

SIRIUS SC 3RF23...-DA.. Solid-State Contactors - Short-Circuit Proof**Main Characteristics:**

"Short-circuit proof" with miniature circuit-breaker.
LED display.
Various connection systems.
Plug-in control terminal.
Degree of protection IP 20.
Double-insulated design.

**General Data:****Standards / Approvals**

DIN EN 60947-4-3
UL 508 / CSA
CE
CCC

Ambient temperature		
during operation	°C	-25 ... 60
during storage	°C	-55 ... 80
Installation altitude	m	0 ... 1000; derating starting at 1000
Impact resistance in acc. with DIN IEC 68	g/ms	15/11
Vibration performance	g	2
Degree of protection		IP20
Electromagnetic compatibility (EMC)		
Emitted interference		
○ Conducted interference voltage IEC 60 947-4-3		Class A for industrial applications
○ Radiated, radio-frequency interference voltage IEC 60 947-4-3		Class A for industrial applications
Interference resistance		
○ Electrostatic discharge in acc. with IEC 61 000-4-2 (equivalent to severity 3)	kV	Contact discharge 4; air discharge 8; performance criteria 2
○ Induced HF fields in acc. with IEC 61 000-4-6	MHz	0.15 ... 80; 140 dBµV; performance criteria 1
○ Burst in acc. with IEC 61 000-4-4	kV	2/5.0 kHz; performance criteria 1
○ Surge in acc. with IEC 61 000-4-5	kV	Phase-to-ground 2; phase-to-phase 1; performance criteria 2

Type		3RF2320-1DA..	3RF2320-2DA..	3RF2320-3DA..
Connection, main contacts		Screw connection	Loaded spring	Ring type cable lug
Conductor cross-section				
○ Solid	mm ²	2 x (1.5 ... 2.5), 2 x (2.5 ... 6)	2x (0.5 ... 2.5)	
○ Stranded with connector sleeve	mm ²	2 x (1 ... 2.5), 2 x (2.5 ... 6), 1 x 10	2x (0.5 ... 1.5)	
○ Stranded w/o connector sleeve	mm ²		2x (0.5 ... 2.5)	
○ Solid or stranded	AWG	2 x (14 ... 10)	2 x (18 ... 14)	
Stripping length	mm	10	10	
Terminal screw		M4	-	M5
○ Tightening torque	Nm	2 ... 2.5	-	2.5 ... 2
	lb.in	18 ... 22	-	18 ... 22
Cable lug	DIN	-	-	DIN 46234 -5-2.5, -5-6, -5-10, -5-16, -5-25
	JIS	-	-	JIS C 2805 R 2-5, 5.5-5, 8-5, 14-5
Connection, auxil. / control contacts				
Conductor cross-section	mm ²	0.5 ... 2.5	0.5 ... 1.5	0.5 ... 2.5
	AWG	20 ... 12	20 ... 12	20 ... 12
Stripping length	mm	7	10	7
Terminal screw		M3	-	M3
○ Tightening torque	Nm	0.5 ... 0.6	-	0.5 ... 0.6
	lb.in	4.5 ... 5.3	-	4.5 ... 5.3

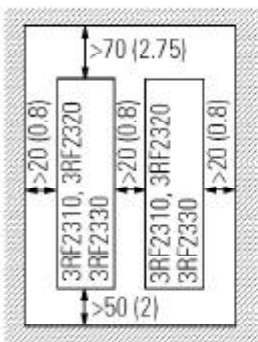
Main Circuit:

Type		3RF2320-?DA? 2	3RF2320-?DA? 4
Rated operating voltage U_e	V	24 ... 230	230 ... 460
• Tolerance	%	-15/+10	
• Rated frequency	Hz	50/60	
Rated insulation voltage U_i	V	600	
Blocking voltage	V	800	1200
Slew rate	V/ μ s	1000	

