SIEMENS

Data sheet

3RT2023-2AP00



CONTACTOR, AC-3, 4KW/400V, 1NO+1NC, AC 230V 50HZ, 3-POLE, SZ S0 SPRING-LOADED 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-1A35- at 24 V Rated valueA35- at 100 V Rated valueA35- at 400 V Rated valueA29- at 600 V Rated valueA14• at DC-3at DC-5			
	• at DC-1		
	— 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 value A 35 - at 220 V Rated value A 10 - at 24 V Rated value A 35 - at 440 V Rated value A 0.6 Operating power - - • at AC-1 at 400 V Rated value KW 23 • at AC-1 at 400 V Rated value KW 4 • at AC-1 at 400 V Rated value KW 4 • at AC-1 at 400 V Rated value KW 4 • at AC-1 - - • at AC-1 - - • at AC-1 - - • at 60 °C Rated value KW 13.3 - at 600 V at 80 °C Rated value KW 13.3 - at 600 V at 80 °C Rated value KW 23 - at 600 V at 80 °C Rated value KW 40 - at 600 V Rated value KW 40 - at 600 V Rated value KW 22 - at 600 V Rated value KW 40 • at 600 V Rated value KW 2.5 Operating power for > 200000 operating cycles at AC-3 - </td <td>— at 440 V Rated value</td> <td>А</td> <td>2.9</td>	— 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 A00 V Rated valueKW4 at A00 V Rated valueKW13.3 at 230 V rated valueKW13.3 at 230 V Rated valueKW13.3 at 400 V rated valueKW23 at 680 V rated valueKW40 at 680 V rated valueKW40 at 680 V rated valueKW40 at 400 V Rated valueKW40 at 400 V Rated valueKW40 at 690 V Rated valueKW22 at 400 V Rated valueKW40 at 690 V Rated valueKW22 at 400 V Rated valueKW25 Operating power for ≥ 200000 operating cycles at AC-3	— 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 690 V at 60 °C Rated valueKW23- at 690 V Rated valueKW40- at 690 V Rated valueKW2.2- at 400 V Rated valueKW2.2- at 690 V Rated valueKW2.5Operating power for 2 20000 operating cycles at AC-3	• 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 24 V Rated value	А	35
Operating power 4 • at AC-1 at 400 V Rated value kW 23 • at AC-2 at 400 V Rated value kW 4 • at AC-3 at 400 V Rated value kW 4 • at AC-4 at 400 V Rated value kW 4 • at AC-1	— at 440 V Rated value	А	0.6
• at AC-1 at 400 V Rated value kW 23 • at AC-2 at 400 V Rated value kW 4 • at AC-4 at 400 V Rated value kW 4 • at AC-4 at 400 V Rated value kW 4 Operating power - - • at AC-1 - - - at 230 V Rated value kW 13.3 - at 230 V Rated value kW 23 - at 400 V Rated value kW 23 - at 690 V Rated value kW 40 - at 690 V Rated value kW 40 - at 230 V Rated value kW 40 - at 690 V Rated value kW 40 - at 690 V Rated value kW 40 - at 690 V Rated value kW 4 - at 690 V Rated value kW 2.2 - at 400 V Rated value kW 2.2 - at 400 V Rated value kW 2.2 - at 690 V Rated value kW 2.5 Operating power for ≥ 200000 operating cycles at AC-3 - - AC-4 kW 2.5 - • at 600 V Rated value	— at 600 V Rated value	А	0.6
• at AC-2 at 400 V Rated value kW 4 • at AC-4 at 400 V Rated value kW 4 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 230 V at 60 °C Rated value kW 23 - at 690 V at 60 °C Rated value kW 40 - at 690 V at 60 °C Rated value kW 40 - 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 value kW 40 - at 690 V Rated value kW 40 - at 690 V Rated value kW 40 - at 400 V Rated value kW 2.2 - at 690 V Rated value kW 7.5 Operating power for ≥ 20000 operating cycles at AC-4 - at 690 V Rated value kW 2.5 - at 690 V Rated value kW 2.5 Operating frequency - at AC-3 maximum 1/h 1000 - at 50 Hz Rated value V 230 • at 60 -1 supply voltage with AC - at 50 Hz Rated value V 230 - 230 - 230	Operating power	-	
• at AC-4 at 400 V Rated value KW 4 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 at 60 °C Rated value KW 40 - at 690 V Rated value KW 40 - at 690 V Rated value KW 40 - at 230 V Rated value KW 40 - at 690 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 KW 2.5 • at 400 V Rated value KW 2.5 Operating 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 at 60 °C Rated value KW 40 - at 690 V Rated value KW 40 - at 690 V Rated value KW 40 - at 690 V Rated value KW 40 - at 230 V Rated value KW 40 - at 690 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 - • at 690 V Rated value KW 2.5 - Operating frequency - - - • at AC-3 maximum 1/h 1 000 - Control circuit/ Control: - - - Type of voltage of the control supply voltage AC - - <	 at AC-2 at 400 V Rated value 	kW	4
• at AC-1KW13.3- at 230 V 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 230 V Rated valueKW4- at 230 V Rated valueKW7.5Operating power for > 200000 operating cycles at AC-4KW2.2- at 400 V Rated valueKW2.5Operating frequencyKW2.5- at AC-3 maximum1/h1 000Control circuit/ Control:Ype of voltage of the control supply voltageMate valueV230Operating range factor control supply voltage ratedvalue of the magnet col with ACV230	• 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:Type of voltage of the control supply voltageMAC230Operating range factor control supply voltage ratedV230Operating range factor control supply voltage ratedV230	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 22 - 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	● at AC-1		
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 2.2 at 400 V Rated value kW 4 at 690 V Rated value kW 4 at 690 V Rated value kW 2.2 at 690 V Rated value kW 7.5 Operating power for ≥ 200000 operating cycles at AC-4	— at 230 V at 60 °C Rated value	kW	13.3
$ \begin{array}{c c c c c } -at 690 \lor at 60 °C Rated value & kW & 40 \\ -at 690 \lor Rated value & kW & 40 \\ \hline -at 690 \lor Rated value & kW & 2.2 \\ -at 230 \lor Rated value & kW & 4 \\ -at 690 \lor Rated value & kW & 7.5 \\ \hline \begin{timeskip} ti$	— at 230 V Rated value	kW	13.3
at 690 V Rated valuekW40• at AC-3 at 230 V Rated valuekW at 400 V Rated valuekW at 690 V Rated value2.5Operating frequency at AC-3 maximum1/h1/h1000Control circuit/ Control:	— 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 frequency1/h1 000• at AC-3 maximum1/h1 000Control circuit/ Control:Type of voltage of the control supply voltageACControl supply voltage with AC230• at 50 Hz Rated valueV230	— 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:ACType of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV230Operating range factor control supply voltage rated value of the magnet col with ACI	— 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 valueV230Operating range factor control supply voltage rated value of the magnet coil with ACI	● 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:Type of voltage of the control supply voltageACControl supply voltage with AC • at 50 Hz Rated valueV230Operating range factor control supply voltage rated value of the magnet coil with ACV230	— at 230 V Rated value	kW	2.2
Operating power for ≥ 200000 operating cycles at AC-4 KW 2 • at 400 V Rated value kW 2 • at 690 V Rated value kW 2.5 Operating frequency 1/h 1 000 • at AC-3 maximum 1/h 1 000 Control circuit/ Control: X Type of voltage of the control supply voltage AC • at 50 Hz Rated value V 230 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	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 valueV230Operating range factor control supply voltage rated value of the magnet coil with ACV230	— at 690 V Rated value	kW	7.5
• 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 valueV230Operating range factor control supply voltage rated value of the magnet coil with ACImage: Control supply voltage rated value of the magnet coil with AC			
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 Control supply voltage with AC 230 • at 50 Hz Rated value V 230	• 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 valueV230Operating range factor control supply voltage rated value of the magnet coil with ACV230	• 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 AC • at 50 Hz Rated value V 230 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 230 • at 50 Hz Rated value V 230 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 230 • at 50 Hz Rated value V 230 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 230 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		V	220
value of the magnet coil with AC		V	230
• at 50 Hz 0.8 1.1	value of the magnet coil with AC		
	• at 50 Hz		0.8 1.1

