SIEMENS

Data sheet 3RT2037-1SP30



power contactor, AC-3e/AC-3, 65 A, 30 kW / 400 V, 3-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NC, screw terminal, size: S2, F-PLC-IN

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
Seneral technical data	
size of contactor	S2
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 	11.4 W
 at AC in hot operating state per pole 	3.8 W
 without load current share typical 	1.6 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
of main circuit rated value	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7.7g / 5 ms, 4.5g / 10 ms
• at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
• at AC	12g / 5 ms, 7g / 10 ms
• at DC	12g / 5 ms, 7g / 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	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5
Weight	1.148 kg
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 	690 V
 at AC-3e rated value maximum 	690 V
operational current	
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 	80 A
— up to 690 V at ambient temperature 40 °C rated value	80 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	70 A
• at AC-3	
— at 400 V rated value	65 A
— at 500 V rated value	65 A
— at 690 V rated value	47 A
• at AC-3e	
— at 400 V rated value	65 A
— at 500 V rated value	65 A
— at 690 V rated value	47 A
• at AC-4 at 400 V rated value	55 A
• at AC-5a up to 690 V rated value	70.4 A
• at AC-5b up to 400 V rated value	53.9 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	56.9 A
— up to 400 V for current peak value n=20 rated value	56.9 A
 up to 500 V for current peak value n=20 rated value 	56.9 A
— up to 690 V for current peak value n=20 rated value	47 A
• at AC-6a	
 up to 230 V for current peak value n=30 rated value 	38 A
 up to 400 V for current peak value n=30 rated value 	38 A
— up to 500 V for current peak value n=30 rated value	38 A
— up to 690 V for current peak value n=30 rated value	38 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	28 A
at 690 V rated value	22 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 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
 with 2 current paths in series at DC-1 	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1A
— at 600 V rated value	0.8 A
• with 3 current paths in series at DC-1	

1041/4 1 1	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
• at 1 current path at DC-3 at DC-5	0F A
— at 24 V rated value— at 60 V rated value	35 A 6 A
	1.4
— at 220 V rated value — at 440 V rated value	0.1 A
— at 600 V rated value	0.06 A
with 2 current paths in series at DC-3 at DC-5	0.00 A
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	25 A
— at 220 V rated value	5 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	0.10 A
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	25 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.35 A
operating power	
at AC-2 at 400 V rated value	30 kW
• at AC-3	
— at 230 V rated value	18.5 kW
— at 400 V rated value	30 kW
— at 500 V rated value	37 kW
— at 690 V rated value	37 kW
• at AC-3e	
— at 230 V rated value	18.5 kW
— at 400 V rated value	30 kW
— at 500 V rated value	37 kW
— at 690 V rated value	37 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	14.7 kW
at 690 V rated value	20 kW
operating apparent power at AC-6a	
up to 400 V for current peak value n=20 rated value	39 400 VA
 up to 500 V for current peak value n=20 rated value 	49 200 VA
• up to 690 V for current peak value n=20 rated value	56 100 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	15 100 VA
 up to 400 V for current peak value n=30 rated value 	26 200 VA
 up to 500 V for current peak value n=30 rated value 	32 800 VA
• up to 690 V for current peak value n=30 rated value	45 300 VA
short-time withstand current in cold operating state up to 40 $^{\circ}\text{C}$	
 limited to 1 s switching at zero current maximum 	1 055 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	730 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	520 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	336 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	272 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

