# AZ8461

## MICROMINIATURE POLARIZED RELAY

### FEATURES

- Microminiature size: up to 50% less board area than previous generation telecom relays
- High dielectric and surge voltage:
  2.5 KV surge (per Bellcore TA–NWT–001089)
  1.5 KV surge (per FCC Part 68)
  1,000 Vrms, open contacts
- Monostable and bistable (latching) versions available
- Low power consumption: 79 mW pickup
- Stable contact resistance for low level signal switching
- Epoxy sealed for automatic wave soldering and cleaning
- UL file E43203; CSA file 700339
- All plastics meet UL94 V–0, 30 min. oxygen index




### CONTACTS

| | |
|---|---|
| **Arrangement** | DPDT (2 Form C)<br>Bifurcated crossbar contacts |
| **Ratings** | Resistive load:<br>Max. switched power: 60 W or 62.5 VA<br>Max. switched current: 2.0 A<br>Max. switched voltage: 220 VDC or 250 VAC |
| **Rated Load**<br>**UL/CSA** | 0.5 A at 125 VAC<br>2.0 A at 30 VDC |
| **Material** | Silver palladium (movable)<br>Silver palladium, gold plated (stationary) |
| **Resistance** | < 50 milliohms initially at 6 V, 1 A |

### COIL (Polarized)

| | |
|---|---|
| **Power** | |
| **At Pickup Voltage (typical)** | 79 mW (3–12 VDC)<br>113 mW (24 VDC) |
| **Max. Continuous Dissipation** | 0.8 W at 20°C (68°F) |
| **Temperature Rise** | At nominal coil voltage<br>20°C (36°F) (3–12 VDC)<br>30°C (54°F) (24 VDC) |
| **Temperature** | Max. 115°C (239°F) |

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than “Must Operate” value.
3. Relay has fixed coil polarity.
4. Specifications subject to change without notice.

### GENERAL DATA

| | |
|---|---|
| **Life Expectancy**<br>**Mechanical**<br>**Electrical** | Minimum operations<br>1 x $10^8$ at 3Hz<br>1 x $10^5$ at 0.5 A, 125 VAC, Res.<br>2 x $10^5$ at 1.0 A, 30 VDC, Res. |
| **Operate Time (typical)** | 3 ms at nominal coil voltage |
| **Release Time (typical)** | 2 ms at nominal coil voltage<br>(with no coil suppression) |
| **Bounce (typical)** | At 10 mA contact current<br>1 ms at operate or release |
| **Capacitance** | < 1.5 pF at 10 KHz (open contacts, adjacent contacts)<br>< 2 pF at 10 KHz (contact to coil) |
| **Dielectric Strength (at sea level)** | See table |
| **Dropout** | Greater than 10% of nominal coil voltage |
| **Insulation Resistance** | $10^9$ ohms min. at 25°C, 500 VDC,<br>50% RH |
| **Ambient Temperature**<br>**Operating**<br>**Storage** | At nominal coil voltage<br>-40°C (-40°F) to 95°C (203°F) (3–12 VDC)<br>-40°C (-40°F) to 90°C (194°F) (24 VDC)<br>-40°C (-40°F) to 85°C (185°F) (48 VDC)<br>-40°C (-40°F) to 115°C (239°F) |
| **Vibration** | Operational, 20 g, 10–55 Hz<br>Non-destructive, 30 g, 10–55 Hz |
| **Shock** | Operational, 50 g min., 11 ms<br>Non-destructive, 100 g min., 11 ms |
| **Max. Solder Temp. Time** | 260°C (500°F) for 5 seconds |
| **Max. Solvent Temp.** | 80°C (176°F) |
| **Max. Immersion Time** | 30 seconds |
| **Weight** | 1.5 grams |
| **Enclosure** | P.B.T. polyester |
| **Terminals** | Tinned copper alloy, P.C. |

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4/30/04W

# AZ8461

## RELAY ORDERING DATA

| STANDARD VERSION | | | | ORDER NUMBER |
|---|---|---|---|---|
| Nominal Coil VDC | Max. Continuous VDC | Coil Resistance ± 10% | Must Operate VDC | |
| 1.5 | 3.6 | 16.1 | 1.13 | AZ8461–1.5 |
| 3 | 7.2 | 64.3 | 2.25 | AZ8461–3 |
| 4.5 | 10.8 | 145 | 3.38 | AZ8461–4.5 |
| 5 | 12.0 | 178 | 3.75 | AZ8461–5 |
| 6 | 14.4 | 257 | 4.50 | AZ8461–6 |
| 9 | 21.6 | 579 | 6.75 | AZ8461–9 |
| 12 | 28.8 | 1028 | 9.00 | AZ8461–12 |
| 18 | 36.0 | 1620 | 13.50 | AZ8461–18 |
| 24 | 48.0 | 2880 | 18.00 | AZ8461–24 |
| **SINGLE COIL LATCHING VERSION** | | | | |
| Nominal Coil VDC | Max. Continuous VDC | Coil Resistance ± 10% | Set Voltage | ORDER NUMBER |
| 1.5 | 4.2 | 22.5 | 1.13 | AZ8461P1–1.5 |
| 3 | 8.5 | 90 | 2.25 | AZ8461P1–3 |
| 4.5 | 12.7 | 203 | 3.38 | AZ8461P1–4.5 |
| 5 | 14.1 | 250 | 3.75 | AZ8461P1–5 |
| 6 | 17.0 | 360 | 4.50 | AZ8461P–-6 |
| 9 | 25.5 | 810 | 6.75 | AZ8461P1–9 |
| 12 | 33.9 | 1440 | 9.00 | AZ8461P1–12 |
| 18 | 41.6 | 2160 | 13.50 | AZ8461P1–18 |
| 24 | 55.4 | 3840 | 18.00 | AZ8461P1–24 |
| **DUAL COIL LATCHING VERSION** | | | | |
| Nominal Coil VDC | Max. Continuous VDC | Coil Resistance ± 10% | Set/Reset Voltage | ORDER NUMBER |
| 1.5 | 3.0 | 11.25 | 1.13 | AZ8461P2–1.5 |
| 3 | 6.0 | 45 | 2.25 | AZ8461P2–3 |
| 4.5 | 9.0 | 101 | 3.38 | AZ8461P2–4.5 |
| 5 | 10.0 | 125 | 3.75 | AZ8461P2–5 |
| 6 | 12.0 | 180 | 4.50 | AZ8461P2–6 |
| 9 | 18.0 | 405 | 6.75 | AZ8461P2–9 |
| 12 | 24.0 | 720 | 9.00 | AZ8461P2–12 |
| 18 | 29.4 | 1080 | 13.50 | AZ8461P2–18 |
| 24 | 39.2 | 1920 | 18.00 | AZ8461P2-24 |

