

**SIRIUS SC 3RF23..-BA.. Instantaneous Switching Solid-State Contactors****Main Characteristics:**

Instantaneous Switching.  
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

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

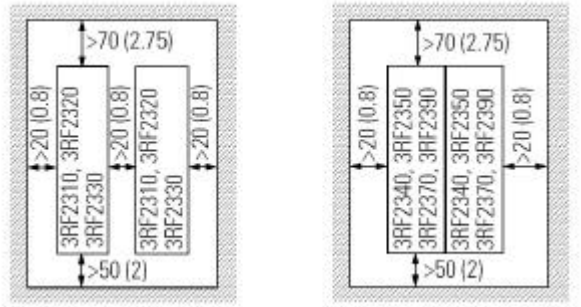
Type		3RF23??-1BA..	3RF23??-3BA..
<b>Connection, main contacts</b>		<b>Screw connection</b>	<b>Ring type cable lug</b>
Conductor cross-section			
o Solid	mm <sup>2</sup>	2 x (1.5 ... 2.5), 2 x (2.5 ... 6)	
o Stranded with connector sleeve	mm <sup>2</sup>	2 x (1 ... 2.5), 2 x (2.5 ... 6), 1 x 10	
o Stranded w/o connector sleeve	mm <sup>2</sup>		
o Solid or stranded	AWG	2 x (14 ... 10)	
Stripping length	mm	10	
Terminal screw		M 4	M 5
o Tightening torque	Nm lb.in	2 ... 2.5 18 ... 22	2.5 ... 2 18 ... 22
Cable lug	DIN	-	DIN 46234
	JIS	-	-5-2.5, -5-6, -5-10, -5-16, -5-25
			JIS C 2805 R 2-5, 5.5-5, 8-5, 14-5
<b>Connection, auxil. / control contacts</b>			
Conductor cross-section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 2.5
	AWG	20 ... 12	20 ... 12
Stripping length	mm	7	7
Terminal screw		M 3	M 3
o Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	0.5 ... 0.6 4.5 ... 5.3

Main Circuit:				
Type		3RF23??-?BA?2	3RF23??-?BA?4	3RF23??-?BA?6
<b>Rated operating voltage <math>U_e</math></b>	V	24 ... 230	230 ... 460	400 ... 600
	%	-15/+10		
	Hz	50/60		
<b>Rated insulation voltage <math>U_i</math></b>	V	600		
<b>Blocking voltage</b>	V	800	1200	1600
<b>Slew rate</b>	V/ $\mu$ s	1000		

Type	$I_{max}$	$I_e$ in acc. with IEC947-4-3	$I_e$ UL/CSA	$I_{AC-15}$	Parameters	Power loss at $I_{max}$	Min. load current	Leakage current
3RF2310-1B.	10,5	7.5	9.6	6	1200 1/h 50 % ED	11	0.5	0.01
3RF2320-1B.	20	13.2	17.6	12	1200 1/h 50 % ED	20	0.5	0.01
3RF2330-1B.	30	22	27	15	1200 1/h 50 % ED	33	0.5	0.01
3RF2340-1B.	40	33	36	20	1200 1/h 50 % ED	44	0.5	0.01
3RF2350-1B.	50	36	45	25	1200 1/h 50 % ED	54	0.5	0.01
3RF2370-? B.	70	70	62	27,5	1200 1/h 50 % ED	83	0.5	0.01
3RF2390-? B.	88	88	80	30	1200 1/h 50 % ED	117	0.5	0.01

Type	Rated peak withstand current $I_{tsm}$	$I^2t$ value
3RF2310-1BA? 2	200	200
3RF2310-1BA? 4	200	200
3RF2310-1BA? 6	400	800
3RF2320-1B.	600	1800
3RF2330-1B.	600	1800
3RF2340-1BA? 2	1200	7200
3RF2340-1BA? 4	1200	7200
3RF2340-1BA? 6	1150	6600
3RF2350-1B.	1150	6600
3RF2370-? B.	1150	6600
3RF2390-? B.	1150	6600

### Minimum Clearances for Individual Mounting<sup>1</sup>:



### Characteristic Curves:

3RF2310-.