At 40 °C ambient temperature, refer to Characteristic Curves	I_{max}	I_e in acc. with IEC947-4-3	I_e UL/CSA	Power loss at I_{max}	Min. load current	Leakage current
Type	A	A	A	W	A	A
3RF2320-?DA.	20	13.2	17.6	20	0.5	0.01

	Rated peak withstand current I_{tsm}	I^2t value
Type	A	A ² s
3RF2320-?DA.	1150	6600

Minimum Clearances for Individual Mounting¹:



Characteristic Curves:

3RF2320-

Upper curves:

I_{max} thermal limit current

Lower curves:

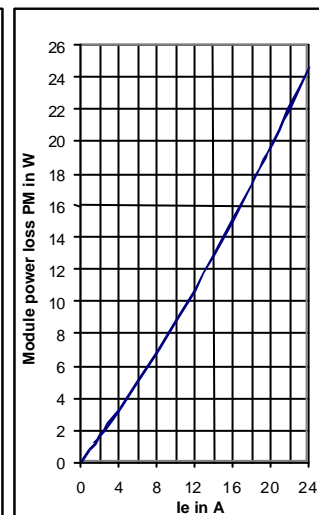
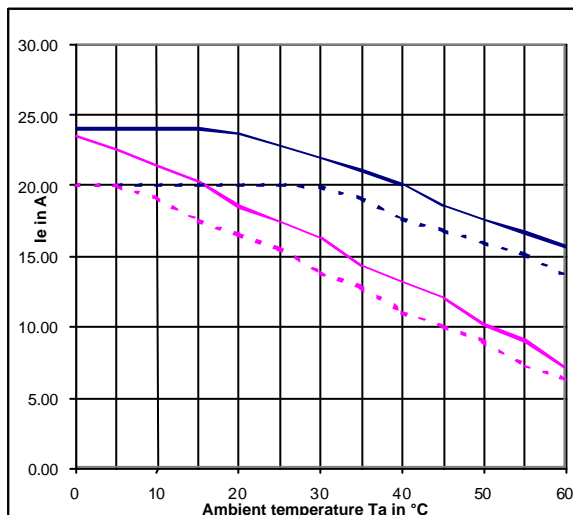
Rated current I_e in acc. with DIN EN 60947-4-3

Continuous lines:

Individual mounting

Dashed lines:

Side-by-side mounting



¹ Dimensions in mm, (in)

SIRIUS SC 3RF23...-DA.. Solid-State Contactors - Short-Circuit Proof**Fused Design with Semiconductor Protection²**

Type	General purpose fuse LV HRC design gR/SITOR 3NE 1	Semiconductor ferrule fuse		
		10 x 38 mm aR / SITOR	14 x 51 mm aR / SITOR	22 x 58 mm aR / SITOR
3RF2320-?DA?2	3NE1820-0			3NC2280
3RF2320-?DA?4	3NE1020-0			3NC2280

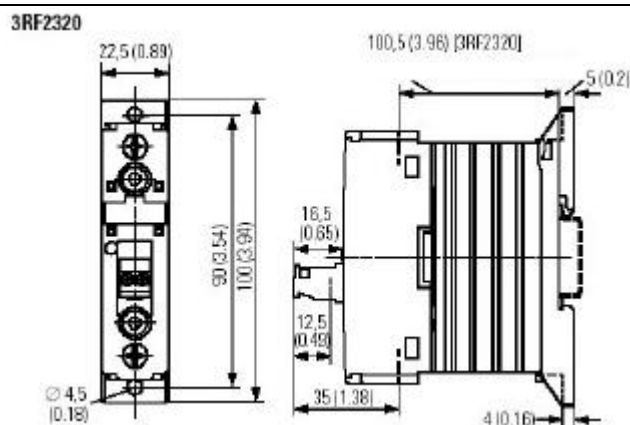
Semiconductor Protection in Fuseless Built-On Accessories

