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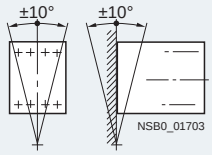
Technical specifications

Order No.		3RF24 ..-1....	3RF24 ..-2....	3RF24 ..-3....
Dimensions (W x H x D)		See overleaf		
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 acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. 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 acc. to IEC 60947-4-3 - Conducted interference voltage		Class A for industrial applications[1]		
• Interference immunity - Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Connection type		**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Connection, main contacts				
• Conductor cross-section				
- Solid	mm^2	2 x (1.5 ... 2.5)[2]; 2 x (2.5 ... 6)[2]	2x (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	2x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Stripped length	mm	10	10	--
• Terminal screw		M4	--	M5
- Tightening torque	Nm	2 ... 2.5		2 ... 2.5
	lb.in	18 ... 22		18 ... 22
• Cable lug		--	--	
- Acc. to DIN 46234				5-2.5 ... 5-25
- Acc. to JIS C 2805				R 2-5 ,,, 14-5
Connection, auxiliary/control contacts				
• Conductor cross-section	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	0.5 ... 2.5	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	AWG 20 ... 12	AWG 20 ... 12	AWG 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
- Tightening torque, ∅ 3.5 mm, PZ 1	Nm	0.5 ... 0.6		0.5 ... 0.6
	lb.in	4.5 ... 5.3		4.5 ... 5.3
Grounding screw[3]				
• Size (standard screw)		M4	M4	M4
Permissible mounting positions				

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. The versions 3RF24 ..-1AC55 comply with Class B for residential, business and commercial applications

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.

3) The screw is not included in the scope of supply.

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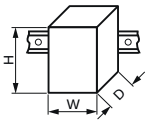
SIRIUS 3RF24 solid-state contactors, three-phase

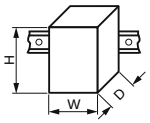
Order No.	Type current I_{AC-51} at 40 °C	Rated operational current I_e Acc. to IEC 60947-4-3 for 40 °C	Rated operational current I_e Acc. to UL/CSA for 50 °C	Power loss at I_{AC-51}	Minimum load current	Max. leakage current	Rated impulse withstand capacity I_{tsm}	I^2t value
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF24 10-.AB.5	10.5	7	7	23	0.1	10	200	200
3RF24 20-.AB.5	22	15	15	44	0.5	10	600	1800
3RF24 30-.AB.5	30	22	22	61	0.5	10	1200	7200
3RF24 40-.AB.5	40	30	30	80	0.5	10	1150	6600
3RF24 50-.AB.5	50	38	38	107	0.5	10	1150	6600
3RF24 10-.AC.5	10.5	7	7	31	0.1	10	300	450
3RF24 20-.AC.5	22	15	15	66	0.5	10	600	1800
3RF24 30-.AC.5	30	22	22	91	0.5	10	1200	7200
3RF24 40-.AC.5	40	30	30	121	0.5	10	1150	6600
3RF24 50-.AC.5	50	38	38	160	0.5	10	1150	6600

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.

Order No.	Type current AC-51	Dimensions W x H x D (including heat sink)
	A	mm
Main circuit		
3RF24 10-.AB..	10.5	45 x 100 x 105
3RF24 10-.AC..		
3RF24 20-.AB..	22	67 x 100 x 112.5
3RF24 20-.AC..	22	89.5 x 100 x 112.5
3RF24 30-.AB..	30	



Order No.	Type current AC-51	Dimensions W x H x D (including heat sink)
	A	mm
Main circuit		
3RF24 30-.AC..	30	113.5 x 100 x 121
3RF24 40-.AB..	40	
3RF24 40-.AC..	40	157.5 x 100 x 121
3RF24 50-.AB..	50	
3RF24 50-.AC..	50	157.5 x 180 x 121



Type		3RF24 ..-.AB.5	3RF24 ..-.AC.5
Main circuit			
Controlled phases		2-phase	3-phase
Rated operational voltage U_e	V AC	48 ... 600	48 ... 600
• Operating range	V AC	40 ... 660	40 ... 660
• Rated frequency	Hz	50/60 ± 10 %	50/60 ± 10 %
Rated insulation voltage U_i	V	600	600
Rated impulse withstand voltage U_{imp}	kV	6	6
Blocking voltage	V	1200	1200
Rage of voltage rise	V/µs	1000	1000

Type		3RF24 ..-...3.	3RF24 ..-...4.	3RF24 ..-...5.
Control circuit				
Method of operation		AC operation	DC operation	AC operation
Rated control supply voltage U_s	V	110	4 ... 30	190 ... 230
Rated frequency of the control supply voltage	Hz	50/60 ± 10 %	--	50/60 ± 10 %
Actuating voltage, max.	V	121	30	253
Typical actuating current	mA	15	30	15
Response voltage	V	90	4	180
Drop-out voltage	V	< 40	< 1	< 40
Operating times				
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave

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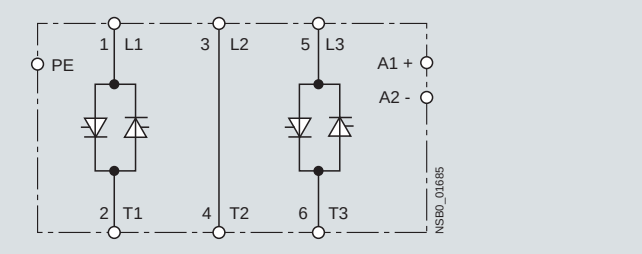
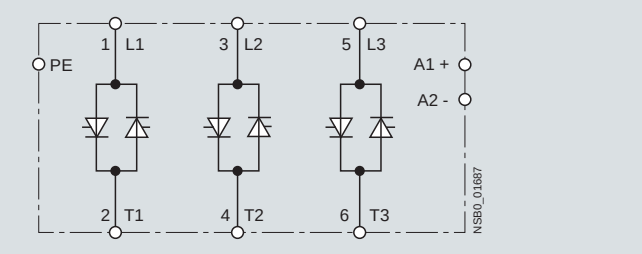
Circuit diagrams

