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Data sheet 3RT2016-2BB44-3MA0



CONTACTOR, AC-3, 4KW/400V, 2NO+2NC, DC 24V, 3-POLE, SZ S00 SPRING-LOADED TERMINAL PERMANENT AUX. SWITCH FOR SUVA APPLICATIONS

product brand name	SIRIUS
Product designation	3RT2 contactor

General technical data:	
Product expansion function module for communication	No
Insulation voltage	
• Rated value	690 V
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
Degree of pollution	3
Shock resistance	
• **at rectangular impulse**	
— **for DC**	6,7g / 5 ms, 4,2g / 10 ms
• **with sine pulse**	
— **for DC**	10,5g / 5 ms, 6,6g / 10 ms
Surge voltage resistance Rated value	6 kV
Mechanical service life (switching cycles)	
• of the 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
Thermal short-time current restricted to 10 s	72 A
Protection class IP	
• on the front	IP20

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• of the terminal	IP20
Equipment marking	
• acc. to DIN EN 61346-2	Q
• acc. to DIN EN 81346-2	Q

Main circuit:	
Number of poles for main current circuit	3
Number of NC contacts for main contacts	0
Number of NO contacts for main contacts	3
Operating voltage	
• at AC-3 Rated value maximum	690 V
Operating current	
• at AC-1	
— at 400 V at ambient temperature 40 °C Rated value	22 A
— up to 690 V at ambient temperature 40 °C Rated value	22 A
— up to 690 V at ambient temperature 60 °C Rated value	20 A
• at AC-2 at 400 V Rated value	9 A
• at AC-3	
— at 400 V Rated value	9 A
— at 500 V Rated value	7.7 A
— at 690 V Rated value	6.7 A
• at AC-4 at 400 V Rated value	8.5 A
Operating current with 1 current path	
• at DC-1	
— at 24 V Rated value	20 A
— at 110 V Rated value	2.1 A
— at 220 V Rated value	0.8 A
— at 440 V Rated value	0.6 A
— at 600 V Rated value	0.6 A
• at DC-3 at DC-5	
— at 24 V Rated value	20 A
— at 110 V Rated value	0.1 A
Operating current with 2 current paths in series	
• at DC-1	
— at 24 V Rated value	20 A
— at 110 V Rated value	12 A
— at 220 V Rated value	1.6 A
— at 440 V Rated value	0.8 A
— at 600 V Rated value	0.7 A
• at DC-3 at DC-5	

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— at 110 V Rated value	0.35 A
— at 24 V Rated value	20 A
Operating current with 3 current paths in series	
• at DC-1	
— at 24 V Rated value	20 A
— at 110 V Rated value	20 A
— at 220 V Rated value	20 A
— at 440 V Rated value	1.3 A
— at 600 V Rated value	1 A
• at DC-3 at DC-5	
— at 110 V Rated value	20 A
— at 220 V Rated value	1.5 A
— at 24 V Rated value	20 A
— at 440 V Rated value	0.2 A
— at 600 V Rated value	0.2 A
Operating power	
• at AC-1	
— at 230 V at 60 °C Rated value	7.5 kW
— at 400 V at 60 °C Rated value	13 kW
— at 690 V at 60 °C Rated value	22 kW
Operating power for ≥ 200000 operating cycles at AC-4	
• at 400 V Rated value	2 kW
• at 690 V Rated value	2.5 kW
Active power loss at AC-3 at 400 V for rated value of the operating current per conductor	0.7 W
Operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-4 maximum	250 1/h
No-load switching frequency	
• for DC	10 000 1/h

Control circuit/ Control:	
Type of voltage of the control supply voltage	DC
Control supply voltage for DC	
• Rated value	24 V
Operating range factor control supply voltage rated value of the magnet coil for DC	0.8 ... 1.1
Closing power of the magnet coil for DC	4 W
Holding power of the magnet coil for DC	4 W
Closing delay	

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• for DC	30 ... 100 ms
Opening delay	
• for DC	7 ... 13 ms
Arcing time	10 ... 15 ms
Residual current of the electronics for control with signal <0>	
• with AC at 230 V maximum permissible	3 mA
• for DC at 24 V maximum permissible	10 mA
Auxiliary circuit:	
Number of NC contacts	
• for auxiliary contacts	
— instantaneous contact	2
Number of NO contacts	
• for auxiliary contacts	
— instantaneous contact	2
Product expansion Auxiliary switch	No
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 690 V Rated value	1 A
Operating current at DC-12	
• 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 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 the 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	7.6 A
• at 600 V Rated value	9 A
yielded mechanical performance [hp]	
• for single-phase AC motor	

