

Latching

Load	1-pole type		2-pole type	
	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	5 A at 250 VAC 5 A at 30 VDC	3.50 A at 250 VAC 2.50 A at 30 VDC	3 A at 250 VAC 3 A at 30 VDC	1.50 A at 250 VAC 2 A at 30 VDC
Contact material	Ag-Alloy			
Carry current	5 A		3 A	
Max. operating voltage	380 VAC, 125 VDC			
Max. operating current	5 A		3 A	
Max. switching capacity	1,250 VA, 150 W	875 VA, 75 W	750 VA, 90 W	375 VA, 60 W
Min permissible load	100 mA, 5 VDC		10 mA, 5 VDC	

Note: 1. P standard: $\lambda_{50} = 0.10 \times 10^{-6}$ operation for all models
 2. For individual product agency approvals consult factory.

■ Coil Data

Non-latching DC coil

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	176	17	0.07	0.14	70% max.	15% min.	110% max. at 70°C (158°F)	Approx. 530
5	106	47	0.20	0.39				
6	88.20	68	0.28	0.55				
12	43.60	275	1.15	2.29				
24	21.80	1,100	4.27	8.55				
48	11.50	4,170	13.86	22.71				
100	5.30	18,860	67.20	93.20				
110	4.80	22,900	81.50	110.60				

Non-latching AC coil

Rated voltage (VAC)	Rated current (mA)(at 60Hz)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (VA)
			Armature OFF	Armature ON				
6	150	16	0.05	0.10	80% max.	30% min.	110% max. at 70°C (158°F)	Approx. 0.9
12	75	65	0.19	0.39				
24	37.50	260	0.81	1.55				
50	18	1,130	3.25	6.73				
100/(110)	9/(10.60)	4,600	13.34	26.84				
120	7.50	6,500	21	42				
200/(220)	4.5/(5.3)	20,200	51.3	102				
220	4.1	25,000	57.5	117				
240	3.80	30,000	65.50	131				

Non-latching high-sensitivity DC coil

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	120	25	0.13	0.26	70% max.	15% min.	110% max. at 70°C (158°F)	Approx. 360
5	71.40	70	0.37	0.75				
6	60	100	0.53	1.07				
12	30	400	2.14	4.27				
24	15	1,600	7.80	15.60				
48	7.50	6,400	31.20	62.40				

Latching dual coil type - Set coil

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	227	10.80	0.026	0.052	70% max.	70% max.	110% max. at 70°C (158°F)	Approx. 850
5	167	30	0.073	0.146				
6	138	43.50	0.104	0.208				
12	70.60	170	0.42	0.83				
24	34.60	694	1.74	3.43				

Latching dual coil type - Reset coil

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	200	15	0.001	0.002	70% max.	70% max.	110% max. at 70°C (158°F)	Approx. 600
5	119	42	0.003	0.006				
6	100	60	0.005	0.009				
12	50	240	0.018	0.036				
24	25	960	0.079	0.148				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of $\pm 10\%$.
 2. The operating characteristics are measured at a coil temperature of 23°C (73°F).

■ Characteristics

Item	Non-latching		Latching
Contact resistance	100 m Ω		
Operate (set) time	15 ms. max.		20 ms max.
Release (reset) time	AC: 10 ms max.; DC: 5 ms max.		20 ms max.
Bounce time	Operate	---	Mean value approx. 3 ms
	Release	---	Mean value approx. 8 ms
Operating frequency	Mechanical	18,000 operations/hour	
	Electrical	1,800 operations/hour (under rated load)	
Insulation resistance	1,000 M Ω min. (at 500 VDC)		
Dielectric strength	5,000 VAC, 50/60 Hz for 1 minute between coil and contacts		
	1,000 VAC, 50/60 Hz for 1 minute across contacts of same pole		
	3,000 VAC, 50/60 Hz for 1 minute between contact sets, 2-pole non-latching		
	1,000 VAC, 50/60 Hz for 1 minute between set and reset coils of dual coil latching		
Vibration	Mechanical durability	10 to 55 Hz; 1.50 mm (0.06) double amplitude	
	Malfunction durability	10 to 55 Hz; 1.50 mm (0.06) double amplitude	
Shock	Mechanical durability	1,000 m/s ² (approx. 100G)	
	Malfunction durability	200 m/s ² (approx. 20 G) when energized 100 m/s ² (approx. 10 G) when de-energized	500 m/s ² (approx. 50 G) at set (1-pole) 200 m/s ² (approx. 20G) at set (2-pole) 100 m/s ² (approx. 10 G) at reset
Ambient temperature	-40 to 70°C (-40 to 158°F)		
Humidity	5% to 85% RH		
Service life	Mechanical	10,000,000 operations min. DC: 20,000,000 operations min. (at 18,000 operations/hour)	
	Electrical	100,000 operations min. (at 1,800 operations /hr) at rated load. See "Characteristics Data"	
Weight	Approx. 17 g (0.60 oz.)		Approx. 17 g. (Approx 20g for quick-connect type)

Note: Data shown are of initial value.