■ ACC - maximum		
	operating frequency	
	• at AC-1 maximum	800 1/h
# 31 AC 3e maximum	• at AC-2 maximum	400 1/h
ACDC Control Supply voltage at AC as a first part of the control supply voltage at AC as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 175 _ 280 V as 60 Hz rade value 180 / 280 / 280 / 280 / 280 V as 60 Hz 480 / 280 / 280 / 280 V 480 / 280 V 480 / 280 V 480 / 280 V 480	• at AC-3 maximum	700 1/h
	• at AC-3e maximum	700 1/h
ACIDC ACID	at AC-4 maximum	200 1/h
entrol supply voltage at AC ■ at 50 Hz rated value ■ at 50 Hz rated value ■ 175 280 V ■ 175 280	Control circuit/ Control	
■ at 60 Hz rated value ■ at 60 Hz rated value ■ 175 280 V ■ 280 V	type of voltage of the control supply voltage	AC/DC
15	control supply voltage at AC	
175	at 50 Hz rated value	175 280 V
Separating range factor control supply voltage rated value of minital value 1.1	at 60 Hz rated value	175 280 V
Initial value 0.8 1.1	control supply voltage at DC rated value	175 280 V
• fill-scele value • fill-scele value • fill-scele value • at 80 Hz • at	operating range factor control supply voltage rated value of	
• full-scale value • at 50 Hz • at 60 Hz •		
operating range factor control supply voltage rated value of megnet coil at AC at 50 Hz at 50		
magnet coll at AC		1.1
• at 60 Hz	magnet coil at AC	
type of PLC-control input according to IEC 60947-1 Type 1 consumed current at PLC-control input according to IEC 80947-1 maximum 11 mA workage at PLC-control input rated value 24 V opporating range factor of the voltage at PLC-control input design of the surge suppressor with varistor inrush current peak 43 A duration of inrush current peak 0.18 A locked-rotor current peak 0.42 A duration of lock-d-rotor current 2.30 ms holding current mean value 0.01 A apparent holding power 4 of VA a tab of Hz 2 VA		
Separated current at PLC-control input according to IEC		
80947-1 maximum 24 V operating range factor of the voltage at PLC-control input 0.8 1.1 design of the surge suppressor infusion of the surge suppressor infusion of inrush current peak 43 A duration of inrush current peak 10 µs locked-rotor current mean value 0.18 A locked-rotor current peak 0.42 A duration of locked-rotor current 230 ms holding current mean value 0.01 A apparent pick-up power of magnet coil at AC 40 VA at 50 Hz 40 VA at 860 Hz 40 VA apparent holding power 2 VA at maximum rated control supply voltage at DC 2 VA at at maximum rated control supply voltage at AC 2 VA — at 50 Hz 2 VA at at maximum rated control supply voltage at AC 2 VA — at 50 Hz 2 VA at at maximum rated control supply voltage at AC 2 VA — at 50 Hz 2 VA a at 60 Hz 2 VA at 50 Hz 2 VA a t 60 Hz 2 VA at 50 Hz 2 VA <t< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td></td></t<>	· · · · · · · · · · · · · · · · · · ·	
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Acceptable Content C	duration of inrush current peak	·
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holding power of magnet coil at DC closing delay	closing power of magnet coil at DC	40 W
closing delay	holding power of magnet coil at DC	
	closing delay	
opening delay		35 110 ms
◆ at AC → at DC 30 55 ms recovery time after power failure typical arcing time 10 20 ms 30 55 ms 2.1 s	• at DC	35 110 ms
◆ at AC → at DC 30 55 ms recovery time after power failure typical arcing time 10 20 ms 30 55 ms 2.1 s	opening delay	
recovery time after power failure typical 2.1 s arcing time 10 20 ms		30 55 ms
arcing time 10 20 ms		
arcing time 10 20 ms	recovery time after power failure typical	2.1 s
control version of the switch operating mechanism Fail-safe PLC input (F-PLC-IN)	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	10 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	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	1A
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	65 A
at 600 V rated value at 600 V rated value	52 A
yielded mechanical performance [hp]	32 A
• for single-phase AC motor	
— at 110/120 V rated value	5 hp
— at 230 V rated value	10 hp
• for 3-phase AC motor	10 110
— at 200/208 V rated value	20 hp
— at 220/230 V rated value	20 hp
— at 460/480 V rated value	50 hp
— at 575/600 V rated value	50 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
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: 125A (690V,100kA), aM: 63A (690V,100kA), BS88: 100A (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 side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	114 mm
width	55 mm
depth	130 mm
us accional amagina	
required spacing	
with side-by-side mounting forwards	10 mm

