SIEMENS

Data sheet 3RF21 20-1AA22



SEMICOND. RELAY 3RF2, 1-PHASE WIDTH 22.5 MM, 20 A 24-230 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
Product designation _1 of the accessories that can be ordered		terminal cover
Manufacturer article number _1 of the accessories that can be ordered		3RF2900-3PA88
Product designation _2 of the accessories that can be ordered		power regulator
Manufacturer article number _2 of the accessories that can be ordered		3RF2920-0HA33
Product designation _4 of the accessories that can be ordered		load monitoring
Manufacturer article number _4 of the accessories that can be ordered		3RF2920-0GA33
Ambient temperature		
during operation	°C	-25 +60
during storage	°C	-55 + 80
Installation altitude at height above sea level maximum	m	1 000
Vibration resistance acc. to IEC 60068-2-6		2g
Shock resistance acc. to IEC 60068-2-27		15g / 11 ms
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K

Equipment marking acc. to DIN EN 61346-2		Q
Number of NC contacts for auxiliary contacts		0
Number of NO contacts for auxiliary contacts	_	0
Number of CO contacts for auxiliary contacts		0
Main circuit:		
Number of NO contacts for main contacts		1
Number of NC contacts for main contacts		0
Operating current		
Rated value maximum	Α	20
● at AC-51 Rated value	Α	20
• minimum	mA	100
Operating voltage with AC		
● at 50 Hz Rated value	V	24 230
● at 60 Hz Rated value	V	24 230
Operating range relative to the operating voltage with AC		
● at 50 Hz	V	20 253
● at 60 Hz	V	20 253
Operating frequency Rated value	Hz	50 60
Relative symmetrical tolerance of the operating	%	10
frequency		
Insulation voltage Rated value	V	600
Rate of voltage rise at the thyristor for main contacts maximum permissible	V/µs	500
Blocking voltage at the thyristor for main contacts maximum permissible	V	800
Reverse current of the thyristor	mA	10
Derating temperature	°C	40
Active power loss total typical	W	28.6
Apparent power loss maximum	V·A	28.6
Surge current resistance Rated value	Α	200
I2t value maximum	A²-s	200
Short-circuit protection, design of the fuse link		
Control circuit/ Control:		
Control supply voltage frequency		
● 1 Rated value	Hz	50
• 2 Rated value	Hz	60
Type of voltage of the control supply voltage		AC
Control supply voltage 1		
• with AC		
— at 50 Hz Initial rated value	V	110
— at 50 Hz Final rated value	V	230

 at 60 Hz Initial rated value 	V	110
— at 60 Hz Final rated value	V	230
Control supply voltage		
• with AC		
— at 50 Hz Full-scale value for signal<0> recognition	V	40
— at 60 Hz Full-scale value for signal<0> recognition	V	40
Symmetrical line frequency tolerance	Hz	5
Relative symmetrical tolerance of the supply voltage frequency	%	10
Control current		
 at minimum control supply voltage 		
— with AC	mA	2
• with AC Rated value	mA	15

Installation/ mounting/ dimensions:		
Mounting type		screw fixing
Mounting type Side-by-side mounting		Yes
Design of the thread of the screw for securing the equipment		M4
Tightening torque of the screw for securing the equipment	N·m	1.5
Width	mm	22.5
Height	mm	85
Depth	mm	48

Type of electrical connection for main current circuit Design of the thread of the connection screw for main contacts Tightening torque for main contacts with screw-type terminals Tightening torque [lbf·in] for main contacts with screw-type terminals Tightening torque [lbf·in] for main contacts with screw-type terminals Type of connectable conductor cross-section • for main contacts — solid — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts — solid 1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)	Connections/ Terminals:		
Tightening torque for main contacts with screw-type terminals Tightening torque [lbf-in] for main contacts with screw-type terminals Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts	Type of electrical connection for main current circuit		screw-type terminals
Tightening torque for main contacts with screw-type terminals Tightening torque [lbf-in] for main contacts with screw-type terminals Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts	Design of the thread of the connection screw for main		M4
terminals Tightening torque [lbf-in] for main contacts with screw-type terminals Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts	contacts		
Tightening torque [lbf-in] for main contacts with screw-type terminals Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts	Tightening torque for main contacts with screw-type	N·m	2 2.5
Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts	terminals		
Type of connectable conductor cross-section • for main contacts — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts		lbf∙in	7 10.3
 for main contacts solid finely stranded with core end processing for AWG conductors for main contacts for auxiliary and control contacts for auxiliary and control contacts for main contacts (AWG 20 12) 	screw-type terminals		
 — solid — finely stranded — with core end processing • for AWG conductors — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts 2x (1.5 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (14 10) 2x (14 10) 1x (AWG 20 12) 	Type of connectable conductor cross-section		
 — finely stranded — with core end processing ● for AWG conductors — for main contacts — for auxiliary and control contacts ● for auxiliary and control contacts Ix (AWG 20 12) 	for main contacts		
 — with core end processing for AWG conductors — for main contacts — for auxiliary and control contacts for auxiliary and control contacts 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (14 10) 1x (AWG 20 12) 	— solid		2x (1.5 2.5 mm²), 2x (2.5 6 mm²)
 for AWG conductors — for main contacts — for auxiliary and control contacts for auxiliary and control contacts 1x (AWG 20 12)	— finely stranded		
 — for main contacts — for auxiliary and control contacts 1x (AWG 20 12) • for auxiliary and control contacts 	 — with core end processing 		2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
— for auxiliary and control contacts 1x (AWG 20 12) • for auxiliary and control contacts	• for AWG conductors		
• for auxiliary and control contacts	— for main contacts		2x (14 10)
	 for auxiliary and control contacts 		1x (AWG 20 12)
— solid 1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)	 for auxiliary and control contacts 		
	— solid		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)

— finely stranded		
 — with core end processing 		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
 — without core end processing 		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
Connectable conductor cross-section		
• for main contacts		
 single or multi-stranded 	mm²	1.5 6
— finely stranded		
 — with core end processing 	mm²	1 10
 for auxiliary and control contacts 		
— solid	mm²	0.5 2.5
— finely stranded		
 — with core end processing 	mm²	0.5 2.5
 — without core end processing 	mm²	0.5 2.5
AWG number as coded connectable conductor cross		14 10
section for main contacts		
Type of electrical connection for auxiliary and control current circuit		screw-type terminals
Design of the thread of the connection screw of the auxiliary and control contacts		M3
AWG number as coded connectable conductor cross		20 12
section for auxiliary and control contacts		
Wire stripping length of the cable		
• for main contacts	mm	7
for auxiliary and control contacts	mm	7
Tightening torque for auxiliary and control contacts	N·m	0.5 0.6
with screw-type terminals		
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 Certificates











Type Test
Certificates/Test
Report

Further information

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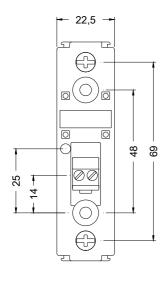
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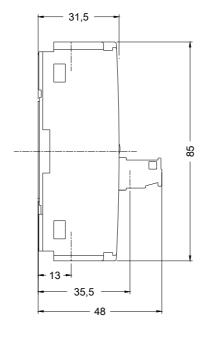
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