# **SIEMENS**

Data sheet 3RT2027-1AP60

Power contactor, AC-3 32 A, 15 kW / 400 V 1 NO + 1 NC, 220 V AC, 50 Hz 240 V, 60Hz, 3-pole, Size S0, screw 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
• at AC in hot operating state per pole	2.7 W
Power loss [W] for rated value of the current without load current share typical	10.5 W
Surge voltage resistance	
of main circuit rated value	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation	
<ul> <li>between coil and main contacts acc. to EN 60947-1</li> </ul>	400 V

3RT2027-1AP60 Page 1/12 Subject to change without notice © Copyright Siemens

Protection class IP	
• on the front	IP20
of the terminal	IP20
Shock resistance at rectangular impulse	
• at AC	8,3g / 5 ms, 5,3g / 10 ms
Shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
Mechanical service life (switching cycles)	
of contactor typical	10 000 000
<ul> <li>of the contactor with added electronics- compatible auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
Reference code acc. to DIN EN 81346-2	Q
A mala in the second distance	
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
3 3.	
Main circuit	
Number of poles for main current circuit	3
Number of poles for main current circuit  Number of NO contacts for main contacts	3 3
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage	3
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum	
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current	3
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V	3 690 V
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value	3
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V	3 690 V
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C	3 690 V 50 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C	3 690 V 50 A 50 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value	3 690 V 50 A 50 A 42 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value	3 690 V 50 A 50 A 42 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value  • at AC-3	3 690 V 50 A 50 A 42 A 32 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value  • at AC-3  — at 400 V rated value	3 690 V 50 A 50 A 42 A 32 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value  • at AC-3  — at 400 V rated value  — at 500 V rated value	3 690 V 50 A 50 A 42 A 32 A 32 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value  • at AC-3  — at 400 V rated value  — at 500 V rated value  — at 690 V rated value  — at 690 V rated value	3 690 V 50 A 50 A 42 A 32 A 32 A 32 A 21 A
Number of poles for main current circuit  Number of NO contacts for main contacts  Operating voltage  • at AC-3 rated value maximum  Operating current  • at AC-1 at 400 V  — at ambient temperature 40 °C rated value  • at AC-1  — up to 690 V at ambient temperature 40 °C rated value  — up to 690 V at ambient temperature 60 °C rated value  • at AC-2 at 400 V rated value  • at AC-3  — at 400 V rated value  — at 500 V rated value  — at 690 V rated value  • at AC-4 at 400 V rated value	3 690 V  50 A  50 A  42 A  32 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
— 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	
<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	

0 -t 4ttht DO 0 -t DO 5	
at 1 current path at DC-3 at DC-5     at 24 V rated value.	20 A
— at 24 V rated value	2.5 A
— at 110 V rated value	1 A
— at 220 V rated value	0.09 A
— at 440 V rated value	
— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	25 A
— 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
• with 3 current paths in series at DC-3 at DC-5	05.4
— 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	45 1111
• 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
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
Operating apparent output at AC-6a	
<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

<ul> <li>up to 500 V for current peak value n=30 rated value</li> <li>up to 690 V for current peak value n=30 rated value</li> <li>21.5 kV·A</li> </ul>	
• 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	
• limited to 1 s switching at zero current 499 A; Use minimum cross-section acc. to AC-1 maximum	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 AC 5 000 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 AC	
Type of voltage of the control supply voltage AC	
Type of voltage of the control supply voltage AC  Control supply voltage at AC	
Type of voltage of the control supply voltage  AC  Control supply voltage at AC  • at 50 Hz rated value  220 V	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  220 V  240 V  Operating range factor control supply voltage rated	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  0.8 1.1	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  0.8 1.1	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  O.8 1.1  Apparent pick-up power of magnet coil at AC	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  O.8 1.1  Apparent pick-up power of magnet coil at AC  at 50 Hz  81 V·A	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  One at 50 Hz  at 60 Hz  Apparent pick-up power of magnet coil at AC  at 50 Hz  at 60 Hz  81 V·A  79 V·A	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  Oss 1.1  Apparent pick-up power of magnet coil at AC  at 50 Hz  at 60 Hz  Inductive power factor with closing power of the coil	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  220 V  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  O.8 1.1  Apparent pick-up power of magnet coil at AC  at 50 Hz  at 60 Hz  Name of the coil  at 60 Hz  O.72	
Type of voltage of the control supply voltage  Control supply voltage at AC  • at 50 Hz rated value  • at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  • at 50 Hz  • at 60 Hz  Apparent pick-up power of magnet coil at AC  • at 50 Hz  • at 60 Hz  Apparent pick-up power of magnet coil at AC  • at 50 Hz  • at 60 Hz  Inductive power factor with closing power of the coil  • at 50 Hz  • at 60 Hz  • at 60 Hz  O.72  • at 60 Hz	
Type of voltage of the control supply voltage  Control supply voltage at AC  at 50 Hz rated value  at 60 Hz rated value  Operating range factor control supply voltage rated value of magnet coil at AC  at 50 Hz  at 60 Hz  Os 1.1  Apparent pick-up power of magnet coil at AC  at 50 Hz  at 60 Hz  Nos 1.1  Apparent pick-up power of magnet coil at AC  at 50 Hz  at 60 Hz  Inductive power factor with closing power of the coil  at 50 Hz  at 60 Hz  O.72  at 60 Hz  Apparent holding power of magnet coil at AC	

coil

Auxiliary circuit	
Control version of the switch operating mechanism	Standard A1 - A2
Arcing time	10 10 ms
• at AC	4 16 ms
Opening delay	
• at AC	8 40 ms
Closing delay	
● at 60 Hz	0.28
● at 50 Hz	0.25

