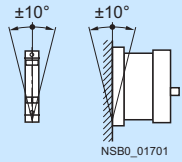


Technical specifications

Type		3RF23 ...-A...	3RF23 ...-B...	3RF23 ...-C...	3RF23 ...-D...
General data					
Ambient temperature					
• During operation, derating from 40 °C	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Installation altitude	m	0 ... 1000; derating from 1000			
Shock resistance According to IEC 60068-2-27	g/ms	15/11			
Vibration resistance According to IEC 60068-2-6	g	2			
Degree of protection		IP20			
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-3 - Conducted interference voltage - Emitted, high-frequency interference voltage		Class A for industrial applications		Class A for industrial applications; Class B for residential/ business/ commercial applications up to 16 A, AC51 Low Noise	Class A for industrial applications
• Interference immunity - Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2			
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1			
- Burst according to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 1			
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2			

Type		3RF23 ...-1....	3RF23 ...-2....	3RF23 ...-3....
General data				
Connection type		Screw terminals	Spring-loaded terminal connections	Ring terminal end connections
Connection, main contacts				
• Conductor cross-section				
- Solid	mm ²	2 x (1.5 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾	2x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm ²	--	2x (0.5 ... 2.5)	--
- Solid or stranded, AWG conductors		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Terminal screw		M4	--	M5
• Tightening torque	Nm lb.in	2 ... 2.5 7 ... 10.3	--	2 ... 2.5 7 ... 10.3
• 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, auxiliary/control contacts				
• Conductor cross-section	mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) AWG 20 ... 12	0.5 ... 2.5 AWG 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) AWG 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	NM lb.in	0.5 ... 0.6 4.5 ... 5.3	--	0.5 ... 0.6 4.5 ... 5.3
Permissible mounting positions				
				

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

Type		3RF23 ..-....2	3RF23 ..-....4	3RF23 ..-....5	3RF23 ..-....6
Main circuit					
Rated operational voltage U_e	V	24 ... 230	48 ... 460	48 ... 600	48 ... 600
• Operating range	V	20 ... 253	40 ... 506	40 ... 660	40 ... 660
• Rated frequency	Hz	50/60 ±10 %			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1200	1600	
Rate of voltage rise	V/μs	1000			

Solid-State Contactors

3RF23 solid-state contactors, single-phase

Type	Type current AC-51 ¹⁾			Power loss at $I_{\max}$	Minimum load current	Leakage current	Rated impulse withstand capacity I_{tsm}	I^2t value
	for $I_{\max}$ at 40 °C	according to IEC 60947-4-3 for 40 °C	according to UL/CSA for 50 °C					
	A	A	A	W	A	mA	A	A²s
Main circuit								
3RF23 1.-A..2	10.5	7.5	9.6	11	0.1	10	200	200
3RF23 1.-A..4							200	200
3RF23 1.-A..6							400	800
3RF23 2.-A..2	20	13.2	17.6	20	0.5	10	600	1800
3RF23 2.-A..4						10	600	1800
3RF23 2.-A..5						10	600	1800
3RF23 2.-A..6						10	600	1800
3RF23 2.-C..2						25	600	1800
3RF23 2.-C..4						25	600	1800
3RF23 2.-D..2						10	1150	6600
3RF23 2.-D..4						10	1150	6600
3RF23 3.-A..2	30	22	27	33	0.5	10	600	1800
3RF23 3.-A..4						10	600	1800
3RF23 3.-A..6						10	600	1800
3RF23 3.-C..2						25	600	1800
3RF23 3.-D..4						10	1150	6600
3RF23 4.-A..2	40	33	36	44	0.5	10	1200	7200
3RF23 4.-A..4							1200	7200
3RF23 4.-A..5							1200	7200
3RF23 4.-A..6							1150	6600
3RF23 5.-A..2	50	36	45	54	0.5	10	1150	6600
3RF23 5.-A..4								
3RF23 5.-A..5								
3RF23 5.-A..6								
3RF23 7.-A..2	70	70	62	83	0.5	10	1150	6600
3RF23 7.-A..4								
3RF23 7.-A..5								
3RF23 7.-A..6								
3RF23 9.-A..2	88	88	80	117	0.5	10	1150	6600
3RF23 9.-A..4								
3RF23 9.-A..5								
3RF23 9.-A..6								

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the characteristic curves on page 4/26.