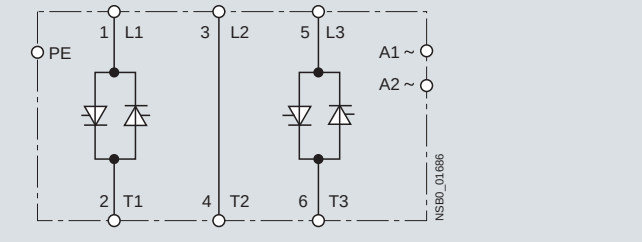
Two-phase controlled, DC control supply voltage



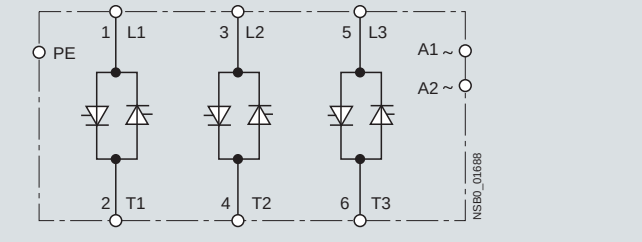
Three-phase controlled, DC control supply voltage



Two-phase controlled, AC control supply voltage



Three-phase controlled, AC control supply voltage



Selection and ordering data

Type current[1] I_{max}	Rated control supply voltage U_s	DT	Screw terminals Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
10.5	4 ... 30 DC	A	**3RF24 10-1AB45**		1	1 unit	101
20		A	**3RF24 20-1AB45**		1	1 unit	101
30		A	**3RF24 30-1AB45**		1	1 unit	101
40		B	**3RF24 40-1AB45**		1	1 unit	101
50		A	**3RF24 50-1AB45**		1	1 unit	101
10.5	110 AC	B	**3RF24 10-1AB35**		1	1 unit	101
20		B	**3RF24 20-1AB35**		1	1 unit	101
30		B	**3RF24 30-1AB35**		1	1 unit	101
40		B	**3RF24 40-1AB35**		1	1 unit	101
50		B	**3RF24 50-1AB35**		1	1 unit	101
10.5	230 AC	B	**3RF24 10-1AB55**		1	1 unit	101
20		B	**3RF24 20-1AB55**		1	1 unit	101
30		B	**3RF24 30-1AB55**		1	1 unit	101
40		B	**3RF24 40-1AB55**		1	1 unit	101
50		B	**3RF24 50-1AB55**		1	1 unit	101
Three-phase controlled							
10.5	4 ... 30 DC	A	**3RF24 10-1AC45**		1	1 unit	101
20		A	**3RF24 20-1AC45**		1	1 unit	101
30		A	**3RF24 30-1AC45**		1	1 unit	101
40		A	**3RF24 40-1AC45**		1	1 unit	101
50		A	**3RF24 50-1AC45**		1	1 unit	101
10.5	110 AC	B	**3RF24 10-1AC35**		1	1 unit	101
20		B	**3RF24 20-1AC35**		1	1 unit	101
30		B	**3RF24 30-1AC35**		1	1 unit	101
40		B	**3RF24 40-1AC35**		1	1 unit	101
50		B	**3RF24 50-1AC35**		1	1 unit	101
10.5	230 AC	B	**3RF24 10-1AC55**		1	1 unit	101
20		B	**3RF24 20-1AC55**		1	1 unit	101
30		B	**3RF24 30-1AC55**		1	1 unit	101
40		B	**3RF24 40-1AC55**		1	1 unit	101
50		B	**3RF24 50-1AC55**		1	1 unit	101

3RF24 20-1AB45

3RF24 10-1AC45

[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 manual, "Characteristic curves".

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RF24 solid-state contactors, three-phase


3RF24 10-2AB45

Type current[1)] I_{max}	Rated control supply voltage U_s	DT	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
			Order No.	Price per PU			
A	V						
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
10	4 ... 30 DC	B	**3RF24 10-2AB45**		1	1 unit	101
20		B	**3RF24 20-2AB45**		1	1 unit	101
10	230 AC	B	**3RF24 10-2AB55**		1	1 unit	101
20		B	**3RF24 20-2AB55**		1	1 unit	101
Three-phase controlled							
10	4 ... 30 DC	B	**3RF24 10-2AC45**		1	1 unit	101
20		B	**3RF24 20-2AC45**		1	1 unit	101
10	230 AC	B	**3RF24 10-2AC55**		1	1 unit	101
20		B	**3RF24 20-2AC55**		1	1 unit	101

Type current[1)] I_{max}	Rated control supply voltage U_s	DT	Ring terminal lug connection		PU (UNIT, SET, M)	PS*	PG
			Order No.	Price per PU			
A	V						
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
50	4 ... 30 DC	B	**3RF24 50-3AB45**		1	1 unit	101
50	230 AC	B	**3RF24 50-3AB55**		1	1 unit	101
Three-phase controlled							
50	4 ... 30 DC	B	**3RF24 50-3AC45**		1	1 unit	101
50	230 AC	B	**3RF24 50-3AC55**		1	1 unit	101

[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 manual, "Characteristic curves".

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate