3RT2036-3XB40-0LA2

Data sheet



traction contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 24 V DC, 0.7-1.25* Us, electronic drive, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S2

product brand name	SIRIUS
product designation	Power contactor
design of the product	With extended operating range
product type designation	3RT2
General technical data	
size of contactor	S2
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 	12 W
 at AC in hot operating state per pole 	4 W
without load current share typical	1 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 protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
• at DC	12g / 5 ms, 7g / 10 ms
mechanical service life (operating 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)	10/01/2014
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	

0101110

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	70 A
value	
• at AC-1	
 up to 690 V at ambient temperature 40 °C rated value 	70 A
— up to 690 V at ambient temperature 60 °C rated value	60 A
• at AC-2 at 400 V rated value	50 A
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-3e	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
at AC-4 at 400 V rated value	41 A
minimum cross-section in main circuit	
at maximum AC-1 rated value	25 mm²
at maximum Ith rated value	25 mm ²
operational current for approx. 200000 operating cycles at	
AC-4	
at 400 V rated value	24 A
at 690 V rated value	20 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	35 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.1 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	55 A
— at 110 V rated value	25 A
— at 220 V rated value	5 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
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— at 24 V rated value	55 A	
— at 110 V rated value	55 A	
— at 220 V rated value	25 A	
— at 440 V rated value	0.6 A	
— at 600 V rated value	0.35 A	
operating power		
 at AC-2 at 400 V rated value 	22 kW	
• at AC-3		
— at 230 V rated value	15 kW	
— at 400 V rated value	22 kW	
— at 500 V rated value	30 kW	
— at 690 V rated value	22 kW	
• at AC-3e		
— at 230 V rated value	15 kW	
— at 400 V rated value	22 kW	
— at 500 V rated value	30 kW	
— at 690 V rated value	22 kW	
operating power for approx. 200000 operating cycles at AC-	ZZ NVV	
4		
• at 400 V rated value	12.6 kW	
at 690 V rated value	18.2 kW	
short-time withstand current in cold operating state up to 40 °C		
 limited to 1 s switching at zero current maximum 	937 A; Use minimum cross-section acc. to AC-1 rated value	
Ilmited to 5 s switching at zero current maximum	697 A; Use minimum cross-section acc. to AC-1 rated value	
Iimited to 10 s switching at zero current maximum	468 A; Use minimum cross-section acc. to AC-1 rated value	
limited to 30 s switching at zero current maximum	282 A; Use minimum cross-section acc. to AC-1 rated value	
limited to 60 s switching at zero current maximum	229 A; Use minimum cross-section acc. to AC-1 rated value	
no-load switching frequency	223 A, OSC MINIMUM Cross-Section acc. to AO-1 fated value	
at DC	1 500 1/h	
operating frequency	1 300 1/11	
at AC-2 at AC-3e maximum	600 1/h	
at AC-2 at AC-3e maximum at AC-4 maximum	250 1/h	
	230 1/11	
Ratings for railway applications		
thermal current (Ith) up to 690 V		
	70 A	
• up to 40 °C according to IEC 60077 rated value	70 A	
 up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value 	70 A 55 A	
• up to 40 °C according to IEC 60077 rated value	55 A	
 up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value 	55 A DC	
 up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control	55 A	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage	55 A DC	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage	55 A DC	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC	DC DC	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of	DC DC	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC	DC DC 24 V	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value	DC DC 24 V 0.7	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value	DC DC 24 V 0.7 1.25	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor	DC DC 24 V 0.7 1.25 with varistor	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak	DC DC 24 V 0.7 1.25 with varistor 3 A	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current peak	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC o rated value operating range factor control supply voltage rated value of magnet coil at DC o initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current peak duration of locked-rotor current	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC orated value operating range factor control supply voltage rated value of magnet coil at DC oinitial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current peak duration of locked-rotor current holding current mean value	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current peak duration of locked-rotor current holding current mean value closing power of magnet coil at DC	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA 23 W	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current peak duration of locked-rotor current holding current mean value closing power of magnet coil at DC holding power of magnet coil at DC	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA 23 W	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current mean value closing current mean value closing power of magnet coil at DC holding power of magnet coil at DC closing delay at DC	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA 23 W 1 W	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current mean value closing power of magnet coil at DC holding power of magnet coil at DC closing delay at DC opening delay	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA 23 W 1 W	
up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC rated value operating range factor control supply voltage rated value of magnet coil at DC initial value full-scale value design of the surge suppressor inrush current peak duration of inrush current peak locked-rotor current mean value locked-rotor current mean value closing current mean value closing power of magnet coil at DC holding power of magnet coil at DC closing delay at DC	DC DC 24 V 0.7 1.25 with varistor 3 A 50 μs 1 A 2.6 A 230 ms 40 mA 23 W 1 W 35 110 ms	

