Miniature High Power Latching Relay	AL

Features

- Latching relay
- 4mm contact gap available
- 25A switching capability
- 5kV dielectric strength (between coil and contacts)
- Creepage distance between coil and contacts: 10mm
- Product in accordance to IEC 60335-1 available
- UL insulation system: Class F
- 1A + 1B configuration for power switching

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(File No.:E122258)

1. COIL DATA (at 23°C)

1) 1 coil latching

Nominal Voltage (VDC)	Set Voltage (VDC) max.[1)]	Pulse Width (ms) min.[1)]	Reset Voltage (VDC) max.[1)]	Coil Resistance (Ω)	Coil Power (W)
5	4.00	150	4.00	20.8 x (1±10%)	Approx. 1.2
6	4.80	150	4.80	30 x (1±10%)	
12	9.60	150	9.60	120 x (1±10%)	
24	19.2	150	19.2	480 x (1±10%)	
48	38.4	150	38.4	1920 x (1±10%)	

2) 2 coils latching

Nominal Voltage (VDC)	Set Voltage (VDC) max.[1)]	Pulse Width (ms) min.[1)]	Reset Voltage (VDC) max.[1)]	Coil Resistance (Ω)	Coil Power (W)
5	4.00	150	4.00	10.4 x (1±10%)	Approx. 2.4
6	4.80	150	4.80	15 x (1±10%)	
12	9.60	150	9.60	60 x (1±10%)	
24	19.2	150	19.2	240 x (1±10%)	
48	38.4	150	38.4	960 x (1±10%)	

Notes: 1) The data shown above are initial values.

2. CONTACT DATA

Contact Arrangement		1A + 1B
Contact Gap		4mm min.
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)
Contact Material		$AgSnO_2$
Contact Ratings (Resistive load)		25A 277VAC
Max. Switching Voltage		277VAC
Max. Switching Current		25A
Max. Switching Power		6925VA
Life Expectancy	Electrical	30,000 operations (NO or NC, 25A 277VAC, Resistive load, at 85℃, 1s on 9s off)
	Mechanical	600,000 operations

Notes: 1) The data shown above are initial values.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	2000VAC 1min
	Coil and Contacts	5000VAC 1min
Surge voltage (between coil and contacts)		10kV (1.2 / 50μs)
Set Time (at nominal voltage)		25ms max.
Reset Time (at nominal voltage)		25ms max.
Temperature Range		-40℃ ~ 85℃
Shock Resistance	Functional	$196m/s^2$
	Destructive	$1000m/s^2$
Vibration Resistance		10 ~ 55Hz 2mm DA
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 45g
Construction		Flux proofed
Outline Dimension (L x W x H)		50 x 20 x 27mm

Notes: The data shown above are initial values.

4. SAFETY APPROVAL

UL / cUL	25A 277/250/125VAC at 85℃ 25A 60VDC at 85℃ 0.5A 240VAC at 85℃

Notes: 1) All values unspecified are at room temperature.

