SIEMENS

Data sheet

3RT2023-1AF00



CONTACTOR, AC-3, 4KW/400V, 1NO+1NC, AC110V 50HZ, 3-POLE, SZ S0 SCREW TERMINAL

product brand name		SIRIUS	
Product designation		3RT2 contactor	
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 		10 000 000	
 of the contactor with added electronics- 		5 000 000	
compatible auxiliary switch block typical			
 of the contactor with added auxiliary switch 		10 000 000	
block typical			
Thermal short-time current restricted to 10 s	А	80	
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			

• at AC-3 Rated value maximum	V	690
Operating current		
• at AC-1		
— at 400 V at ambient temperature 40 °C	А	40
Rated value		
— up to 690 V at ambient temperature 40 °C	А	40
Rated value		
— up to 690 V at ambient temperature 60 °C Rated value	A	35
 at AC-2 at 400 V Rated value 	А	9
● at AC-3		
— at 400 V Rated value	А	9
— at 500 V Rated value	А	9
— at 690 V Rated value	А	9
• at AC-4 at 400 V Rated value	А	8.5
Operating current with 1 current path		
● at DC-1		
— at 24 V Rated value	А	35
— at 110 V Rated value	А	4.5
— at 220 V Rated value	А	1
— at 440 V Rated value	А	0.4
— at 600 V Rated value	А	0.25
• at DC-3 at DC-5		
— at 24 V Rated value	А	20
— at 110 V Rated value	А	2.5
— at 220 V Rated value	А	1
— at 440 V Rated value	А	0.09
— at 600 V Rated value	А	0.06
Operating current with 2 current paths in series		
• at DC-1		
— at 24 V Rated value	А	35
— at 110 V Rated value	А	35
— at 220 V Rated value	А	5
— at 440 V Rated value	А	1
— at 600 V Rated value	А	0.8
• at DC-3 at DC-5		
— at 110 V Rated value	А	15
— at 220 V Rated value	А	3
— at 24 V Rated value	А	35
— at 440 V Rated value	А	0.27
— at 600 V Rated value	А	0.16
Operating current with 3 current paths in series		

