SIEMENS

Data sheet 3RT2018-1AF02



CONTACTOR, AC-3, 7.5KW/400V, 1NC, AC110V, 50/60 HZ, 3-POLE, SZ S00 SCREW TERMINAL

product brand name	SIRIUS
·	
Product designation	3RT2 contactor
General technical data:	
Solisiai tecimical data.	

General technical data:		
Insulation voltage		
Rated value	V	690
Degree of pollution		3
Surge voltage resistance Rated value	kV	6
Mechanical service life (switching cycles)		
 of the contactor typical 		30 000 000
 of the contactor with added electronics- compatible auxiliary switch block typical 		5 000 000
 of the contactor with added auxiliary switch block typical 		10 000 000
Thermal short-time current restricted to 10 s	Α	128
Protection class IP		
• on the front		IP20
of the terminal		IP20
Equipment marking		
• acc. to DIN EN 61346-2		Q
• acc. to DIN EN 81346-2		Q

Main circuit:		
Number of poles for main current circuit	3	
Number of NC contacts for main contacts	0	
Number of NO contacts for main contacts	3	
Operating voltage		

Operating current ■ at AC-1 — at 400 V at ambient temperature 40 °C Rated value — up to 690 V at ambient temperature 40 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value — ut 690 V at ambient temperature 60 °C Rated value — at A00 V Rated value — at 400 V Rated value — at 400 V Rated value — at 500 V Rated value — at 690 V Rated value — at 10 C-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 20 V Rated value — at 600 V Rated value — at 10 C-1 — at 24 V Rated value — at 10 V Rated value — at 24 V Rated value — at 24 V Rated value — at 20 V Rated value — at 22 V Rated value — at 20 V Rated value — at	at AC-3 Rated value maximum	V	690
— at 400 V at ambient temperature 40 °C Rated value — up to 690 V at ambient temperature 40 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value • at AC-2 at 400 V Rated value • at AC-3 — at 400 V Rated value — at 4600 V Rated value — at 690 V Rated value • at AC-4 at 400 V Rated value • at DC-1 — at 24 V Rated value — at 110 V Rated value • at 400 V Rated value — at 440 V Rated value • at C-3 at DC-5 — at 24 V Rated value • at 10 C-1 — at 24 V Rated value • at 10 C-1 — at 24 V Rated value • at 10 C-1 — at 24 V Rated value • at 10 C-3 at DC-5 — at 110 V Rated value — at 110 V Rated value • at 10 C-1 — at 24 V Rated value — at 110 V Rated value • at 10 C-1 — at 24 V Rated value • at 10 C-1 — at 24 V Rated value — at 110 V Rated value — at 110 V Rated value — at 120 V Rated value — at 20 V Rated v	Operating current		
Rated value — up to 690 V at ambient temperature 40 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value — up to 690 V at ambient temperature 60 °C Rated value • at AC-3 • at 400 V Rated value — at 500 V Rated value — at 690 V Rated value — at 100-1 — at 24 V Rated value — at 110 V Rated value — at 110 V Rated value — at 120 V Rated value — at 440 V Rated value — at 440 V Rated value — at 20 V Rated value — at 110 V Rated value — at 20 V Rated value — at 110 V Rated value — at 110 V Rated value — at 220 V Rated value — at 110 V Rated value — at 220 V Rated value — at 24 V Rated value — at 220	• at AC-1		
Rated value — up to 690 V at ambient temperature 60 °C Rated value • at AC-2 at 400 V Rated value • at AC-2 at 400 V Rated value — at 500 V Rated value — at 690 V Rated value — at 690 V Rated value • at AC-4 at 400 V Rated value — at 24 V Rated value — at 24 V Rated value — at 24 V Rated value — at 20 V Rated value — at 300 V Rated value — at 600 V Rated value — at 24 V Rated value — at 110 V Rated value — at 24 V Rated value — at 24 V Rated value — at 24 V Rated value — at 110 V Rated value — at 110 V Rated value — at 110 V Rated value — at 20 V Rated value — at 24 V Rated value — at 20 V Rated value — at	•	Α	22
Rated value • at AC-2 at 400 V Rated value • at AC-3 — at 400 V Rated value — at 500 V Rated value — at 500 V Rated value — at 690 V Rated value — at 690 V Rated value — at 690 V Rated value A 8.9 • at AC-4 at 400 V Rated value A 11.5 Operating current with 1 current path • at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 600 V Rated value — at 600 V Rated value — at 10 C-5 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 200 V Rated value — at 600 V Rated value — at 600 V Rated value — at 70 V Rated value — at 10 V Rated value — at 110 V Rated value — at 20 V Rated value — at 600 V Rated value — at 20 V Rated value — at 600 V Rated value — at 24 V Rated value — at 20		Α	22
		Α	20
- at 400 V Rated value - at 500 V Rated value - at 690 V Rated value	• at AC-2 at 400 V Rated value	Α	16
- at 500 ∨ Rated value	• at AC-3		
- at 690 ∨ Rated value	— at 400 V Rated value	Α	16
• at AC-4 at 400 V Rated value Operating current with 1 current path • at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value — at 600 V Rated value — at 100 V Rated value — at 100 V Rated value — at 110 V Rated value — at 110 V Rated value — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 220 V Rated value — at 440 V Rated value — at 440 V Rated value — at 440 V Rated value — at 24 V Rated value — at 220 V Rated value — at 440 V Rated value	— at 500 V Rated value	Α	12.4
Operating current with 1 current path ■ at DC-1	— at 690 V Rated value	Α	8.9
■ at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value — at 600 V Rated value — at 600 V Rated value — at 170 V Rated value — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value — at 600 V Rated value — at 600 V Rated value — at 100-3 at DC-5 — at 110 V Rated value — at 24 V Rated value — at 110 V Rated value — at 24 V Rated value — at 22 V Rated value — at 320 V Rated value — at 440 V Rated value	• at AC-4 at 400 V Rated value	Α	11.5
at 24 V Rated value	Operating current with 1 current path	_	
— at 110 V Rated value A 0.8 — at 220 V Rated value A 0.6 — at 440 V Rated value A 0.6 — at 600 V Rated value A 0.6 • at DC-3 at DC-5 — at 24 V Rated value A 0.1 Operating current with 2 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 110 V Rated value A 12 — at 220 V Rated value A 12 — at 220 V Rated value A 1.6 — at 440 V Rated value A 0.8 — at 600 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 0.35 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 220 V Rated value A 20 — at 24 V Rated value A 20 — at 440 V Rated value A 20	• at DC-1		
- at 220 V Rated value	— at 24 V Rated value	Α	20
