SIEMENS

Data sheet 3RT2047-1SP30



power contactor, AC-3e/AC-3, 110 A, 55 kW / 400 V, 3-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NC, screw terminal, size: S3, F-PLC-IN

Figure similar

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 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 %
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 at AC-1 	130 A
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	110 A
• at AC-3	
— 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-3e	
— 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 at AC-5b up to 400 V rated value	120 A
at AC-5b up to 400 V rated value at AC-6c	110 A
 at AC-6a up to 230 V for current peak value n=20 rated value 	08 Λ
 up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value 	98 A 98 A
— up to 500 V for current peak value n=20 rated value — 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
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
 with 2 current paths in series at DC-1 — at 24 V rated value 	100 A
— at 24 V rated value — at 60 V rated value	100 A
— at 60 V rated value — at 110 V rated value	100 A
— at 110 V rated value — at 220 V rated value	10 A
— at 440 V rated value	1.8 A
— at 770 v rateu value	1.07

— 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 				
— 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-3				
— 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-				
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 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 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 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 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 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			

• limited to 30 s switching at zero current maximum	707 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 60 s switching at zero current maximum 	562 A; Use minimum cross-section acc. to AC-1 rated value		
no-load switching frequency			
• at AC	1 000 1/h		
• at DC	1 000 1/h		
operating frequency			
• at AC-1 maximum	900 1/h		
• at AC-2 maximum	350 1/h		
• at AC-3 maximum	850 1/h		
• at AC-3e maximum	850 1/h		
• at AC-4 maximum	200 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	175 280 V		
at 60 Hz rated value	175 280 V		
control supply voltage at DC			
• rated value	175 280 V		
operating range factor control supply voltage rated value of			
magnet coil at DC			
• initial value	0.8		
• full-scale value	1.1		
operating range factor control supply voltage rated value of			
magnet coil at AC			
● at 50 Hz	0.8 1.1		
• at 60 Hz	0.8 1.1		
type of PLC-control input according to IEC 60947-1	Type 1		
consumed current at PLC-control input according to IEC	11 mA		
60947-1 maximum			
voltage at PLC-control input rated value	24 V		
operating range factor of the voltage at PLC-control input	0.8 1.1		
design of the surge suppressor	with varistor		
inrush current peak	43 A		
duration of inrush current peak	10 µs		
locked-rotor current mean value	0.4 A		
locked-rotor current peak	1.2 A		
duration of locked-rotor current	150 ms		
holding current mean value	0.01 A		
apparent pick-up power of magnet coil at AC			
• at 50 Hz	130 VA		
● at 60 Hz	130 VA		
apparent holding power			
 at minimum rated control supply voltage at DC 	1.8 VA		
 at maximum rated control supply voltage at DC 	1.8 VA		
apparent holding power			
 at minimum rated control supply voltage at AC 			
— at 50 Hz	2.4 VA		
— at 60 Hz	2.4 VA		
at maximum rated control supply voltage at AC			
— at 50 Hz	2.4 VA		
— at 60 Hz	2.4 VA		
apparent holding power of magnet coil at AC			
• at 50 Hz	2.4 VA		
• at 60 Hz	2.4 VA		
inductive power factor with the holding power of the coil			
• at 50 Hz	0.95		
• at 60 Hz	0.95		
closing power of magnet coil at DC	130 W		
holding power of magnet coil at DC	1.8 W		
closing delay			
• at AC	50 70 ms		
• at DC	50 70 ms		
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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	1		
contact			
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 40 V rated value	6 A		
at 110 V rated value	3 A		
at 110 V rated value at 125 V rated value	2 A		
at 220 V rated value	1 A		
at 600 V rated value	0.15 A		
	0.15 A		
operational current at DC-13	40 A		
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	96 A		
at 600 V rated value	99 A		
yielded mechanical performance [hp]			
 for single-phase AC motor 			
— at 110/120 V rated value	10 hp		
— at 230 V rated value	20 hp		
• for 3-phase AC motor			
— 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	J		
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		
for grounded parts			
— forwards	20 mm		
— upwards	10 mm		
— at the side	10 mm		
— downwards	10 mm		
	10 111111		
• for live parts	00		
— 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 	screw-type terminals		
 at contactor for auxiliary contacts 	Screw-type terminals		
of magnet coil	Screw-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 mm ²		
connectable conductor cross-section for auxiliary contacts	2.0 00 11111		
solid or stranded	0.5 2.5 mm²		
	0.5 2.5 mm²		
• finely stranded with core end processing	0.5 2.5 11111		
type of connectable conductor cross-sections			
for auxiliary contacts	0 (0 5 4 5 3) 0 (0 75 0 5 3)		
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
— finely stranded with core end processing	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
for AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)		
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	Type B		
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	С		
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 %		
with high demand rate according to SN 31920	73 %		
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		
Safe failure fraction (SFF)	96 %		
PFDavg with low demand rate according to IEC 61508	0.0067		
1 1 Davy with low demand rate according to IEC 01300	0.0007		

MTBF	52 a
hardware fault tolerance according to IEC 61508	0
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
Certificates/ approvals	

General Product Approval



Confirmation





<u>KC</u>



Functional EMC Safety/Safety of Ma- Declaration of Conformity Test Certificates chinery
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Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping other Railway









Confirmation Vibration and Shock

Siemens has decided to exit the Russian market (see here).

own-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=3RT2047-1SP30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2047-1SP30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1SP30

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

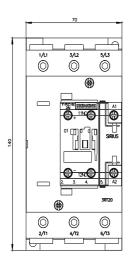
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-1SP30&lang=en

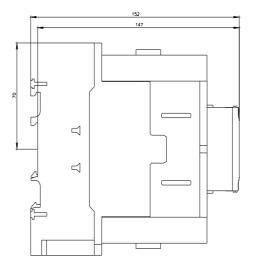
Characteristic: Tripping characteristics, I2t, Let-through current

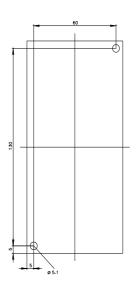
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1SP30/char

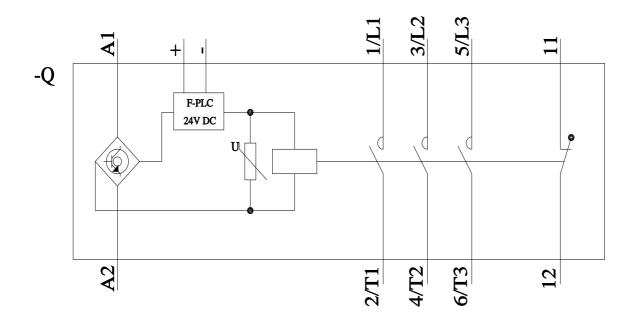
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-1SP30&objecttype=14&gridview=view1









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