



Power contactor, AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC 21-27.3 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, size S12 Busbar connections Operating mechanism: solid-state with PLC interface 24 V DC screw terminals

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
• per pole	55 W
power loss [W] for rated value of the current without load current share typical	3.6 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	610 A
- at AC-1 - 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 °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-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 value	180 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 mm ²
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 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 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 — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value	400 A 400 A 400 A 11 A 5.2 A
operational current • at 1 current path at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 3 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value	400 A 3 A 0.6 A 0.18 A 0.125 A 400 A 400 A 2.5 A 0.65 A 0.37 A 400 A 400 A 400 A 1.4 A 0.75 A
operating power • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value	160 kW 250 kW 315 kW 400 kW 250 kW
operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value	98 kW 148 kW
operating apparent power at AC-6a • up to 230 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 690 V for current peak value n=20 rated value • up to 1000 V for current peak value n=20 rated value	160 000 kV·A 280 000 V·A 350 000 V·A 490 000 V·A 310 000 V·A
operating apparent power at AC-6a • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 1000 V for current peak value n=30 rated value	110 000 V·A 190 000 V·A 230 000 V·A 330 000 V·A 310 000 V·A
short-time withstand current in cold operating state up to 40 °C • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum	7 484 A; Use minimum cross-section acc. to AC-1 rated value 7 484 A; Use minimum cross-section acc. to AC-1 rated value 5 978 A; Use minimum cross-section acc. to AC-1 rated value 3 765 A; Use minimum cross-section acc. to AC-1 rated value 2 887 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency • at AC	1 000 1/h

• at DC	1 000 1/h
operating frequency	
• at AC-1 maximum	500 1/h
• at AC-2 maximum	170 1/h
• at AC-3 maximum	420 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	21 ... 27.3 V
• at 60 Hz rated value	21 ... 27.3 V
control supply voltage at DC	
• rated value	21 ... 27.3 V
type of PLC-control input acc. to IEC 60947-1	Type 2
consumed current at PLC-control input acc. 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
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	750 V·A
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
apparent holding power of magnet coil at AC	
• at 50 Hz	7 V·A
inductive power factor with the holding power of the coil	
• at 50 Hz	0.8
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	
• 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	
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 • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 • at 600 V rated value	477 A 472 A
yielded mechanical performance [hp] • for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value	150 hp 200 hp 400 hp 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 1 required — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required	gG: 630 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA) 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	screw fixing Yes
height	214 mm
width	160 mm
depth	225 mm
required spacing • with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards — at the side	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm

Connections/ Terminals	
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil	Connection bar screw-type terminals Screw-type terminals Screw-type terminals
type of connectable conductor cross-sections • at AWG cables for main contacts	2/0 ... 500 kcmil
connectable conductor cross-section for main contacts • stranded	70 ... 240 mm ²
connectable conductor cross-section for auxiliary contacts • solid or stranded • finely stranded with core end processing	0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections • for auxiliary contacts — solid — solid or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 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 • positively driven operation acc. to IEC 60947-5-1	Yes No
protection class IP on the front acc. to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
suitability for use safety-related switching OFF	Yes

Certificates/ approvals		
General Product Approval	EMC	Declaration of Conformity



Declaration of Conformity	Test Certificates	Marine / Shipping
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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=3RT1076-6NB36>

Cax online generator

<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, ...)

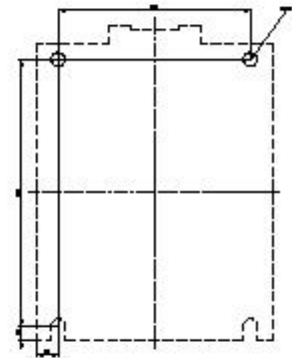
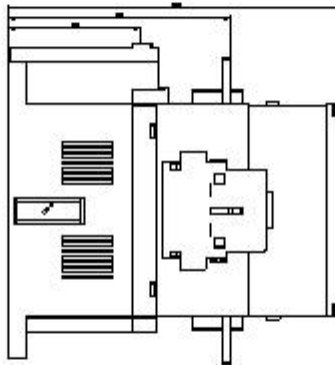
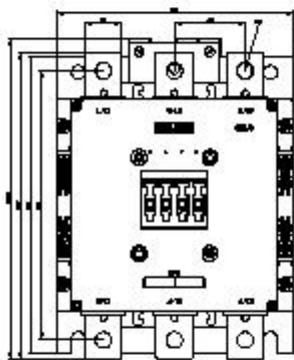
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6NB36&lang=en

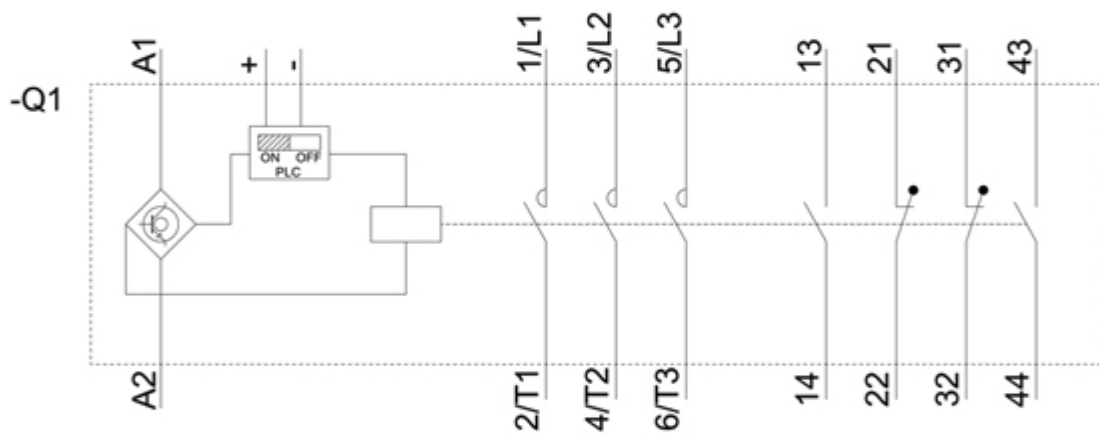
Characteristic: Tripping characteristics, I^2t , Let-through current

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

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-6NB36&objecttype=14&gridview=view1>





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