SIEMENS

Data sheet 3RT1066-6AP36





power contactor, AC-3e/AC-3 300 A, 160 kW / 400 V, AC (50-60 Hz) / DC Uc: 220-240 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional 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	S10
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 	66 W
 at AC in hot operating state per pole 	22 W
 without load current share typical 	7.4 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
SVHC substance name	Lead - 7439-92-1
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

during operation	-25 +60 °C
during operation during storage	-25 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30	95 %
maximum	
Environmental footprint	
Environmental Product Declaration(EPD)	Yes
Global Warming Potential [CO2 eq] total	580 kg
Global Warming Potential [CO2 eq] during manufacturing	26.3 kg
Global Warming Potential [CO2 eq] during operation	559 kg
Global Warming Potential [CO2 eq] after end of life	-4.89 kg
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	000 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value 	330 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	330 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	300 A
— up to 1000 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	150 A
 up to 1000 V at ambient temperature 60 °C rated value at AC-3 	150 A
— at 400 V rated value	300 A
— at 500 V rated value	300 A
— at 690 V rated value	280 A
— at 1000 V rated value	95 A
• at AC-3e	
— at 400 V rated value	300 A
— at 500 V rated value	300 A
— at 690 V rated value	280 A
— at 1000 V rated value	95 A
• at AC-4 at 400 V rated value	280 A
• at AC-5a up to 690 V rated value	290 A
• at AC-5b up to 400 V rated value	249 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	292 A
— up to 400 V for current peak value n=20 rated value	292 A
— up to 500 V for current peak value n=20 rated value	292 A
— up to 690 V for current peak value n=20 rated value	280 A
— up to 1000 V for current peak value n=20 rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	195 A
— up to 400 V for current peak value n=30 rated value	195 A
— up to 500 V for current peak value n=30 rated value	195 A
 up to 690 V for current peak value n=30 rated value up to 1000 V for current peak value n=30 rated value 	195 A 95 A
minimum cross-section in main circuit at maximum AC-1 rated value	185 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	125 A
at 690 V rated value	115 A
operational current	
• at 1 current path at DC-1	

— at 24 V rated value	300 A
— at 60 V rated value	300 A
— at 110 V rated value	33 A
— at 220 V rated value	3.8 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.6 A
with 2 current paths in series at DC-1	
— at 24 V rated value	300 A
— at 60 V rated value	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	4 A
— at 600 V rated value	2 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	300 A
— at 60 V rated value	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	11 A
— at 600 V rated value	5.2 A
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	300 A
— at 60 V rated value	11 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.18 A
— at 600 V rated value	0.125 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	300 A
— at 60 V rated value	300 A
— at 110 V rated value	300 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	300 A
— at 60 V rated value	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 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	90 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 690 V rated value	250 kW
— at 1000 V rated value	132 kW
• at AC-3e	
— at 230 V rated value	90 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 690 V rated value	250 kW
— at 1000 V rated value	132 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	71 kW
at 400 V rated value at 690 V rated value	112 kW
at 690 v rated value operating apparent power at AC-6a	II & NVV
 up to 230 V for current peak value n=20 rated value 	110 000 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	200 000 VA
up to 500 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value	250 000 VA
□ up to 500 v for current peak value II=20 fateu value	200 000 VA