Type	Type current AC-51 ¹⁾			Type current AC-15	Parameters	Power loss at $I_{\max}$	Minimum load current	Leakage current	Rated impulse withstand capacity I_{tsm}	I^2t value
	for $I_{\max}$ at 40 °C	according to IEC 60947-4-3 for 40 °C	according to UL/CSA for 50 °C	$10 \times I_e$ for 60 ms						
	A	A	A	A		W	A	mA	A	A²s
Main circuit										
3RF23 1.-B..2	10.5	7.5	9.6	6	1200 1/h 50 % ON-period	11	0.1	10	200	200
3RF23 1.-B..4									200	200
3RF23 1.-B..6									400	800
3RF23 2.-B..2	20	13.2	17.6	12	1200 1/h 50 % ON-period	20	0.5	10	600	1800
3RF23 2.-B..4										
3RF23 2.-B..6										
3RF23 3.-B..2	30	22	27	15	1200 1/h 50 % ON-period	33	0.5	10	600	1800
3RF23 3.-B..4										
3RF23 3.-B..6										
3RF23 4.-B..2	40	33	36	20	1200 1/h 50 % ON-period	44	0.5	10	1200	7200
3RF23 4.-B..4									1200	7200
3RF23 4.-B..6									1150	6600
3RF23 5.-B..2	50	36	45	25	1200 1/h 50 % ON-period	54	0.5	10	1150	6600
3RF23 5.-B..4										
3RF23 5.-B..6										
3RF23 7.-B..2	70	70	62	27.5	1200 1/h 50 % ON-period	83	0.5	10	1150	6600
3RF23 7.-B..4										
3RF23 7.-B..6										
3RF23 9.-B..2	88	88	80	30	1200 1/h 50 % ON-period	117	0.5	10	1150	6600
3RF23 9.-B..4										
3RF23 9.-B..6										

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the characteristic curves on page 4/26.

Solid-State Contactors

3RF23 solid-state contactors, single-phase

Type		3RF23 ...0.	3RF23 ...1.	3RF23 ...2.	3RF23 ...4.
Control circuit					
Method of operation		DC operation	AC/DC operation	AC operation	DC operation
Rated control supply voltage U_s	V	24 acc. to EN 61131-2	24	110 ... 230 AC	4 ... 30
Rated frequency Of the control supply voltage	Hz	--	AC 50/60 Hz / -- DC	50/60 ±10 %	--
Actuating voltage, max.	V	30	26.5 AC / 30 DC	253	30
Typical actuating current	A	20	20	15	20
Response voltage	V	15	14 AC / 15 DC	90	4
Drop-out voltage	V	5	5	40	1
Operating times					
• ON-delay	ms	1 + additional max. one half-wave ¹⁾	AC: 40 + additional max. one half-wave ¹⁾ DC: 1 + additional max. one half-wave ¹⁾	40 + additional max. one half-wave ¹⁾	1 + additional max. one half-wave ¹⁾
• OFF-delay	ms	1 + additional max. one half-wave	AC: 1 + additional max. one half-wave DC: 1 + additional max. one half-wave	40 + additional max. one half-wave	1 + additional max. one half-wave

¹⁾ Only for zero-point-switching devices.

Fused version with semiconductor protection (similar to type of coordination "2")¹⁾

The semiconductor protection for the SIRIUS controls can be used with different protective devices. This allows protection by means of LV HRC fuses of gG operational class or miniature circuit breakers. Siemens recommends the use of special SITOP semiconductor fuses. The table below lists the maximum permissible fuses for each SIRIUS control.

If a fuse is used with a higher rated current than specified, semiconductor protection is no longer guaranteed. However, smaller fuses with a lower rated current for the load can be used without problems.

For protective devices with gG operational class and for SITOP full range fuses 3NE1, the minimum cross-sections for the conductor to be connected must be taken into account.

