IDEC

SPECIFICATIONS

No. ISD2278G
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RF1V SERIES FORCE GUIDED RELAY

TYPE RF1V-◇ △ ○ - □

- ◇ : Contact configuration
- △ : Operation indicator (LED)
- ○ : Surge voltage protection diode
- □ : Coil rated voltage

1. Applicable standard

EN61810-3, EN61810-1 (TUV Approval)
UL508 (UL Approval)
CSA C22.2 No.14 (CSA Approval)

2. Operating conditions

(1) Operating temperature

-40 to +85℃ (no freezing)
See the table below for the current and operating temperature

	Single mounting	Collective mounting	
Operating Temperature	–40°C to +85°C	4-pole	–40°C～+70°C
		6-pole	–40°C～+65°C
Contact Current	6A	6A	
Remarks	When the ambient temperature is over 70°C, lower the contact current at 0.1A/°C. 5NO1NC: Up to 70°C: Keep the total current of NO side to 24A maximum. Over 70°C: Lower the contact current at 0.1A/°C.	4-pole	When the ambient temperature is over 60°C, lower the contact current at 0.1A/°C.
		6-pole	When the ambient temperature is over 50°C, lower the contact current at 0.1A/°C. 5NO1NC: Up to 50°C: Keep the total current of NO side to 24A maximum. Over 50°C: Lower the contact current at 0.1A/°C.

(2) Operating humidity — 5 to 85%RH (no condensation)

(3) Storage temperature — -40 to +85℃ (no freezing)

3. Ratings

3. 1 Rated insulation voltage

3. 2 Coil rating (at 20℃)

(1) Rated voltage— (□)

12V DC(D12)		24V DC(D24)		48V DC(D48)	
4-pole	6-pole	4-pole	6-pole	4-pole	6-pole
30.0mA	41.7mA	15.0mA	20.8mA	7.5mA	10.4mA
400Ω	288Ω	1,600Ω	1,152Ω	6,400Ω	4,608Ω

(2) Rated current (±10%)

(3) Coil resistance (±10%)

(4) Maximum allowable voltage — 110 % (Not continuously applicable)

(5) Minimum pickup voltage (initial value) — 75% maximum

(6) Dropout voltage (initial value) — 10% minimum

3．3 Switching ratings

(1)	Contact ratings	
(a)	Allowable switching power	Resistive load: 1,500VA AC 180W DC (30V DC max.) 85W DC(30V DC ～125V DC)
(b)	Rated load	Resistive load: 250V AC・6A : 30V DC・6A
(2)	Allowable switching current	6A
(3)	Allowable switching voltage	250V AC, 125V DC
	Minimum applicable load(reference value)	5V DC ・ 1mA

4． Constructions

(1)	Outside view	See attached sheet
(2)	Degree of protection	IP40
(3)	Contact configuration－（◇）	4-pole : 2a-2b(2A2B),3a-1b(3A1B), 6-pole : 4a-2b(4A2B),5a-1b(5A1B),3a-3b(3A3B)
(4)	Operating indicator (LED) －（△）	With(L), Without(blank)
(5)	Surge voltage protection diode－（○）	With(D1), Without(blank)
(6)	Contact material	$AgSnO_2$ +Au
(7)	Weight (approx.)	4- pole: 20g, 6-pole : 23g

5． Characteristics

(1)	Contact resistance(initial value)	100mΩmaximum (Note: Measured using 6V DC, 1A voltage drop method.)
(2)	Power consumption(approx.)	4-pole:036W, 6-pole:0.50W
(3)	Insulation resistance	1,000MΩminimum (measured with a 500V DC megger)
(4)	Operate time	20 ms max. (at the rated voltage)
(5)	Release time	20 ms max. (at the rated voltage)
(6)	Response time	8 ms max. (at the rated voltage without surge voltage protection diode) 12 ms max. (at the rated voltage with surge voltage protection diode)
(7)	Dielectric strength	
(a)	Between contact and coil	4,000V AC for 1min.
(b)	Between contacts of different poles	
	・4-pole	Between contact 7-8/9-10: 2,500V AC for 1min. Between contact 3-4/5-6, 3-4/7-8, 5-6/9-10: 4,000V AC for 1min.
	・6-Pole	Between contact 7-8/11-12, 9-10/13-14, 11-12/13-14: 2,500V AC for 1min. Between contact 3-4/5-6, 3-4/7-8, 5-6/9-10, 7-8/9-10: 4,000V AC for 1min.
(c)	Between contacts of the same pole	1,500V AC for 1min.
(8)	Vibration resistance	
(a)	Operating extremes	Frequency 10 to 55Hz, Amplitude 0.75mm
(b)	Damage limits	Frequency 10 to 55Hz, Amplitude 0.75mm
(9)	Shock resistance	
(a)	Operating extremes	200 m/s^2
(b)	Damage limits	1,000 m/s^2

6. Life

(1) Mechanical life (without load) 10,000,000 operation minimum
(Operating frequency: 10,800 operations/hour maximum)

(2) Electrical life (rated load) 250V AC/30V DC・6A resistive load :100,000 operation minimum
(Operating frequency: 1,200 operations/hour maximum,1-pole)
250V AC/30V DC・1A resistive load :500,000 operation minimum
(Operating frequency: 1,800 operations/hour maximum,1-pole)
AC15:240V AC・2A Inductive load :100,000 operation minimum
(Operating frequency: 1,200 operations/hour maximum, COSϕ=0.3,1-pole)
DC13:24V DC・1A Inductive load :100,000 operation minimum
(Operating frequency: 1,200 operations/hour maximum, L/R=48ms,1-pole)

7. Surge voltage protection diode ratings

(1) Diode reverse voltage 400V

(2) Diode forward current 1A