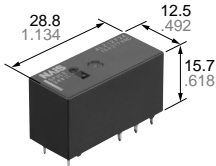


# NAIS

## 16A Low Profile Power Relay

# LZ RELAYS

### 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. Pb free and Cd free**
- 5. Low operating power**  
• Nominal operating power: 400mW
- 6. Conforms to the various safety standards:**  
• UL/CSA, VDE approved.

### SPECIFICATIONS

Contact		Characteristics		
Arrangement	1 Form A, 1 Form C	Max. operating speed (at rated load)	20 cpm	
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)	100 mΩ	Initial insulation resistance*1	Min. 1,000 MΩ (at 500 V DC)	
Contact material	Silver alloy	Initial breakdown voltage*2	Between open contacts	1,000 Vrms for 1 min.
			Between contacts and coil	5,000 Vrms for 1 min.
Rating (resistive load)	Nominal switching capacity	Initial surge voltage between contact and coil*3	Min. 10,000 V	
	Max. switching power	Operate time*4 (at nominal voltage)	Max. 15ms (at 20°C 68°F)	
	Max. switching voltage	Release time (with diode)*4 (at nominal voltage)	Max. 5ms (at 20°C 68°F)	
	Max. switching current	Temperature rise (at nominal voltage)	Max. 55°C (resistance method, contact current 16 A, 20°C 68°F)	
Expected life (min. operations)	Mechanical (at 180 cpm)	Shock resistance	Functional*5	Min. 100 m/s <sup>2</sup> {10 G}
	Electrical (at 20 cpm)*10 (Resistive load)		Destructive*6	Min. 1,000 m/s <sup>2</sup> {100 G}
<b>Coil</b>		Vibration resistance	Functional*7	10 to 55Hz at double amplitude of 1.5mm (NO), 0.82mm (NC)
Nominal operating power	400 mW		Destructive	10 to 55Hz at double amplitude of 1.5mm
<b>Remarks</b>		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
* Specifications will vary with foreign standards certification ratings.			Humidity	5 to 85% R.H.
*1 Measurement at same location as "Initial breakdown voltage" section.		Unit weight	Approx. 12 g .42 oz	
*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: 0.8 ms; detection time: 10 μs				
*6 Half-wave pulse of sine wave: 6 ms				
*7 Detection time: 10 μs				
*8 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 24).				
*9 Class F type is ambient temperature 105°C 221°F.				
*10 Electrical life was evaluated with the breathing hole open.				

### TYPICAL APPLICATIONS

- HVAC
- Oven ranges
- Refrigerators

### ORDERING INFORMATION

Ex. A LZ 1 2 B 12 W

Product name	Contact arrangement	Protective construction	Coil insulation class	Coil voltage, V DC	Packing style
LZ	1: 1 Form C 2: 1 Form A	1: Flux-resistant type 2: Sealed type	B: Class B insulation F: Class F insulation	05: 5 09: 9 12: 12 18: 18 24: 24 48: 48	Nil: Tube packing W: Carton packing

UL/CSA approved type is standard.

- Notes: 1. Tube packing: Inner carton: 20pcs.; Case: 800pcs.  
2. Carton packing: Inner carton: 100pcs.; Case: 500pcs.  
3. Carton packing symbol "W" is not marked on the relay.

# TYPES

Contact arrangement	Coil voltage, V DC	Flux-resistant type		Sealed type	
		Class B	Class F	Class B	Class F
1 Form A	5	ALZ21B05	ALZ21F05	ALZ22B05	ALZ22F05
	9	ALZ21B09	ALZ21F09	ALZ22B09	ALZ22F09
	12	ALZ21B12	ALZ21F12	ALZ22B12	ALZ22F12
	18	ALZ21B18	ALZ21F18	ALZ22B18	ALZ22F18
	24	ALZ21B24	ALZ21F24	ALZ22B24	ALZ22F24
	48	ALZ21B48	ALZ21F48	ALZ22B48	ALZ22F48
1 Form C	5	ALZ11B05	ALZ11F05	ALZ12B05	ALZ12F05
	9	ALZ11B09	ALZ11F09	ALZ12B09	ALZ12F09
	12	ALZ11B12	ALZ11F12	ALZ12B12	ALZ12F12
	18	ALZ11B18	ALZ11F18	ALZ12B18	ALZ12F18
	24	ALZ11B24	ALZ11F24	ALZ12B24	ALZ12F24
	48	ALZ11B48	ALZ11F48	ALZ12B48	ALZ12F48

