# **SIEMENS**

Data sheet 3RT2027-2BF40

Power contactor, AC-3 32 A, 15 kW / 400 V 1 NO + 1 NC, 110 V DC 3-pole, size S0 Spring-type terminals



product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2

General technical data	
size of contactor	S0
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	8.1 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	2.7 W
power loss [W] for rated value of the current without	5.9 W
load current share typical	
surge voltage resistance	
of main circuit rated value	6 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	6 kV
maximum permissible voltage for safe isolation	
<ul> <li>between coil and main contacts acc. to EN</li> </ul>	400 V
60947-1	

protection class IP	
• on the front	IP20
of the terminal	IP20
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
<ul> <li>of the contactor with added electronics-</li> </ul>	5 000 000
compatible auxiliary switch block typical	
of the contactor with added auxiliary switch	10 000 000
block typical	
reference code acc. to DIN EN 81346-2	Q
Ambient conditions	
<ul> <li>installation altitude at height above sea level</li> </ul>	2 000 m
maximum	
ambient temperature	05
during operation	-25 +60 °C
during storage	-55 +80 °C
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
operating current	
● at AC-1 at 400 V	
<ul> <li>at ambient temperature 40 °C rated value</li> </ul>	50 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C	FO A
rated value	50 A
rated value  — up to 690 V at ambient temperature 60 °C rated value	50 A 42 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$	
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> </ul>	42 A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> </ul>	42 A 32 A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> </ul>	42 A 32 A 32 A
<ul> <li>— up to 690 V at ambient temperature 60 °C rated value</li> <li>• at AC-3</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul>	42 A 32 A 32 A 21 A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> <li>at 690 V rated value</li> <li>at AC-4 at 400 V rated value</li> </ul>	42 A  32 A  32 A  21 A  22 A

<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	30.8 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	30.8 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	27 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	21 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	20.5 A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	20.5 A
<ul><li>up to 500 V for current peak value n=30 rated value</li></ul>	18 A
<ul><li>up to 690 V for current peak value n=30 rated value</li></ul>	18 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	10 mm²
operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
operating current	
• at 1 current path at DC-1	
— at 24 V rated value	35 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
<ul><li>with 2 current paths in series at DC-1</li></ul>	
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— at 24 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
operating current	

<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	20 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 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
operating power for approx. 200000 operating cycles	
at AC-4	a I w
• at 400 V rated value	6 kW
at 690 V rated value	10.3 kW
operating apparent output at AC-6a	40.012/ A
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	12.2 kV·A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	21.3 kV·A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	23.3 kV·A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	25 kV·A
operating apparent output at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	8.1 kV·A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	14.2 kV·A
• up to 400 V for current peak value n=30 rated	14.2 kV·A

<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	15.5 kV·A
up to 690 V for current peak value n=30 rated value	21.5 kV·A
short-time withstand current in cold operating state up to 40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	499 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	395 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	260 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	186 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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	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
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
rated value	110 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.8
• full-scale value	1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay	
• at DC	50 170 ms
opening delay	
• at DC	15 17.5 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	
• instantaneous contact	1
number of NO contacts for auxiliary contacts	

• instantaneous contact	1
operating current at AC-12 maximum	10 A
operating 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
operating 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
operating 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 three-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 three-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 / 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)

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 60715
<ul><li>side-by-side mounting</li></ul>	Yes
height	102 mm
width	45 mm
depth	107 mm
required spacing	
<ul><li>with side-by-side mounting</li></ul>	
— 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
dominaldo	6 mm

Connections/ Terminals		
type of electrical connection		
• for main current circuit	spring-loaded terminals	
<ul> <li>for auxiliary and control current circuit</li> </ul>	spring-loaded terminals	
<ul> <li>at contactor for auxiliary contacts</li> </ul>	Spring-type terminals	
• of magnet coil	Spring-type terminals	
type of connectable conductor cross-sections		
• for main contacts		
— solid	2x (1 10 mm²)	
— single or multi-stranded	2x (1 10 mm²)	

