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	
 function module for communication 	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
 at AC in hot operating state 	23.7 W
 at AC in hot operating state per pole 	7.9 W
 without load current share typical 	3.5 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	1 000 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
 of main circuit rated value 	8 kV
 of auxiliary circuit rated value 	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)	
 of contactor typical 	5 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	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	
 at AC-3 rated value maximum 	1 000 V
 at AC-3e rated value maximum 	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
 — at 1000 V rated value ● at AC-3e 	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	
 — up to 230 V for current peak value n=30 rated value 	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
 operating power at AC-2 at 400 V rated value 	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	
 up to 400 V for current peak value n=20 rated value 	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	
 limited to 1 s switching at zero current maximum 	1 960 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	1 502 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	1 095 A; Use minimum cross-section acc. to AC-1 rated value

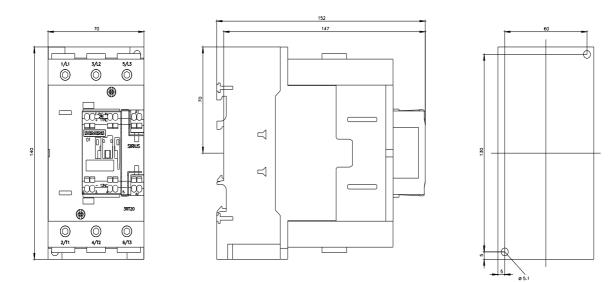
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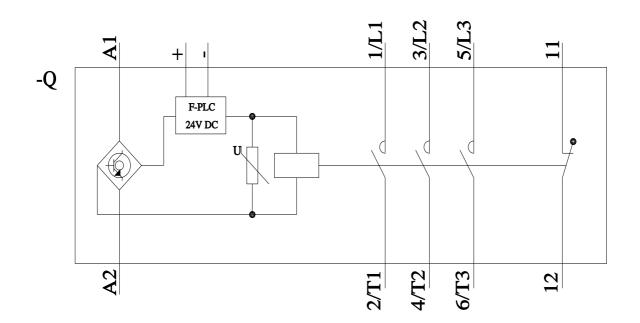
opening delay	
• at AC	38 57 ms
• at DC	38 57 ms
recovery time after power failure typical	2.1 s
arcing time	10 20 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	0
operational current at AC-12 maximum	10 A
operational current at AC-15	
 at 230 V rated value 	6 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	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	
 for short-circuit protection of the main circuit 	
— 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)
 — with type of assignment 2 required 	gG: 200A (690V,100kA), aM: 100A (690V,100kA), BS88: 160A (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	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	
 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	
 finely stranded with core end processing 	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
 finely stranded with core end processing 	2.5 50 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 2.5 mm ²
 finely stranded without core end processing 	0.5 2.5 mm ²
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 mm ²)
 for AWG cables for auxiliary contacts 	2x (20 16)
AWG number as coded connectable conductor cross section	
for main contacts	10 2
 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
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, I²t, 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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