## SIEMENS

## Data sheet

## 3RT2047-3SB30



power contactor, AC-3e/AC-3, 110 A, 55 kW / 400 V, 3-pole, 21-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S3, F-PLC-IN

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product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S3
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>	23.7 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	7.9 W
<ul> <li>without load current share typical</li> </ul>	3.5 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	1 000 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	8 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
• at AC	10.3g / 5 ms, 6,.g / 10 ms
• at DC	6.7 g / 5 ms, 4g / 10 ms
shock resistance with sine pulse	
• at AC	16.3g / 5 ms, 10.g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 10 ms
mechanical service life (operating cycles)	
<ul> <li>of contactor typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	5 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	01/29/2021
SVHC substance name	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 2-Methyl-1-(4-methylthiophenyl)-2-morpho - 71868-10-5 Bleititanzirkonoxid - 12626-81-2 2,2',6,6'-Tetrabrom-4,4'-isopropylidendi - 79-94-7
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

- during exercises	
during operation	-25 +60 °C
during storage	55 +80 °C 10 %
relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30	95 %
maximum	50 /0
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	1 000 V
<ul> <li>at AC-3e rated value maximum</li> </ul>	1 000 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	130 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	110 A
• at AC-3	440.4
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A 20 A
<ul> <li>— at 1000 V rated value</li> <li>● at AC-3e</li> </ul>	30 A
• at AC-se — at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	120 A
• at AC-5b up to 400 V rated value	110 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	98 A
— up to 400 V for current peak value n=20 rated value	98 A
— up to 500 V for current peak value n=20 rated value	98 A
— up to 690 V for current peak value n=20 rated value	98 A
● at AC-6a	
<ul> <li>— up to 230 V for current peak value n=30 rated value</li> </ul>	65.3 A
— up to 400 V for current peak value n=30 rated value	65.3 A
— up to 500 V for current peak value n=30 rated value	65.3 A
— up to 690 V for current peak value n=30 rated value	65.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 mm²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	46 A
at 690 V rated value	36 A
operational current	
• at 1 current path at DC-1	400.4
- at 24 V rated value	100 A
- at 60 V rated value	60 A
— at 110 V rated value	9 A 2 A
— at 220 V rated value — at 440 V rated value	2 A 0.6 A
— at 600 V rated value	0.6 A
with 2 current paths in series at DC-1	0.77
- at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 100 V rated value	100 A
— at 220 V rated value	100 A 10 A
— at 440 V rated value	1.8 A
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— at 600 V rated value	1 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	80 A
— at 440 V rated value	4.5 A
— at 600 V rated value	2.6 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	40 A
— at 60 V rated value	6 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.15 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	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	7 A
— at 440 V rated value	0.42 A
— at 600 V rated value	0.16 A
• with 3 current paths in series at DC-3 at DC-5	400.4
— at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	35 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.35 A
<ul> <li>operating power</li> <li>at AC-2 at 400 V rated value</li> </ul>	55 kW
• at AC-2 at 400 v lated value	55 KW
- at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
• at AC-3e	
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
operating power for approx. 200000 operating cycles at AC-	
4	
• at 400 V rated value	24.3 kW
at 690 V rated value	32.9 kW
operating apparent power at AC-6a	
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	67 000 VA
• up to 500 V for current peak value n=20 rated value	84 000 VA
• up to 690 V for current peak value n=20 rated value	117 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	26 000 VA
• up to 400 V for current peak value n=30 rated value	45 200 VA
• up to 500 V for current peak value n=30 rated value	56 500 VA
up to 690 V for current peak value n=30 rated value	78 000 VA
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>	1 960 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	1 502 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	1 095 A; Use minimum cross-section acc. to AC-1 rated value

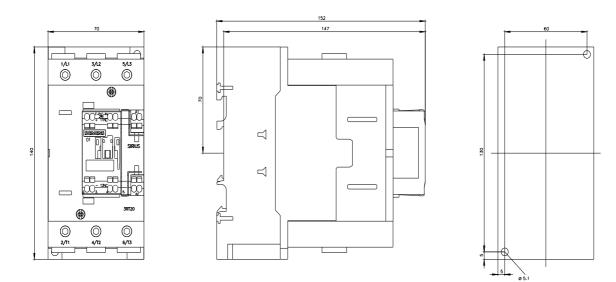
• limited to 50 switching at zoro current maximum     707 A. User minimum cross-section acc. 16 AC-1 rated value       no-load switching frequency     582 A. User minimum cross-section acc. 16 AC-1 rated value       = i AC     1000 1/h       = i AC     1000 1/h       = i AC-2 matrixm     500 1/h       = i AC-2 matrixm     500 1/h       = i AC-2 matrixm     500 1/h       = i AC-3 matrixm     500 1/h       = i AC-4 matrixm     500 1/h       = i AC-3 matrixm     500 1/h       = i AC-4 matrixm     500 1/h       = i AC-5 matrixm     500 1/h																																																																										
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	closing delay																																																																									
	• at AC	50 70 ms																																																																								
• at DC 50 70 ms	• at DC	50 70 ms																																																																								