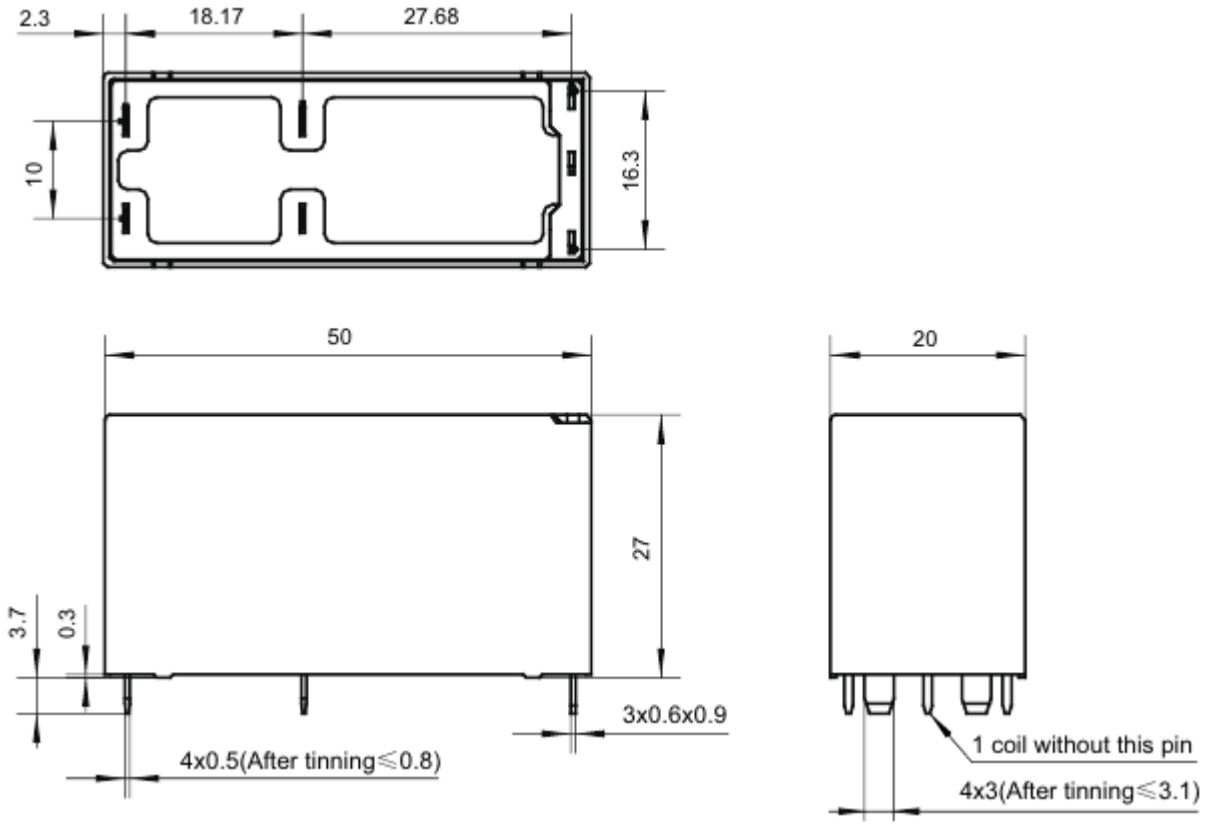
2) Only typical loads are listed above. Other load specifications can be available upon request.

5. ORDERING INFORMATION

AL - 1A1B - 12 L1 ① ② ③ ④	
① Relay Model	AL
② Contact Arrangement	1A1B: 1A + 1B
③ Coil Voltage	5=5VDC, 6=6VDC, 12=12VDC, 24=24VDC, 48=48VDC
④ Sort	L1: 1 coil latching L2: 2 coils latching

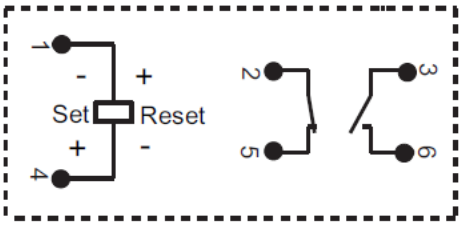
6. DIMENSIONS (Unit: mm)

Outline Dimensions

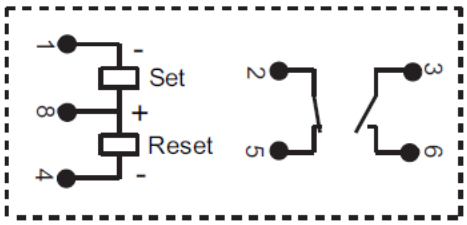


Wiring Diagram (Bottom view)