#### Upper curves:

$I_{max}$  thermal limit current

#### Lower curves:

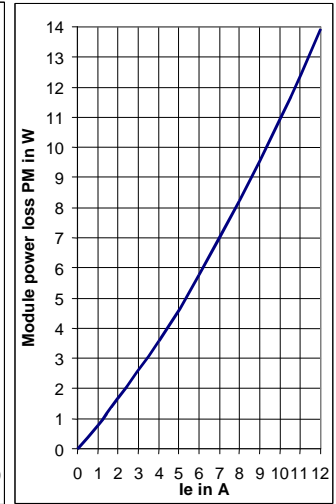
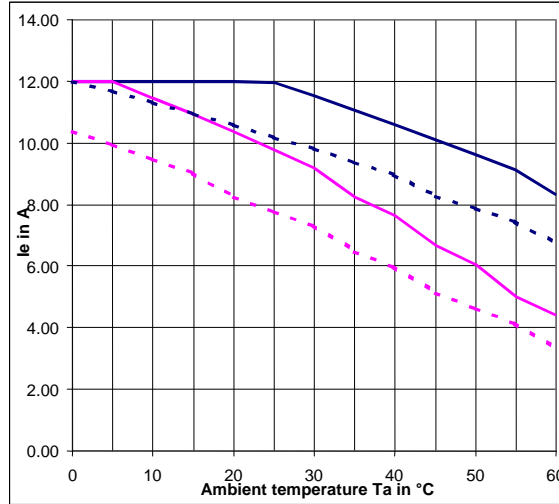
Rated current  $I_e$  in acc. with DIN EN 60947-4-3

#### Continuous lines:

Individual mounting

#### Dashed lines:

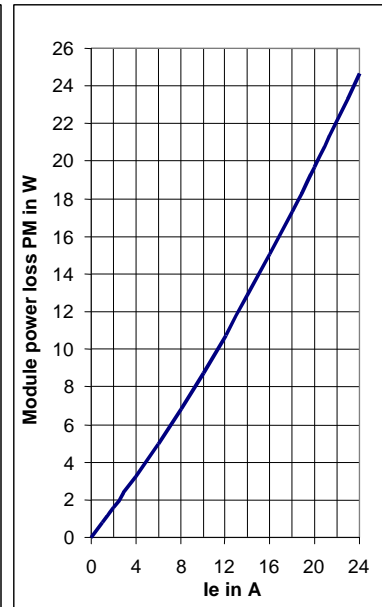
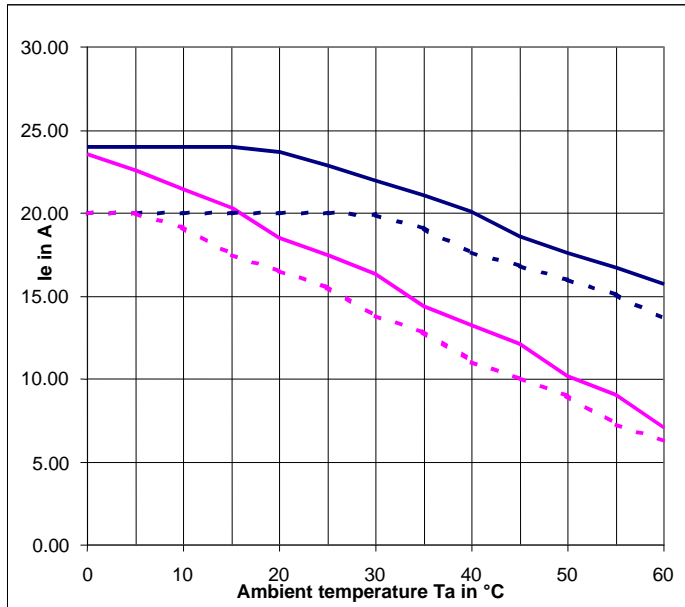
Side-by-side mounting



