

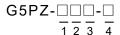
Compact 20 A Power Relay

- 10.5 mm (W) slim size and 1 pole 16 A/20 A switching capability
- · High sensitivity of 530 mW coil consumption and further saving energy with holding voltage 50%
- · Min. 6.4 mm of insulation distance and 10 kV impulse withstand voltage (between coil and contacts)
- IEC60664-1 Reinforced insulation conformed
- · IEC/EN60079-15 conformed. (Only for G5PZ-1A4-E model)



Refer to the Precautions on page 5.

Model Number Legend



- 1. Number of Poles 2. Contact Form 1 : 1-pole
 - A : SPST-NO (1a)
- 3. Enclosure rating None : Flux protection 4 : Sealed
- 4. Classification
 - None : Standard Е : High-capacity

Application Examples

- · Air conditioners
- · Home appliances

- · OA equipments
- · Industrial machinery

Ordering Information

Classification	Contact form	Enclosure rating	Model	Rated coil voltage	Minimum packing unit
Standard		Flux protection	G5PZ-1A	5 VDC	
	SPST-NO (1a)	Flux protection	G5PZ-1A-E	12 VDC	100 pcs. / Tray
High-capacity		Sealed	G5PZ-1A4-E	24 VDC	

Note 1. When ordering, add the rated coil voltage to the model number.

-Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as ____VDC.

Ratings

Ite	em I	Rated current (mA)	Coil resistance (Ω)	Must-operate voltage (V)	Must-release voltage (V)	Max. voltage (V)	Power consumption (mW)
Rated voltage				% of rated voltage			
5 VDC		106	47				
12 VDC		44.1	272	75% max.	10% min.	140% (at 23°C)	Approx. 530
24 VDC		22.1	1087			(

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

Note 2. The operating characteristics are measured at a coil temperature of 23°C.

Note 3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

Example: G5PZ-1A DC12

G5PZ

Contacts

	Classification	Standard	Standard High-capacity		
	Enclosure rating	Flux protection	Flux protection	Sealed	
Model		G5PZ-1A	G5PZ-1A-E	G5PZ-1A4-E	
Item	Load	Resistive load			
Contact type		Single			
Contact materi	ial		Ag-alloy (Cd free)		
Rated load		16 A at 250 VAC	16 A at 250 VAC 20 A at 250 VAC		
Rated carry cu	irrent	16 A 20 A			
Max. switching voltage 250 VAC			250 VAC		
Max. switching	current	16 A	16 A 20 A		

■Characteristics

Classification		Standard	High-o	capacity		
Item	Enclosure rating	Flux protection	Flux protection	Sealed		
Contact resistance *1		100 mΩ				
Operate time		15 ms max.				
Release time		5 ms max.				
Insulation resistance *2		1,000 MΩ min.				
Dialoctric strongth	Between coil and contacts	4,000 VAC 50/60 Hz 1 min				
Dielectric strength Between contacts of the same polarity		1,000 VAC 50/60 Hz 1 min				
Impulse withstand voltage	Between coil and contacts	10 kV (1.2 x 50 μs)				
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)				
VIDIATION TESISTATICE	Malfunction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)				
Shock resistance	Destruction	1,000 m/s ²				
Shock resistance	Malfunction	200 m/s ²				
	Mechanical	2,000,000 operations min.				
Durability	Electrical (resistive load)	100,000 operations at 250 VAC, 16 A	50,000 operations at 250 VAC, 20 A	20,000 operations at 250 VAC, 20 A		
Failure rate (P level) (refe	erence value) *3	5 VDC 100 mA				
Ambient operating temperature		-40 to 70°C (with no icing or condensation)				
Ambient operating humid	ity	5 to 85%				
Weight		Approx. 10.5 g				

Note. Values in the above table are the initial values at 23°C.

*1. Measurement conditions: 5 VDC, 1 A, voltage drop method

*2. Measurement conditions: Measured at the same points as the dielectric strength using a 500 VDC ohmmeter.

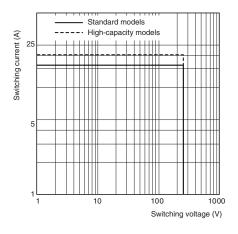
*3. This value was measured at a switching frequency of 120 operations/min.

