Panasonic
ideas for life

Low profile: 15.7mm height 1a/1c 16A power relay

LZ RELAYS (ALZ)



RoHS compliant

FEATURES

1. Low profile type with height of 15.7 mm
Slim, low profile type with dimensions of 28.8 (L) × 12.5 (W) × 15.7 (H) mm
1.134 (L) × .492 (W) × .618 (H) inch.

2. High insulation resistance
Superior insulation characteristics have been achieved by maintaining an insulation distance between coil and contacts of at least 10 mm for both creepage distance and clearances. Furthermore, anti-surge voltage is 10 kV and higher. (Supports European reinforced insulation requirement.)

3. Superior heat resistance
Can be used in ambient temperatures up to 85°C 185°F for the class B and 105°C 221°F for the class F.

4. Low operating power
Power saved with a nominal operating power of only 400 mW.

5. Conforms to the various safety standards:
UL/C-UL, VDE approved.

6. Superior heat resistance and tracking resistance
EN60335-1 GWT compliant (Tested by VDE) type available

TYPICAL APPLICATIONS

1) Household electrical appliances
TV, CATV, Audio equipment, Microwave ovens, and Heaters, etc.

2) Office equipment
Copy machines, Packaged air conditioners, and Vending machines

3) Industrial equipment
Machine tools, Robots, and Temperature controllers

ORDERING INFORMATION

ALZ □ □ □ □ □ □ □

LZ relays

Contact arrangement
1: 1 Form C
5: 1 Form A (New PC board terminal)

Protective construction
1: Flux-resistant type
2: Sealed type

Coil insulation class
B: Class B insulation
F: Class F insulation

Nominal coil voltage (DC)
05: 5 V 18: 18 V
09: 9 V 24: 24 V
12: 12 V 48: 48 V

Flame resistance and tracking resistance
Nil: –
T: EN60335-1 (Conform)

Packing style
W: Carton packing

Notes: 1. Certified by UL/C-UL and VDE
2. Tube packing type is also available. Please consult us.

TYPES

Contact arrangement	Coil voltage	Flux-resistant type		Sealed type	
		Class B insulation	Class F insulation	Class B insulation	Class F insulation
		Part No.	Part No.	Part No.	Part No.
1 Form C	5 V DC	ALZ11B05W	ALZ11F05W	ALZ12B05W	ALZ12F05W
	9 V DC	ALZ11B09W	ALZ11F09W	ALZ12B09W	ALZ12F09W
	12 V DC	ALZ11B12W	ALZ11F12W	ALZ12B12W	ALZ12F12W
	18 V DC	ALZ11B18W	ALZ11F18W	ALZ12B18W	ALZ12F18W
	24 V DC	ALZ11B24W	ALZ11F24W	ALZ12B24W	ALZ12F24W
	48 V DC	ALZ11B48W	ALZ11F48W	ALZ12B48W	ALZ12F48W
1 Form A (New PC board terminal)	5 V DC	ALZ51B05W	ALZ51F05W	ALZ52B05W	ALZ52F05W
	9 V DC	ALZ51B09W	ALZ51F09W	ALZ52B09W	ALZ52F09W
	12 V DC	ALZ51B12W	ALZ51F12W	ALZ52B12W	ALZ52F12W
	18 V DC	ALZ51B18W	ALZ51F18W	ALZ52B18W	ALZ52F18W
	24 V DC	ALZ51B24W	ALZ51F24W	ALZ52B24W	ALZ52F24W
	48 V DC	ALZ51B48W	ALZ51F48W	ALZ52B48W	ALZ52F48W

Standard packing: Carton: 100 pcs.; Case: 500 pcs.

