SIEMENS

Product data sheet 3RT2024-1AC20-1AA0

CONTACTOR, AC-3, 5.5KW/400V, 1NO+1NC,
AC 24V 50/60HZ, 3-POLE,
SZ S0 SCREW TERMINAL VERTICAL MOUNTING POSITION

General technical data:		
product brand name		SIRIUS
Size of the contactor		S0
Product extension / auxiliary switch		Yes
Product extension / function module for communication		No
Protection class IP / on the front		IP20
Protection against electrical shock		finger-safe
Degree of pollution		3
Installation altitude / at a height over sea level / maximum	m	2,000
Ambient temperature		
• during storage	°C	-55 … +80
• during operating	°C	-25 … +60
Shock resistance		
• at rectangular impulse		
• at AC		7,5g / 5 ms, 4,7g / 10 ms
• at sine pulse		
• at AC		11,8g / 5 ms, 7,4g / 10 ms
Impulse voltage resistance / rated value	kV	6
Insulation voltage / rated value	V	690
Maximum permissible voltage for protective separation / between coil and main contacts / in accordance with EN 60947-1	V	400
Mechanical operating cycles as operating time		
• of the contactor / typical		10,000,000
• of the contactor with added auxiliary switch block / typical		10,000,000
• of the contactor with added electronics-compatible auxiliary switch block / typical		5,000,000

Main circuit:		
Number of NC contacts / for main contacts		0
Number of NO contacts / for main contacts		3
Operating current / at AC-1 / at 400 V		
• at 40 °C ambient temperature / rated value	A	40

• at 60 °C ambient temperature / rated value	A	35
Connectable conductor cross-section / in main circuit		
• at AC-1		
• at 40 °C / minimum permissible	m²	10
• at 60 °C / minimum permissible	m²	10
Operational current		
• at AC-2 / at 400 V / rated value	A	12
• at AC-3		
• at 400 V / rated value	A	12
• at 500 V / rated value	A	12
• at 690 V / rated value	A	9
• at AC-4 / at 400 V / rated value	A	12.5
Operational current		
• with 1 current path / at DC-1		
• at 24 V / rated value	A	35
• at 110 V / rated value	A	4.5
• at 220 V / rated value	A	1
• at 440 V / rated value	A	0.4
• at 600 V / rated value	A	0.25
• with 2 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	5
• at 440 V / rated value	A	1
• at 600 V / rated value	A	0.8
• 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	2.9
• at 600 V / rated value	A	1.4
Operational current		
• with 1 current path / at DC-3 / at DC-5		
• at 24 V / rated value	A	20
• at 110 V / rated value	A	2.5
• at 220 V / rated value	A	1
• at 440 V / rated value	A	0.09
• at 600 V / rated value	A	0.06
• with 2 current paths in series / at DC-3 / at DC-5		
• at 24 V / rated value	A	35

• at 110 V / rated value	A	15
• at 220 V / rated value	A	3
• at 440 V / rated value	A	0.27
• at 600 V / rated value	A	0.16
• with 3 current paths in series / at DC-3 / at DC-5		
• at 24 V / rated value	A	35
• at 110 V / rated value	A	35
• at 220 V / rated value	A	10
• at 440 V / rated value	A	0.6
• at 600 V / rated value	A	0.6
Service power		
• at AC-1		
• at 230 V / rated value	kW	13.3
• at 400 V / rated value	kW	23
• at 500 V / rated value	kW	29
• at 690 V / rated value	kW	40
• at AC-2 / at 400 V / rated value	kW	5.5
• at AC-3		
• at 230 V / rated value	kW	3
• at 400 V / rated value	kW	5.5
• at 690 V / rated value	kW	7.5
• at AC-4 / at 400 V / rated value	kW	5.5
Active power loss / at AC-3 / at 400 V / with rated operational current value / per conductor	W	0.5
Off-load operating frequency		
• at AC	1/h	5,000
• at DC	1/h	1,500
Frequency of operation		
• at AC-1 / according to IEC 60947-6-2	1/h	1,000
• at AC-2 / according to IEC 60947-6-2	1/h	1,000
• at AC-3 / according to IEC 60947-6-2	1/h	1,000
• at AC-4 / according to IEC 60947-6-2	1/h	300

