2. Specifications (relay)

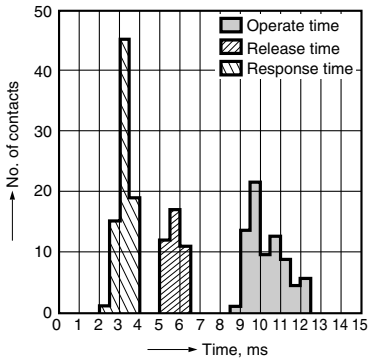
Characteristics	Item		Specifications				
			4 poles		6 poles		
Contact	Contact arrangement		2 Form A 2 Form B	3 Form A 1 Form B	4 Form A 2 Form B	5 Form A 1 Form B	3 Form A 3 Form B
	Contact resistance (Initial)		Max. 100 mΩ (By voltage drop 6 V DC 1A)				
	Contact material		Au flashed $AgSnO_2$ type				
Rating	Nominal switching capacity (resistive load)		6A 250V AC, 6A 30V DC				
	Max. switching power (resistive load)		1,500VA, 180W				
	Max. switching voltage		250V AC, 125V DC				
	Max. switching current		6 A (Reduce by 0.1 A/°C for temperatures 70 to 85°C 158 to 185°F)				
	Min. switching capacity (Reference value)*1		1mA 5V DC				
	Nominal operating power		Approx. 360mW		Approx. 500mW		
Electrical characteristics	Insulation resistance (Initial)		Min. 1,000MΩ (at 500V DC) Measurement at same location as “Breakdown voltage” section.				
	Breakdown voltage (Initial)	Between open contacts	1,500 Vrms for 1 min. (Detection current: 10mA)				
		Between contact sets	2,500 Vrms for 1 min. (Detection current: 10mA); 7-8/9-10 between open contacts		2,500 Vrms for 1 min. (Detection current: 10mA); 7-8/11-12 between open contacts 9-10/13-14 between open contacts 11-12/13-14 between open contacts		
			4,000 Vrms for 1 min. (Detection current: 10mA); 3-4/5-6 between open contacts 3-4/7-8 between open contacts 5-6/9-10 between open contacts		4,000 Vrms for 1 min. (Detection current: 10mA); 3-4/5-6 between open contacts 3-4/7-8 between open contacts 5-6/9-10 between open contacts 7-8/9-10 between open contacts		
		Between contact and coil	4,000 Vrms for 1min (Detection current: 10mA)				
	Operate time (at 20°C 68°F)		Max. 20ms (Nominal coil voltage applied to the coil, excluding contact bounce time)				
	Response time (at 20°C 68°F)*2		Max. 8ms (Nominal coil voltage applied to the coil, excluding contact bounce time and without diode)*4				
	Release time (at 20°C 68°F)		Max. 20ms (Nominal coil voltage applied to the coil, excluding contact bounce time)				
Mechanical characteristics	Shock resistance	Functional	200 m/s^2 (Half-wave pulse of sine wave: 11 ms; detection time: 10μs)				
		Destructive	1,000 m/s^2 (Half-wave pulse of sine wave: 6 ms)				
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs)				
		Destructive	10 to 55 Hz at double amplitude of 1.5 mm				
Expected life	Mechanical		Min. 10^7 (at 180 times/min.)				
	Electrical		250 V AC 6 A resistive load: Min. 10^5 (at 20 times/min.)				
			30 V DC 6 A resistive load: Min. 10^5 (at 20 times/min.)				
			250 V AC 1 A resistive load: Min. 5×10^5 (at 30 times/min.)				
			30 V DC 1 A resistive load: Min. 5×10^5 (at 30 times/min.)				
			[AC 15] 240 V AC 2 A inductive load: Min. 10^5 (at 20 times/min., $\cos\varphi = 0.3$)				
			[DC 13] 24 V DC 1 A inductive load: Min. 10^5 (at 20 times/min., L/R = 48 ms)				
Conditions	Conditions for operation, transport and storage*3		Ambient temperature: –40°C to +85°C –40°F to +185°F Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)				
	Max. operating speed		20 times/min. (at max. rating)				
Unit weight			Approx. 20 g .71 oz		Approx. 23 g .81 oz		

Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.
*2. Response time is the time after the coil voltage turns off until the time when “a” contact turns off.
*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.
*4. Response time of built-in diode type is 12 ms or less (excluding contact bounce time when nominal coil voltage is applied to the coil).

REFERENCE DATA

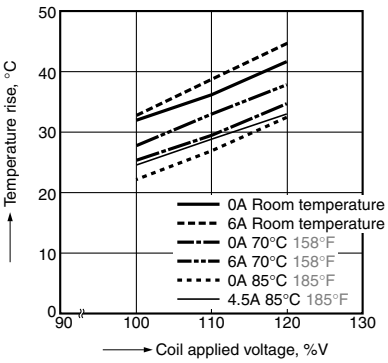
1. Operate/response/release time

Tested sample: SFS4-DC24V (4 Form A 2 Form B), 20pcs. (a contacts: 80, b contacts: 40)



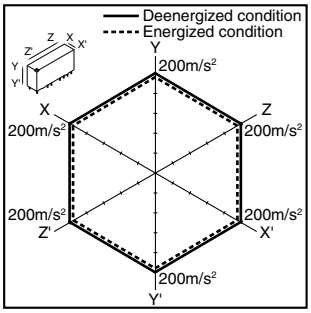
2. Coil temperature rise

Tested sample: SFS4-DC24V (4 Form A 2 Form B), 3pcs.
Measured portion: Inside the coil
Ambient temperature: Room temperature (27°C 80.6°F), 70°C 158°F, 85°C 185°F

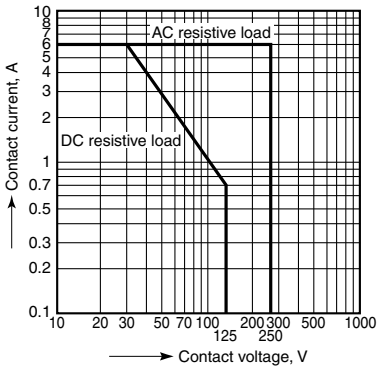


3. Malfunctional shock

Tested sample: SFS4-DC24V (4 Form A 2 Form B), 3pcs.



4. Max, switching capacity



Other contact gaps when contacts are welded

Sample: SFS4-DC24V (4 Form A 2 Form B)

The table below shows the state of the other contacts.
In case of form “NO” contact weld the coil applied voltage is 0 V.
In case of form “NC” contact weld the coil applied voltage is nominal.

		State of other contacts					
		3-4 (NC)	5-6 (NC)	7-8 (NO)	9-10 (NO)	11-12 (NO)	13-14 (NO)
Welded contact No.	3-4 (NC)			>0.5	>0.5	>0.5	>0.5
	5-6 (NC)			>0.5	>0.5	>0.5	>0.5
	7-8 (NO)	>0.5	>0.5				
	9-10 (NO)	>0.5	>0.5				
	11-12 (NO)	>0.5	>0.5				
	13-14 (NO)	>0.5	>0.5				

>0.5: contact gap is kept at min. 0.5 mm .020inch
Empty cells: either ON or OFF
Note: Contact gaps are shown at the initial state.
If the contact transfer is caused by load switching, it is necessary to check the actual loading.