— at 440 V Rated value A 0.6 — at 600 V Rated value A 0.6 • at DC-3 at DC-5 — at 24 V Rated value A 0.1 Operating current with 2 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 12 — at 110 V Rated value A 1.6 — at 220 V Rated value A 0.8 — at 440 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 0.35 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 24 V Rated value A 20	— at 110 V Rated value	Α	2.1
— at 600 ∨ Rated value • at DC-3 at DC-5 — at 24 ∨ Rated value A Departing current with 2 current paths in series • at DC-1 — at 24 ∨ Rated value A Doparting current with 2 current paths in series • at DC-1 — at 24 ∨ Rated value A Date of the control of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of the control of the current paths in series • at DC-3 • at DC-3 — at 110 ∨ Rated value A Date of the current paths in series • at DC-3 — at 24 ∨ Rated value A Date of the current paths in series • at DC-1 — at 24 ∨ Rated value A Date of the current paths in series • at DC-1 — at 24 ∨ Rated value A Date of the current paths in series • at DC-1 — at 24 ∨ Rated value A Date of the current paths in series • at DC-1 — at 24 ∨ Rated value A Date of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of the current paths in series • at DC-1 — at 220 ∨ Rated value A Date of DC-1 — at 220 ∨ Rated value A Date of DC-1 — at 220 ∨ Rated value A Date of DC-1 — at 240 ∨ Rated value A	— at 220 V Rated value	Α	0.8
• at DC-3 at DC-5 — at 24 V Rated value A 20 — at 110 V Rated value A 0.1 Operating current with 2 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 12 — at 220 V Rated value A 1.6 — at 440 V Rated value A 0.8 — at 600 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 0.35 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 20 V Rated value A 20 — at 110 V Rated value A 20 — at 20 V Rated value A 20 — at 440 V Rated value A 1.3	— at 440 V Rated value	Α	0.6
at 24 ∨ Rated value A 0.1 Operating current with 2 current paths in series • at DC-1 at 24 ∨ Rated value A 20 at 110 ∨ Rated value A 12 at 220 ∨ Rated value A 1.6 at 440 ∨ Rated value A 0.8 at 600 ∨ Rated value A 0.7 • at DC-3 at DC-5 at 110 ∨ Rated value A 0.35 at 24 ∨ Rated value A 20 Operating current with 3 current paths in series • at DC-1 at 24 ∨ Rated value A 20 Operating current with 3 current paths in series • at DC-1 at 24 ∨ Rated value A 20 at 110 ∨ Rated value A 20	— at 600 V Rated value	Α	0.6
— at 110 ∨ Rated value A 0.1 Operating current with 2 current paths in series • at DC-1 — at 24 ∨ Rated value A 12 — at 220 ∨ Rated value A 1.6 — at 440 ∨ Rated value A 0.8 — at 600 ∨ Rated value A 0.7 • at DC-3 at DC-5 — at 110 ∨ Rated value A 0.35 — at 24 ∨ Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 ∨ Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 ∨ Rated value A 20 — at 110 ∨ Rated value A 20 — at 440 ∨ Rated value A 20	• at DC-3 at DC-5		
Operating current with 2 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 12 — at 220 V Rated value A 0.8 — at 440 V Rated value A 0.7 • at DC-3 at DC-5 — at 110 V Rated value A 20 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 20 — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 1.3	— at 24 V Rated value	Α	20
■ at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 420 V Rated value — at 440 V Rated value — at 600 V Rated value — at 600 V Rated value — at 110 V Rated value — at 110 V Rated value — at 24 V Rated value — at 440 V Rated value A 1.3	— at 110 V Rated value	Α	0.1
- at 24 V Rated value - at 110 V Rated value - at 220 V Rated value - at 220 V Rated value - at 440 V Rated value - at 600 V Rated value - at 100 V Rated value - at 110 V Rated value - at 24 V Rated value - at 240 V Rated value - at 240 V Rated value - at 440 V Rated value	Operating current with 2 current paths in series		
— at 110 V Rated value A 12 — at 220 V Rated value A 1.6 — at 440 V Rated value A 0.8 — at 600 V Rated value A 0.7 • at DC-3 at DC-5 — — — at 110 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 20 — at 440 V Rated value A 1.3	• at DC-1		
- at 220 V Rated value A A D.8 A 0.8 A 0.7 ■ at DC-3 at DC-5 A A DOPERATING CURRENT WITH 3 CURRENT PATHS in series ■ at DC-1 A A A A A A A A A A A A A A A A A A A	— at 24 V Rated value	Α	20
 — at 440 V Rated value — at 600 V Rated value A 0.7 ● at DC-3 at DC-5 — at 110 V Rated value — at 24 V Rated value A 20 Operating current with 3 current paths in series ● at DC-1 — at 24 V Rated value — at 110 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value A 20 — at 440 V Rated value A 1.3 	— at 110 V Rated value	Α	12
 — at 600 V Rated value ■ at DC-3 at DC-5 — at 110 V Rated value — at 24 V Rated value A 20 Operating current with 3 current paths in series ■ at DC-1 — at 24 V Rated value — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 220 V Rated value — at 440 V Rated value A 20 — at 440 V Rated value A 1.3 	— at 220 V Rated value	Α	1.6
 at DC-3 at DC-5 at 110 V Rated value A 0.35 at 24 V Rated value Operating current with 3 current paths in series at DC-1 at 24 V Rated value at 110 V Rated value at 220 V Rated value at 220 V Rated value at 440 V Rated value A 20 A 20 at 440 V Rated value A 1.3 	— at 440 V Rated value	Α	0.8
— at 110 V Rated value A 0.35 — at 24 V Rated value A 20 Operating current with 3 current paths in series • at DC-1 — — at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 1.3	— at 600 V Rated value	Α	0.7
 — at 24 V Rated value A 20 Operating current with 3 current paths in series ● at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value A 20 — at 440 V Rated value A 1.3 	• at DC-3 at DC-5		
Operating current with 3 current paths in series • at DC-1 — at 24 V Rated value — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 1.3	— at 110 V Rated value	Α	0.35
● at DC-1 — at 24 V Rated value — at 110 V Rated value — at 220 V Rated value — at 440 V Rated value A 20 A 20 — at 440 V Rated value A 1.3	— at 24 V Rated value	Α	20
— at 24 V Rated value A 20 — at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 1.3	Operating current with 3 current paths in series		
— at 110 V Rated value A 20 — at 220 V Rated value A 20 — at 440 V Rated value A 1.3	• at DC-1		
 — at 220 V Rated value — at 440 V Rated value A 1.3 	— at 24 V Rated value	Α	20
— at 440 V Rated value A 1.3	— at 110 V Rated value	Α	20
	— at 220 V Rated value	Α	20
— at 600 V Rated value A 1	— at 440 V Rated value	Α	1.3
	— at 600 V Rated value	Α	1

