SIEMENS

Data sheet 3RT2047-1NB34-3MA0

Power contactor, AC-3 115 A, 55 kW / 400 V 2 NO + 2 NC, 20-33 V AC/DC 3-pole, 3 NO, Size S3 screw terminals integrated varistor Perm. mounted auxiliary switch

Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT2

General technical data	
Size of contactor	S3
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	23.7 W
• at AC in hot operating state per pole	7.9 W
Power loss [W] for rated value of the current without load current share typical	3.5 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

Protection class IP	
• on the front	IP20
• of the terminal	IP00
Shock resistance at rectangular impulse	
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms
• at DC	6.7 g / 5 ms, 4.0 g / 10 ms
Shock resistance with sine pulse	
• at AC	10.6 g / 5 ms, 6.3 g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 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	130 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	110 A
— up to 1000 V at ambient temperature 40 °C rated value	70 A
— up to 1000 V at ambient temperature 60 °C rated value	60 A
• at AC-2 at 400 V rated value	110 A

• at AC-3	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	120 A
• at AC-5b up to 400 V rated value	110 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	98 A
— up to 400 V for current peak value n=20 rated value	98 A
— up to 500 V for current peak value n=20 rated value	98 A
— up to 690 V for current peak value n=20 rated value	98 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	65.3 A
— up to 400 V for current peak value n=30 rated value	65.3 A
— up to 500 V for current peak value n=30 rated value	65.3 A
— up to 690 V for current peak value n=30 rated value	65.3 A
Minimum cross-section in main circuit	
• at maximum AC-1 rated value	50 mm²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	46 A
• at 690 V rated value	36 A
Operating current	
• at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A

— at 600 V rated value	1 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	80 A
— at 440 V rated value	4.5 A
— at 600 V rated value	2.6 A
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	40 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.15 A
— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	7 A
— at 440 V rated value	0.42 A
— at 600 V rated value	0.16 A
• with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	35 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.35 A
Operating power	
• at AC-1	
— at 230 V rated value	49 kW
— at 230 V at 60 °C rated value	42 kW
— at 400 V rated value	86 kW
— at 400 V at 60 °C rated value	72 kW
— at 690 V rated value	148 kW
— at 690 V at 60 °C rated value	125 kW
• at AC-2 at 400 V rated value	55 kW
• at AC-3	
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW

Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24.3 kW
• at 690 V rated value	32.9 kW
No-load switching frequency	
• at AC	1 000 1/h
• at DC	1 000 1/h
Operating frequency	
• at AC-1 maximum	900 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	850 1/h
• at AC-4 maximum	200 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	20 ... 33 V
• at 60 Hz rated value	20 ... 33 V
Control supply voltage at DC	
• rated value	20 ... 33 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
Inrush current peak	
• at 24 V	4.2 A
Apparent pick-up power of magnet coil at AC	
• at 50 Hz	151 V·A
• at 60 Hz	151 V·A
Apparent holding power of magnet coil at AC	
• at 50 Hz	3.5 V·A
• at 60 Hz	3.5 V·A
Closing power of magnet coil at DC	76 W
Holding power of magnet coil at DC	2.7 W
Closing delay	
• at DC	50 ... 70 ms
Opening delay	
• at DC	38 ... 57 ms

Arcing time	10 ... 20 ms
Control version of the switch operating mechanism	Standard A1 - A2
Residual current of the electronics for control with signal <0>	
• at AC at 230 V maximum permissible	20 mA
• at DC at 24 V maximum permissible	20 mA

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	6 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	96 A
• at 600 V rated value	99 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	10 hp

— at 230 V rated value	20 hp
• for three-phase AC motor	
— at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 hp
Contact rating of auxiliary contacts according to UL	A600 / P600

Short-circuit protection

Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
— with type of assignment 2 required	gG: 200A (690V,100kA), aM: 100A (690V,100kA), BS88: 160A (415V,80kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

Mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
• Side-by-side mounting	Yes
Height	140 mm
Width	70 mm
Depth	195 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
— downwards	10 mm
— at the side	10 mm

Connections/ Terminals	
Type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control current 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	
— finely stranded with core end processing	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)
• at AWG conductors for main contacts	2x (10 ... 1/0), 1x (10 ... 2)
Connectable conductor cross-section for main contacts	
• solid	2.5 ... 16 mm²
• stranded	6 ... 70 mm²
• finely stranded with core end processing	2.5 ... 50 mm²
Connectable conductor cross-section for auxiliary contacts	
• single or multi-stranded	0.5 ... 2.5 mm²
• finely stranded with core end processing	0.5 ... 2.5 mm²
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section	
• for main contacts	10 ... 2
• for auxiliary contacts	20 ... 14

Safety related data	
B10 value	
• with high demand rate acc. to SN 31920	1 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
Failure rate [FIT]	
• with low demand rate acc. to SN 31920	100 FIT
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
T1 value for proof test interval or service life acc. to IEC 61508	20 y

Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/ approvals

General Product Approval				EMC	Declaration of Conformity
CCC	CSA	UL		RCM	EG-Konf.

