



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		K
• 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	A	20
• at AC-51 / rated value	A	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	A	200
I²t-level / maximum	A ² ·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 • for AC / rated value	mA mA	2 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 • maximum	N·m N·m	2 2.5
Tightening torque (lbf·in) / for main contacts / with screw-type terminals • minimum • maximum	lbf·in lbf·in	7 10.3
Type of the connectable conductor cross-section • for main contacts • solid • finely stranded • with conductor end processing • for AWG conductors • for main contacts • for auxiliary and control contacts • for auxiliary and control contacts • solid • finely stranded		2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²) 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² 2x (14 ... 10) 1x (AWG 20 ... 12) 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)

• with conductor end processing		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
• without conductor final cutting		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
Conductor cross section that can be connected		
• for main contacts		
• solid	mm ²	1.5 ... 6
• stranded wire		
• with conductor end processing	mm ²	1 ... 10
• for auxiliary and control contacts		
• solid	mm ²	0.5 ... 2.5
• stranded wire		
• with conductor end processing /	mm ²	0.5 ... 2.5
• without conductor final cutting	mm ²	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
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[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>