a -4 DO 2 -4 DO 5		
• at DC-3 at DC-5	٨	20
— at 110 V Rated value	A	20
— at 220 V Rated value	A	1.5
— at 24 V Rated value	Α	20
— at 440 V Rated value	Α	0.2
— at 600 V Rated value	Α	0.2
Operating power		
at AC-1 at 400 V Rated value	kW	13
• at AC-2 at 400 V Rated value	kW	7.5
• at AC-4 at 400 V Rated value	kW	5.5
Operating power		
• at AC-1		
— at 230 V at 60 °C Rated value	kW	7.5
— at 230 V Rated value	kW	7.5
— at 400 V at 60 °C Rated value	kW	13
— at 690 V at 60 °C Rated value	kW	22
— at 690 V Rated value	kW	22
• at AC-3		
— at 230 V Rated value	kW	4
— at 400 V Rated value	kW	7.5
— at 690 V Rated value	kW	7.5
Operating power for ≥ 200000 operating cycles at AC-4		
• at 400 V Rated value	kW	2.5
• at 690 V Rated value	kW	3.5
Operating frequency		
• at AC-3 maximum	1/h	750
Control circuit/ Control:		
Type of voltage of the control supply voltage		AC
Control supply voltage with AC		
• at 50 Hz Rated value	V	110
● at 60 Hz Rated value	V	110
Operating range factor control supply voltage rated		
value of the magnet coil with AC		
● at 50 Hz		0.8 1.1
● at 60 Hz		0.85 1.1
Auxiliary circuit:		
Number of NC contacts		
• for auxiliary contacts		
— instantaneous contact		1
Number of NO contacts		

