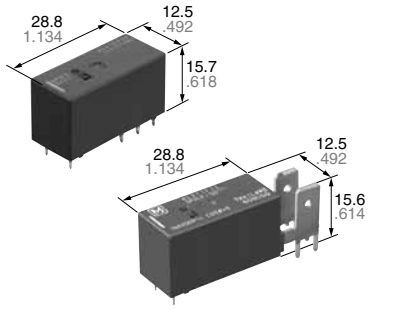
Panasonic
ideas for life

16A LOW PROFILE POWER RELAY

LZ RELAYS (ALZ)



mm inch

RoHS Directive compatibility information
http://www.mew.co.jp/ac/e/environment/

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 (Excluding TMP type)

7. TMP type also available.

SPECIFICATIONS

Contact

Arrangement		1 Form A, 1 Form C and 1 Form A (TMP type)
Initial contact resistance, max. (By voltage drop 6V DC 1A)		100mΩ
Contact material		$AgSnO_2$ type
Rating (resistive load)	Nominal switching capacity	16A 250V AC
	Max. switching power	4,000V A
	Max. switching voltage	440V AC
	Max. switching current	16A
	Min. switching capacity#1 (Reference value)	100mA, 5V DC
Expected life (min. operations)	Mechanical (at 180 cpm)	1 Form A/1 Form C: 1×10^7 1 Form A (TMP type) 5×10^6
	Electrical (at 20 cpm) (Rated load)	1 Form A/1 Form C: N.O.: 10^5, N.C.: 5×10^4 1 Form A (TMP type) 10^5

Coil

Nominal operating power	400mW

#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.

Remarks
* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section.
*2 Detection current: 10mA
*3 Wave is standard shock voltage of ±1.2 × 50μs according to JEC-212-1981
*4 Excluding contact bounce time.
*5 Half-wave pulse of sine wave: 11 ms; detection time: 10 μs
*6 Half-wave pulse of sine wave: 6 ms
*7 Detection time: 10 μs
*8 The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.
*9 Class F type is ambient temperature 105°C 221°F.
*Please note that some of the specifications listed above may not comply with overseas standards.

Characteristics

Max. operating speed		20 cpm (at rated load)
Initial insulation resistance*1		Min. 1,000 MΩ (at 500V DC)
Initial breakdown voltage*2	Between open contacts	1,000 Vrms for 1 min.
	Between contacts and coil	5,000 Vrms for 1 min.
Initial surge voltage between contact and coil*3		10,000 V
Operate time*4 (at nominal voltage)		Max. 15ms (at 20°C 68°F)
Release time (without diode)*4 (at nominal voltage)		Max. 5ms (at 20°C 68°F)
Temperature rise (20°C 68°C)		Max. 55°C with nominal coil voltage and at 16A contact carrying current (resistance method)
Shock resistance	Functional*5	100 m/s²{approx. 10 G}
	Destructive*6	1,000 m/s²{approx. 100 G}
Vibration resistance	Functional*7	1 Form A/1 Form C: 10 to 55Hz at double amplitude of 0.8mm 1 Form A (TMP type): 10 to 55Hz at double amplitude of 1.5mm
	Destructive	10 to 55Hz at double amplitude of 1.5mm
Conditions for operation, transport and storage*8 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +85°C –40°F to +185°F (Class B)*9
	Humidity	5 to 85% R.H.
Unit weight		1 Form A/1 Form C: Approx. 12 g .42 oz 1 Form A (TMP type): Approx. 13 g .46 oz

LZ (ALZ)

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

Ex. A | LZ | 1 | 1 | B | 12 | | W

Product name	Contact arrangement	Protective construction	Coil insulation class	Coil voltage,* V DC	Flame resistance and tracking resistance	Packing style
LZ	1: 1 Form C 2: 1 Form A 7: 1 Form A (TMP type)	1: Flux-resistant type	B: Class B insulation F: Class F insulation	05: 5 18: 18 09: 9 24: 24 12: 12 48: 48	Nil: — T: EN60335-1 (Conform) (Excluding TMP type.)	Nil: Tube packing (Excluding TMP type.) W: Carton packing

Notes: 1. Only 1 Form C and 1 Form A types are available for 48 V (excluding TMP type).
2. UL, C-UL, VDE approved type is standard.
3. Sealed type is also available. (Excluding TMP type.) Please consult us.