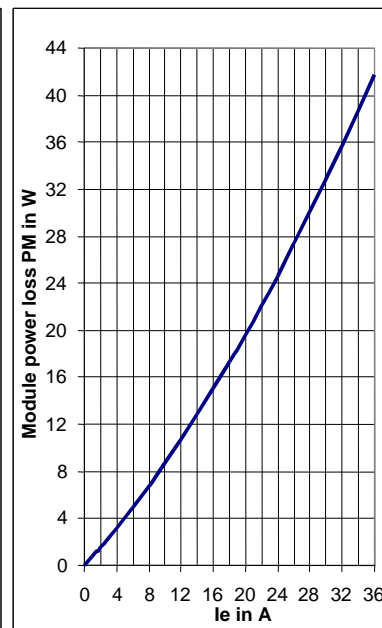
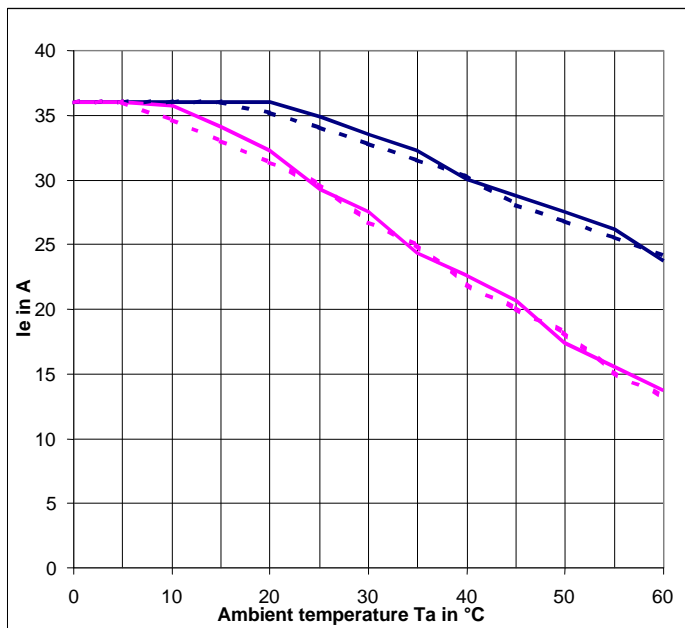
<sup>1</sup> Dimensions in mm, (in)

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3RF2320-.

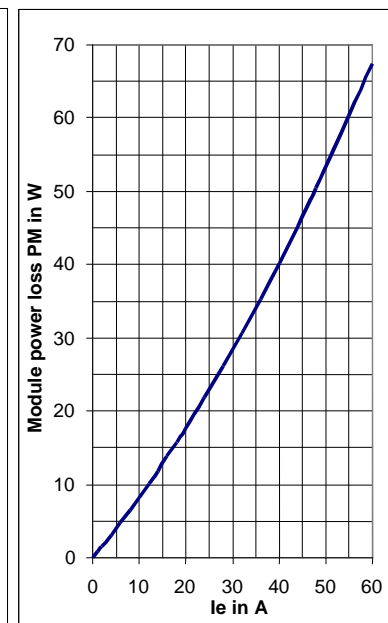
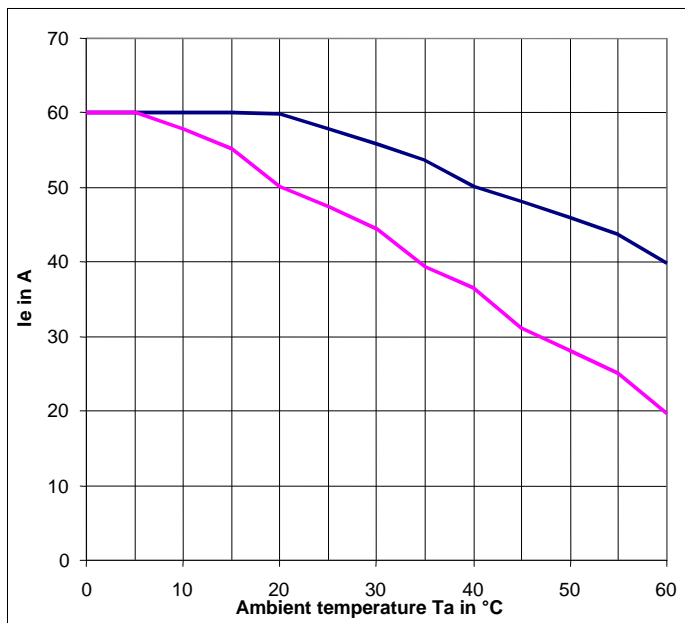
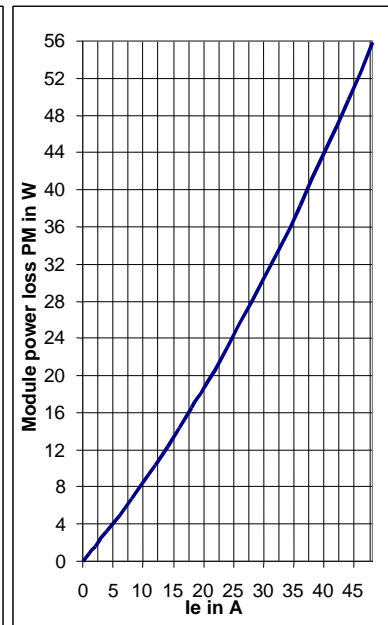
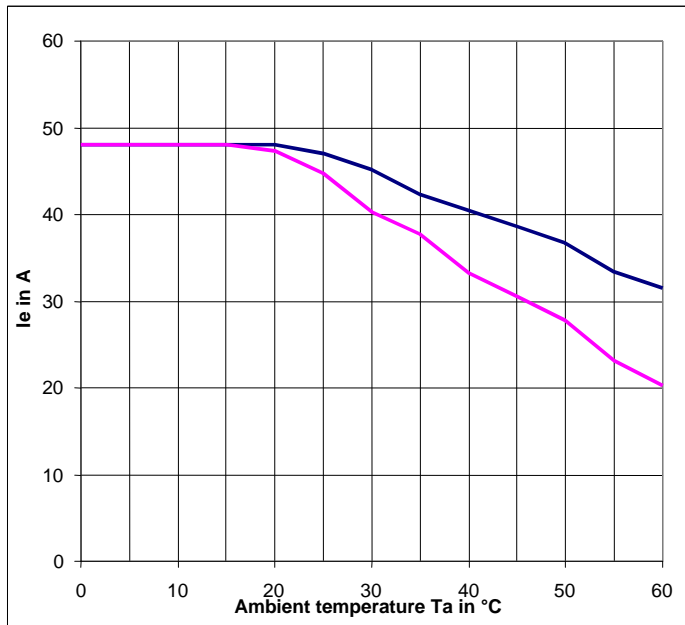