■Actual Load Life (Reference Values)

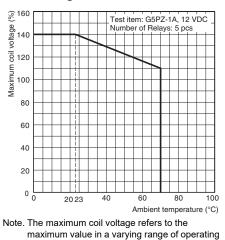
- 250 VAC Inverter load (Standard) Inrush: 240 A (0-P, Rise Time 3 ms or more), Current 16 A, Cut off current 0 A 50,000 operations min. (at 23°C)
- 250 VAC Inverter load (High-capacity) Inrush: 240 A (0-P, Rise Time 3 ms or more), Current 20 A, Cut off current 0 A 50,000 operations min. (at 23°C)

Engineering Data

Maximum Switching Capacity

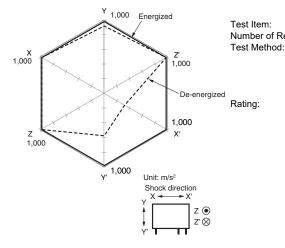


Ambient Temperature vs. Maximum Coil Voltage



power voltage, not a continuous voltage.

Shock malfunction



 Test Item:
 G5PZ-1A 12 VDC

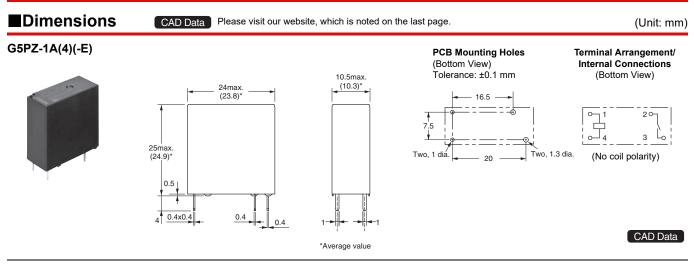
 Number of Relays: 5 pcs
 5

 Test Method:
 Shock is applied 3 times in 6 directions along 3 axes and the level at which shock caused malfunction is measured. The energized voltage is 100% of the rated voltage.

 Rating:
 200 m/s²

G5PZ

PCB Power Relay



■Approved Standards

The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

•UL Recognized: 💫 (File No. E41515) CSA Certified: 🚯 (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5PZ-1A	SPST-NO(1a)	5 to 24 VDC	16 A, 277 VAC (Resistive) 70°C	6,000
G5PZ-1A-E			20 A, 277 VAC (Resistive) 70°C	50,000
G5PZ-1A(4)(-E)				6,000

●EN/IEC, VDE Certified: 🖉 (Certificate No. 40042966)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5PZ-1A	SPST-NO(1a)	5, 12, 24 VDC	16 A, 250 V AC (Resistive) 70°C	6,000

●EN/IEC, TÜV Certified: 🛕 (Certificate No. R50408241)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5PZ-1A-E	SPST-NO(1a)	5, 12, 24 VDC	20 A, 250 VAC (coso=1) 70°C	50,000
G5PZ-1A(4)(-E)	3F31-NO(1a)	5, 12, 24 VDC	20 A, 200 VAC (COS\$=1) 70 C	6,000

●CQC Certified: ^C (Certificate No. CQC15002133270)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5PZ-1A	SPST-NO(1a)	5, 12, 24 VDC	16 A, 250 VAC (cosφ=1) 70°C	6,000
G5PZ-1A-E			20 A, 250 VAC (cosథ=1) 70°C	50,000
G5PZ-1A(4)(-E)				6,000

Creepage distance	9.5 mm min.
Clearance distance	6.4 mm min.
Insulation material group	III a
Type of insulation coil-contact circuit open contact circuit	Reinforced (Standard : Pollution degree 2) (High-capacity : Pollution degree 3)
Type of disconnection open contact circuit	Micro disconnection
Rated Insulation voltage	250 VAC
Pollution degree	2
Rated voltage system	250 V
Over voltage category	III
Category of protection according to IEC 61810-1	RT II (Flux protection) / RT III (Sealed)
Tracking resistance according to IEC 60112	PTI 250 V min. (housing parts)
Flammability class according to UL94	V-0

Precautions

●Please refer to "PCB Relays Common Precautions" for correct use.

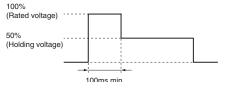
Correct Use

Handling

For G5PZ flux protection type, do not perform immersion cleaning by boiling or soaking in water.

Coil Voltage Reduction (Holding Voltage) after Relay Operation

- If the coil voltage is reduced to the holding voltage after Relay operation, first apply the rated voltage to the coil for at least 100 ms, as shown below.
- A voltage of at least 50% of the rated voltage is required for the coil holding voltage. Do not allow voltage fluctuations to cause the coil holding voltage to fall below this level.



	Applied coil voltage	Coil resistance*	Power consumption
Rated voltage	100%	475 Ω (5 VDC) 272 Ω (12 VDC)	Approx. 530 mW
Holding voltage	50%	1087 Ω (24 VDC)	Approx. 133 mW

The coil resistance were measured at a coil temperature of 23°C with tolerances of \pm 10%.

Please check each region's Terms & Conditions by region website.

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In the interest of product improvement, specifications are subject to change without notice.

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