TYPES

Contact arrangement	Coil voltage, V DC	Tube packing		Carton packing	
		Class B	Class F	Class B	Class F
1 Form C	5	ALZ11B05	ALZ11F05	ALZ11B05W	ALZ11F05W
	9	ALZ11B09	ALZ11F09	ALZ11B09W	ALZ11F09W
	12	ALZ11B12	ALZ11F12	ALZ11B12W	ALZ11F12W
	18	ALZ11B18	ALZ11F18	ALZ11B18W	ALZ11F18W
	24	ALZ11B24	ALZ11F24	ALZ11B24W	ALZ11F24W
	48	ALZ11B48	ALZ11F48	ALZ11B48W	ALZ11F48W
1 Form A	5	ALZ21B05	ALZ21F05	ALZ21B05W	ALZ21F05W
	9	ALZ21B09	ALZ21F09	ALZ21B09W	ALZ21F09W
	12	ALZ21B12	ALZ21F12	ALZ21B12W	ALZ21F12W
	18	ALZ21B18	ALZ21F18	ALZ21B18W	ALZ21F18W
	24	ALZ21B24	ALZ21F24	ALZ21B24W	ALZ21F24W
	48	ALZ21B48	ALZ21F48	ALZ21B48W	ALZ21F48W
1 Form A (TMP type)	5	— (Tube packing is not available)	— (Tube packing is not available)	ALZ71B05W	ALZ71F05W
	9			ALZ71B09W	ALZ71F09W
	12			ALZ71B12W	ALZ71F12W
	18			ALZ71B18W	ALZ71F18W
	24			ALZ71B24W	ALZ71F24W

Notes: 1. Tube packing: Inner carton: 20pcs.; Case: 800pcs.
2. Carton packing: Inner carton: 100pcs.; Case: 500pcs.
3. For carton packaging add a “W” to the end of the part number when ordering. (For 1 Form A TMP type, only carton packaging is available.)
4. Carton packing symbol “W” is not marked on the relay.
5. EN60335-1 GWT compliant types available. When ordering, please add suffix “T”. (EN60335-1 GWT compliant type is not available for the TMP types.)
Ex. ALZ21B12T, ALZ21F12TW

COIL DATA

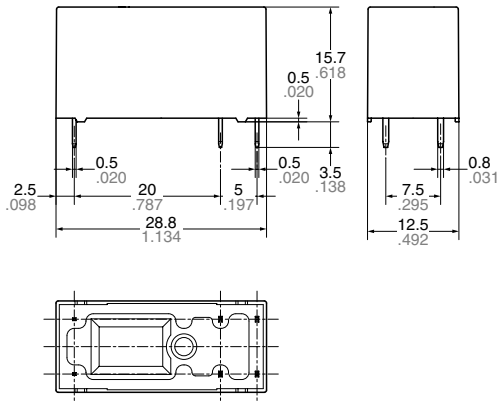
Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Coil resistance, Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Maximum allowable voltage, V DC
5	3.5	0.5	63	80	400	6.5
9	6.3	0.9	203	44.4		11.7
12	8.4	1.2	360	33.3		15.6
18	12.6	1.8	810	22.2		23.4
24	16.8	2.4	1,440	16.7		31.2
48*	33.6	4.8	5,760	8.3		62.4

* Only 1 Form C and 1 Form A types are available for 48 V (excluding TMP type).

