

Technical specifications				
Type		3RF22 ...-1....	3RF22 ...-2....	3RF22 ...-3....
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1000; > 1000 ask Technical Assistance		
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		
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4000		
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage according to IEC 60947-4-3		Class A for industrial applications ¹⁾		
- Emitted, high-frequency interference voltage according to IEC 60947-4-3		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		
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) ²⁾ , 2 x (2.5 ... 6) ²⁾	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ²⁾ , 2 x (2.5 ... 6) ²⁾ , 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG conductors		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Stripped length	mm	10	10	
• Terminal screw		M4	--	M5
- Tightening torque, Ø 5 ... 6 mm, PZ 2	Nm	2 ... 2.5		2.5 ... 2
	lb.in	18 ... 22		18 ... 22
• Cable lug		--	--	
- According to DIN 46234				5-2.5 ... 5-25
- According to JIS C 2805				R 2-5 ... 14-5
Connection, auxiliary/control contacts				
• Conductor cross-section, with or without end sleeve	mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12	0.5 ... 2.5 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
- Tightening torque, Ø 3.5, PZ 1	Nm	0.5 ... 0.6		0.5 ... 0.6
	lb.in	4.5 ... 5.3		4.5 ... 5.3

1) These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

2) 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.

Solid-State Relays

3RF22 solid-state relays, 3-phase, 45 mm

Type	$I_{\max}^{1)}$ at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e acc. to IEC 60947-4-3 at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e according to UL/CSA at $R_{\text{thha}}/T_u = 50\text{ °C}$		Power loss at I_{\max}	Minimum load current	Max. leakage current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF22 30-. AB..	30	0.57	30	0.57	30	0.44	81	0.5	10
3RF22 55-1AB..	55	0.18	50	0.27	50	0.19	151	0.5	10
3RF22 55-2AB..			20	1.83	20	1.58			
3RF22 55-3AB..			50	0.27	50	0.19			
3RF22 30-. AC..	30	0.33	30	0.33	30	0.25	122	0.5	10
3RF22 55-1AC..	55	0.09	50	0.15	50	0.1	226	0.5	10
3RF22 55-2AC..			20	1.19	20	1.02			
3RF22 55-3AC..			50	0.15	50	0.1			

¹⁾ I_{\max} provides information about the performance of the solid-state relay.
The actual permitted rated operational current I_e can be smaller
depending on the connection method and cooling conditions.

Type	Rated impulse withstand capacity I_{tsm}	I^2t value
A		A ² s
Main circuit		
3RF22 30-...5	300	450
3RF22 55-...5	600	1800

Type		3RF22 ...-AB.5	3RF22 ...-AC.5
Main circuit			
Controlled phases		Two-phase	Three-phase
Rated operational voltage U_e		V	48 ... 600
• Operating range		V	40 ... 660
• Rated frequency		Hz	50/60 ±10 %
Rated insulation voltage U_i		V	600
Rated impulse withstand voltage U_{imp}		kV	6
Blocking voltage		V	1200
Rage of voltage rise		V/μs	1.000

Type		3RF22 ...-AB.4.	3RF22 ...-AC.4.
Control circuit			
Method of operation		DC operation	DC operation
Rated control supply voltage U_s		V	4 ... 30
Typical actuating current		mA	30
Response voltage		V	15
Drop-out voltage		V	1
Operating times			
• ON-delay		ms	1 + max. one half-wave
• OFF-delay		ms	1 + max. one half-wave

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

The semiconductor protection for the 3RF22 controls can be used with different protective devices. Siemens recommends the use of special SITOR semiconductor fuses. The table below lists the maximum permissible fuses for each 3RF22 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.

Order No.	All-range fuses	Semiconductor fuses				Cable and line protection fuses			
		LV HRC design	Cylindrical design			LV HRC design	Cylindrical design		
		gR/SITOR	10 x 38 mm	14 x 51 mm	22 x 58 mm	gG	10 x 38 mm	14 x 51 mm	22 x 58 mm
		3NE1	aR/SITOR	aR/SITOR	aR/SITOR	3NA	gG	gG	gG
			3NC1 0	3NC1 4	3NC2 2		3NW	3NW	3NW
Rated operational voltage U_e up to 506 V									
3RF22 30-.....	3NE1 814-0	3NE8 003-1	3NC1 032	3NC1 430	3NC2 232	3NA3 803-6	--	3NW6 101-1	3SB1 17
3RF22 55-.....	3NE1 802-0	3NE8 020-1	--	3NC1 450	3NC2 263	3NA3 807-6	--	3NW6 205-1	3SB3 11
Rated operational voltage U_e up to 660 V									
3RF22 30-.....	3NE1 814-0	3NE8 003-1	3NC1 025	3NC1 430	3NC2 232	3NA3 803-6	--	--	--
3RF22 55-.....	3NE1 803-0	3NE8 018-1	--	3NC1 450	3NC2 250	3NA3 805-6	--	--	--

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.