3RF2330-.



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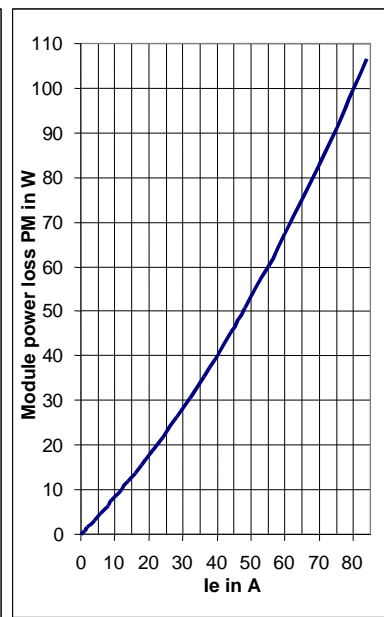
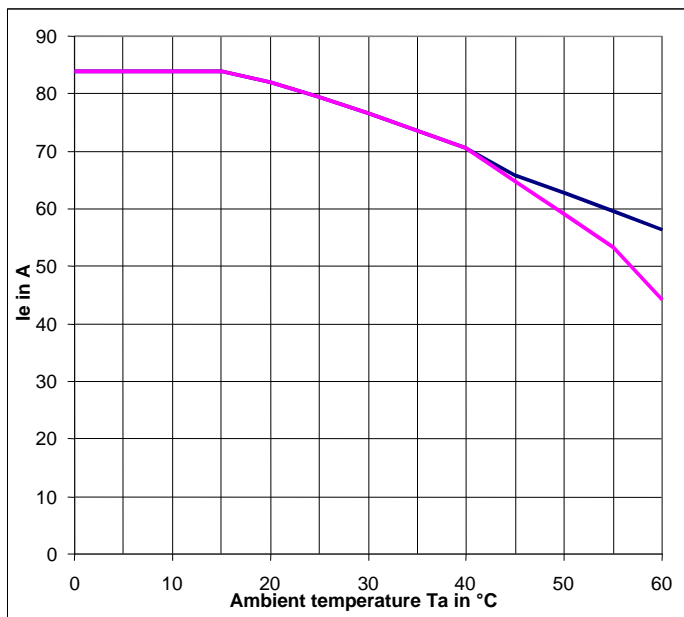
3RF2340-.



