SIEMENS

Product data sheet 3RT1046-1AL20



CONTACTOR, AC-3 45 KW/400 V, AC 230V 50/60HZ 3-POLE, SIZE S3, SCREW CONNECTION

General technical data:		
product brand name		SIRIUS
Size of the contactor		S3
Protection class IP / on the front		IP20
Degree of pollution		3
Installation altitude / at a height over sea level / maximum	m	2,000
Ambient temperature / during operating	°C	-25 +60
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	Α	120
• at AC-3 / at 400 V / rated value	Α	95
• at AC-4 / at 400 V / rated value	Α	80

 at 24 V / rated value at 110 V / rated value with 2 current paths in series / at DC-1 at 24 V / rated value at 110 V / rated value at 110 V / rated value at 110 V / rated value at 24 V / rated value at 110 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 24 V / rated value at 110 V / rated value at 24 V / rated value at 24 V / rated value at 110 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 bt W 45 at 110 V / rated value at 110 V / rated value bt W 45 at 110 V / rated value at 110 V / rated value bt W 45 at 110 V / rated value bt W 45 at 110 V / rated value bt W 45 at 110 V / rated value bt W 45 at 110 V / rated value bt W 45 at 110 V / rated value bt W 45 at 110 V / rated value ct 110 V / rated value dt 110 V / rated value dt 110	• with 1 current path / at DC-1		
with 2 current paths in series / at DC-1 at 24 V / rated value at 110 V / rated value at 110 V / rated value 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 110 V / rated value at 24 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 24 V / rated value at 110 V / rated value at 110 V / rated value at 24 V / rated value at 110 V / rated	• at 24 V / rated value	Α	100
 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-1 at 24 V / rated value at 110 V / rated value with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value at 110 V / rated value at 24 V / rated value at 24 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value A 100 with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value A 100 Service power at AC-2 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45 	• at 110 V / rated value	Α	9
 at 110 V / rated value with 3 current paths in series / at DC-1 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated va	• with 2 current paths in series / at DC-1		
 with 3 current paths in series / at DC-1 at 24 V / rated value at 110 V / rated value with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value at 24 V / rated value at 24 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 ext 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value 	• at 24 V / rated value	Α	100
 at 24 V / rated value at 110 V / rated value with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value at 110 V / rated value at 24 V / rated value at 24 V / rated value A 100 with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with 3 current paths in series / at DC-3 / at DC-5 with	• at 110 V / rated value	Α	100
 at 110 V / rated value with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 24 V / rated value A 100 with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45 	• with 3 current paths in series / at DC-1		
with 1 current path / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 40 at 110 V / rated value A 2.5 with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value A 100 at 110 V / rated value A 100 with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value A 100 at 110 V / rated value A 100 service power at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45	• at 24 V / rated value	Α	100
 at 24 V / rated value at 110 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value 	• at 110 V / rated value	Α	100
at 110 V / rated value with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value A 100 at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45	• with 1 current path / at DC-3 / at DC-5		
with 2 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value at 110 V / rated value at 110 V / rated value at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45	• at 24 V / rated value	Α	40
 at 24 V / rated value at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45 	• at 110 V / rated value	Α	2.5
 at 110 V / rated value with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45 	 with 2 current paths in series / at DC-3 / at DC-5 		
with 3 current paths in series / at DC-3 / at DC-5 at 24 V / rated value at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value kW 45 at AC-3 / at 400 V / rated value kW 45	• at 24 V / rated value	Α	100
 at 24 V / rated value at 110 V / rated value A 100 Service power at AC-2 / at 400 V / rated value at AC-3 / at 400 V / rated value kW 45 kW 45 	• at 110 V / rated value	Α	100
• at 110 V / rated value A 100 Service power • at AC-2 / at 400 V / rated value • at AC-3 / at 400 V / rated value kW 45 kW 45	 with 3 current paths in series / at DC-3 / at DC-5 		
Service power • at AC-2 / at 400 V / rated value	• at 24 V / rated value	Α	100
• at AC-2 / at 400 V / rated value	• at 110 V / rated value	Α	100
• at AC-3 / at 400 V / rated value kW 45	Service power		
	• at AC-2 / at 400 V / rated value	kW	45
• at AC-4 / at 400 V / rated value W 45,000	• at AC-3 / at 400 V / rated value	kW	45
	• at AC-4 / at 400 V / rated value	W	45,000

Control circuit:		
Voltage type / of control feed voltage		AC
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		0.8 1.1
Apparent pull-in power / of the solenoid / for AC	V-A	298
Apparent holding power / of the solenoid / for AC	V·A	27
Inductive power factor / with the pull-in power of the coil		0.7
Inductive power factor / with the pull-in power of the coil		0.29

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	0	
Number of NO contacts / for auxiliary contacts / instantaneous switching	0	

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 	fuse gL	/gG: 250 A
• at type of coordination 2 / required	fuse gL	/gG: 160 A

Installation/mounting/dimensions:		
Mounting type		screw and snap-on mounting onto 35 mm and 75 mm standard mounting rail
series installation		Yes
Width	mm	70
Height	mm	146
Depth	mm	139
Distance, to be maintained, to earthed part / sidewards	mm	6

Connection type:	
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 (2.5 16 mm²)
• stranded	2x (10 50 mm²)
• finely stranded	
 with conductor end processing 	2x (2.5 35 mm²)
 without conductor final cutting 	2x (10 35 mm²)
• for AWG conductors / for main contacts	2x (10 1/0)
for auxiliary contacts	
• solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), max. 2x (0.75 4 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), 1x 12

Certificates/approvals:

General Product Approval

Functional Safety / Safety of Machinery Declaration of Conformity









Type Examination



Test Certificates

Shipping Approval

Special Test Certificate











other

Confirmation

other

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/industrial-controls/mall

Cax online generator:

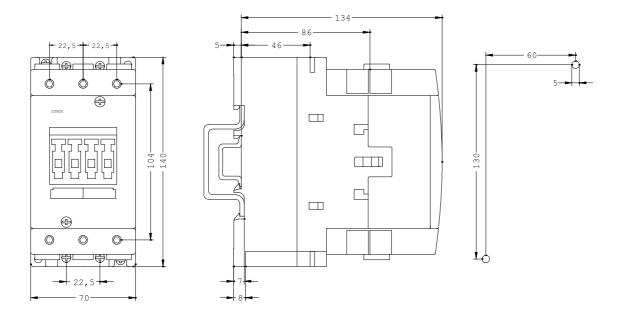
http://www.siemens.com/cax

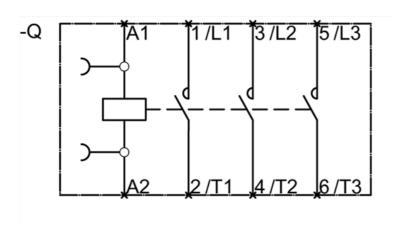
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

http://support.automation.siemens.com/WW/view/en/3RT1046-1AL20/all

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RT1046-1AL20}$





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