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	1A		
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	52 A		
at 600 V rated value	52 A		
yielded mechanical performance [hp]			
for single-phase AC motor			
— at 110/120 V rated value	3 hp		
— at 230 V rated value	10 hp		
• for 3-phase AC motor	4-1		
— at 200/208 V rated value	15 hp		
— at 220/230 V rated value	15 hp		
— at 460/480 V rated value	40 hp		
— at 575/600 V rated value	50 hp		
contact rating of auxiliary contacts according to UL	A600 / P600		
Short-circuit protection	No		
product function short circuit protection design of the fuse link	No		
for short-circuit protection of the main circuit			
with type of coordination 1 required	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)		
— with type of assignment 2 required	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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 position fastening method	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715		
*	backward by +/- 22.5° on vertical mounting surface		
fastening method	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715		
fastening method ■ side-by-side mounting	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 Yes		
fastening method ● side-by-side mounting height	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 Yes 114 mm		
fastening method • side-by-side mounting height width	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 Yes 114 mm 55 mm		
fastening method • side-by-side mounting height width depth	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 Yes 114 mm 55 mm		
fastening method • side-by-side mounting height width depth required spacing	backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 Yes 114 mm 55 mm		

	40		
— 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	screw-type 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 or stranded	2x (1 35 mm²), 1x (1 50 mm²)		
 finely stranded with core end processing 	2x (1 25 mm²), 1x (1 35 mm²)		
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)		
for AWG cables for auxiliary contacts	2x (20 14)		
AWG number as coded connectable conductor cross section			
• for main contacts	18 1		
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	1 000 000		
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 a		
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



<u>KC</u>



EMC	Functional Safety/Safety of Ma- chinery	Declaration of Conformity	Test Certificates
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Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













other Railway Environment

 Confirmation
 Vibration and Shock
 Type Test Certificates/Test Report
 Special Test Certificates
 Environmental Confirmations

Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT2036-3XB40-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-3XB40-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3XB40-0LA2

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

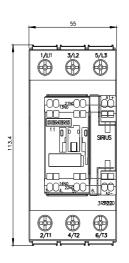
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3XB40-0LA2&lang=en

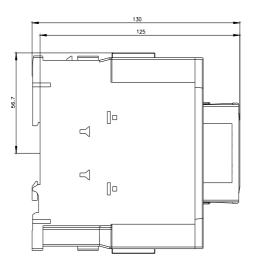
Characteristic: Tripping characteristics, I2t, Let-through current

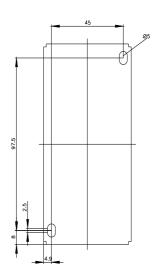
https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3XB40-0LA2/char

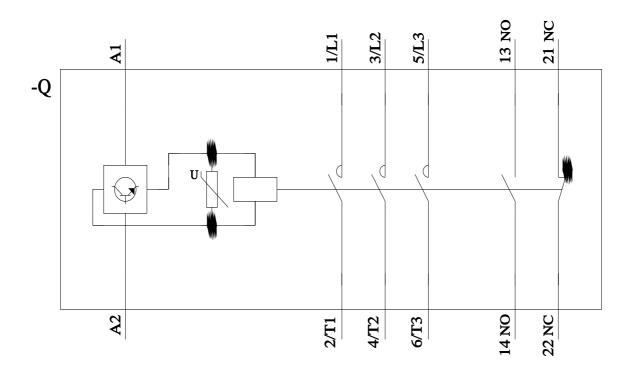
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-3XB40-0LA2&objecttype=14&gridview=view1









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