SIEMENS

Data sheet 3RT1054-1AF36

Power contactor, AC-3 115 A, 55 kW / 400 V AC (50-60 Hz) / DC operation 110-127 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, Size S6 with box terminals Drive: conventional 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
● per pole	7 W
power loss [W] for rated value of the current without load current share typical	5.2 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
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	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
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 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	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 power 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 power 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	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-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	110 ... 127 V
● at 60 Hz rated value	110 ... 127 V
control supply voltage at DC	
● rated value	110 ... 127 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 of magnet coil at AC	
● at 50 Hz	300 V·A
inductive power factor with closing power of the coil	
● at 50 Hz	0.9
apparent holding power of magnet coil at AC	
● at 50 Hz	5.8 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.8
closing power of magnet coil at DC	360 W
holding power of magnet coil at DC	5.2 W
closing delay	
● at AC	20 ... 95 ms
● 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
● 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	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 mm²
— finely stranded with core end processing	max. 1x 50, 1x 70 mm²
— finely stranded without core end processing	max. 1x 50, 1x 70 mm²
● at 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 mm²
● finely stranded without core end processing	16 ... 70 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)
● 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

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	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
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**

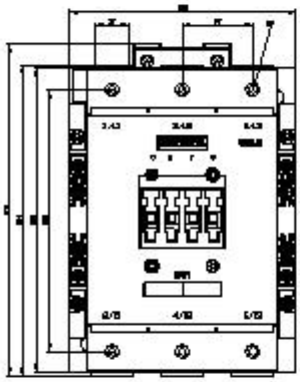
Miscellaneous | EG-Konf. | Type Test Certificates/Test Report | Special Test Certificate | ABS | RMRS

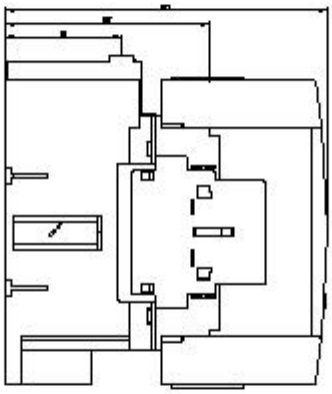
Marine / Shipping | **other** | **Railway**

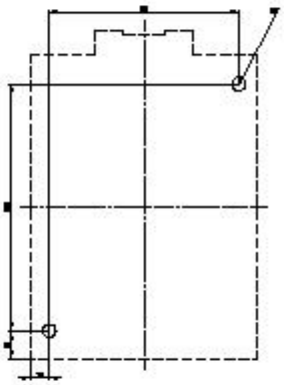
DNV·GL | Confirmation | Miscellaneous | Confirmation | Miscellaneous | Special Test Certificate

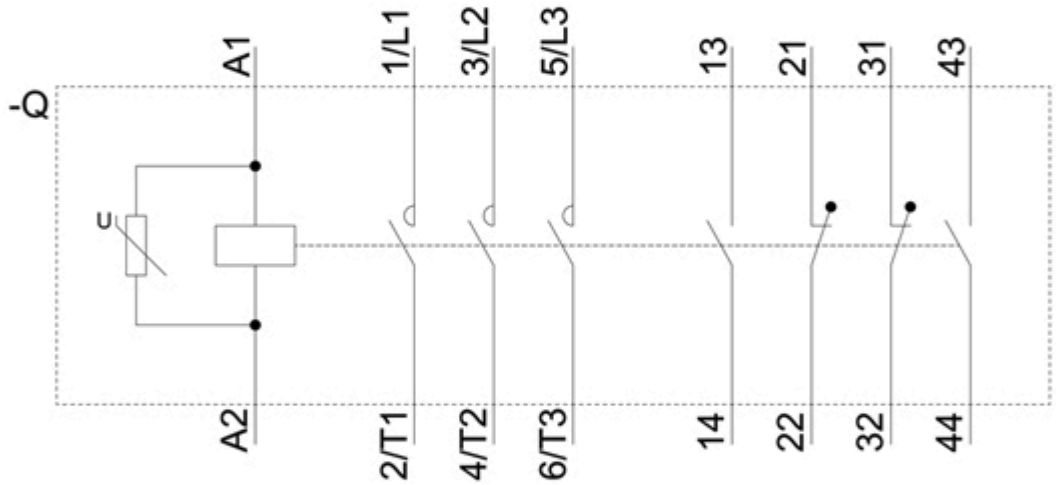
Further information

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=3RT1054-1AF36
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-1AF36
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AF36
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-1AF36&lang=en
Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AF36/char
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-1AF36&objecttype=14&gridview=view1









last modified: 12/15/2020