3RT2036-3XF40-0LA2

Data sheet



traction contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 110 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
at ood a raida failad	

— 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 KVV
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
 limited to 5 s switching at zero current maximum 	697 A; Use minimum cross-section acc. to AC-1 rated value
 limited 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	2257, 956 mmman 5.556 555667 657 167 1 1664 7 166
• at DC	1 500 1/h
operating frequency	1 000 1/11
at AC-2 at AC-3e maximum	600 1/h
• at AC-4 maximum	250 1/h
	250 1/11
Ratings for railway applications	
thermal current (Ith) up to 690 V	70.4
up to 40 °C according to IEC 60077 rated value	70 A
up to 70 °C according to IEC 60077 rated value	55 A
Control circuit/ Control	
type of voltage	DC
type of voltage of the control supply voltage	DC
control supply voltage at DC	
rated value	110 V
rated value operating range factor control supply voltage rated value of magnet coil at DC	110 V
operating range factor control supply voltage rated value of	110 V 0.7
operating range factor control supply voltage rated value of magnet coil at DC	
operating range factor control supply voltage rated value of magnet coil at DC • initial value	0.7
operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value	0.7 1.25
operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value design of the surge suppressor	0.7 1.25 with varistor
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	0.7 1.25 with varistor 1.5 A
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	0.7 1.25 with varistor 1.5 A 50 μs
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	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A
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	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A
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	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms
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	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA
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	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA 23 W
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 closing delay	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA 23 W 1 W
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 closing delay • at DC	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA 23 W
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 closing delay • at DC opening delay	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA 23 W 1 W
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 closing delay • at DC	0.7 1.25 with varistor 1.5 A 50 μs 0.45 A 0.8 A 230 ms 12 mA 23 W 1 W

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	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>





Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

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=3RT2036-3XF40-0LA2

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2036-3XF40-0LA2$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3XF40-0LA2

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

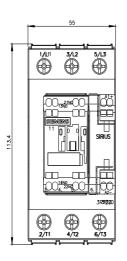
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3XF40-0LA2&lang=en

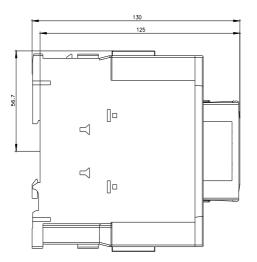
Characteristic: Tripping characteristics, I2t, Let-through current

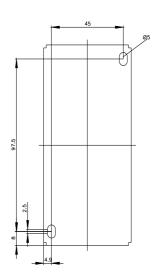
https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3XF40-0LA2/char

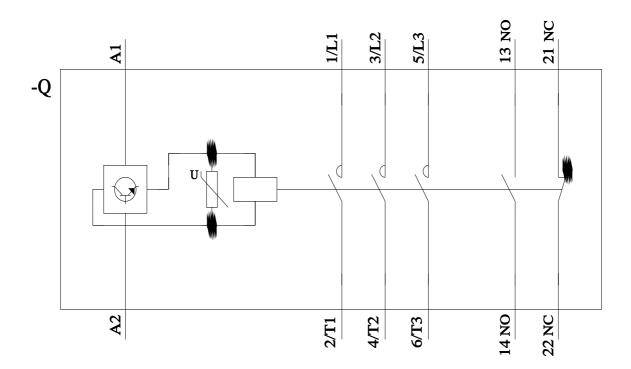
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-3XF40-0LA2&objecttype=14&gridview=view1









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