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]	

<ul><li>for single-phase AC motor</li></ul>	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
<ul> <li>for three-phase AC motor</li> </ul>	
— 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	
<ul> <li>for short-circuit protection of the main circuit</li> </ul>	
— with type of coordination 1 required	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 10 A (500 V, 1 kA)

nstallation/ 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 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	85 mm
Width	45 mm
Depth	97 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
<ul> <li>for grounded parts</li> </ul>	
— 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		
<ul> <li>for auxiliary and control current circuit</li> </ul>	screw-type terminals		
<ul> <li>at contactor for auxiliary contacts</li> </ul>	Screw-type terminals		
• of magnet coil	Screw-type terminals		
Type of connectable conductor cross-sections			
• for main contacts			
— solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)		
<ul> <li>single or multi-stranded</li> </ul>	2x (1 2,5 mm²), 2x (2,5 10 mm²)		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²		
<ul> <li>at AWG conductors for main contacts</li> </ul>	2x (16 12), 2x (14 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 10 mm²		
Connectable conductor cross-section for auxiliary			
contacts			
<ul><li>single or multi-stranded</li></ul>	0.5 2.5 mm²		
<ul><li>finely stranded with core end processing</li></ul>	0.5 2.5 mm <sup>2</sup>		
Type of connectable conductor cross-sections			
<ul><li>for auxiliary contacts</li></ul>			
<ul><li>— single or multi-stranded</li></ul>	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
<ul> <li>at AWG conductors for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)		
AWG number as coded connectable conductor cross			
section			
• for main contacts	16 8		
• for auxiliary contacts	20 14		
Safety related data			
B10 value			
• with high demand rate acc. to SN 31920	1 000 000		
Proportion of dangerous failures			
• with low demand rate acc. to SN 31920	40 %		
• with high demand rate acc. to SN 31920	73 %		

Failure rate [FIT]

**Product function** 

• with low demand rate acc. to SN 31920

100 FIT

<ul> <li>Mirror contact acc. to IEC 60947-4-1</li> </ul>	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

EMC











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

### Marine / Shipping

other









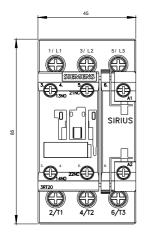


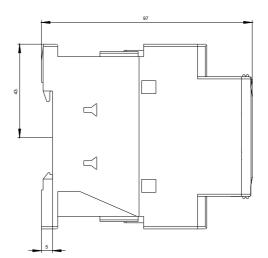
Confirmation

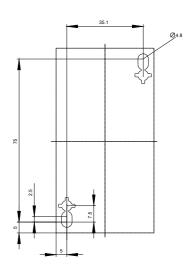
#### other

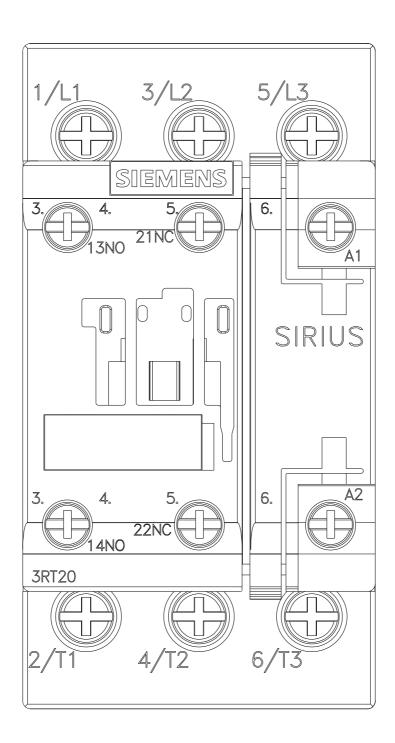


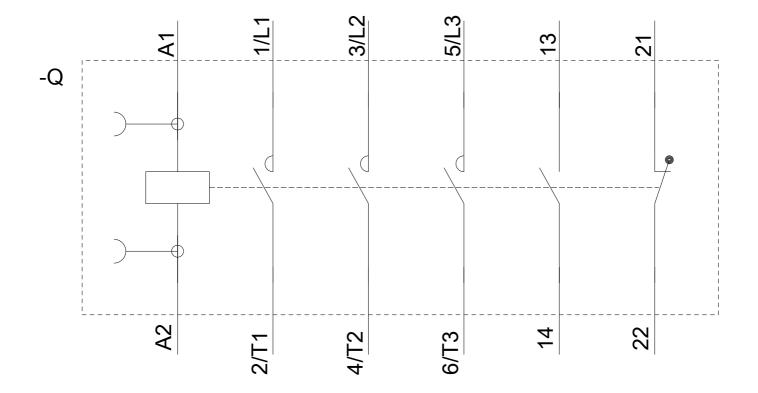
#### Further information











last modified: 06/10/2020