

2. Specifications

Characteristics	Item		Specifications
Contact rating	Arrangement		1 Form A
	Contact resistance (Initial)		Max. 100 mΩ (By voltage drop 6 V DC 1A)
	Contact material		AgSnO ₂ type
	Contact rating (resistive)		16A 277V AC
	Max. switching power (resistive)		4,432VA
	Max. switching voltage		277V AC
	Max. switching current		16A
	Min. switching load (reference value)*1		100mA, 5V DC
Insulation resistance (Initial)			Min. 1,000MΩ (at 500V DC) Measurement at same location as “Dielectric strength” section.
Dielectric strength (Initial)		Between open contacts	1,000 Vrms for 1 min. (Detection current: 10 mA)
		Between contact and coil	4,000 Vrms for 1 min. (Detection current: 10 mA)
Surge withstand voltage (Initial)*2			Between contact and coil 10,000 V
Time characteristics	Operate time		Max. 20 ms (at rated voltage), (at 20°C 68°F), (Initial) (excluding contact bounce time.)
	Release time		Max. 20 ms, Max. 25 ms (200mW type) (at rated voltage), (at 20°C 68°F), (Initial) (excluding contact bounce time) (With diode)
Mechanical characteristics	Shock resistance	Functional	200 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)
		Destructive	1,000 m/s ² (Half-wave pulse of sine wave: 6 ms.)
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs.)
		Destructive	10 to 55 Hz at double amplitude of 1.5 mm
Mechanical life (at 180 times/min.)			Min. 2×10 ⁶
Conditions for operation, transport and storage*3			Ambient temperature: −40°C to +85°C −40°F to +185°F; Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature) Air pressure: 86 to 106 kPa
Unit weight			Approx. 17 g .60 oz, Approx. 15 g .53 oz (PCB type)

* Specifications will vary with foreign standards certification ratings.

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 $\pm 1.2 \times 50\mu\text{s}$ according to JEC-212-1981

*3. 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.

3. Electrical life

Condition: Resistive, at 20°C 68°F, at 20 times/min.

Type	Contact rating	Number of operation
1 Form A	16A 277V AC	10 ⁵

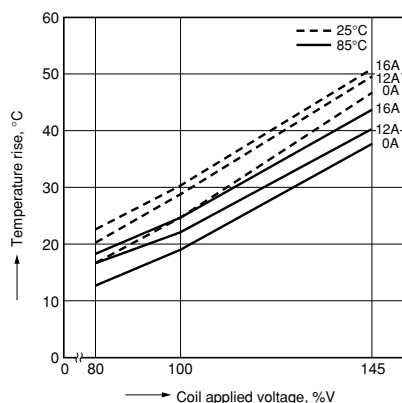
REFERENCE DATA

1.-(1) Coil temperature rise (400mW type)

Sample: ALE14B12, 6 pcs.

Point measured: coil inside

Ambient temperature: 25°C 77°F, 85°C 185°F

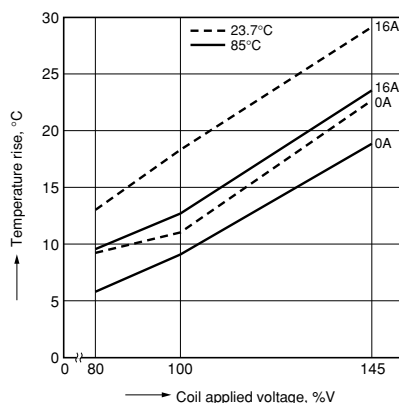


1.-(2) Coil temperature rise (200mW type)

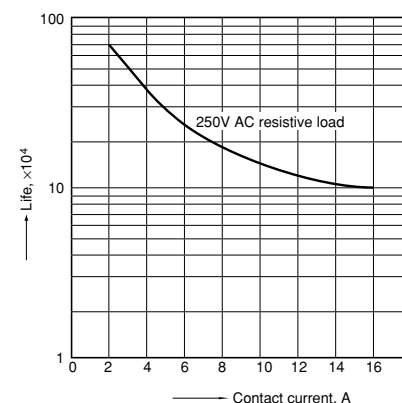
Sample: ALE74B12, 6 pcs.