for auxiliary contacts		
instantaneous contact		0
Product expansion Auxiliary switch		Yes
Operating current at AC-15		
• at 230 V Rated value	Α	10
• at 400 V Rated value	Α	3
• at 690 V Rated value	Α	1
Operating current		
• at DC-12 at 125 V Rated value	Α	2
• at DC-12 at 220 V Rated value	Α	1
• at DC-12 at 600 V Rated value	Α	0.15
• at DC-13 at 125 V Rated value	Α	0.9
• at DC-13 at 220 V Rated value	Α	0.3
• at DC-13 at 600 V Rated value	Α	0.1
Operating current		
• at DC-12		
— at 60 V Rated value	Α	6
— at 110 V Rated value	Α	3
• at DC-13		
— at 24 V Rated value	Α	10
— at 60 V Rated value	Α	2
— at 110 V Rated value	Α	1
Contact reliability of the auxiliary contacts		1 faulty switching per 100 million (17 V, 1 mA)
JL/CSA ratings:		
Full-load current (FLA) for three-phase AC motor		
• at 480 V Rated value	Α	14
• at 600 V Rated value	Α	11
yielded mechanical performance [hp]		
• for single-phase AC motor at 110/120 V Rated value	metric hp	1
• for single-phase AC motor at 230 V Rated	metric	2