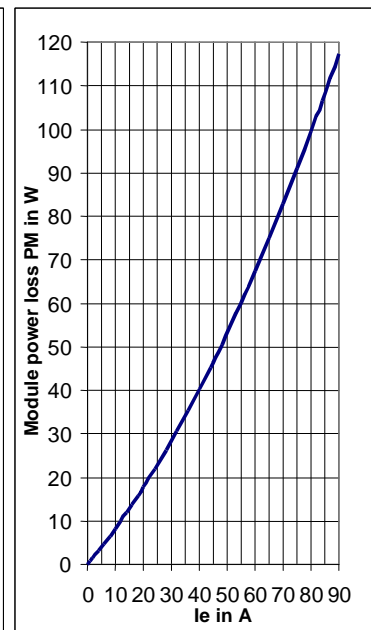
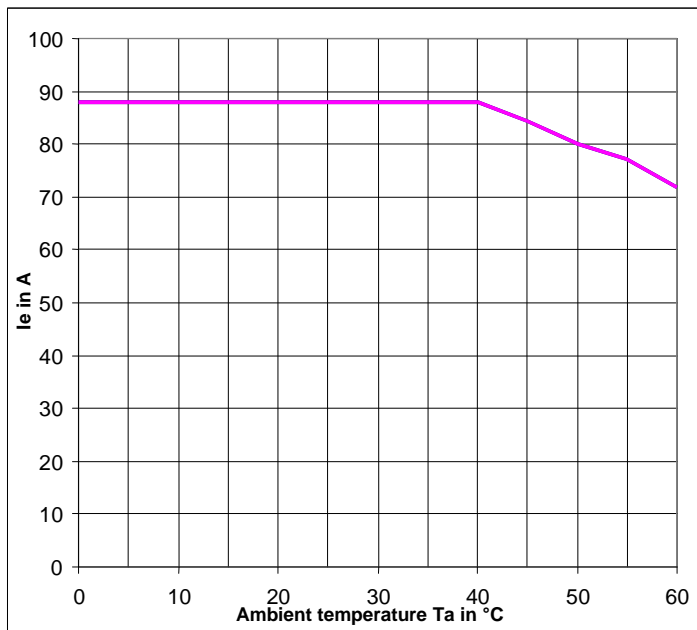
3RF2350-.

**SIRIUS SC 3RF23..-BA.. Instantaneous Switching Solid-State Contactors**

3RF2370-.



3RF2390-.

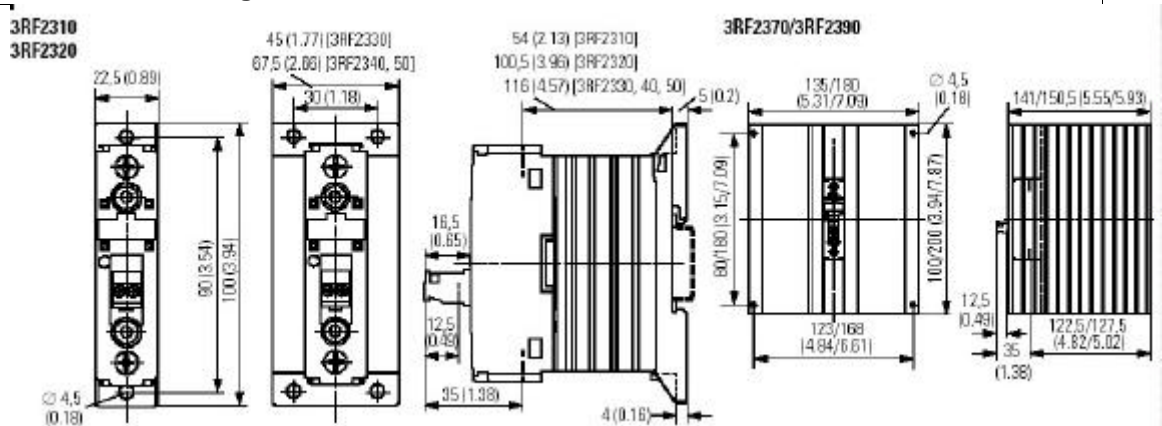


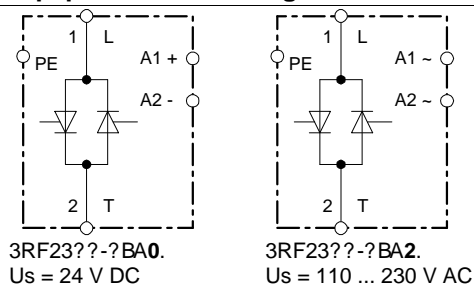
**SIRIUS SC 3RF23..-BA.. Instantaneous Switching Solid-State Contactors****Fused Design with Semiconductor Protection**