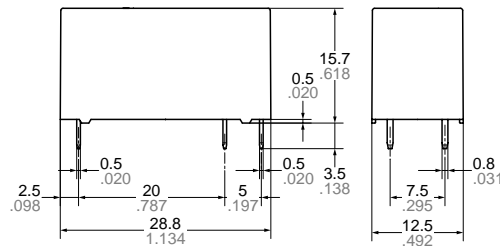
# COIL DATA

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, W	Maximum allowable voltage, V DC
5	3.5	0.5	63	80	0.4	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

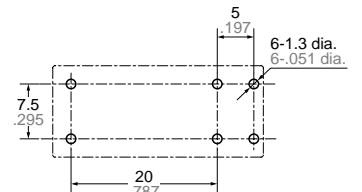
# DIMENSIONS

mm inch

## 1. 1 Form A type

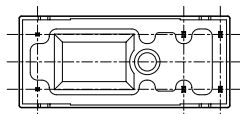


PC board pattern (Copper-side view)



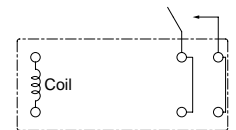
Tolerance : ±0.1 ±.004

Schematic (Bottom view)

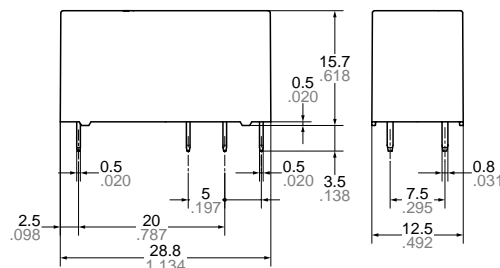


Dimension :  
 Max. 1mm .039 inch:  
 1 to 3mm .039 to .118 inch:  
 Min. 3mm .118 inch:

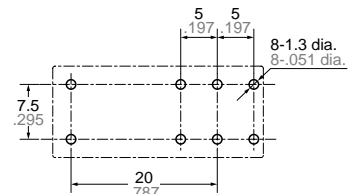
Tolerance  
 ±0.1 ±.004  
 ±0.2 ±.008  
 ±0.3 ±.012



## 2. 1 Form C type

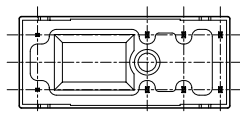


PC board pattern (Copper-side view)



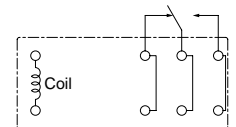
Tolerance : ±0.1 ±.004

Schematic (Bottom view)



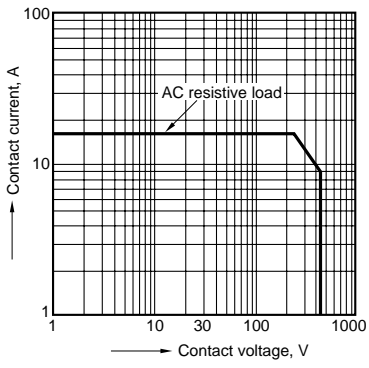
Dimension :  
 Max. 1mm .039 inch:  
 1 to 3mm .039 to .118 inch:  
 Min. 3mm .118 inch:

Tolerance  
 ±0.1 ±.004  
 ±0.2 ±.008  
 ±0.3 ±.012

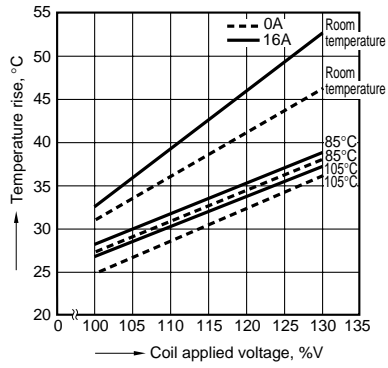


REFERENCE DATA

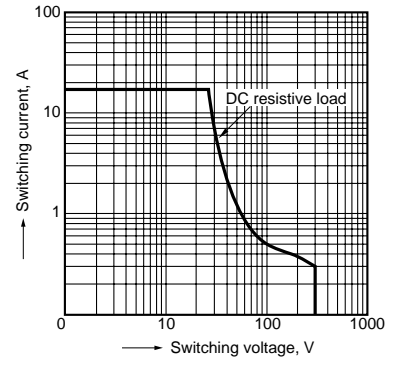
1. Max. switching power



2. Coil temperature rise



3. DC breaking capacity



For Cautions for Use, see Relay Technical Information