SIEMENS

Data sheet 3RT2027-2XB40-0LA2

Traction contactor, AC-3 32 A, 15 kW / 400 V 1 NO + 1 NC with solid-state operating mechanism 24 V DC, 0.7-1.25*Us with integrated varistor 3-pole, size S0 Spring-type terminals

product brand name	SIRIUS
product designation	Contactor
design of the product	With extended operating range
product type designation	3RT2
General technical data	
size of contactor	S0
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	8.1 W
● at AC in hot operating state per pole	2.7 W
● without load current share typical	0.8 W
insulation voltage	
● of main circuit with degree of pollution 3 rated value	690 V
● of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
● of main circuit rated value	6 kV
● of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
● at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
● at DC	15g / 5 ms, 10g / 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 according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
● during operation	-40 ... +70 °C
● during storage	-55 ... +80 °C
relative humidity minimum	10 %

relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
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	690 V
● at AC-3e rated value maximum	690 V
operational current	
● at AC-1 at 400 V at ambient temperature 40 °C rated value	50 A
● at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
● at AC-2 at 400 V rated value	32 A
● at AC-3	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
● at AC-3e	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
● at AC-4 at 400 V rated value	22 A
minimum cross-section in main circuit	
● at maximum AC-1 rated value	10 mm²
● at maximum Ith rated value	10 mm²
operational current for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	12 A
● at 690 V rated value	12 A
operating power	
● at AC-2 at 400 V rated value	15 kW
● at AC-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
● at AC-3e	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	6 kW
● at 690 V rated value	10.3 kW
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	499 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	395 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	186 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	152 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
● at DC	1 500 1/h
operating frequency	
● at AC-1 maximum	750 1/h
● at AC-2 maximum	750 1/h
● at AC-3 maximum	750 1/h

● at AC-3e maximum	750 1/h
● at AC-2 at AC-3e maximum	750 1/h
● at AC-4 maximum	250 1/h
Ratings for railway applications	
thermal current (Ith) up to 690 V	
● up to 40 °C according to IEC 60077 rated value	50 A
● up to 70 °C according to IEC 60077 rated value	36 A
Control circuit/ Control	
type of voltage	DC
type of voltage of the control supply voltage	DC
control supply voltage at DC	
● rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.7
● full-scale value	1.25
design of the surge suppressor	with varistor
inrush current peak	3 A
duration of inrush current peak	30 µs
locked-rotor current mean value	0.3 A
locked-rotor current peak	0.52 A
duration of locked-rotor current	180 ms
holding current mean value	45 mA
closing power of magnet coil at DC	6.7 W
holding power of magnet coil at DC	1.4 W
closing delay	
● at DC	50 ... 75 ms
opening delay	
● at DC	30 ... 50 ms
arcing time	10 ... 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts	1
● instantaneous contact	1
number of NO contacts for auxiliary contacts	1
● instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
● at 230 V rated value	10 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
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	

● at 480 V rated value	27 A
● at 600 V rated value	27 A
yielded mechanical performance [hp]	
● for single-phase AC motor	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
● for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	20 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
product function short circuit protection	No
design of the fuse link	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
— with type of assignment 2 required	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
● side-by-side mounting	Yes
height	102 mm
width	45 mm
depth	107 mm
required spacing	
● with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
● for grounded parts	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
● for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection	
● for main current circuit	spring-loaded terminals
● for auxiliary and control circuit	spring-loaded terminals
● at contactor for auxiliary contacts	Spring-type terminals
● of magnet coil	Spring-type terminals
type of connectable conductor cross-sections	
● for main contacts	
— solid	2x (1 ... 10 mm²)
— solid or stranded	2x (1 ... 10 mm²)
— finely stranded with core end processing	2x (1 ... 6 mm²)
— finely stranded without core end processing	2x (1 ... 6 mm²)
● at AWG cables for main contacts	2x (18 ... 8)
type of connectable conductor cross-sections	

• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 2.5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)
• at AWG cables for auxiliary contacts	2x (20 ... 14)
AWG number as coded connectable conductor cross section	
• for main contacts	18 ... 8
• for auxiliary contacts	20 ... 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
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 y
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Communication/ Protocol	
product function bus communication	No
Certificates/ approvals	

General Product Approval

Confirmation

KC

EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	
	Type Examination Certificate		Type Test Certificates/Test Report	Special Test Certificate

Marine / Shipping

Marine / Shipping	other	Railway		
	Confirmation		Type Test Certificates/Test Report	Special Test Certificate	Vibration and Shock

Dangerous Good

Transport Information

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=3RT2027-2XB40-0LA2
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-2XB40-0LA2
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2XB40-0LA2
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-2XB40-0LA2&lang=en
Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2XB40-0LA2/char
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-2XB40-0LA2&objecttype=14&gridview=view1

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