

AZ970E/AZ971E

40 AMP MINIATURE POWER RELAY FOR AUTOMOTIVE USE

FEATURES

- Low cost
- Up to 40 Amp switching capability in a compact size
- Open, covered or sealed
- Coils to 24 VDC
- Small footprint (European style)
- 1 Form A, B and C contacts available
- Vibration and shock resistant
- Designed for high in-rush applications



CONTACTS

| | |
|--------------------|--|
| Arrangement | SPST (1 Form A) SPST (1 Form B) SPDT (1 Form C) |
| Ratings | Resistive load: Max. switched power: Form A: 560 W Form B: 420 W Form C: 420 W Max. switched current: Form A: 40 A Form B: 30 A Form C: 30 A Max. switched voltage: 150* VDC * If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory. |
| Material | Silver tin oxide |
| Resistance | < 100 milliohms initially (24 V, 1 A voltage drop method) |

GENERAL DATA

| | |
|--|---|
| Life Expectancy Mechanical Electrical | Minimum operations 5 x 10 ⁶ operations 1 x 10 ⁵ operations at 40 A 14 VDC Res. |
| Operate Time (typical) | 5 ms at nominal coil voltage |
| Release Time (typical) | 3 ms at nominal coil voltage (with no coil suppression) |
| Dielectric Strength (at sea level for 1 min.) | 500 VDC coil to contact 500 VDC between open contacts |
| Insulation Resistance | 100 megohms min. at 20°C, 500 VDC, 50% RH |
| Dropout | Greater than 6% of nominal coil voltage |
| Ambient Temperature AZ970E Operating AZ970E Storage AZ971E Operating AZ971E Storage | At nominal coil voltage -40°C (-40°F) to 105°C (221°F) -40°C (-40°F) to 105°C (221°F) -40°C (-40°F) to 105°C (221°F) -40°C (-40°F) to 105°C (221°F) |
| Vibration | 0.062" (1.5 mm) DA at 10–55 Hz |
| Shock | 10 g |
| Enclosure | P.B.T. polyester |
| Terminals | Tinned copper alloy, P.C. |
| Max. Solder Temp. | 270°C (518°F) |
| Max. Solder Time | 5 seconds |
| Max. Solvent Temp. | 80°C (176°F) |
| Max. Immersion Time | 30 seconds |
| Weight | 20 grams |

COIL

| | |
|--|--|
| Power At Pickup Voltage (typical) Max. Continuous Dissipation Temperature Rise | 514 mW (12 and 24 VDC Coil) 573 mW (6 VDC Coil) 5.3 W 20°C (68°F) ambient (AZ970E) 4.6 W 20°C (68°F) ambient (AZ971E) 56°C (101°F) nominal coil VDC (AZ970E) 59°C (106°F) nominal coil VDC (AZ971E) |
| Max. Temperature | 155°C (311°F) |

NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Specifications subject to change without notice.

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AZ970E/AZ971E

RELAY ORDERING DATA — AZ970E — OPEN STYLE

| COIL SPECIFICATIONS | | | | ORDER NUMBER | | |
|---------------------|------------------|---------------------|--------------------------------|---------------|---------------|---------------|
| Nominal Coil VDC | Must Operate VDC | Max. Continuous VDC | Coil Resistance Ohm $\pm 10\%$ | Form A (SPST) | Form B (SPST) | Form C (SPDT) |
| 6 | 3.3 | 9.8 | 19.0 | AZ970E-1A-6D | AZ970E-1B-6D | AZ970E-1C-6D |
| 9 | 5.1 | 15.9 | 50.0 | AZ970E-1A-9D | AZ970E-1B-9D | AZ970E-1C-9D |
| 12 | 6.8 | 21.3 | 90.0 | AZ970E-1A-12D | AZ970E-1B-12D | AZ970E-1C-12D |
| 24 | 13.9 | 42.7 | 362.0 | AZ970E-1A-24D | AZ970E-1B-24D | AZ970E-1C-24D |

RELAY ORDERING DATA — AZ971E — With Dust Cover

| COIL SPECIFICATIONS | | | | ORDER NUMBER* | | |
|---------------------|------------------|---------------------|--------------------------------|---------------|---------------|---------------|
| Nominal Coil VDC | Must Operate VDC | Max. Continuous VDC | Coil Resistance Ohm $\pm 10\%$ | Form A (SPST) | Form B (SPST) | Form C (SPDT) |
| 6 | 3.3 | 9.4 | 19.0 | AZ971E-1A-6D | AZ971E-1B-6D | AZ971E-1C-6D |
| 9 | 5.1 | 15.2 | 50.0 | AZ971E-1A-9D | AZ971E-1B-9D | AZ971E-1C-9D |
| 12 | 6.8 | 20.4 | 90.0 | AZ971E-1A-12D | AZ971E-1B-12D | AZ971E-1C-12D |
| 24 | 13.9 | 41.0 | 362.0 | AZ971E-1A-24D | AZ971E-1B-24D | AZ971E-1C-24D |

*Add suffix "E" for epoxy sealed version.

MECHANICAL DATA

AZ970E Outline Dimensions and PCB Layout

Viewed towards terminals

Terminal Dimensions

| Term. | Dimensions |
|-------|---------------------------|
| 3,5 | .041 [1.02] x .03 [0.76] |
| 1,2 | .041 [1.02] x .018 [0.46] |
| 4 | .041 [1.02] x .062 [1.57] |

AZ971E Outline Dimensions and PCB Layout

Viewed towards terminals

Wiring Diagrams

FORM C

FORM B

FORM A

Viewed towards terminals

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± 0.010 "

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