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— at 110/120 V Rated value	0.33 hp
— at 230 V Rated value	1 hp
• for three-phase AC motor	
— at 200/208 V Rated value	2 hp
— at 220/230 V Rated value	3 hp
— at 460/480 V Rated value	5 hp
— at 575/600 V Rated value	7.5 hp
Contact rating of the auxiliary contacts acc. to UL	A600 / Q600

Short-circuit:

Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of assignment 1 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A
— with type of assignment 2 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A
• for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A

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 50022
• Side-by-side mounting	Yes
Height	69.5 mm
Width	45 mm
Depth	121 mm
Required spacing	
• with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
• for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— at the side	6 mm
— downwards	0 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm

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— upwards	0 mm
— downwards	0 mm
— at the side	6 mm

Connections/ Terminals:

Type of electrical connection	
• for main current circuit	spring-loaded terminals
• for auxiliary and control current circuit	spring-loaded terminals
Type of connectable conductor cross-section	
• for main contacts	
— single or multi-stranded	2x (0,5 ... 4 mm²)
— finely stranded with core end processing	2x (0.5 ... 2.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)
• for AWG conductors for main contacts	2x (20 ... 12)
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 4 mm²)
— finely stranded with core end processing	2x (0.5 ... 2.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)
• for AWG conductors for auxiliary contacts	2x (20 ... 12)

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 %
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe

Mechanical data:

Size of contactor	S00

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

Certificates/ approvals:

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

Shipping Approval					
ABS	BUREAU VERITAS	DNV	GL	LRS	PRS

Shipping Approval		other		
RINA	RMRS	Environmental Confirmations	Confirmation	VDE

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)
http://www.siemens.com/industrymall

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20162BB443MA0

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT20162BB443MA0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20162BB443MA0&lang=en

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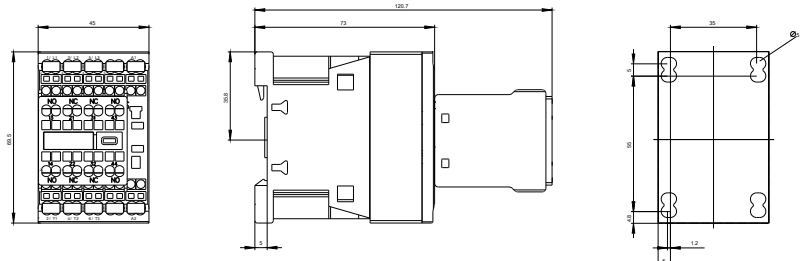

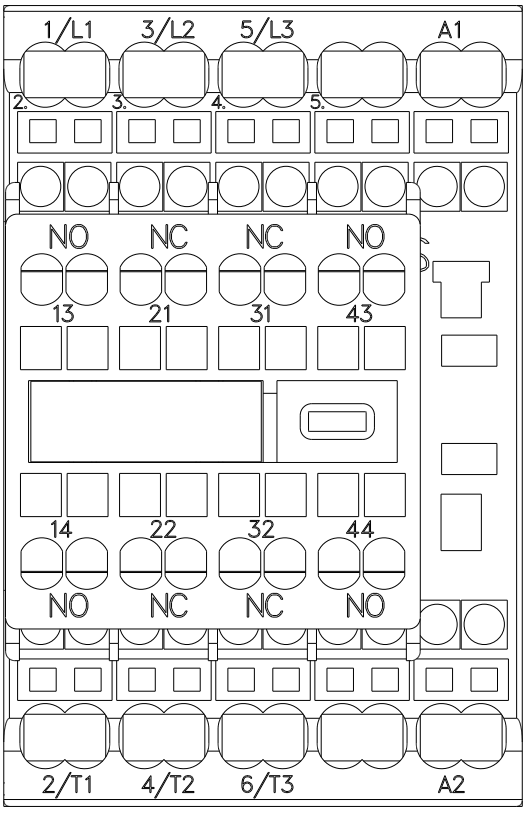

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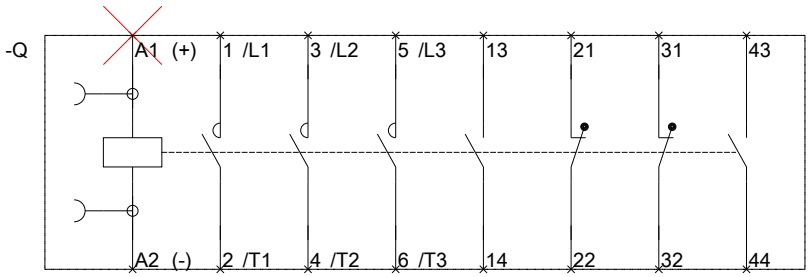

last modified: 27.04.2015

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