• at DC-1 - at 24 V Rated value A 35 - at 110 V Rated value A 35 - at 220 V Rated value A 35 - at 440 V Rated value A 29 - at 600 V Rated value A 14 • at DC-3 DC-5 - - at 110 V Rated value A 35 - at 220 V Rated value A 10 - at 220 V Rated value A 0.6 - at 24 V Rated value A 0.6 - at 200 V Rated value A 0.6 - at 400 V Rated value A 0.6 - at 440 V Rated value KW 4 • at AC-1 at 400 V Rated value KW 4 • at AC-2 at 400 V Rated value KW 13.3 - at 230 V Rated value KW 13.3 - at 690 V rated value KW 13.3 - at 690 V rated value KW 40 - at 690 V rated value KW 40 - at 690 V Rated value KW 40 - at 690 V Rated			
	• at DC-1		
Landow LaborationA35- at 220 V Rated valueA2.9- at 600 V Rated valueA1.4• at DC-3 at DC-5 at 110 V Rated valueA10- at 220 V Rated valueA10- at 220 V Rated valueA0.6- at 220 V Rated valueA0.6- at 600 V Rated valueA0.6- at 600 V Rated valueKW23- at 600 V Rated valueKW23- at AC-1 at 400 V Rated valueKW4• at AC-2 at 400 V Rated valueKW4• at AC-1 at 230 V Rated valueKW13.3- at 230 V Rated valueKW13.3- at 690 V at 60 °C Rated valueKW23- at 690 V at 60 °C Rated valueKW23- at 690 V Rated valueKW24- at 690 V Rated valueKW22- at 690 V Rated valueKW22- at 690 V Rated valueKW2.5Operating power for > 200000 operating cycles at AC-3 at 690 V Rated valueKW2.5Operating frequencyit 400 V Rated value- at 690 V Rated valueKW2.5Operating frequency-AC- at 690 V Rated valueKW2.5Operating frequency-AC- at 690 V Rated valueKW2.5Operating frequency at 690 V Rated valueV110Operating frequency-<	— at 24 V Rated value	А	35
	— at 110 V Rated value	А	35
	— at 220 V Rated value	А	35
• at DC-3 at DC-5·- at 110 V Rated valueA35- at 220 V Rated valueA10- at 24 V Rated valueA35- at 440 V Rated valueA0.6Operating power·-• at AC-1 at 400 V Rated valueKW23• at AC-2 at 400 V Rated valueKW4• at AC-2 at 400 V Rated valueKW4• at AC-2 at 400 V Rated valueKW4• at AC-1·-• at 60 °C Rated valueKW13.3- at 600 V at 60 °C Rated valueKW23• at 600 V Rated valueKW40• at 600 V Rated valueKW40• at 600 V Rated valueKW22• at 600 V Rated valueKW22• at 600 V Rated valueKW2.5Operating power for > 200000 operating cycles atACAC-4·1000Control circuit/ Control·110Operating power for 200000 operating syntage ratedV• at 50 Hz Rated valueV110Operating range factor control supply voltage ratedV• at 50 Hz Rated valueV110	— at 440 V Rated value	А	2.9
- at 110 V Rated valueA35- at 220 V Rated valueA10- at 24 V Rated valueA35- at 440 V Rated valueA0.6- at 600 V Rated valueKW23- at AC-1 at 400 V Rated valueKW4- at AC-2 at 400 V Rated valueKW4- at AC-4 at 400 V Rated valueKW4- at AC-4 at 400 V Rated valueKW13.3- at 230 V at 60 °C Rated valueKW13.3- at 230 V Rated valueKW13.3- at 400 V Rated valueKW23- at 690 V Rated valueKW40- at 400 V Rated valueKW40- at 400 V Rated valueKW40- at 690 V Rated valueKW40- at 400 V Rated valueKW22- at 400 V Rated valueKW22- at 400 V Rated valueKW7.5Operating power for ≥ 200000 operating cycles at AC-3 at 400 V Rated valueKW2.5Operating frequency • at AC-3 maximum1/h1000Control circuit/ ControlV110Operating range factor control supply voltage rated value of the magnet col with ACV	— at 600 V Rated value	А	1.4
at 220 V Rated valueA10 at 24 V Rated valueA35 at 440 V Rated valueA0.6 at 600 V Rated valueA0.6 at 600 V Rated valueKW23- at AC-1 at 400 V Rated valueKW4- at AC-2 at 400 V Rated valueKW4- at 230 V Rated valueKW4- at 230 V Rated valueKW13.3- at 230 V Rated valueKW13.3- at 600 V Rated valueKW23- at 600 V Rated valueKW40- at 600 V Rated valueKW22- at 400 V Rated valueKW22- at 400 V Rated valueKW22- at 600 V Rated valueKW25Operating power for 2 20000 operating cycles at AC-3AC- at 600 V Rated valueKW2.5Operating frequency	• at DC-3 at DC-5		
	— at 110 V Rated value	А	35
at 440 V Rated valueA0.6 at 600 V Rated valueA0.6Operating power	— at 220 V Rated value	А	10
at 600 V Rated valueA0.6Operating power• at AC-1 at 400 V Rated valuekW23• at AC-2 at 400 V Rated valuekW4• at AC-4 at 400 V Rated valuekW4• at AC-4 at 400 V Rated valuekW13.3- at 230 V at 60 °C Rated valuekW13.3- at 230 V Rated valuekW13.3- at 230 V Rated valuekW23- at 690 V Rated valuekW40- at 690 V Rated valuekW2.2- at 690 V Rated valuekW4- at 690 V Rated valuekW2.2- at 690 V Rated valuekW2.5Operating power for 2 20000 operating cycles at AC-3	— at 24 V Rated value	А	35
Operating powerKW23• at AC-1 at 400 V Rated valuekW4• at AC-2 at 400 V Rated valuekW4• at AC-3 at 400 V Rated valuekW4• at AC-4 at 400 V Rated valuekW4• at AC-1 at 230 V at 60 °C Rated valuekW13.3- at 230 V Rated valuekW23- at 400 V Rated valuekW23- at 690 V Rated valuekW40- at 690 V Rated valuekW40- at 690 V Rated valuekW40- at 230 V Rated valuekW40- at 690 V Rated valuekW22- at 400 V Rated valuekW22- at 690 V Rated valuekW22- at 690 V Rated valuekW4- at 690 V Rated valuekW4- at 690 V Rated valuekW22- at 690 V Rated valuekW22- at 690 V Rated valuekW2- at 400 V Rated valuekW2- at 690 V Rated valuekW2	— at 440 V Rated value	А	0.6
• at AC-1 at 400 V Rated valueKW23• at AC-2 at 400 V Rated valueKW4• at AC-3 at 400 V Rated valueKW4• at AC-4 at 400 V Rated valueKW4• at AC-1	— at 600 V Rated value	А	0.6
a if AC-2 at 400 V Rated valueKW4• at AC-3 at 400 V Rated valueKW4Operating power• at AC-1- at 230 V at 60 °C Rated valueKW• at AC-1- at 230 V Rated valueKW13.3- at 230 V Rated valueKW13.3- at 400 V at 60 °C Rated valueKW23- at 690 V at 60 °C Rated valueKW40- at 690 V Rated valueKW2.2- at 400 V Rated valueKW4- at 690 V Rated valueKW7.5Operating power for ≥ 20000 operating cycles at AC-4• at 690 V Rated valueKW2.5-Operating frequency• at 600 V Rated valueKW2.5-Operating frequency• at 600 V Rated valueKW2.5-Operating frequency• at 600 V Rated valueV110Operating frequency• at 600 V Rated valueV110Operating range factor control supply voltage ratedV110	Operating power		
• at AC-4 at 400 V Rated valueKW4Operating power-• at AC-1 at 230 V at 60 °C Rated valueKW13.3- at 230 V Rated valueKW13.3- at 400 V at 60 °C Rated valueKW23- at 690 V at 60 °C Rated valueKW40- at 690 V Rated valueKW2.2- at 400 V Rated valueKW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2.5• at 400 V Rated valueKW2.5Operating frequency	• at AC-1 at 400 V Rated value	kW	23