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
3RF2310-1BA.	3NE1813-0	3NC1010	3NC1410	3NC2220
3RF2320-1BA.	3NE1814-0	3NC1020	3NC1420	3NC2220
3RF2330-1BA.	3NE1803-0	3NC1032	3NC1430	3NC2232
3RF2340-1BA.	3NE1802-0	-	3NC1440	3NC2240
3RF2350-1BA.	3NE1817-0	-	3NC1450	3NC2250
3RF2370-? BA? 2	3NE1820-0	-	-	3NC2280
3RF2370-? BA? 4	3NE1818-0	-	-	3NC2280
3RF2370-? BA? 6	3NE1818-0	-	-	3NC2280
3RF2390-? BA? 2	3NE1820-0	-	-	3NC2280
3RF2390-? BA? 4	3NE1020-2	-	-	3NC2280
3RF2390-? BA? 6	3NE1020-2	-	-	3NC2280

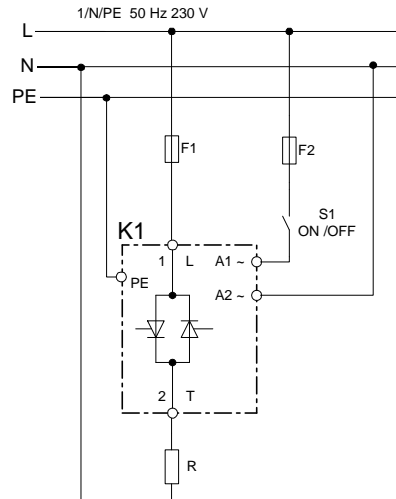
**Control Circuit:**

Type		3RF23??-?BA0.	3RF23??-?BA2.
<b>Operating type</b>		DC operation	AC operation
<b>Rated control supply voltage</b> $U_s$	V	24 in acc. with EN 61131-2	110 ... 230
<b>Rated operating voltage</b> $U_c$	V	30	253
<b>Rated operating current</b>	mA	15	6
<b>Rated frequency</b> of the control supply voltage	Hz		50/60
<b>Threshold voltage</b>	V	15	90
• At threshold current	mA	2	2
<b>Drop-out voltage</b>	V	5	40
<b>Switching times</b> ON delay	ms	1 + add. max. one half wave	40 + add. max. one half wave
OFF delay	ms	1 + add. max. one half wave	40 + add. max. one half wave

**Dimension Drawing<sup>2</sup>:**<sup>2</sup> Dimensions in mm, (in)

**SIRIUS SC 3RF23...-BA.. Instantaneous Switching Solid-State Contactors****Equipment Circuit Diagram:****Sample Circuit Diagram:**

- F1 Main circuit fuse  
(semiconductor protection  
is recommended)
- F2 Control circuit fuse
- K1 3RF2 solid-state relay
- R Load resistance

**Accessories:**

Function module	Order No.	Applicable with the following types	Versions
Converter	3RF2900-0E A18	3RF23??-?B/0.	Us = 24 V DC
Basic load monitoring	3RF2920-0F A08	3RF23??-1B/0.	Screw connection, Us = 24 V DC
Extended load monitoring <sup>3</sup>	3RF29...0G ...	3RF23??-1. 3RF23??-3.	Screw connection Ring type cable lug
Output regulator	3RF29...0H ...	3RF23??-1B/...	Screw connection
Terminal cover <sup>4</sup>	3RF2900-3F A88	3RF23??-3B/... 3RF23??-1. 3RF23??-3.	Ring type cable lug Screw connection Ring type cable lug

<sup>3</sup> The exact assignment of function modules is available in the LV 10 catalog.

<sup>4</sup> The terminal cover can be easily adjusted for screw connection systems.