SIEMENS

Data sheet 3RT2027-2NP30



power contactor, AC-3e/AC-3, 32 A, 15 kW / 400 V, 3-pole, 200-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

product brand name	SIRIUS
product designation	Power contactor
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 	6.3 W
 at AC in hot operating state per pole 	2.3 W
 without load current share typical 	4.3 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 AC	8,3g / 5 ms, 5,3g / 10 ms
• at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
• at DC	15g / 5 ms, 10g / 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)	10/01/2009
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
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

lain circuit	2
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	50 A
value	50 A
— up to 690 V at ambient temperature 60 °C rated	42 A
value	
• 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
• at AC-5a up to 690 V rated value	44 A
 at AC-5b up to 400 V rated value 	26.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	30.8 A
 up to 400 V for current peak value n=20 rated value 	30.8 A
— up to 500 V for current peak value n=20 rated value	27 A
 up to 690 V for current peak value n=20 rated value 	21 A
• at AC-6a	
 up to 230 V for current peak value n=30 rated value 	20.5 A
 up to 400 V for current peak value n=30 rated value 	20.5 A
 up to 500 V for current peak value n=30 rated value 	18 A
 up to 690 V for current peak value n=30 rated value 	18 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm ²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	12 A
at 690 V rated value at 690 V rated value	12 A
operational current	12 A
•	
at 1 current path at DC-1 at 24 V rated value	35 A
— at 60 V rated value	20 A
— at 110 V rated value — at 110 V rated value	4.5 A
— at 110 V rated value — at 220 V rated value	4.5 A
— at 440 V rated value — at 440 V rated value	0.4 A
	0.4 A 0.25 A
— at 600 V rated valuewith 2 current paths in series at DC-1	0.20 A
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value — at 110 V rated value	35 A
— at 110 V rated value — at 220 V rated value	5 A
	1 A
— at 440 V rated value	
— at 600 V rated value	0.8 A
with 3 current paths in series at DC-1 at 24 V roted value.	2F A
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 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	20 A
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• 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-	10.0 KVV
4	
• at 400 V rated value	6 kW
at 690 V rated value	10.3 kW
operating apparent power at AC-6a	
 up to 230 V for current peak value n=20 rated value 	12.2 kVA
• up to 400 V for current peak value n=20 rated value	21.3 kVA
• up to 500 V for current peak value n=20 rated value	23.3 kVA
• up to 690 V for current peak value n=20 rated value	25 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	8.1 kVA
• up to 400 V for current peak value n=30 rated value	14.2 kVA
• up to 500 V for current peak value n=30 rated value	15.5 kVA
• up to 690 V for current peak value n=30 rated value	21.5 kVA
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 	341 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	199 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	162 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	1 500 1/h
• at DC	1 500 1/h
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-3e maximum	750 1/h
• at AC-3e maximum	250 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	200 280 V
at 60 Hz rated value	200 280 V
control supply voltage at DC	200 200 V
• rated value	200 280 V
operating range factor control supply voltage rated value of	200 200 V
magnet coil at DC	
• initial value	0.7
• full-scale value	1.1
operating range factor control supply voltage rated value of	
magnet coil at AC	
at 50 Hz	0.7 1.1
● at 60 Hz	0.7 1.1
design of the surge suppressor	with varistor
inrush current peak	25 A
duration of inrush current peak	30 µs
locked-rotor current mean value	0.1 A
locked-rotor current peak	0.13 A
duration of locked-rotor current	180 ms
holding current mean value	17 mA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	12.7 VA
• at 60 Hz	14.7 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.98
• at 60 Hz	0.98
apparent holding power of magnet coil at AC	
• at 50 Hz	3.9 VA
• at 60 Hz	4.3 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.51
• at 60 Hz	0.56
closing power of magnet coil at DC	14.3 W
holding power of magnet coil at DC	1.9 W
closing delay	
• at AC	50 80 ms
• at DC	50 80 ms
opening delay	
• at AC	30 50 ms
• at DC	30 50 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	Statistical (1) 1/12
number of NC contacts for auxiliary contacts instantaneous	1
contact	
number of NO contacts for auxiliary contacts 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 100 V rated value at 110 V rated value	3 A
at 110 v lateu value	٧٨

