Specifications

Ratings **Coil Ratings**

Rated voltage		Rated current		O all ma alatamaa	Must operate	Must release	Mary welters	Power
		50 Hz	60 Hz	Coll resistance	voltage	voltage	max. vonage	consumption
AC	6 V	443 mA	385 mA	3.1 Ω	80% max. of rated voltage	30% min. of rated voltage at 60 Hz 25% min. of rated voltage at 50 Hz	110% of rated voltage	Approx. 2.3 VA at 60 Hz Approx. 2.7 VA at 50 Hz
	12 V	221 mA	193 mA	13.7 Ω				
	24 V	110 mA	96.3 mA	48.4 Ω				
	100 V	26.6 mA	23.1 mA	760 Ω				
	110 V	24.2 mA	21.0 mA	932 Ω				
	200 V	13.3 mA	11.6 mA	3,160 Ω				
	220 V	12.1 mA	10.5 mA	3,550 Ω				
	230 V	10.0 mA	11.5 mA	4,250 Ω				
	240 V	11.0 mA	9.6 mA	4,480 Ω				
DC	6 V	224 mA		26.7 Ω		15% min. of rated voltage		
	12 V	112 mA		107 Ω				Approx. 1.4 W
	24 V	55.8 mA		430 Ω				
	48 V	28.1 mA		1,710 Ω				
	100 V	13.5 mA		7,390 Ω				
	110 V	12.3 mA		8,960 Ω				
	125 V	10.8 mA		11,576 Ω				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for AC rated current and $\pm 15\%$ for DC coil resistance. 2. Performance characteristic data are measured at a coil temperature of 23°C.

The maximum voltage is one that is applicable instantaneously to the Relay coil at 23°C and not continuously.
For DC-operated Relays with the LED indicator built-in, add an LED current of approx. 5 mA to the rated current.

Contact Ratings

Load		Resistive load $(\cos\phi = 1)$	Inductive load $(\cos\phi = 0.4)$	
Contact mechanism		Single		
Contact material		AgSnIn		
Pated load	NO	10 A, 250 VAC 10A, 30 VDC	7 4 050 1/40	
naleu loau	NC	5 A, 250 VAC 5 A, 30 VDC	7 A, 250 VAC	
Rated carry current		10 A		
Max. switching voltage		250 VAC, 250 VDC		
Max. switching current		10 A		
Max. switching power NO		2,500 VA/300 W		
		1,250 VA/150 W		

Characteristics

Contact resistance	100 mΩ max.
Operate time	AC: 20 ms max. DC: 30 ms max.
Release time	20 ms max. (40 ms max. for built-in Diode Relays)
Max. operating frequency	Mechanical: 18,000 operations/h Electrical: 1,800 operations/h (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	2,500 VAC 50/60 Hz for 1 min between coil and contacts 1,000 VAC 50/60 Hz for 1 min between contacts of same polarity and terminals of the same polarity 2,500 VAC 50/60 Hz for 1 min between current-carrying parts, non-current-carrying parts, and opposite polarity
Insulation method	Basic insulation
Impulse withstand voltage	4.5 kV between coil and contacts (with $1.2 \times 50 \ \mu$ s impulse wave) 3.0 kV between contacts of different polarity (with $1.2 \times 50 \ \mu$ s impulse wave)
Pollution degree	3
Rated insulation voltage	250 V
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.5-mm single amplitude (1.0-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s ² (approx. 100 G) Malfunction: 100 m/s ² (approx. 10 G)
Endurance	Mechanical: 5,000,000 operations min. (at 18,000 operations/h under rated load) Electrical: 100,000 operations h. (at 1,800 operations/h under rated load)
Failure rate P level (reference value)	10 mA at 1 VDC
Ambient temperature	Operating: -40 to 60°C (with no icing or condensation)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 90 g
Note: 1. The values given above are in	nitial values

- **3.** Ambient temperature of models with LED indicator is -25 to 60° C.

Approved Standards

UL508 (File No. E41515) 🔊

Coil ratings		Operations	
6 to 110 VDC	N.O. contact	10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000
6 to 240 VAC	N.C. contact	10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000

CSA Standard: CSA C22.2 No. 14 (File No. LR35535)

Coil ratings	Number of Poles	Contact ratings	Operations
	2	10 A, 250 V AC (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC (General Use)	100,000
6 to 125 VDC 6 to 240 VAC	3	10 A, 250 V AC (Resistive) Same Polarity 10 A, 30 V DC (Resistive) Same Polarity 7 A, 250 V AC (General Use) Same Polarity	100,000

IEC Standard/TÜV Certification: IEC61810-1 (Certification No. R50104853)

Coil ratings		Operations	
6, 12, 24, 48, 100, 110 VDC 6, 12, 24, 100	N.O. contact	10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000
110, 200, 220, 240 VAC	N.C. contact	5 A, 250 V AC 50/60 Hz (Resistive) 5 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000

Note: When Relays are mounted on the PF083A-E or PF113A-E, the maximum carrying current is 9 A.

Engineering Data

Reference Data

Maximum Switching Power



Rated Carry Current vs. Ambient Rated Temperature



Note: The lower limit of the ambient operating temperature for models with built-in operation indicators is -25°C.