

mm inch

### FEATURES

**1. Low profile size: Height 15.7 mm**

28.8 (L)×12.5 (W)×15.7(H) mm  
1.134 (L)×.492 (W)×.618(H) inch

**2. High insulation resistance**

Creepage distance and clearances between contact and coil: Min. 10 mm

**3. UL coil insulation class B (85°C 185°F) or class F (105°C 221°F).**

**4. EN60335-1 GWT compliant (Tested by VDE) type available (Class B insulation type only)**

**5. Pb free and Cd free**

**6. Low operating power**

- Nominal operating power: 400mW

**7. Conforms to the various safety standards:**

- UL, C-UL, VDE approved.

**RoHS Directive compatibility information**  
<http://www.nais-e.com/>

### SPECIFICATIONS

#### Contact

Arrangement	1 Form A, 1 Form C	
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)	100 mΩ	
Contact material	AgSnO <sub>2</sub> type	
Rating (resistive load)	Nominal switching capacity	16 A 250 V AC
	Max. switching power	4,000 V A
	Max. switching voltage	440 V AC
	Max. switching current	16 A
Expected life (min. operations)	Min. switching capacity#1 (Reference value)	100 mA, 5 V DC
	Mechanical (at 180 cpm)	1 × 10 <sup>7</sup>
	Electrical (at 20 cpm) (Rated load)	N.O.: 10 <sup>5</sup> N.C.: 5 × 10 <sup>4</sup>

#### Coil

Nominal operating power	400 mW
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#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 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT

#9 Class F type is ambient temperature 105°C 221°F.

#### Characteristics

Max. operating speed	20 cpm (at rated load)	
Initial insulation resistance*1	Min. 1,000 MΩ (at 500 V 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 (with 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 16 A contact carrying current (resistance method)	
Shock resistance	Functional*5	100 m/s <sup>2</sup> {approx. 10 G}
	Destructive*6	1,000 m/s <sup>2</sup> {approx. 100 G}
Vibration resistance	Functional*7	10 to 55Hz at double amplitude of 1.5mm (NO), 0.82mm (NC)
	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	Approx. 12 g .42 oz	

### TYPICAL APPLICATIONS

- HVAC
- Oven ranges
- Refrigerators

# LZ (ALZ)

## 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	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) (Class B insulation only)	Nil: Tube packing W: Carton packing

UL, C-UL, VDE approved type is standard.

- Notes: 1. Sealed type is also available. Please consult us.  
 2. Tube packing: Inner carton: 20pcs.; Case: 800pcs.  
 3. Carton packing: Inner carton: 100pcs.; Case: 500pcs.  
 4. Carton packing symbol "W" is not marked on the relay.

## TYPES

Contact arrangement	Coil voltage, V DC	Tube packing		Carton packing	
		Class B	Class F	Class B	Class F
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 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

Note: EN60335-1 GWT compliant types available. When ordering, please add suffix "T".

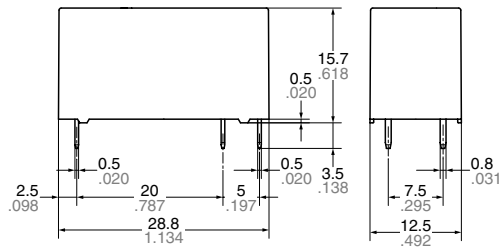
Ex) ALZ21B12T, ALZ21B05TW

## COIL DATA

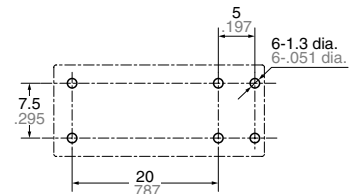
Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Coil resistance, $\Omega$ ( $\pm 10\%$ )	Nominal operating current, mA ( $\pm 10\%$ )	Nominal operating power, mW	Maximum allowable voltage, V DC
5	3.5	0.5	63	80	400	6.5
9	6.3	0.9	203	44.4		11.7
12	8.4	1.2	360	33.3		15.6
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

## DIMENSIONS

### 1. 1 Form A type

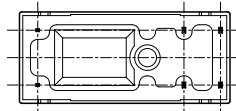
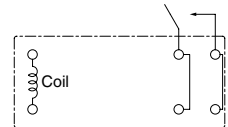


PC board pattern (Bottom view)



Tolerance:  $\pm 0.1 \pm .004$

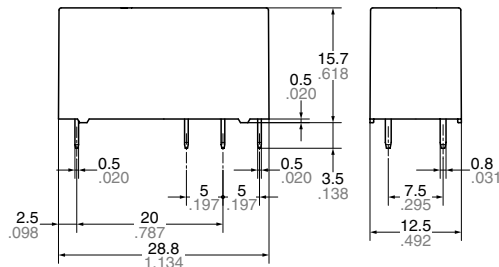
Schematic (Bottom view)



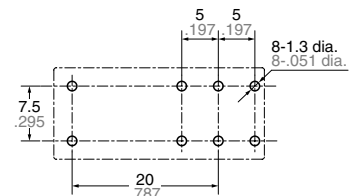
**Dimension:**  
 Max. 1mm .039 inch:  
 1 to 3mm .039 to .118 inch:  
 Min. 3mm .118 inch:

**Tolerance**  
 $\pm 0.1 \pm .004$   
 $\pm 0.2 \pm .008$   
 $\pm 0.3 \pm .012$

### 2. 1 Form C type

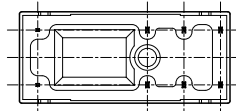
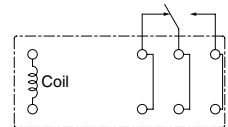


PC board pattern (Bottom view)



Tolerance:  $\pm 0.1 \pm .004$

Schematic (Bottom view)

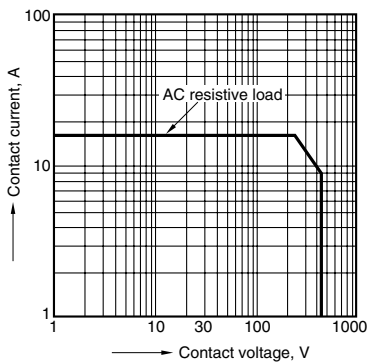


**Dimension:**  
 Max. 1mm .039 inch:  
 1 to 3mm .039 to .118 inch:  
 Min. 3mm .118 inch:

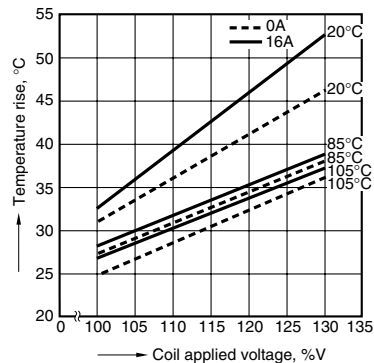
**Tolerance**  
 $\pm 0.1 \pm .004$   
 $\pm 0.2 \pm .008$   
 $\pm 0.3 \pm .012$

## REFERENCE DATA

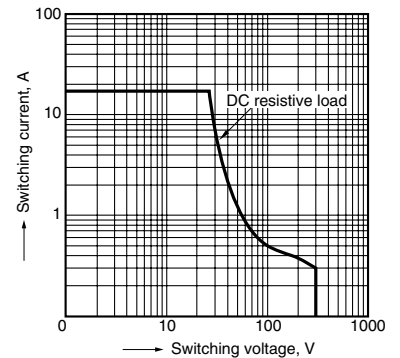
### 1. Max. switching power



### 2. Coil temperature rise



### 3. DC breaking capacity



**For Cautions for Use, see Relay Technical Information**