• 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
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
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]	ZIA
• for single-phase AC motor	
■ for single-phase AC motor — at 110/120 V rated value	2 hn
	2 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	40.1
— 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 / P600
Short-circuit protection	
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 DIN 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	
	10 mm
with side-by-side mounting	10 mm 10 mm
with side-by-side mounting — forwards	
with side-by-side mounting— forwards— upwards	10 mm
 with side-by-side mounting forwards upwards downwards at the side 	10 mm 10 mm
with side-by-side mountingforwardsupwardsdownwards	10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards 	10 mm 10 mm 0 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards 	10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side 	10 mm 10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards downwards 	10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards for live parts 	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards for live parts forwards 	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards for live parts forwards upwards upwards 	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards for live parts forwards upwards for live parts downwards downwards downwards downwards 	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
 with side-by-side mounting forwards upwards downwards at the side for grounded parts forwards upwards at the side downwards for live parts forwards upwards at the side downwards for live parts forwards upwards downwards at the side 	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm
with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards — at ownwards • for live parts — forwards — upwards — at the side — downwards — at the side — downwards — upwards — downwards — at the side Connections/ Terminals	10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards — at the side — downwards • for live parts — forwards — upwards — upwards — at the side — downwards — upwards — upwards — at the side Connections/ Terminals type of electrical connection	10 mm
with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards — at the side — downwards • for live parts — forwards — upwards — upwards — upwards — at the side — downwards — at the side Connections/ Terminals type of electrical connection • for main current circuit	10 mm
with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards — at the side — downwards • for live parts — forwards — upwards — upwards — at the side — downwards — at the side Connections/ Terminals type of electrical connection	10 mm

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)
connectable conductor cross-section for main contacts	2.(1 3 11111)
• solid	1 10 mm²
• stranded	1 10 mm²
finely stranded with core end processing	1 6 mm²
finely stranded without core end processing	1 6 mm²
connectable conductor cross-section for auxiliary contacts	1 0 111111
solid or stranded	0.5 2.5 mm²
finely stranded with core end processing	0.5 1.5 mm²
finely stranded with earle end processing finely stranded without core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	0.0 2.0 mm
• 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 with 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 8
for auxiliary contacts	20 14
Safety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
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 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
suitability for use	
 safety-related switching OFF 	Yes
Certificates/ approvals	

Certificates/ approvals

General Product Approval



Confirmation





<u>KC</u>



Functional

EMC Safety/Safety of Machinery

Declaration of Conformity Test Certificates



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

Test Certificates Marine / Shipping











Marine / Shipping

other

Railway





Confirmation



Vibration and Shock Confirmation

Dangerous Good

Environment

Transport Information

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=3RT2027-2NP30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-2NP30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2NP30

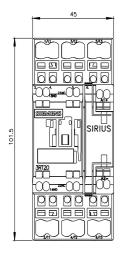
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

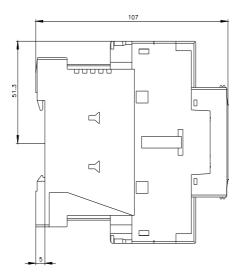
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-2NP30&lang=en

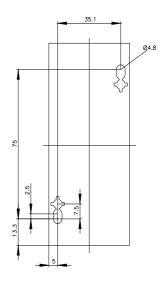
Characteristic: Tripping characteristics, I2t, Let-through current

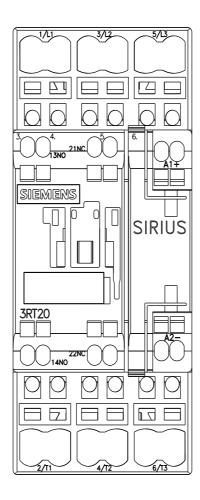
https://support.industry.siemens.com/cs/ww/en/ps/3RT20

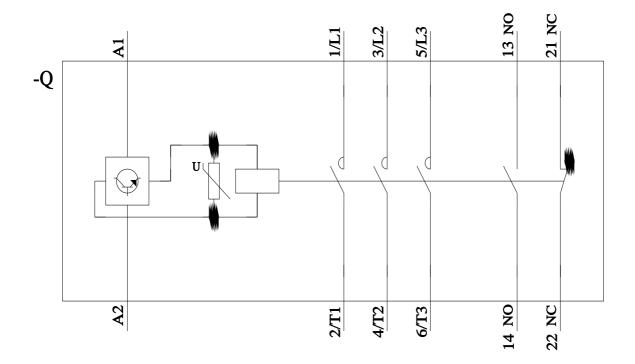
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-2NP30&objecttype=14&gridview=view1











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