The following miniature circuit-breakers with B characteristic and 10 kA breaking capacity protect the 3RF2320-.DA.. solid-state contactors against short-circuits at the load and at the indicated conductor cross-sections and lengths:

Rated current of the miniature circuit-breaker	Example Type	Max. line cross-section	Line length from the contactor to the load
6 A	5SY4106-6	1 mm ²	5 m
10 A	5SY4110-6	1.5 mm ²	8 m
16 A	5SY4116-6	1.5 mm ²	12 m
16 A	5SY4116-6	2.5 mm ²	20 m
20 A	5SY4120-6	2.5 mm ²	20 m

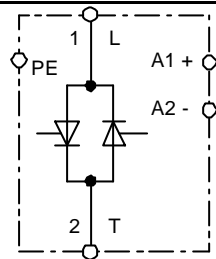
Control Circuit:

Type		3RF2320-?DA0.	3RF2320-?DA2.
Operating type		DC operation	AC operation
Rated control supply voltage U_s	V	24 in acc. with EN 61131-2	110 ... 230
Rated operating voltage U_c	V	30	253
Rated operating current	mA	15	6
Rated frequency of the control supply voltage	Hz		50/60
Threshold voltage	V	15	90
• At threshold current	mA	2	2
Drop-out voltage	V	5	40
Switching times ON delay	ms	1 + add. max. one half wave	40 + 1 + add. max. one half wave
OFF delay	ms	1 + add. max. one half wave	40 + 1 + add. max. one half wave

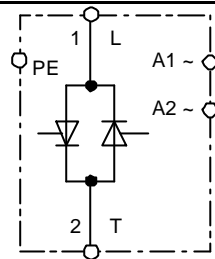
Dimension Drawing³:

² The table contains the maximum fuse size permissible. Smaller fuses with a rated current down to the rated current of the load can be used without concern.

³ Dimensions in mm, (in)

SIRIUS SC 3RF23...-DA.. Solid-State Contactors - Short-Circuit Proof**Equipment Circuit Diagram:**

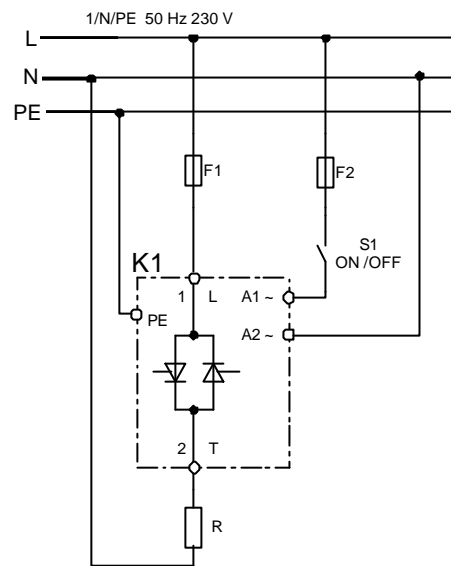
3RF2320-?DA0.
Us = 24 V DC



3RF2320-?DA2.
Us = 110 ... 230 V AC

Sample Circuit Diagram:

- F1 Main circuit fuse
F2 Control circuit fuse
K1 3RF2 solid-state relay
R Load resistance

**Accessories:**

Function module	Order No.	Applicable with the following types	Versions
Converter	3RF2900-0EA18	3RF2320-?DA0.	Us = 24 V DC
Basic load monitoring	3RF2920-0FA08	3RF2320-1DA0.	Screw connection, Us = 24 V DC
Extended load monitoring ⁴	3RF29...-0GA..	3RF2320-1.	Screw connection
		3RF2320-3.	Ring-type cable lug
Terminal cover ⁵	3RF2900-3PA88	3RF2320-1.	Screw connection
		3RF2320-3.	Ring-type cable lug

⁴ The exact assignment of function modules is available in the LV 10 catalog.

⁵ With screw connections, the terminal cover must be adjusted for use.