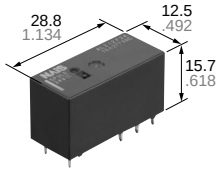
NAiS

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

Arrangement		1 Form A, 1 Form C
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		100 mΩ
Contact material		Silver alloy
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)	Mechanical (at 180 cpm)	1×10^7
	Electrical (at 20 cpm)*10 (Resistive load)	N.O.: 10^5 N.C.: 5×10^4

Coil

Nominal operating power	400 mW

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: 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.

Characteristics

Max. operating speed (at rated load)		20 cpm
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		Min. 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 (at nominal voltage)		Max. 55°C (resistance method, contact current 16 A, 20°C 68°F)
Shock resistance	Functional*5	Min. 100 m/s²{10 G}
	Destructive*6	Min. 1,000 m/s²{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

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 18: 18 09: 9 24: 24 12: 12 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

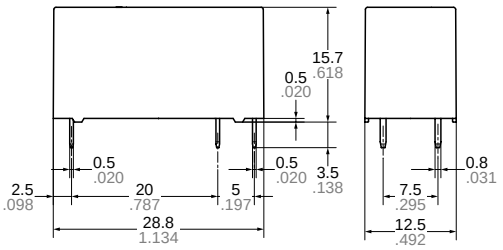
COIL DATA

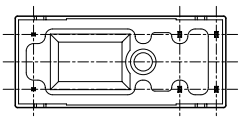
Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Coil resistance, Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, W	Maximum allowable voltage, V DC
5	3.5	0.5	63	80	0.4	6.5
9	6.3	0.9	203	44.4		11.7
12	8.4	1.2	360	33.3		15.6
18	12.6	1.8	810	22.2		23.4
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

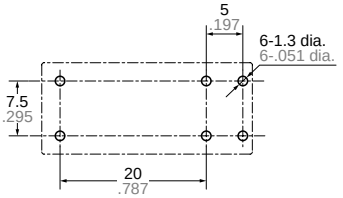




Dimension :

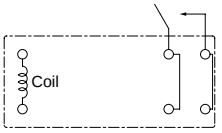
	Tolerance
Max. 1mm .039 inch:	±0.1 ±.004
1 to 3mm .039 to .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

PC board pattern (Copper-side view)

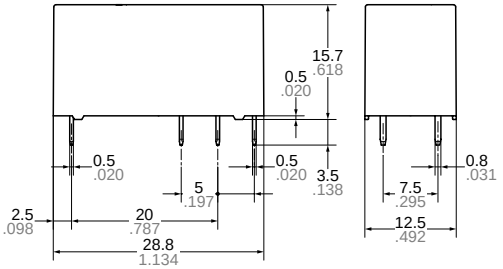


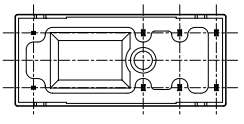
Tolerance : ±0.1 ±.004

Schematic (Bottom view)



2. 1 Form C type





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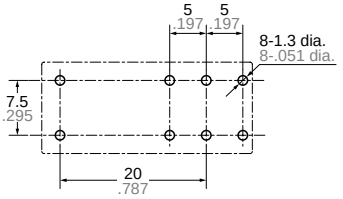
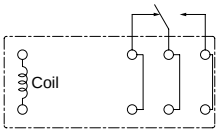
PC board pattern (Copper-side view)



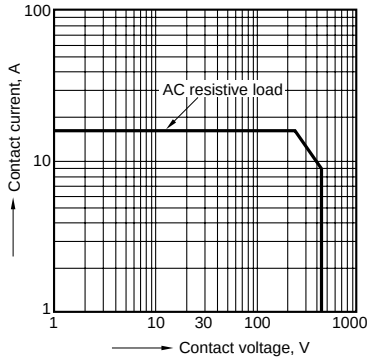
Tolerance : ±0.1 ±.004

Schematic (Bottom view)

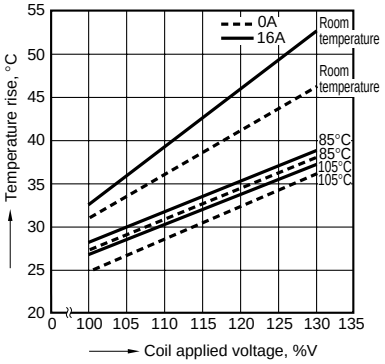


REFERENCE DATA

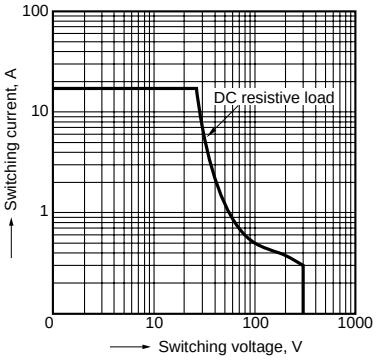
1. Max. switching power



2. Coil temperature rise



3. DC breaking capacity



For Cautions for Use, see Relay Technical Information (Page 11 to 39).

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