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	102
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
— downwards	mm	0
— at the side	mm	6
Connections/ Terminals:		

Type of electrical connection		
 for main current circuit 		spring-loaded terminals
 for auxiliary and control current circuit 		spring-loaded terminals
Type of connectable conductor cross-section	-	
 for main contacts 		
— single or multi-stranded		2x (1 10 mm²)
— finely stranded with core end processing		2x (1 6 mm²)
 finely stranded without core end processing 		2x (1 6 mm²)
 for AWG conductors for main contacts 		2x (18 8)
 for auxiliary contacts 		
— single or multi-stranded		2x (0,5 2,5 mm²)
— finely stranded with core end processing		2x (0.5 1.5 mm²)
 finely stranded without core end processing 		2x (0.5 2.5 mm²)
 for AWG conductors for auxiliary contacts 		2x (20 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 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
Mechanical data:		
Size of contactor		S0
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	Approval			EMC	Functional Safety/Safety of Machinery
	CSA		EHC	С-тіск	Type Examinatic
Declaration of Conformity	Test Certificates	i	Shipping App	roval	
EG-Konf.	Special Test Certificate	<u>Type Test</u> Certificates/Test <u>Report</u>	ABS	B U R E A U VERITAS	DINV DNV
Shipping Approv	al				other
GL GL	Lloyd's Register LRS	PRS	RINA	RMRS	Environmental Confirmations
other					
<u>Confirmation</u>					
ther information		gs, Brochures,)			

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