| INITIAL DIELECTRIC STRENGTH (minimum) | | | SURGE | |
|---|---|---|---|---|
| | VRMS, 1 min. | Peak (V) | Rise Time (µS) | Decay Time* (9µS) (1/2 peak) |
| Between open contacts | 1,000 | 1,500 | 10 | 160 |
| Between contact sets | 1,000 | 1,500 | 2 | 160 |
| Between coil and contacts | 1,500 (1000[(1)]) | 2,500 (1500[(1)]) | 2 | 10 |

(1) Dual coil

* Decay time measured from beginning of surge.

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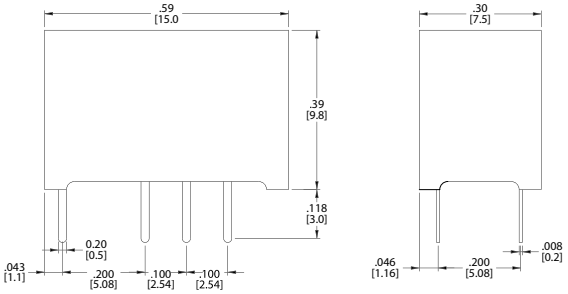
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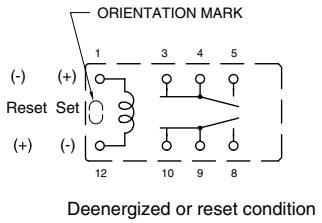
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## Mechanical Data

Non-latching type

Single coil latching type

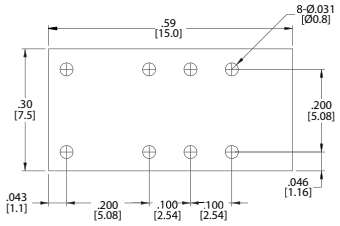



Deenergized or reset condition

Wiring Diagram

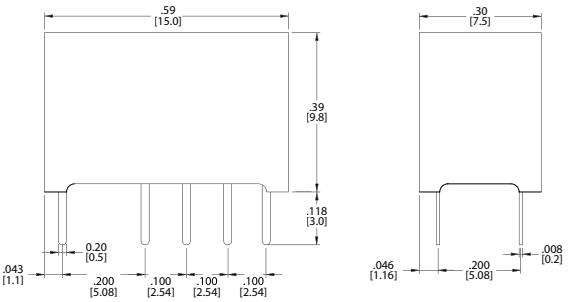
Viewed toward terminals

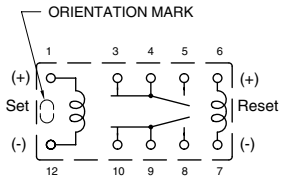



PC Board Layout

Viewed toward terminals

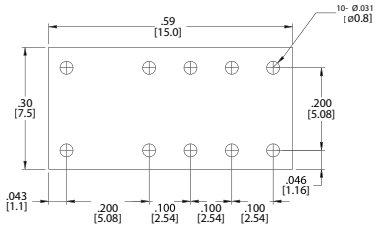
Double coil latching type




Wiring Diagram

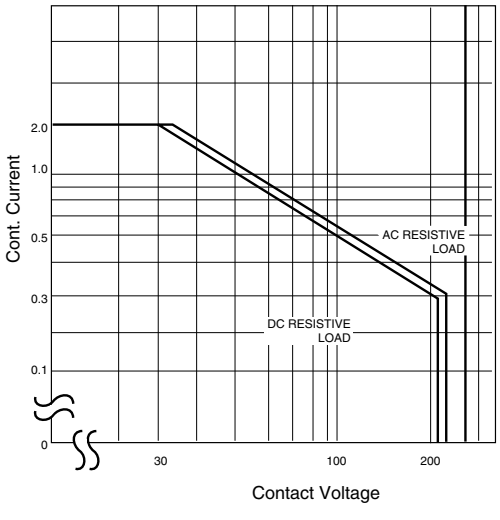
Viewed toward terminals




PC Board Layout

Viewed toward terminals

## Maximum Switching Capacity





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