Operating power • at AC-1 - at 230 V at 60 °C Rated value KW 13.3 - at 230 V Rated value KW 13.3 - at 400 V at 60 °C Rated value KW 23 - at 690 V Rated value KW 40 - at 230 V Rated value KW 40 - at 690 V Rated value KW 2.2 - at 400 V Rated value KW 7.5 Operating power for ≥ 200000 operating cycles at AC-4 - - • at 400 V Rated value KW 2 - • at 400 V Rated value KW 2.5 - Operating frequency - - - • at AC-3 maximum 1/h 1 000 - Control circuit/ Control: - - - • at AC-3 maximum 1/h 1 000 - Control supply voltage of the control supply voltage rated AC -	 at AC-2 at 400 V Rated value 	kW	4
• at AC-1Image: Control supply voltageKW13.3- at 230 V Rated valueKW13.3- at 230 V Rated valueKW23- at 600 °C Rated valueKW40- at 600 V Rated valueKW40- at 600 V Rated valueKW22- at 600 V Rated valueKW2.2- at 230 V Rated valueKW4- at 230 V Rated valueKW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2.5• at 400 V Rated valueKW2.5Operating frequency • at AC-3 maximumTh1000Control circuit/ Control:V110Operating range factor control supply voltage rated value of the magnet coil with ACV110	• at AC-4 at 400 V Rated value	kW	4
at 230 V at 60 °C Rated valueKW13.3 at 230 V Rated valueKW13.3 at 400 V at 60 °C Rated valueKW23 at 690 V Rated valueKW40 at 690 V Rated valueKW40 at 690 V Rated valueKW2.2 at 230 V Rated valueKW4 at 690 V Rated valueKW4 at 690 V Rated valueKW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2.5• at 400 V Rated valueKW2.5Operating frequencyI/h1 000• at AC-3 maximum1/h1 000Control circuit/ Control:YType of voltage of the control supply voltageACControl supply voltage with ACV110operating range factor control supply voltage ratedV110	Operating power	-	
- at 230 V Rated value kW 13.3 - at 400 V at 60 °C Rated value kW 23 - at 690 V at 60 °C Rated value kW 40 - at 690 V Rated value kW 40 - at 230 V Rated value kW 22 - at 400 V Rated value kW 4 - at 690 V Rated value kW 7.5 Operating power for ≥ 200000 operating cycles at AC-4 KW 2 • at 400 V Rated value kW 2.5 Operating frequency 1/h 1 000 • at AC-3 maximum 1/h 1 000 Control circuit/ Control: X AC Control supply voltage with AC AC • at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value V 110	● at AC-1		
	— at 230 V at 60 °C Rated value	kW	13.3
at 690 V at 60 °C Rated valuekW40 at 690 V Rated valuekW40• at AC-3 at 230 V Rated valuekW2.2 at 400 V Rated valuekW4 at 690 V Rated valuekW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2• at 400 V Rated valuekW2• at 400 V Rated valuekW2• at 400 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:Type of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	— at 230 V Rated value	kW	13.3
at 690 V Rated valuekW40• at AC-3 at 230 V Rated valuekW2.2 at 400 V Rated valuekW4 at 690 V Rated valuekW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2• at 400 V Rated valuekW2• at 400 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1000Control circuit/ Control:XAC-4Type of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	— at 400 V at 60 °C Rated value	kW	23
• at AC-3KW2.2- at 230 V Rated valueKW4- at 400 V Rated valueKW4- at 690 V Rated valueKW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2• at 400 V Rated valueKW2• at 400 V Rated valueKW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:Type of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	— at 690 V at 60 °C Rated value	kW	40
at 230 V Rated valuekW2.2 at 400 V Rated valuekW4 at 690 V Rated valuekW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2• at 400 V Rated valuekW2• at 690 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:ACControl supply voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet col with ACV110	— at 690 V Rated value	kW	40
at 400 V Rated valuekW4 at 690 V Rated valuekW7.5Operating power for ≥ 200000 operating cycles at AC-4kW2• at 400 V Rated valuekW2• at 690 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1000Control circuit/ Control:ACType of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	● at AC-3		
at 690 V Rated valuekW7.5Operating power for ≥ 200000 operating cycles at AC-4KW2• at 400 V Rated valuekW2• at 690 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:XType of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	— at 230 V Rated value	kW	2.2
Operating power for ≥ 200000 operating cycles at Image: Constraint of Constraint	— at 400 V Rated value	kW	4
AC-4KW2• at 400 V Rated valuekW2• at 690 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:ACType of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	— at 690 V Rated value	kW	7.5
• at 690 V Rated valuekW2.5Operating frequency • at AC-3 maximum1/h1 000Control circuit/ Control:Control circuit/ Control:Type of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110			
Operating frequency 1/h 1 000 • at AC-3 maximum 1/h 1 000 Control circuit/ Control: AC Type of voltage of the control supply voltage AC • at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value of the magnet coil with AC Image: Control supply voltage rated value	• at 400 V Rated value	kW	2
• at AC-3 maximum1/h1 000Control circuit/ Control:ACType of voltage of the control supply voltageACControl supply voltage with ACAC• at 50 Hz Rated valueV110Operating range factor control supply voltage rated value of the magnet coil with ACV110	• at 690 V Rated value	kW	2.5
Control circuit/ Control: Type of voltage of the control supply voltage AC Control supply voltage with AC Image: Control supply voltage with AC • at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value of the magnet coil with AC Image: Control supply voltage rated value	Operating frequency		
Type of voltage of the control supply voltage AC Control supply voltage with AC 110 • at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value of the magnet coil with AC Image: Control supply voltage rated value	• at AC-3 maximum	1/h	1 000
Control supply voltage with AC V 110 • at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value of the magnet coil with AC Image: Control supply voltage rated value			
• at 50 Hz Rated value V 110 Operating range factor control supply voltage rated value of the magnet coil with AC			AC
Operating range factor control supply voltage rated value of the magnet coil with AC			
value of the magnet coil with AC		V	110
• at 50 Hz 0.8 1.1			
	● at 50 Hz		0.8 1.1
	Auxiliary circuit:		