Declaration of Conformity	Marine / Shipping				
Miscellaneous	ABS	LRS	PRS	RINA	

other
Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2047-1NB34-3MA0

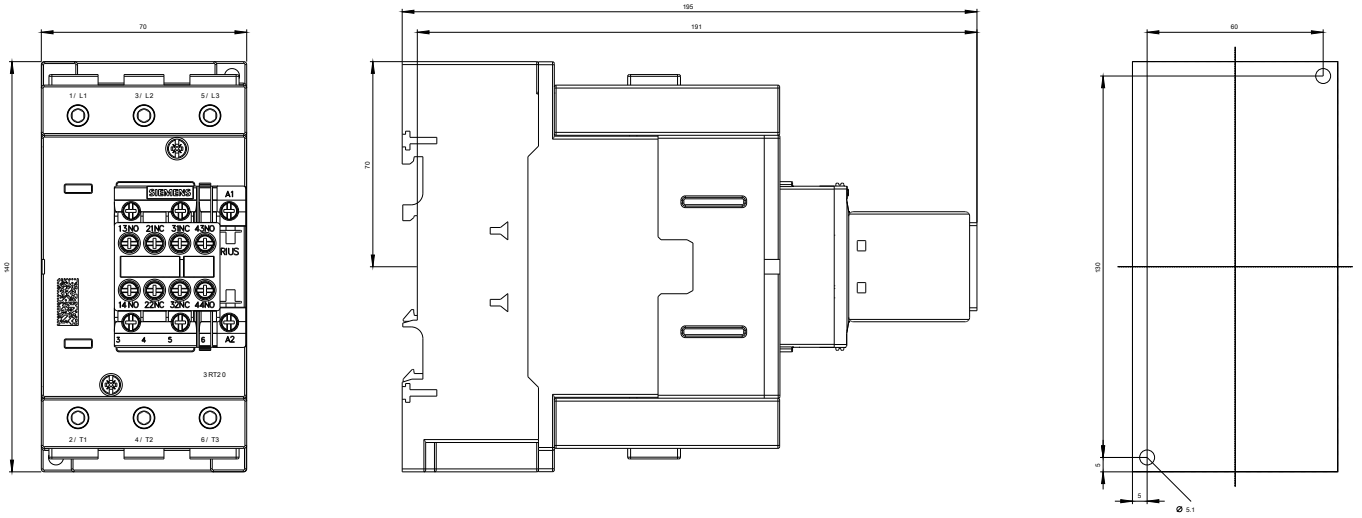
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2047-1NB34-3MA0

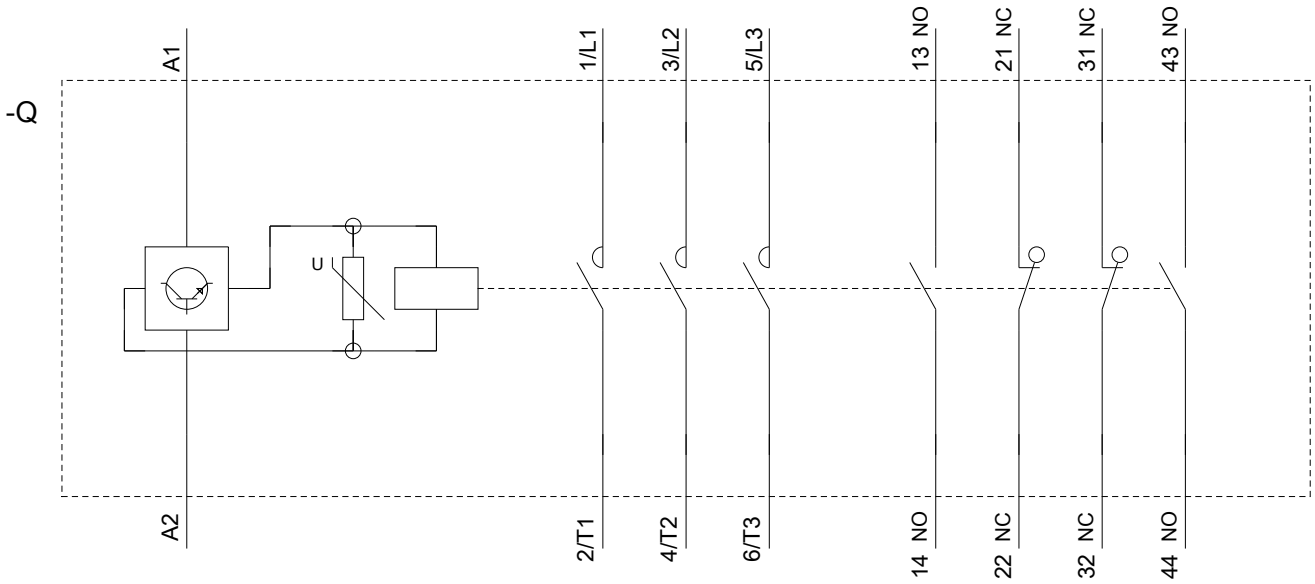
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1NB34-3MA0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-1NB34-3MA0&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1NB34-3MA0/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-1NB34-3MA0&objecttype=14&gridview=view1





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