Notes: 1. Tube packing type is also available. Please consult us.
2. Carton packing symbol "W" is not marked on the relay.
3. EN60335-1 GWT compliant types available. When ordering, please add suffix "T".
Ex. ALZ51F12TW

RATING

1. Coil data

Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power (at 20°C 68°F)	Max. applied voltage (at 20°C 68°F)
5 V DC	Max. 70%V nominal voltage (Initial)	Min. 10%V nominal voltage (Initial)	80 mA	63Ω	400 mW	130%V of nominal voltage
9 V DC			44.4 mA	203Ω		
12 V DC			33.3 mA	360Ω		
18 V DC			22.2 mA	810Ω		
24 V DC			16.7 mA	1,440Ω		
48 V DC			8.3 mA	5,760Ω		

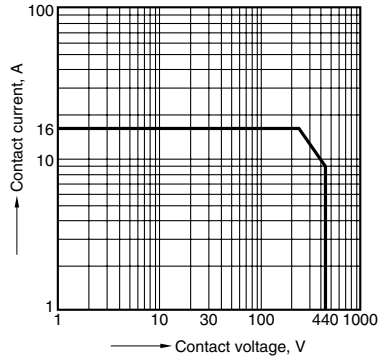
2. Specifications

Characteristics	Item		Specifications
Contact	Arrangement		1 Form C, 1 Form A
	Contact resistance (Initial)		Max. 100 mΩ (By voltage drop 6V DC 1A)
	Contact material		$AgSnO_2$ type
Rating	Nominal switching capacity (resistive load)		16A 250V AC
	Max. switching power (resistive load)		4,000V A
	Max. switching voltage		440V AC
	Max. switching current		16A
	Nominal operating power		400mW
	Min. switching capacity*1		100mA 5V DC
Electrical characteristics	Insulation resistance (Initial)		Min. 1,000 MΩ (at 500V DC) Measurement at same location as "Breakdown voltage" section.
	Breakdown voltage (Initial)	Between open contacts	1,000 Vrms for 1 min. (Detection current: 10mA)
		Between contacts and coil	5,000 Vrms for 1 min. (Detection current: 10mA)
	Temperature rise (coil)		Max. 55°C 131°F [with nominal coil voltage and at 16A contact carrying current (resistance method) at 20°C 68°F]
	Surge breakdown voltage*2 (Between contacts and coil) (Initial)		10,000 V
	Operate time (at nominal voltage) (at 20°C 68°F)		Max. 15ms (excluding contact bounce time)
	Release time (at nominal voltage) (at 20°C 68°F)		Max. 5ms (excluding contact bounce time, without diode)
Mechanical characteristics	Shock resistance	Functional	100 m/s² (Half-wave pulse of sine wave: 11ms; detection time: 10μs)
		Destructive	1,000 m/s² (Half-wave pulse of sine wave: 6ms)
	Vibration resistance	Functional	10 to 55Hz at double amplitude of 1.5mm (Detection time: 10μs) (Only the N.C. side of 1 Form C is 0.8mm)
		Destructive	10 to 55Hz at double amplitude of 1.5mm
Expected life	Mechanical (at 180 times/min.)		Min. 10^7
	Electrical (at 20 times/min.)*3		N.O.: Min. 10^5, N.C.: Min. 5×10^4
Conditions	Conditions for operation, transport and storage*4, *5		Ambient temperature: –40°C to +85°C –40°F to +185°F (Class B), Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)
	Max. operating speed		20 times/min. (at nominal switching capacity)
Unit weight			Approx. 12 g .42 oz

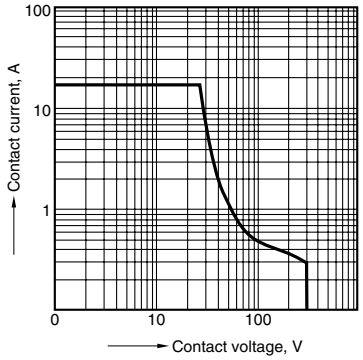
Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.
*2. Wave is standard shock voltage of ±1.2 × 50μs according to JEC-212-1981.
*3. In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib. More detail, please look at caution for NOTES.
*4. Class F type is ambient temperature 105°C 221°F.
*5. 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.
*Please note that some of the specifications listed above may not comply with overseas standards.

