SIEMENS

Data sheet 3RT1076-6NB36



power contactor, AC-3e/AC-3 500 A, 250 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	S12
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	165 W
• at AC in hot operating state per pole	55 W
 without load current share typical 	3.6 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
Weight	10.484 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	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	610 A
value	
• at AC-1	040.4
 — up to 690 V at ambient temperature 40 °C rated value 	610 A
— up to 690 V at ambient temperature 60 °C rated value	550 A
 up to 1000 V at ambient temperature 40 °C rated value 	200 A
— up to 1000 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	200 A
• at AC-3	
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value	450 A
— at 1000 V rated value	180 A
• at AC-3e	
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value	450 A
— at 1000 V rated value	180 A
at AC-4 at 400 V rated value	430 A
at AC-5a up to 690 V rated value	536 A
at AC-5b up to 400 V rated value	415 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	414 A
— up to 400 V for current peak value n=20 rated value	414 A
— up to 500 V for current peak value n=20 rated value	414 A
— up to 690 V for current peak value n=20 rated value	414 A
— up to 1000 V for current peak value n=20 rated	180 A
value	100 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	276 A
— up to 400 V for current peak value n=30 rated value	276 A
— up to 500 V for current peak value n=30 rated value	276 A
— up to 690 V for current peak value n=30 rated value	276 A
— up to 1000 V for current peak value n=30 rated value	180 A
minimum cross-section in main circuit at maximum AC-1 rated value	370 mm²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	175 A
at 690 V rated value	150 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	400 A
— at 60 V rated value	330 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	400 A

— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 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	400 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 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	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
• at AC-3e	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	98 kW
• at 690 V rated value	148 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	160 000 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	280 000 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	350 000 VA
up to 690 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value	490 000 VA
 up to 1000 V for current peak value n=20 rated value 	310 000 VA
operating apparent power at AC-6a	
up to 230 V for current peak value n=30 rated value	110 000 VA
 up to 400 V for current peak value n=30 rated value 	190 000 VA
 up to 500 V for current peak value n=30 rated value 	230 000 VA
 up to 690 V for current peak value n=30 rated value 	330 000 VA
up to 1000 V for current peak value n=30 rated value up to 1000 V for current peak value n=30 rated value	310 000 VA
- ap to 1000 v for outfork poak value II-30 fated value	010 000 V/1

short-time withstand current in cold operating state up to 40 °C	
limited to 1 s switching at zero current maximum	7 484 A; Use minimum cross-section acc. to AC-1 rated value
limited to 5 s switching at zero current maximum	7 484 A; Use minimum cross-section acc. to AC-1 rated value
limited to 10 s switching at zero current maximum	5 978 A; Use minimum cross-section acc. to AC-1 rated value
limited to 30 s switching at zero current maximum	3 765 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	2 887 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	2 557 74 555 1111111111111111111111111111
• at AC	1 000 1/h
• at DC	1 000 1/h
operating frequency	1 000 1/11
at AC-1 maximum	500 1/h
• at AC-2 maximum	170 1/h
• at AC-3 maximum	420 1/h
at AC-3e maximum	420 1/h
• at AC-4 maximum	130 1/h
Control circuit/ Control	100 1/11
	ACIDO
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	21 27 3 V
at 50 Hz rated value at 60 Hz rated value	21 27.3 V
at 60 Hz rated value	21 27.3 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	
• 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	
at minimum rated control supply voltage at AC	
— at 50 Hz	560 VA
— at 60 Hz	560 VA
at maximum rated control supply voltage at AC	
— at 60 Hz	750 VA
— at 50 Hz	750 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	750 VA
• at 60 Hz	750 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	3 VA
at maximum rated control supply voltage at DC	3.6 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	
— at 50 Hz	9 VA
— at 60 Hz	9 VA
inductive power factor with the holding power of the coil	
at 50 Hz	0.5
• at 60 Hz	0.4
₩ at 00 Hz	U.T

aloning nowar of magnet onil of DC	800 W
closing power of magnet coil at DC	800 W
holding power of magnet coil at DC	3.6 W
closing delay • at AC	60 90 ms
• at DC	60 90 ms
opening delay	00 90 IIIS
• at AC	80 100 ms
• at DC	80 100 ms
arcing time	10 15 ms
control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)
Auxiliary circuit	FLC-IN OF Standard AT - Az (adjustable)
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	477 A
at 600 V rated value	472 A
yielded mechanical performance [hp]	
• for 3-phase AC motor	4-0.1
— at 200/208 V rated value	150 hp
— at 220/230 V rated value	200 hp
— at 460/480 V rated value	400 hp
— at 575/600 V rated value	500 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 4 required.	~C+ C20 A (C00 \/ 400 kA)
— with type of coordination 1 required	gG: 630 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 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 side-by-side mounting	Yes
fastening method	screw fixing

width	160 mm
	225 mm
depth	225 111111
required spacing	
with side-by-side mounting	20
— 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	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 mm ²
 finely stranded with core end processing 	0.5 2.5 mm ²
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; safety-related disconnection via A1 A2
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 31920	100 FIT
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
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





EMV Functional Saftey

Test Certificates

Marine / Shipping



Type Examination Certificate

Type Test Certificates/Test Report

Special Test Certificate





Marine / Shipping

other







Miscellaneous

Confirmation

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=3RT1076-6NB36

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT1076-6NB36}}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6NB36

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

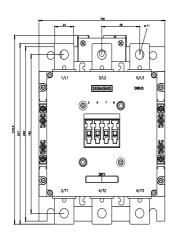
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6NB36&lang=en

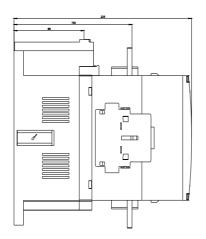
Characteristic: Tripping characteristics, I²t, Let-through current

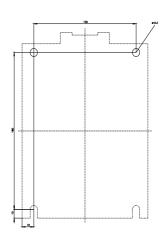
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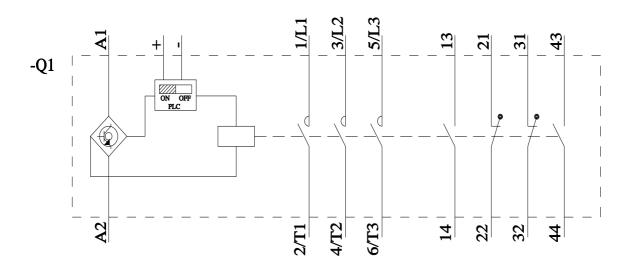
Further characteristics (e.g. electrical endurance, switching frequency)

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3RT10766NB: Page 9/9	36