

Power contactor, AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC
110-127 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, size S12
Busbar connections Operating mechanism: conventional screw
terminals



Figure similar

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
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
Protection class IP	
• on the front	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00

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 electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	K
Reference code acc. to DIN EN 81346-2	Q

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

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
Operating 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-2 at 400 V rated value	500 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
Connectable conductor cross-section in main circuit at AC-1	
• at 60 °C minimum permissible	370 mm ²
• at 40 °C minimum permissible	370 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	175 A
• at 690 V rated value	150 A
Operating 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	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
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	400 A
— at 110 V rated value	3 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 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 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-1	
— at 230 V at 60 °C rated value	208 kW
— at 400 V rated value	362 kW
— at 400 V at 60 °C rated value	362 kW
— at 690 V rated value	624 kW
— at 690 V at 60 °C rated value	624 kW
— at 1000 V at 60 °C rated value	329 kW
• at AC-2 at 400 V rated value	250 kW
• 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
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	98 kW
• at 690 V rated value	148 kW
Thermal short-time current limited to 10 s	4 000 A
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	55 W
No-load switching frequency	
• at AC	2 000 1/h
• at DC	2 000 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	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	830 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	9.2 V·A
Inductive power factor with the holding power of the coil	
• at 50 Hz	0.9
Closing power of magnet coil at DC	920 W
Holding power of magnet coil at DC	10 W
Closing delay	
• at AC	45 ... 100 ms
• at DC	45 ... 100 ms
Opening delay	
• at AC	60 ... 100 ms
• at DC	60 ... 100 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
Operating current at AC-12 maximum	10 A
Operating 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

Operating 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
Operating 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 three-phase AC motor	
• at 480 V rated value	477 A
• at 600 V rated value	472 A
Yielded mechanical performance [hp]	
• for three-phase AC motor	
— 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 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	fuse gG: 10 A

Installation/ mounting/ dimensions

Mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
Mounting type	screw fixing
• Side-by-side mounting	Yes

Height	214 mm
Width	160 mm
Depth	225 mm
Required spacing	
• with side-by-side mounting — forwards 20 mm — upwards 19 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 • for auxiliary and control current circuit	Connection bar screw-type terminals
Type of connectable conductor cross-sections	
• at AWG conductors 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	
• single or multi-stranded • finely stranded with core end processing	0.5 ... 4 mm² 0.5 ... 2.5 mm²
Type of connectable conductor cross-sections	
• for auxiliary contacts — solid — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²) 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 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 acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1	Yes No
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/approvals

General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
 CCC	 EAC	 EG-Konf.
 UL	Type Examination Certificate	
 CSA		

Test Certificates	Marine / Shipping
Special Test Certificate	 ABS
Type Test Certificates/Test Report	 RMRS
Miscellaneous	 DNV-GL DNVGL.COM/AF

other
Miscellaneous
Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1076-6AF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-6AF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AF36>

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

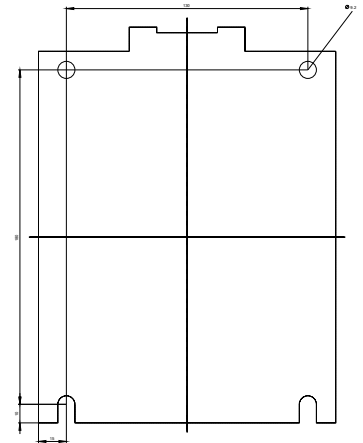
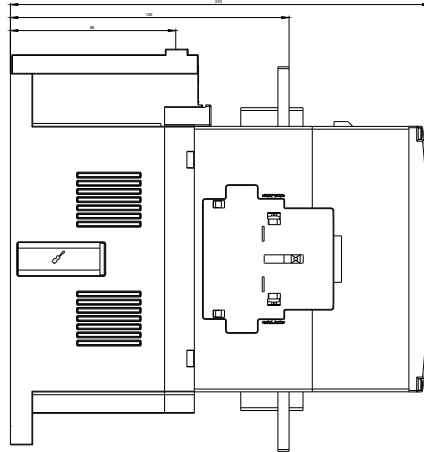
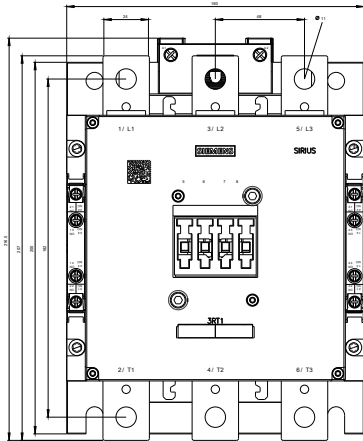
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-6AF36&lang=en

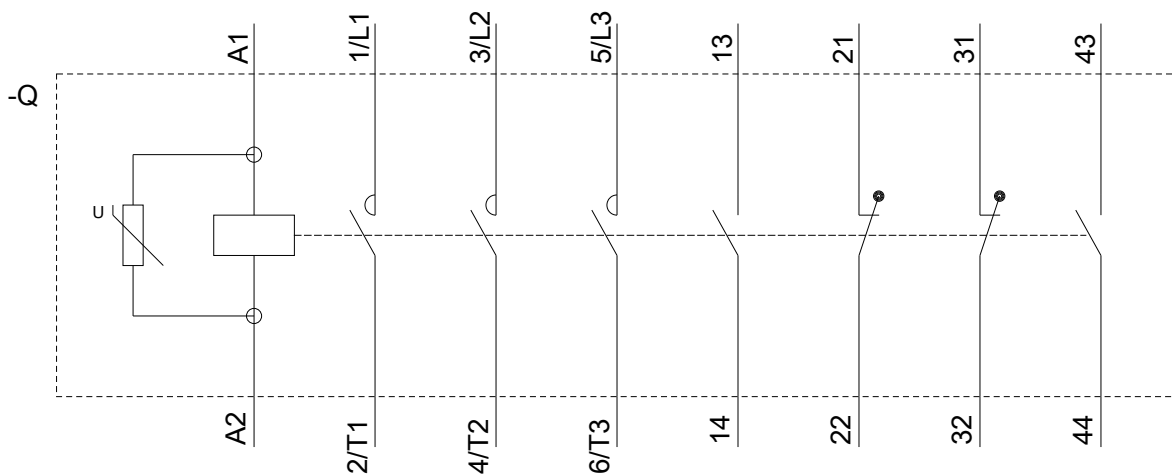
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6AF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-6AF36&objecttype=14&gridview=view1>





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