REFERENCE DATA

1. Max. switching power (AC resistive load)

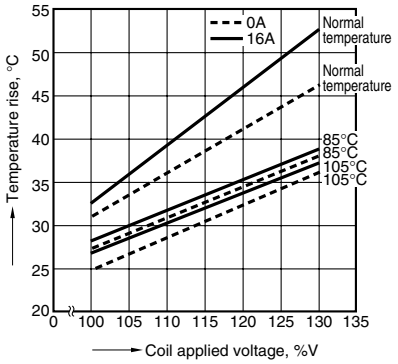


2. Max. switching power (DC resistive load)



3. Coil temperature rise

Sample: ALZ11F12, 5pcs.
Measured portion: coil inside
Contact current: 0 A, 16 A



DIMENSIONS (mm inch)

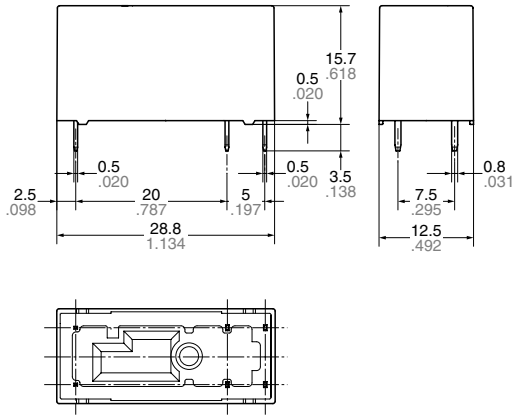
The CAD data of the products with a **CAD Data** mark can be downloaded from: http://industrial.panasonic.com/ac/e/

1. 1 Form A type (New PC board terminal)

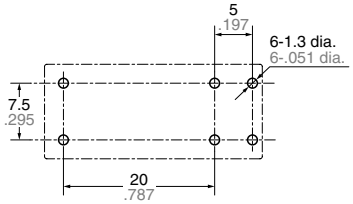
CAD Data



External dimensions

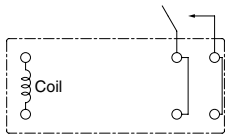


PC board pattern



Tolerance: ±0.1 ±.004

Schematic (Bottom view)



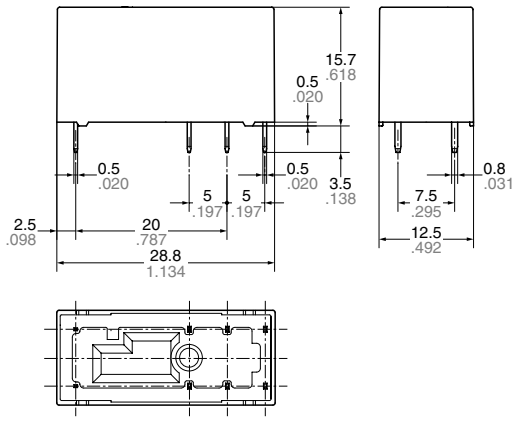
Dimension:	Tolerance
Less than 1mm .039inch:	±0.1 ±.004
Min. 1mm .039inch less than 3mm .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

2. 1 Form C type

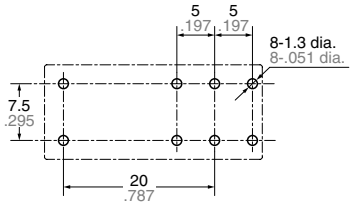
CAD Data



External dimensions

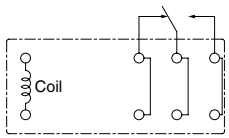


PC board pattern



Tolerance: ±0.1 ±.004

Schematic (Bottom view)



Dimension:	Tolerance
Less than 1mm .039inch:	±0.1 ±.004
Min. 1mm .039inch less than 3mm .118 inch:	±0.2 ±.008
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SAFETY STANDARDS

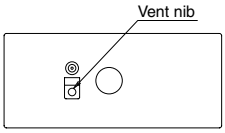
UL/C-UL (Recognized)		VDE (Certified)		TV rating (UL/CSA)	
File No.	Contact rating	File No.	Contact rating	File No.	Rating
E43149	16A 277V AC, 34.8LRA/7.2FLA/120V AC, 15LRA/3FLA/120V AC 10LRA/3FLA 240V AC, 20A 240V AC (N.O. only) 16A 30V DC, 25A 240V AC, 15A 240V AC Resistive load 105°C (N.O. only)	40000380	16A 250V AC (cosϕ=1.0)	C-UL E43149	TV-5

* CSA standard: Certified by C-UL

NOTES

1. Electrical life (Sealed type)

In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib after the soldering/ washing process.



For Cautions for Use.