SIEMENS

Data sheet 3RT2047-1SB30



contactor, AC-3, 110 A/400 V/60 $^{\circ}\text{C}$ S3, 3-pole, 21-33 V AC/DC, F-PLC-IN, with varistor, 1 NC, screw terminal

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 safe isolation between coil and main contacts acc. to EN 60947-1	690 V		
shock resistance at rectangular impulse			
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms		
• at DC	6.7 g / 5 ms, 4.0 g / 10 ms		
shock resistance with sine pulse			
• at AC	10.6 g / 5 ms, 6.3 g / 10 ms		
• at DC	10.6 g / 5 ms, 6.3 g / 10 ms		
mechanical service life (switching 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 acc. to IEC 81346-2	Q		
Substance Prohibitance (Date)	29.01.2021		
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 acc. 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	130 A	
 at AC-1 — up to 690 V at ambient temperature 40 °C 	130 A	
— up to 690 V at ambient temperature 60 °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	120 A	
• at AC-5b up to 400 V rated value	110 A	
• at AC-6a	00 4	
— 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 — up to 690 V for current peak value n=20 rated 	98 A 98 A	
value • at AC-6a	30 A	
— up to 230 V for current peak value n=30 rated	65.3 A	
value		
— 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 mm ²	
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 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		

1041/	400 A			
— at 24 V rated value	100 A			
— at 110 V rated value	100 A			
— at 220 V rated value	10 A			
— at 440 V rated value	1.8 A			
— at 600 V rated value	1 A			
 with 3 current paths in series at DC-1 				
— at 24 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 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 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 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 1000 V rated value	37 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			
operating power for approx. 200000 operating cycles				
at AC-4 • at 400 V rated value	24.3 kW			
at 690 V rated value at 690 V rated value				
operating apparent power at AC-6a	32.9 kW			
	67 000 \/A			
 up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 	67 000 VA 84 000 VA			
	117 000 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 250 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value 	45 200 VA			
	45 200 VA 56 500 VA			
up to 500 V for current peak value n=30 rated value up to 600 V for current peak value n=30 rated value	78 000 VA			
up to 690 V for current peak value n=30 rated value short time withstand current in cold energting state.	70 000 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	21 33 V			
at 60 Hz rated value	21 33 V			
control supply voltage at DC				
rated value	21 33 V			
type of PLC-control input acc. to IEC 60947-1	Type 1			
consumed current at PLC-control input acc. to IEC 60947-1 maximum	11 mA			
voltage at PLC-control input rated value	24 V			
operating range factor of the voltage at PLC-control input	0.8 1.1			
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			
design of the surge suppressor	with varistor			
inrush current peak	2.2 A			
duration of inrush current peak	100 μs			
locked-rotor current mean value	4 A			
locked-rotor current peak	_ 6.5 A			
duration of locked-rotor current	150 ms			
holding current mean value	0.09 A			
apparent pick-up power of magnet coil at AC	400.1/4			
• at 50 Hz	130 VA			
• at 60 Hz	130 VA			
apparent holding power of magnet coil at AC • at 50 Hz	2.4 VA			
• at 60 Hz	2.4 VA 2.4 VA			
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			
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	0			
instantaneous contact				

an austinual austant at AO 40	40.4				
operational current at AC-12 maximum	10 A				
operational current at AC-15	6.0				
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	40.4				
• 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				
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 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					
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 standard mounting 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					
f	00				
— forwards	20 mm				
— upwards	10 mm				

- for everyaded weather				
• for grounded parts	00			
— 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 	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)			
at AWG cables for main contacts	2x (10 1/0), 1x (10 2)			
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 mm²			
type of connectable conductor cross-sections				
 for auxiliary contacts 				
 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)			
 at 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 acc. to IEC 60947-4-1	Yes			
 positively driven operation acc. to IEC 60947-5-1 	No			
safety device type acc. to IEC 61508-2	Type B			
B10 value with high demand rate acc. to SN 31920	1 000 000			
Safety Integrity Level (SIL) acc. to IEC 61508	2			
SIL Claim Limit (subsystem) acc. to EN 62061	2			
performance level (PL) acc. to EN ISO 13849-1	C			
category acc. to EN ISO 13849-1	2			
stop category acc. to DIN EN 60204-1	0			
Safe failure fraction (SFF)	96 %			
diagnostics test interval by internal test function	28 800 s			
maximum				
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] with low demand rate acc. to SN 31920	100 FIT			
PFHD with high demand rate acc. to EN 62061	0.000000077 1/h			
PFDavg with low demand rate acc. to IEC 61508	0.0067			
MTBF	52 y			
hardware fault tolerance acc. to IEC 61508	0			
protection class IP on the front acc. to IEC 60529	IP20			

touch protection on the front acc. to IEC 60529 finger-safe, for vertical contact from the front suitability for use · safety-related switching on No · safety-related switching OFF Yes Certificates/ approvals

General Product Approval EMC



Confirmation



KC





Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	other	Railway
Type Examination Certificate	CE	Type Test Certificates/Test Report	Confirmation	Vibration and Shock

Information- and Downloadcenter (Catalogs, Brochures,...)

EG-Konf.

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2047-1SB30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2047-1SB30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1SB30

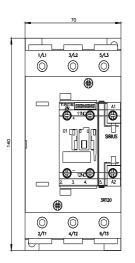
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-1SB30&lang=en

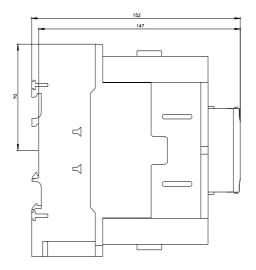
Characteristic: Tripping characteristics, I2t, Let-through current

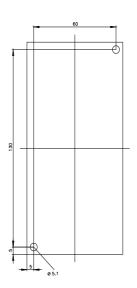
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1SB30/char

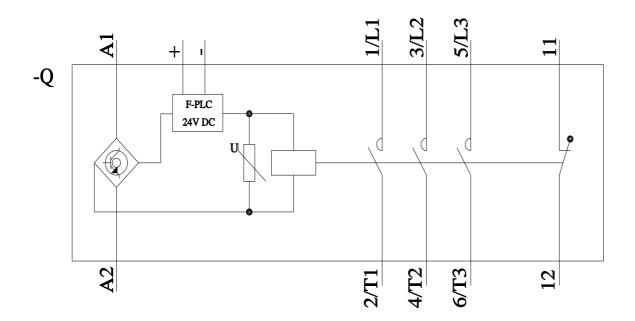
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-1SB30&objecttype=14&gridview=view1









last modified: 2/15/2022 🖸