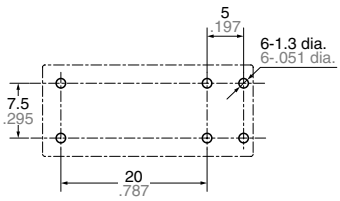
DIMENSIONS

mm inch

1. 1 Form A type

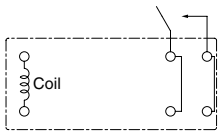


PC board pattern

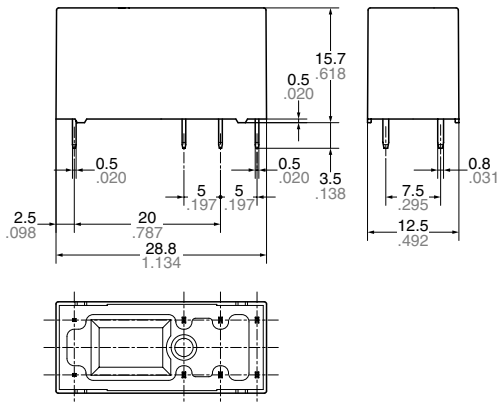


Tolerance: ±0.1 ±.004

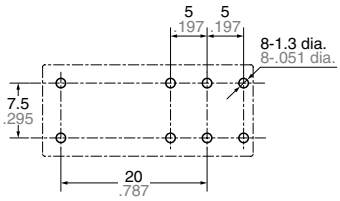
Schematic (Bottom view)



2. 1 Form C type

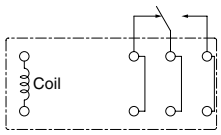


PC board pattern

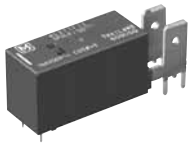


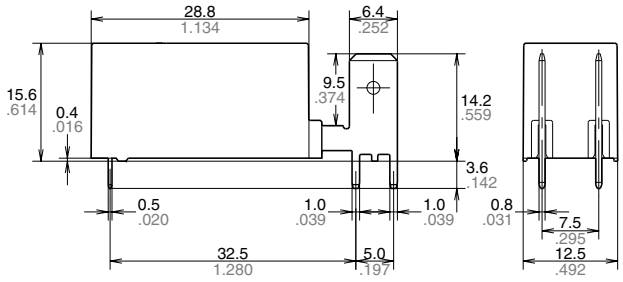
Tolerance: ±0.1 ±.004

Schematic (Bottom view)

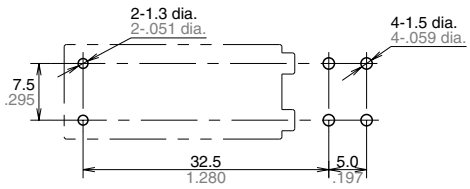


3. 1 Form A (TMP type)



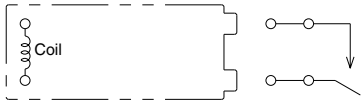


PC board pattern



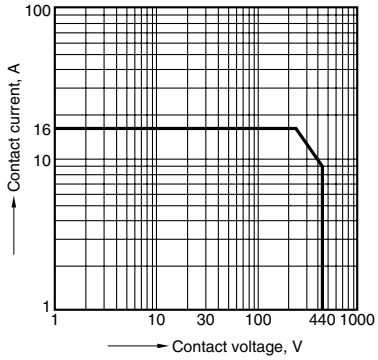
Tolerance: ±0.1 ±.004

Schematic (Bottom view)

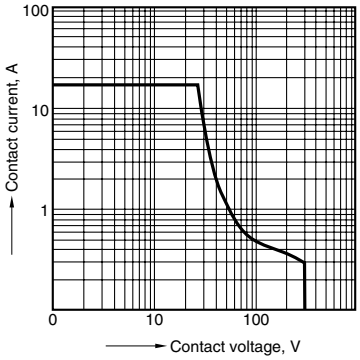


REFERENCE DATA

1. Max. switching power (AC resistive load)

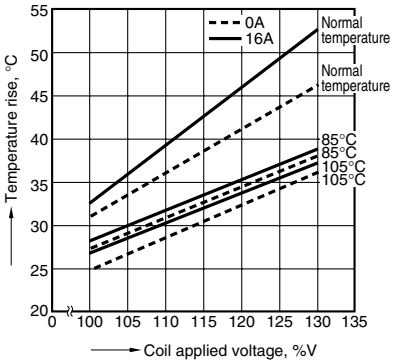


2. Max. switching power (DC resistive load)



3. Coil temperature rise

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



For Cautions for Use, see Relay Technical Information.