Number of NC contacts		
for auxiliary contacts		
— instantaneous contact		1
Number of NO contacts	-	
 for auxiliary contacts 		
— instantaneous contact		1
Product expansion Auxiliary switch	-	Yes
Operating current at AC-15	_	
at 230 V Rated value	А	10
• at 400 V Rated value	А	3
• at 690 V Rated value	А	1
Operating current	-	
• at DC-12 at 125 V Rated value	А	2
• at DC-12 at 220 V Rated value	А	1
• at DC-12 at 600 V Rated value	А	0.15
• at DC-13 at 125 V Rated value	А	0.9
 at DC-13 at 220 V Rated value 	А	0.3
• at DC-13 at 600 V Rated value	А	0.1
Operating current	-	
• at DC-12		
— at 60 V Rated value	А	6
— at 110 V Rated value	А	3
• at DC-13		
— at 24 V Rated value	А	10
— at 60 V Rated value	А	2
— at 110 V Rated value	А	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	А	7.6
at 600 V Rated value	A	9
yielded mechanical performance [hp]	~	
 for single-phase AC motor at 110/120 V Rated 	metric	1
value	hp	
• for single-phase AC motor at 230 V Rated	metric	1
value	hp	
• for three-phase AC motor at 200/208 V Rated	metric	2
value	hp	
 for three-phase AC motor at 220/230 V Rated 	metric	3
value	hp	
• for three-phase AC motor at 460/480 V Rated	metric	5
value	hp	

