

Semiconductor relay, 1-phase 3RF2 Width 45 mm, 20 A
24-230 V / 24 V DC 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 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
Reference identifier acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K
Reference identifier 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	A	20
• at AC-51 rated value	A	20
• minimum	mA	100
Operating voltage at AC		
• at 50 Hz rated value	V	24 ... 230
• at 60 Hz rated value	V	24 ... 230
Operating range relative to the operating voltage at 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 frequency	%	10
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
Power loss [W] total typical	W	28.6
Surge current resistance rated value	A	200
I²t value maximum	A ² ·s	200
Short-circuit protection, design of the fuse link		

Control circuit/ Control		
Type of voltage of the control supply voltage		DC
Control supply voltage 1		
• at DC		
— Initial rated value	V	15
— Final rated value	V	24
— rated value maximum permissible	V	30
Control supply voltage		
• at DC initial value for signal <1> detection	V	15
• at DC Full-scale value for signal <0> recognition	V	5
Relative symmetrical tolerance of the supply voltage frequency	%	10
Control current		
• at minimum control supply voltage		
— at DC	mA	2

- at DC rated value

mA	15
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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	45
Height	mm	58
Depth	mm	48

Connections/Terminals

Type of 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 connectable conductor cross-sections		
• for main contacts		
— solid		2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²)
— finely stranded		
— with core end processing		2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²
• at 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 mm ²), 2x (0.5 ... 1.0 mm ²)
— finely stranded		
— with core end processing		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
— without core end processing		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
Connectable conductor cross-section		
• for main contacts		
— single or multi-stranded	mm ²	1.5 ... 6
— finely stranded		
— with core end processing	mm ²	1 ... 10
• for auxiliary and control contacts		

— solid	mm ²	0.5 ... 2.5
— finely stranded		
— with core end processing	mm ²	0.5 ... 2.5
— without core end processing	mm ²	0.5 ... 2.5
AWG number as coded connectable conductor cross section		
• for main contacts		14 ... 10
• for auxiliary and control contacts		20 ... 12
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
Wire stripping length of the cable		
• for main contacts	mm	10
• 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
 CSA	 UR		 C-Tick
		 EG-Konf.	Type Test Certificates/Test Report

other

[Confirmation](#)

Further information

Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

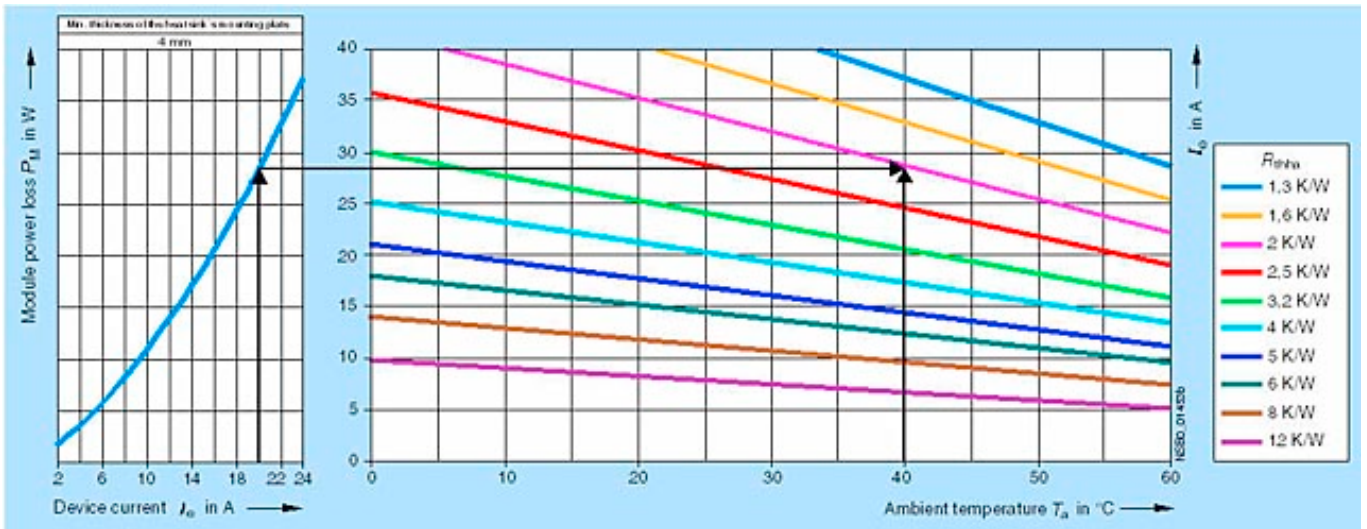
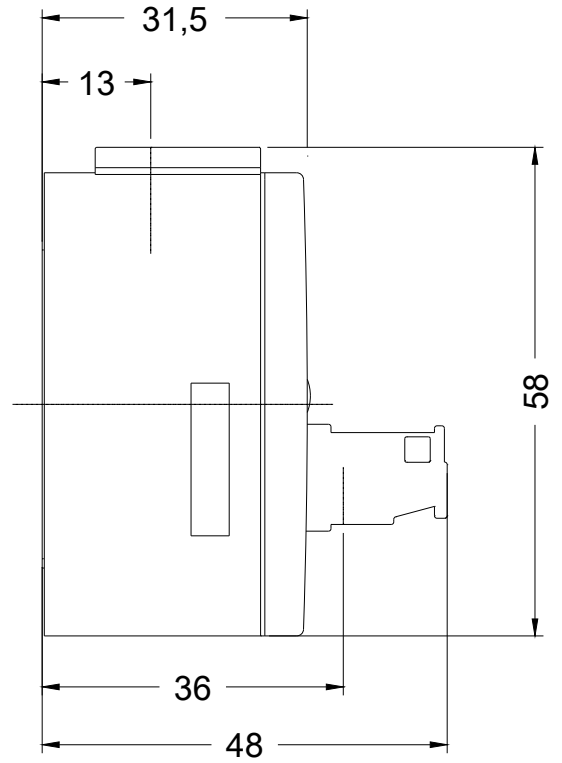
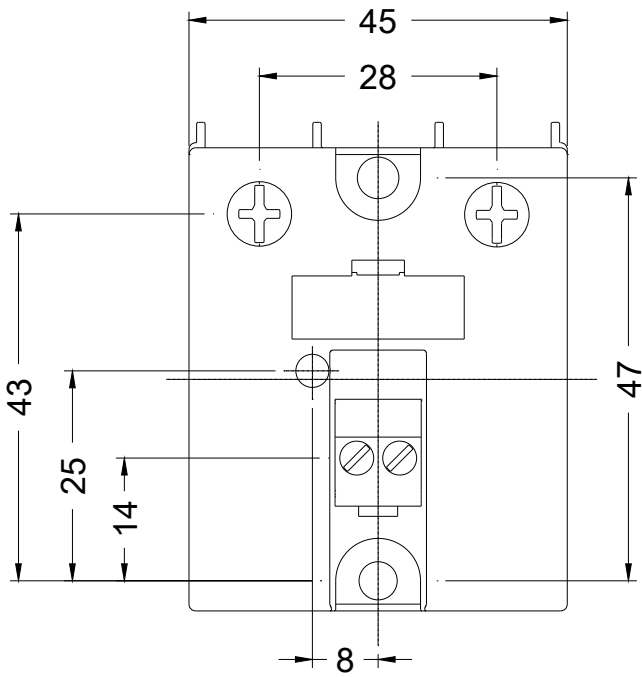
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2020-1AA02>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2020-1AA02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2020-1AA02>



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