 at 480 V Rated value 	Α	14
● at 600 V Rated value	Α	11
yielded mechanical performance [hp]		
 for single-phase AC motor at 110/120 V Rated value 	metric hp	1
 for single-phase AC motor at 230 V Rated value 	metric hp	2
 for three-phase AC motor at 200/208 V Rated value 	metric hp	3
 for three-phase AC motor at 220/230 V Rated value 	metric hp	5
 for three-phase AC motor at 460/480 V Rated value 	metric hp	10
• for three-phase AC motor at 575/600 V Rated value	metric hp	10
Contact rating of the auxiliary contacts acc. to UL		A600 / Q600

Short-circuit:

Design of the fuse link

- for short-circuit protection of the main circuit
 - with type of assignment 1 required
 - with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A

gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A

fuse gL/gG: 10 A

mounting position		+/-180° rotation possible on vertical mounting
		surface; can be tilted forward and backward by +/-
		22.5° on vertical mounting surface
Mounting type		screw and snap-on mounting onto 35 mm standard
		mounting rail according to DIN EN 50022
 Side-by-side mounting 		Yes
Height	mm	57.5
Width	mm	45
Depth	mm	73
Required spacing		
with side-by-side mounting		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	0
• for grounded parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— at the side	mm	6
— downwards	mm	0
• for live parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	6

Connections/ Terminals.

Type of electrical connection	
• for main current circuit	screw-type terminals
 for auxiliary and control current circuit 	screw-type terminals
Type of connectable conductor cross-section	

• for main contacts		
— single or multi-stranded		2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm²
 finely stranded with core end processing 		2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 for AWG conductors for main contacts 		2x (20 16), 2x (18 14), 2x 12
• for auxiliary contacts		
 single or multi-stranded 		2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm²
 finely stranded with core end processing 		2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 for AWG conductors for auxiliary contacts 		2x (20 16), 2x (18 14), 2x 12
Apparent pick-up power of the magnet coil with AC		
● at 50 Hz	V·A	37
● at 60 Hz	V·A	43
Safety related data:		
B10 value with high demand rate acc. to SN 31920		1 000 000
Proportion of dangerous failures		
 with low demand rate acc. to SN 31920 	%	40

Safety related data:		
B10 value with high demand rate acc. to SN 31920		1 000 000
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	FIT	100
Product function Mirror contact acc. to IEC 60947-4-1		Yes
T1 value for proof test interval or service life acc. to IEC 61508	У	20
Protection against electrical shock		finger-safe

Size of contactor		S00
Ambient conditions:		
Installation altitude at height above sea level	m	2 000
maximum		
Ambient temperature		
during operation	°C	-25 + 60

°C

-55 ... +80

Certificates/ approvals:

• during storage

Mechanical data:

General Product Approval

Functional Safety/Safety of Machinery Declaration of Conformity









Type Examination



ıе	St	
_		

Shipping Approval

Certificates

Special Test Certificate













LRS

Shipping Approval

other







Confirmation

Environmental Confirmations



Further information

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

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

http://www.siemens.com/industrymall

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT20181AF02}$

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

http://support.automation.siemens.com/WW/view/en/3RT20181AF02/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20181AF02&lang=en