<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 6 mm²)
<ul> <li>finely stranded without core end</li> </ul>	2x (1 6 mm²)
processing	
<ul> <li>at AWG conductors for main contacts</li> </ul>	2x (18 8)
connectable conductor cross-section for main	
contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	1 6 mm²
<ul> <li>finely stranded without core end processing</li> </ul>	1 6 mm²
connectable conductor cross-section for auxiliary	
contacts	
single or multi-stranded	0.5 2.5 mm <sup>2</sup>
<ul><li>finely stranded with core end processing</li></ul>	0.5 1.5 mm²
<ul> <li>finely stranded without core end processing</li> </ul>	0.5 2.5 mm²
• type of connectable conductor cross-sections	
for auxiliary contacts	
<ul><li>— single or multi-stranded</li></ul>	2x (0.5 2.5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²)
<ul> <li>finely stranded without core end processing</li> </ul>	2x (0.5 2.5 mm²)
<ul> <li>type of connectable conductor cross-sections at AWG conductors for auxiliary contacts</li> </ul>	2x (20 14)
AWG number as coded connectable conductor cross	
section	
• for main contacts	18 8
• for auxiliary contacts	20 14
Safety related data	
B10 value	
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	1 000 000
proportion of dangerous failures	
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	40 %
• with high demand rate acc. to SN 31920	73 %
failure rate [FIT]	
• with low demand rate acc. to SN 31920	100 FIT
product function	
• mirror contact acc. to IEC 60947-4-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection against electrical shock	finger-safe
suitability for use safety-related switching OFF	Yes
Certificates/ approvals	

## **General Product Approval**







KC





**EMC** 

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Ship- ping
Type Examination  Certificate	Miscellaneous  EG-Konf.	Type Test Certificates/Test Report Special Test Certificate	ABS

## Marine / Shipping













### other

Confirmation



### 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=3RT2027-2BF40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-2BF40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2BF40

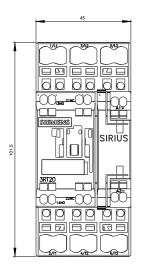
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2027-2BF40&lang=en

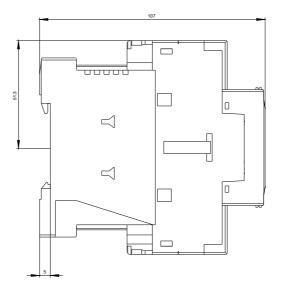
Characteristic: Tripping characteristics, I2t, Let-through current

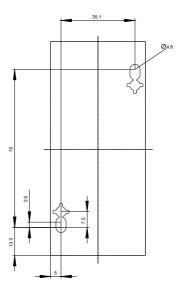
https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-2BF40/char

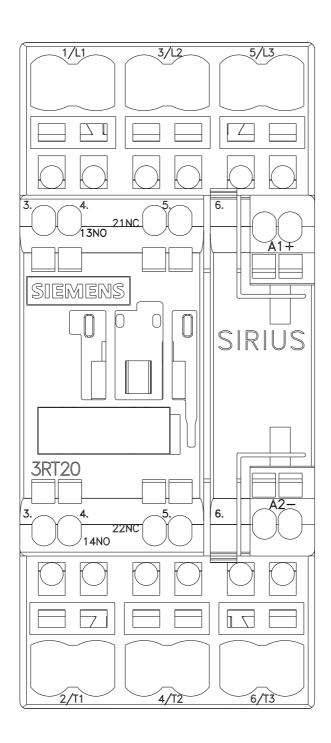
Further characteristics (e.g. electrical endurance, switching frequency)

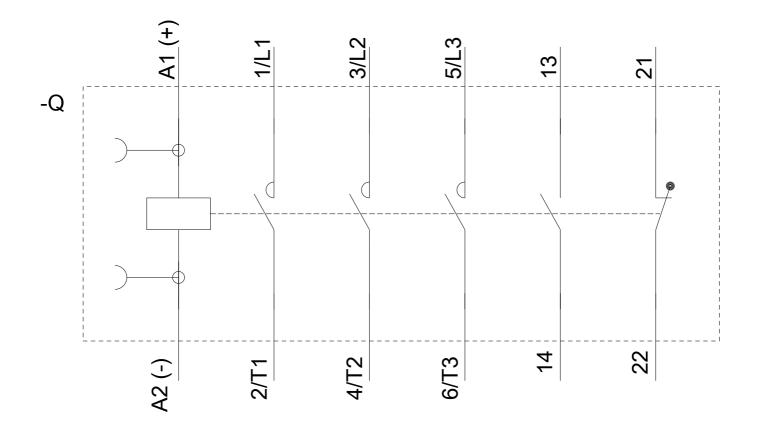
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-2BF40&objecttype=14&gridview=view1











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