— upwards	10 mm
— upwarus — downwards	10 mm
— at the side	0 mm
for grounded parts	40
— 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
 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	
— solid or stranded	2x (1 35 mm²), 1x (1 50 mm²)
 finely stranded with core end processing 	2x (1 25 mm²), 1x (1 35 mm²)
for AWG cables for main contacts	2x (18 2), 1x (18 1)
connectable conductor cross-section for main contacts	
finely stranded with core end processing	1 35 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	5.5 <u>2.6 mm</u>
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)
for AWG cables for auxiliary contacts	2x (0.5 1.5 min-), 2x (0.75 2.5 min-) 2x (20 16), 2x (18 14)
AWG number as coded connectable conductor cross	۱۵ (۵۵ ۱۵), ۵۸ (۱۵ ۱ ۹)
section	
• for main contacts	18 1
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
suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
safe state	off
test wear-related service life necessary	Yes
diagnostics test interval by internal test function maximum	28 800 s
stop category according to IEC 60204-1	0
proportion of dangerous failures	40.07
with low demand rate according to SN 31920 with high demand rate according to SN 31920	40 %
with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
MTBF	52 a
IEC 62061	
Safety Integrity Level (SIL) according to IEC 62061	SIL 2
PFHD with high demand rate according to IEC 62061	7.7E-8 1/h
ISO 13849	
performance level (PL) according to ISO 13849-1	PL c
category according to ISO 13849-1	2
category according to 100 100 10 1	

device type according to ISO 13849-1	1
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
Safety Integrity Level (SIL) according to IEC 61508	2
safety device type according to IEC 61508-2	Type B
PFHD with high demand rate according to IEC 61508	7.7E-8 1/h
PFDavg with low demand rate according to IEC 61508	0.0067
Safe failure fraction (SFF)	96 %
hardware fault tolerance according to IEC 61508	0
T1 value of service life according to IEC 61508	20 a
Electrical Safety	
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
Approvals Cortificatos	

Approvals Certificates









Confirmation



<u>KC</u>

General Product Approval

EMV

Functional Saftey

Test Certificates

Marine / Shipping





Type Examination Cer**tificate**

Type Test Certificates/Test Report





Marine / Shipping other Environment Railway







Confirmation

Special Test Certific-<u>ate</u>

Environmental Confirmations

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2037-1SP30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lanq=en&mlfb=3RT2037-1SP30

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

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

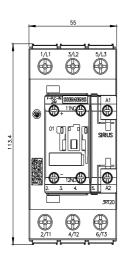
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2037-1SP30&lang=en

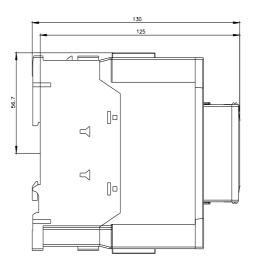
Characteristic: Tripping characteristics, I2t, Let-through current

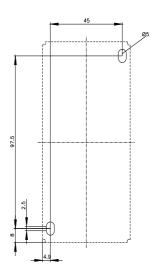
https://support.industry.siemens.com/cs/ww/en/ps/3RT2037-1SP30/char

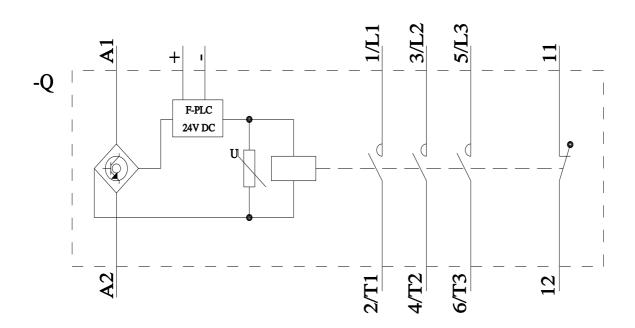
Further characteristics (e.g. electrical endurance, switching frequency)

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