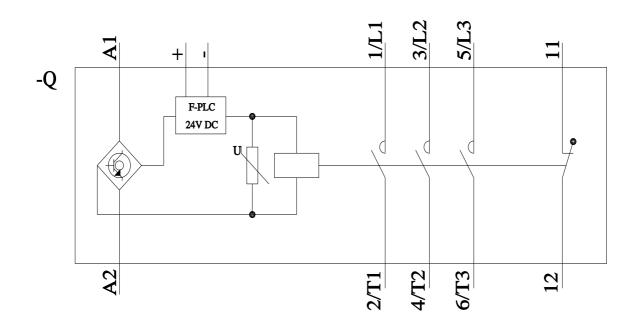
opening delay	
• at AC	38 57 ms
• at DC	38 57 ms
recovery time after power failure typical	2.1 s
arcing time	10 20 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	0
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul> <li>at 230 V rated value</li> </ul>	6 A
<ul> <li>at 400 V rated value</li> </ul>	3 A
<ul> <li>at 500 V rated value</li> </ul>	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
<ul> <li>at 125 V rated value</li> </ul>	2 A
at 220 V rated value	1A
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 100 V rated value	1A
at 125 V rated value	0.9 A
at 123 Vilated value     at 220 V rated value	0.3 A
at 220 V rated value     at 600 V rated value	0.3 A 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	
	96 A
at 480 V rated value	
at 600 V rated value	99 A
yielded mechanical performance [hp]	
for single-phase AC motor	40 hz
— at 110/120 V rated value	10 hp
— at 230 V rated value	20 hp
for 3-phase AC motor	00 hr
- at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 200A (690V,100kA), aM: 100A (690V,100kA), BS88: 160A (415V,80kA)
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	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	140 mm
width	70 mm

depth	152 mm
required spacing	
with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
	U TIIII
for grounded parts     forwards	20 mm
— forwards	20 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
• for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm
Connections/ Terminals	
type of electrical connection	
<ul> <li>for main current circuit</li> </ul>	screw-type terminals
<ul> <li>for auxiliary and control 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	
<ul> <li>finely stranded with core end processing</li> </ul>	2x (2.5 35 mm²), 1x (2.5 50 mm²)
connectable conductor cross-section for main contacts	
• solid	2.5 16 mm²
stranded	6 70 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	2.5 50 mm²
connectable conductor cross-section for auxiliary contacts	
<ul> <li>solid or 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>
<ul> <li>finely stranded without 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>	
— solid or stranded	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 mm <sup>2</sup> )
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16)
AWG number as coded connectable conductor cross section	
for main contacts	10 2
<ul> <li>for auxiliary contacts</li> </ul>	20 14
Safety related data	
product function	
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No
safety device type according to IEC 61508-2	Туре В
suitability for use safety-related switching OFF	Yes
B10 value with high demand rate according to SN 31920	1 000 000
Safety Integrity Level (SIL) according to IEC 61508	2
SIL Claim Limit (subsystem) according to EN 62061	2
performance level (PL) according to EN ISO 13849-1	c
category according to EN ISO 13849-1	2
stop category according to EN 60204-1	0
diagnostics test interval by internal test function maximum	28 800 s
proportion of dangerous failures	
with low demand rate according to SN 31920	40 %
-	40 % 73 %
with high demand rate according to SN 31920	
PFHD with high demand rate according to EN 62061	7.7E-8 1/h
failure rate [FIT] with low demand rate according to SN 31920	100 FIT

PFDavg with low den			96 %		
	nand rate according to IE	C 61508	0.0067		
MTBF			52 a		
nardware fault tolera	nce according to IEC 615	808	0		
1 value for proof test	interval or service life acco	ording to IEC	20 a		
protection class IP o	n the front according to I	EC 60529	IP20		
ouch protection on t	the front according to IEC	60529	finger-safe, for vertical cont	tact from the front	
ertificates/ approvals	;				
General Product App	proval				
(SP)	<u>Confirmation</u>			KC	EAC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of	Conformity	Test Certificates	
	<u>Type Examination Cer-</u> <u>tificate</u>	UK CA	CE EG-Konf.	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific</u> ates/Test Repor
Marine / Shipping				other	Railway
Marine / Shipping	Llovds Register urs		KMRS	other <u>Confirmation</u>	-
ABS	Lloyds Register uts	RINA	KMRS		Railway

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-3SB30/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-3SB30&objecttype=14&gridview=view1





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