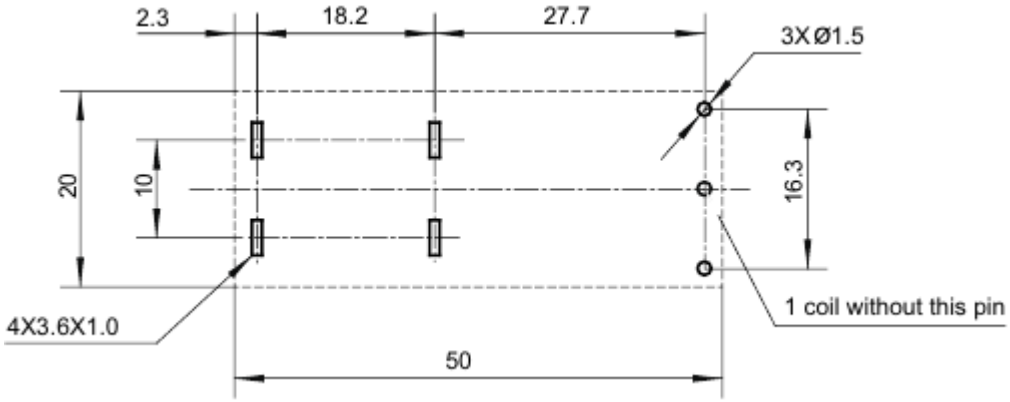
1 coil latching



2 coils latching



PCB Layout (Bottom view)



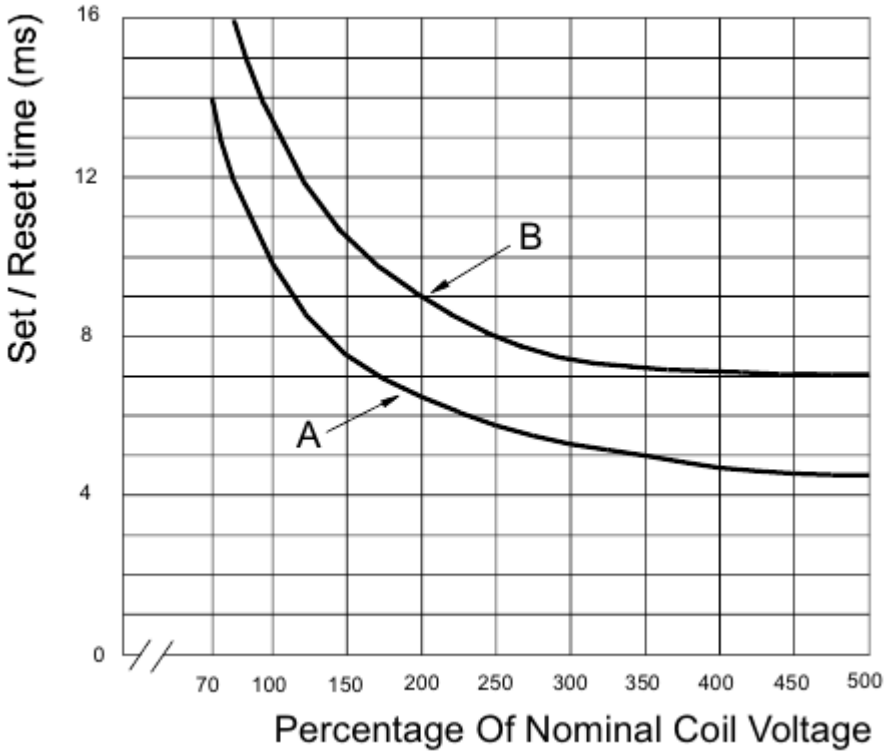
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

2) The tolerance without indicating for PCB layout is always ±0.1m

3) The width of the gridding is 2.54mm.

7. CHARACTERISTIC CURVES

Set/Reset Time and Voltage Curve



Curve A: Typical value

Curve B: Max value

Notice:

1. Relay is on the “reset” or “set” status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to “set” or “reset” status, therefore, when application (connecting the power supply), please reset the relay to “set” or “reset” status on request.
2. In order to maintain “set” or “reset” status, energized voltage to coil should reach the rated voltage, impulse width should be 5 times more than “set” or “reset” time. Do not energized voltage to “set” coil and “reset” coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.