SIEMENS

Product data sheet 3RF2020-1AA24



SEMICONDUCTOR RELAY 3RF2, 1-PH. WIDTH 45 MM, 20 A 48-460 V / 110-230 V AC SCREW TERMINAL

General technical data:			
product brand name		SIRIUS	
product designation		solid-state relay	
Product function		zero-point switching	
Number of poles / for main current circuit		1	
Protection class IP		IP20	
Ambient temperature			
during operating	°C	-25 +60	
during storage	°C	-55 +80	
Installation altitude / at a height over sea level / maximum	m	1,000	
Resistance against vibration / according to IEC 60068-2-6		2g	
Resistance against shock / according to IEC 60068-2-27		15g / 11 ms	
Item designation			
 according to DIN 40719 extendable after IEC 204-2 / according to IEC 750 		К	
according to DIN EN 61346-2		Q	
Number of NC contacts / for auxiliary contacts		0	
Number of NO contacts / for auxiliary contacts		0	
Number of change-over switches / for auxiliary contacts		0	

Main circuit:

Number of NO contacts / for main contacts		1
Number of NC contacts / for main contacts		0
Operating current		
• at AC-1 / at 400 V / rated value	Α	20
• at AC-51 / rated value	А	20
Operating current / minimum	mA	100
Operating voltage		
• at 50 Hz / at AC / rated value	V	48 460
• at 60 Hz / at AC / rated value	V	48 460
Working area related to the operating voltage		
• at 50 Hz / for AC	V	40 506
• at 60 Hz / for AC	V	40 506
Operating frequency		
• rated value	Hz	50 60
Relative symmetrical tolerance / of the operation frequency	%	10
Insulation voltage / rated value	V	600
Voltage slew rate / at the thyristor / for main contacts / maximum permissible	V/µs	500
Block voltage / at the thyristor / for main contacts / maximum permissible	V	1,200
Reverse current / of the thyristor	mA	10
Derating temperature	°C	40
Active power loss / total / typical	W	28.6
Resistance against the impulse current / rated value	Α	200
I2t-level / maximum	A²·s	200
Control circuit:		
Control supply voltage frequency		
• 1 / rated value	Hz	50
• 2 / rated value	Hz	60
Type of voltage / of the controlled supply voltage		AC
Control supply voltage / 1		
• at 50 Hz / for AC		
• initial rated value	V	110
• final rated value	V	230
• at 60 Hz / for AC		
• initial rated value	V	110
• final rated value	V	230
Control supply voltage		
• at 50 Hz / for AC / final value for signal<0>-recognition	V	40
• at 60 Hz / for AC / final value for signal<0>-recognition	V	40

Tolerance of the line frequency	Hz	5	
Relative symmetrical tolerance / of the supply voltage frequency	%	10	
Control current			
• at minimum control supply voltage / for AC	mA	2	
• for AC / rated value	mA	15	
Fuse assignments		https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf	

Installation/mounting/dimensions:			
Type of mounting		screw fixing	
Type of fixing/fixation / series installation		Yes	
Design of the thread / of the screw for fastening of the operating resource		M4	
Tightening torque / of the screw for fastening of the operating resource	N⋅m	1.5	
Width	mm	45	
Height	mm	58	
Depth	mm	48	

Connections:		
Design of the electrical connection / for main current circuit		screw-type terminals
Design of the thread / of the connection screw / for main contacts		M4
Tightening torque / for main contacts / with screw-type terminals		
• minimum	N⋅m	2
• maximum	N⋅m	2.5
Tightening torque (lbf-in) / for main contacts / with screw-type terminals		
• minimum	lbf-in	7
• maximum	lbf-in	10.3
Type of the connectable conductor cross-section		
• for main contacts		
• solid		2x (1.5 2.5 mm²), 2x (2.5 6 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 (14 10)
for auxiliary and control contacts		1x (AWG 20 12)
• for auxiliary and control contacts		
• solid		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
• finely stranded		

 with conductor end processing 		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
 without conductor final cutting 		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
Conductor cross section that can be connected		
• for main contacts		
• solid	mm²	1.5 6
• stranded wire		
 with conductor end processing 	mm²	1 10
for auxiliary and control contacts		
• solid	mm²	0.5 2.5
• stranded wire		
 with conductor end processing / 	mm²	0.5 2.5
without conductor final cutting	mm²	0.5 2.5
AWG number / as coded connectable conductor cross-section / for main contacts		14 10
Design of the electrical connection / for auxiliary and control current circuit		screw-type terminals
Design of the thread / of the connection screw / of the auxiliary and control pins		M3
AWG number / as coded connectable conductor cross-section		
for auxiliary and control contacts		20 12
Skinning length / of the cable / for main contacts	mm	10
Skinning length / of the cable / for auxiliary and control contacts	mm	7
Tightening torque / for auxiliary and control contacts		
with screw-type terminals	N⋅m	0.5 0.6
Tightening torque (lbf-in) / for auxiliary and control contacts		
with screw-type terminals	lbf∙in	4.5 5.3

Certificates/approvals:

General Product	Approval		EMC	Declaration of Conformity	Test Certificates
S	P T	SU ®	Стіск	EG-Konf.	Type Test Certificates/Test Report

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

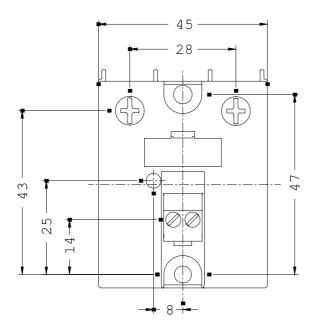
http://www.siemens.com/cax

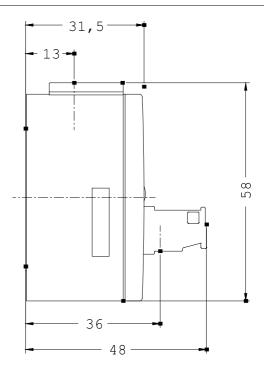
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

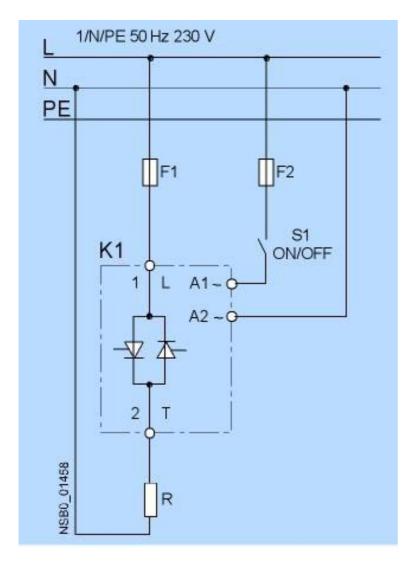
http://support.automation.siemens.com/WW/view/en/3RF2020-1AA24/all

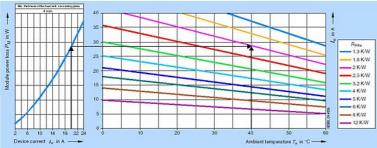
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RF2020-1AA24









last change: Feb 4, 2013