 for three-phase AC motor at 575/600 V Rated value 	metric hp	7.5
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		gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 63 A
— with type of assignment 2 required		gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 25 A
 for short-circuit protection of the auxiliary switch required 		fuse gL/gG: 10 A
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
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	85
Width	mm	45
Depth	mm	97
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
		0
— downwards — at the side	mm 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 (1 2,5 mm²), 2x (2,5 10 mm²)
 finely stranded with core end processing 		2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
 for AWG conductors for main contacts 		2x (16 12), 2x (14 8)
 for auxiliary contacts 		
— single or multi-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 conductors for auxiliary contacts 		2x (20 16), 2x (18 14)
Apparent pick-up power of the magnet coil with AC		
• at 50 Hz	V·A	65
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	FIT	100
31920		
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
Mechanical data:		
Size of contactor		SO
Ambient conditions:		
Installation altitude at height above sea level	m	2 000
maximum		
Ambient temperature		
• during operation	°C	-25 +60
• during storage	°C	-55 +80
Certificates/ approvals:		

General Product	t Approval			EMC	Functional Safety/Safety of Machinery	
	CSA		EHC	С-тіск	Type Examination	
Declaration of Conformity	Test Certificates		Shipping App	proval		
EG-Konf.	<u>Type Test</u> Certificates/Test <u>Report</u>	Special Test Certificate	ABS	B U R E A U VERITAS		
Shipping Approv	/al				other	
GL	Lloyd's Kegister LRS	PRS	RINA	RMRS	Environmental Confirmations	
other						
Confirmation	VDE					
Further information	Information- and Downloadcenter (Catalogs, Brochures,)					
http://www.siemens.com/industrial-controls/catalogs						

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