• up to 690 V for current peak value n=20 rated value	330 000 VA
• up to 1000 V for current peak value n=20 rated value	160 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	70 000 VA
• up to 400 V for current peak value n=30 rated value	130 000 VA
 up to 500 V for current peak value n=30 rated value 	160 000 VA
 up to 690 V for current peak value n=30 rated value 	230 000 VA
up to 1000 V for current peak value n=30 rated value	160 000 VA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	5 524 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	4 579 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	3 153 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	1 883 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	1 445 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	770.40
• at AC-1 maximum	750 1/h
• at AC-2 maximum	250 1/h
• at AC-3 maximum	500 1/h
• at AC-3e maximum	500 1/h
• at AC-4 maximum	130 1/h
Control circuit/ Control	AO/DO
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	000 04014
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	220 240 V
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	490 VA
— at 60 Hz	490 VA
 at maximum rated control supply voltage at AC 	
— at 60 Hz	590 VA
— at 50 Hz	590 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	590 VA
• at 60 Hz	590 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.9
• at 60 Hz	0.9
apparent holding power	0.41/4
at minimum rated control supply voltage at DC	6.1 VA
at maximum rated control supply voltage at DC	7.4 VA
apparent holding power	
at minimum rated control supply voltage at AC	
— at 50 Hz	5.6 VA
— at 60 Hz	5.6 VA
at maximum rated control supply voltage at AC	2-14
— at 50 Hz	6.7 VA

— at 60 Hz	6.7 VA
inductive power factor with the holding power of the coil	V.I VII
at 50 Hz	0.9
• at 60 Hz	0.9
	650 W
closing power of magnet coil at DC	7.4 W
holding power of magnet coil at DC	7.4 VV
closing delay • at AC	30 95 ms
• at DC	30 95 ms
opening delay	30 95 IIIS
at AC	40 80 ms
• at DC	40 80 ms
	10 15 ms
arcing time	Standard A1 - A2
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	302 A
• at 600 V rated value	289 A
yielded mechanical performance [hp]	
• for 3-phase AC motor	
— at 200/208 V rated value	100 hp
— at 220/230 V rated value	125 hp
— at 460/480 V rated value	250 hp
— at 575/600 V rated value	300 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: 500 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 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	210 mm
width	145 mm
depth	202 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
— upwarus — downwards	10 mm
— at the side	10 mm
	IV IIIII
connections/ Terminals	
type of electrical connection	0
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	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections	
for AWG cables for main contacts	2/0 500 kcmil
connectable conductor cross-section for main contacts	
stranded	70 240 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
afety 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
Div value with high demand rate according to SN 31320	1 000 000

31920	
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
T1 value	
 for proof test interval or service life according to IEC 61508 	20 a
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
Approvals Certificates	

General Product Approval







Confirmation



<u>KC</u>

General Product Approval

EMV

Functional Saftey

Test Certificates





Type Examination Certificate

Type Test Certificates/Test Report

Special Test Certific-

Miscellaneous

Marine / Shipping











Confirmation

other

other

Railway

Environment

Miscellaneous

Confirmation

Special Test Certific-<u>ate</u>







Environmental Confirmations

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=3RT1066-6AP36

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT1066-6AP36}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AP36

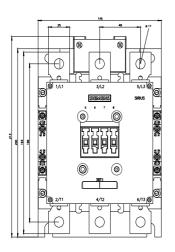
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

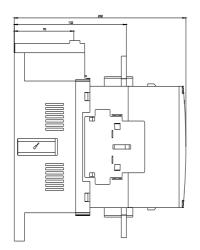
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6AP36&lang=en

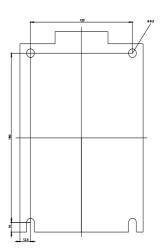
Characteristic: Tripping characteristics, I2t, Let-through current

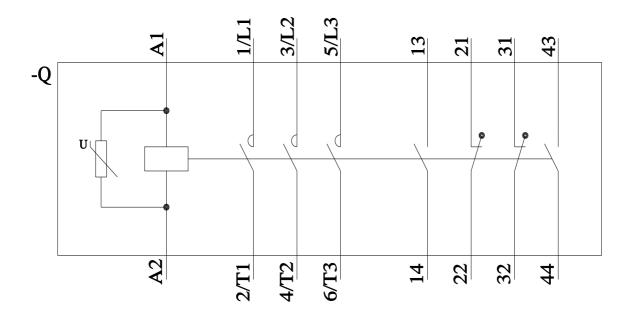
https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AP36/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6AP36&objecttype=14&gridview=view1









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