Point measured: coil inside

Ambient temperature: 23.7°C 74.66°F, 85°C 185°F



2. Life curve



3. Electrical life test (16 A 277 V AC, resistive load)

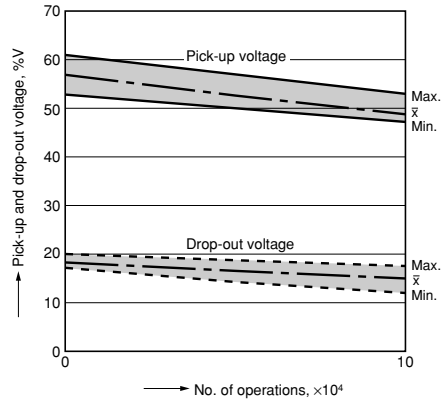
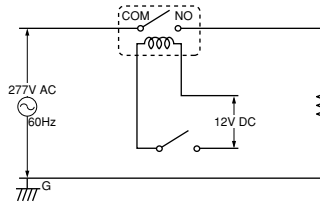
Sample: ALE14B12, 6 pcs.

Operation frequency: 20 times/min.

(ON/OFF = 1.5s: 1.5s)

Ambient temperature: Room temperature

Circuit:



DIMENSIONS (mm inch)

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

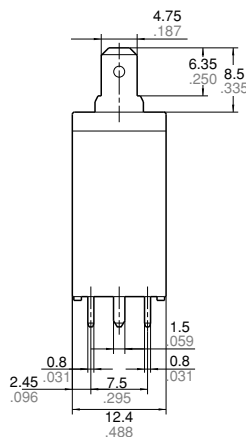
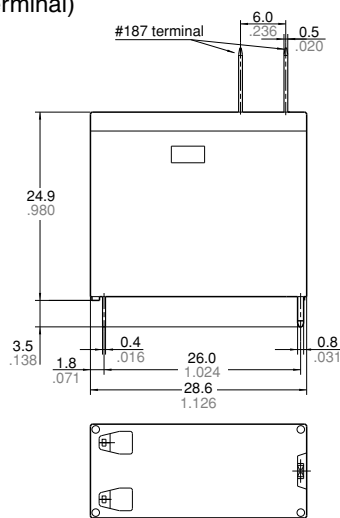
1. TMP type

1) PCB side three terminals
(includes one dummy terminal)

CAD Data

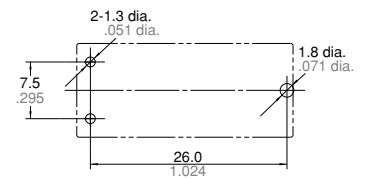


External dimensions



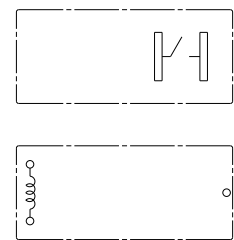
Dimension:	Tolerance
Less than 1mm .039inch:	$\pm 0.1 \pm .004$
Min. 1mm .039inch	
less than 3mm .118 inch:	$\pm 0.2 \pm .008$
Min. 3mm .118 inch:	$\pm 0.3 \pm .012$

PC board pattern (Bottom view)



Tolerance: $\pm 0.1 \pm .004$

Schematic (Bottom view)

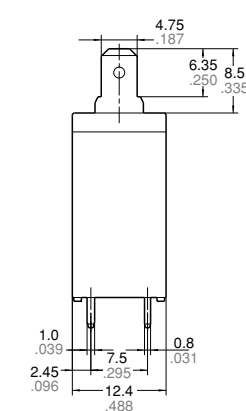
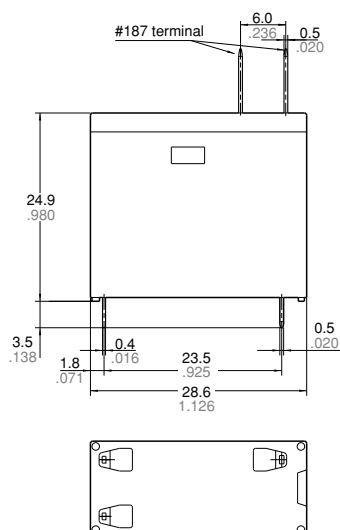


2) PCB side three terminals

CAD Data

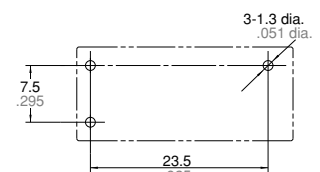


External dimensions



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

PC board pattern (Bottom view)



Tolerance: $\pm 0.1 \pm .004$

Schematic (Bottom view)