Type	All-range fuses	Semiconductor fuses				Cable and line protection fuses					DIAZED
		LV HRC design	Cylindrical design			LV HRC design	Cylindrical design				
		LV HRC design gR/SITOR 3NE1	aR/SITOR 3NE8	10 x 38 mm aR/SITOR 3NC1 0	14 x 51 mm aR/SITOR 3NC1 4	22 x 58 mm aR/SITOR 3NC2 2	gG 3NA	10 x 38 mm gG 3NW	14 x 51 mm gG 3NW	22 x 58 mm gG 3NW	
3RF23 1.-.....2	3NE1 813-0	3NE8 015-1	3NC1 010	3NC1 410	3NC2 220	3NA2 803	3NW6 001-1	3NW6 101-1	--	5SB1 41	
3RF23 1.-.....4	3NE1 813-0	3NE8 015-1	3NC1 010	3NC1 410	3NC2 220	3NA2 801	3NW6 001-1	3NW6 101-1	--	5SB1 41	
3RF23 1.-.....6	3NE1 813-0	3NE8 015-1	3NC1 010	3NC1 410	3NC2 220	3NA2 803-6	--	--	--	--	
3RF23 2.-.....2	3NE1 814-0	3NE8 015-1	3NC1 020	3NC1 420	3NC2 220	3NA2 807	3NW6 007-1	3NW6 107-1	3NW6 207-1	5SB1 71	
3RF23 2.-.....4	3NE1 814-0	3NE8 015-1	3NC1 020	3NC1 420	3NC2 220	3NA2 807	3NW6 005-1	3NW6 105-1	3NW6 205-1	5SB1 71	
3RF23 2.-.....5	3NE1 814-0	3NE8 015-1	3NC1 020	3NC1 420	3NC2 220	3NA2 807-6	--	--	--	--	
3RF23 2.-.....6	3NE1 814-0	3NE8 015-1	3NC1 020	3NC1 420	3NC2 220	3NA2 807-6	--	--	--	--	
3RF23 3.-.....2	3NE1 803-0	3NE8 003-1	3NC1 032	3NC1 432	3NC2 232	3NA2 810	--	3NW6 107-1	3NW6 207-1	5SB3 11	
3RF23 3.-.....4	3NE1 803-0	3NE8 003-1	3NC1 032	3NC1 432	3NC2 232	3NA2 807	--	3NW6 105-1	3NW6 205-1	5SB3 11	
3RF23 3.-.....6	3NE1 803-0	3NE8 003-1	3NC1 032	3NC1 432	3NC2 232	3NA2 807-6	--	--	--	--	
3RF23 4.-.....2	3NE1 802-0	3NE8 017-1	--	3NC1 440	3NC2 240	3NA2 817	--	3NW6 117-1	3NW6 217-1	5SB3 21	
3RF23 4.-.....4	3NE1 802-0	3NE8 017-1	--	3NC1 440	3NC2 240	3NA2 812	--	3NW6 112-1	3NW6 212-1	5SB3 21	
3RF23 4.-.....5	3NE1 802-0	3NE8 017-1	--	3NC1 440	3NC2 240	3NA2 812-6	--	--	--	--	
3RF23 4.-.....6	3NE1 802-0	3NE8 017-1	--	3NC1 440	3NC2 240	3NA2 812-6	--	--	--	--	
3RF23 5.-.....2	3NE1 817-0	3NE8 018-1	--	3NC1 450	3NC2 250	3NA2 817	--	3NW6 117-1	3NW6 217-1	5SB3 21	
3RF23 5.-.....4	3NE1 817-0	3NE8 018-1	--	3NC1 450	3NC2 250	3NA2 812	--	--	3NW6 210-1	5SB3 21	
3RF23 5.-.....5	3NE1 817-0	3NE8 018-1	--	3NC1 450	3NC2 250	3NA2 812-6	--	--	--	--	
3RF23 5.-.....6	3NE1 817-0	3NE8 018-1	--	3NC1 450	3NC2 250	3NA2 812-6	--	--	--	--	
3RF23 7.-.....2	3NE1 820-0	3NE8 020-1	--	--	3NC2 280	3NA2 817	--	--	3NW6 217-1	5SB3 31	
3RF23 7.-.....4	3NE1 020-2	3NE8 020-1	--	--	3NC2 280	3NA2 812	--	--	3NW6 210-1	5SB3 21	
3RF23 7.-.....5	3NE1 020-2	3NE8 020-1	--	--	3NC2 280	3NA2 812-6	--	--	--	--	
3RF23 7.-.....6	3NE1 020-2	3NE8 020-1	--	--	3NC2 280	3NA2 812-6	--	--	--	--	
3RF23 9.-.....2	3NE1 021-2	3NE8 021-1	--	--	3NC2 200	3NA2 817	--	--	3NW6 217-1	5SB3 31	
3RF23 9.-.....4	3NE1 021-2	3NE8 021-1	--	--	3NC2 280 ²⁾	3NA2 812	--	--	3NW6 210-1	5SB3 21	
3RF23 9.-.....5	3NE1 020-2 ²⁾	3NE8 021-1	--	--	3NC2 280 ²⁾	3NA2 812-6	--	--	--	--	
3RF23 9.-.....6	3NE1 020-2 ²⁾	3NE8 021-1	--	--	3NC2 280 ²⁾	3NA2 812-6	--	--	--	--	

Suitable fuse holders, fuse bases and controls can be found in Catalog LV 1, Chapter 19.

¹⁾ Type of coordination "2" according to EN 60947-4-1:

In the event of a short-circuit, the controls in the load feeder must not endanger persons or the installation. They must be suitable for further operation. For fused configurations, the protective device must be replaced.

²⁾ These fuses have a smaller rated current than the solid-state contactors.