Control circuit:		
Type of voltage / of the controlled supply voltage		AC
Control supply voltage		
• at 50 Hz / at AC / rated value	V	24
• at 60 Hz / at AC / rated value	V	24
operating range factor control supply voltage rated value / of the magnet coil		
• at 50 Hz / for AC		0.8 … 1.1

• at 60 Hz / for AC		0.85 … 1.1
Apparent pull-in power / of the solenoid / for AC	V·A	68
Apparent holding power / of the solenoid / for AC	V·A	7.9
Inductive power factor		
• with the pull-in power of the coil		0.82
• with the pull-in power of the coil		0.25
Closing delay		
• at AC	ms	9 … 38
Opening delay		
• at AC	ms	4 … 16
Arcing time	ms	10 … 10
Residual current / of electronics / for control with signal <0>		
• at 230 V / with AC / maximum permissible	mA	6
• at 24 V / with DC / maximum permissible	mA	16

Auxiliary circuit:		
Contact reliability / of the auxiliary contacts		1 faulty switching per 100 million (17 V, 1 mA)
Number of NC contacts / for auxiliary contacts / instantaneous switching		1
Number of NO contacts / for auxiliary contacts / instantaneous switching		1
Operating current / of the auxiliary contacts		
• [nicht versorgt: PMD_ABP551_001_000]		
•	A	2
• at 690 V	A	1

UL/CSA ratings:		
yielded mechanical performance (hp)		
• for single-phase squirrel cage motors		
• at 110/120 V / rated value	hp	1
• at 230 V / rated value	hp	2
• for three-phase squirrel cage motors		
• at 200/208 V / rated value	hp	3
• at 220/230 V / rated value	hp	3
• at 460/480 V / rated value	hp	7.5
• at 575/600 V / rated value	hp	10
Operating current (FLA) / for three-phase squirrel cage motors		
• at 480 V / rated value	A	11
• at 600 V / rated value	A	11
Contact rating designation / for auxiliary contacts / according to UL		A600 / Q600

Short-circuit:		
Design of the fuse link		
• for short-circuit protection of the auxiliary switch / required		fuse gL/gG: 10 A
• 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
• at type of coordination 2 / required		gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 25A

Installation/mounting/dimensions:		
mounting position		standing, on horizontal mounting surface
Type of mounting		screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022
Type of fixing/fixation / series installation		Yes
Width	mm	45
Height	mm	85
Depth	mm	97
Distance, to be maintained, to the ranks assembly / sidewards	mm	0

Connections:		
Design of the electrical connection		
• for main current circuit		screw-type terminals
• for auxiliary and control current circuit		screw-type terminals
Type of the connectable conductor cross-section		
• for main contacts		
• solid		2x (1 ... 2.5 mm²), 2x (2.5 ... 10 mm²)
• finely stranded		
• with conductor 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		
• solid		2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
• finely stranded		
• with conductor 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)

Sicherheitsrelevante Kenngrößen:		
B10 value / with high demand rate		
• according to SN 31920		1,000,000
T1 value / for proof test interval or service life		
• according to IEC 61508	a	20
Proportion of dangerous failures		
• with low demand rate / according to SN 31920	%	40

• with high demand rate / according to SN 31920	%	73
Failure rate (FIT value) / with low demand rate		
• according to SN 31920	FIT	100
Product function		
• mirror contact to IEC 60947-4-1		Yes
• comment		with 3RH29
• positively driven operation to IEC 60947-5-1		No

Certificates/approvals:

General Product Approval | **Declaration of Conformity**

CCC, CSA, UL, EG-Konf.

Shipping Approval

ABS, BUREAU VERITAS, DNV, GL, LRS, PRS

Shipping Approval | **other**

RINA, RMRS, VDE

Further information:

Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)
http://www.siemens.com/industrial-controls/mall

Cax online generator
http://www.siemens.com/cax

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3RT2024-1AC20-1AA0/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RT2024-1AC20-1AA0

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