3RT1054-1AP36-3PA0

Data sheet



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)	
Weight	3.608 kg
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-3 rated value maximum at AC-3e rated value maximum	1 000 V
	1 000 V
operational current	160 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 	160 A
— up to 690 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	140 A
— up to 1000 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	80 A
 up to 1000 V at ambient temperature 60 °C rated value at AC-3 	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	00 A
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
	53 A
— at 1000 V rated value	
at AC-5 up to 600 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	445 A
— 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
— 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
·	98 A
 up to 500 V for current peak value n=30 rated value 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 minimum cross-section in main circuit at maximum AC-1 rated	53 A 70 mm ²
value 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 	
— 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	0.07 / 1
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
	160 A
— at 220 V rated value	1.4 A
— at 440 V rated value — at 600 V rated value	
	0.75 A
operating power	EE IAM
	55 kW
• at AC-3	07.144
— 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	A= 114
— 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	48 kW
operating apparent power at AC-6a	TO NOT
• 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 up to 400 V for current peak value n=20 rated value	
up to 500 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value	80 000 VA 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 VA
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	
Iimited to 1 s switching at zero current maximum	2 565 A; Use minimum cross-section acc. to AC-1 rated value
Ilmited to 7 s switching at zero current maximum Ilmited to 5 s switching at zero current maximum	1 654 A; Use minimum cross-section acc. to AC-1 rated value
limited to 0 s switching at zero current maximum	1 170 A: Use minimum cross-section acc. to AC-1 rated value
Ilimited 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 60 Hz rated value	220 240 V
control supply voltage at DC rated value	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	000 \/4
• 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 50 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	
• 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	
design of the auxiliary switch	lateral, permanently connected
number of NC contacts for auxiliary contacts instantaneous	2
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
• 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
factoring mathed	+/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	172 mm
width	120 mm
depth	170 mm
required spacing	

W	
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
— solid or 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
 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 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)
 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
suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN	100 FIT
31920	
ISO 13849	
device type according to ISO 13849-1	3 Ves
overdimensioning according to ISO 13849-2 necessary	Yes

IEC 61508	
safety device type according to IEC 61508-2	Type A
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







Confirmation



<u>KC</u>

General Product Approval

EMV

Functional Saftey

Test Certificates

Marine / Shipping





Type Examination Certificate

Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping









Miscellaneous

other

Confirmation

other

Railway

Environment

Miscellaneous

Special Test Certificate

Environmental Confirmations

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=3RT1054-1AP36-3PA0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-1AP36-3PA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AP36-3PA0

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

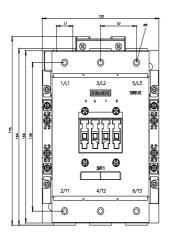
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-1AP36-3PA0&lang=en

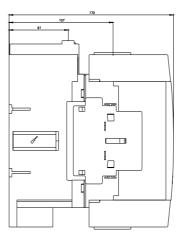
Characteristic: Tripping characteristics, I2t, Let-through current

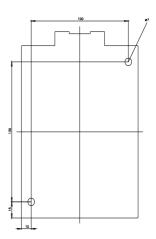
https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1AP36-3PA0/char

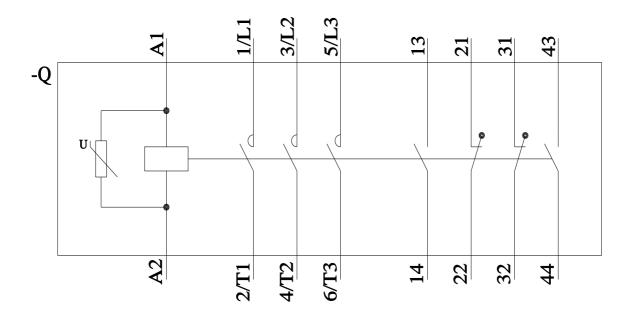
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-1AP36-3PA0&objecttype=14&gridview=view1









last modified:

