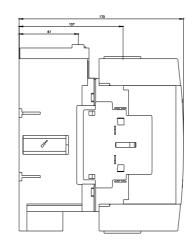
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-1AP36&lang=en

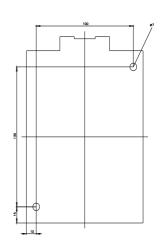
Characteristic: Tripping characteristics, I²t, Let-through current

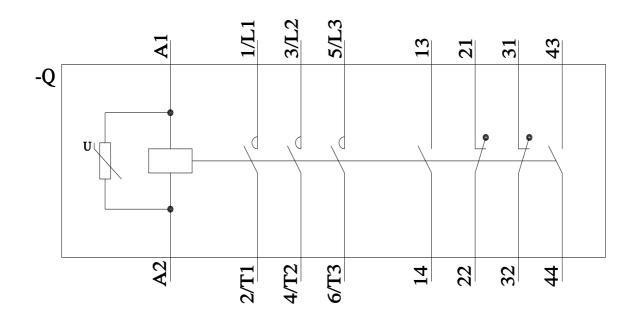
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AP36/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-1AP36&objecttype=14&gridview=view1









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