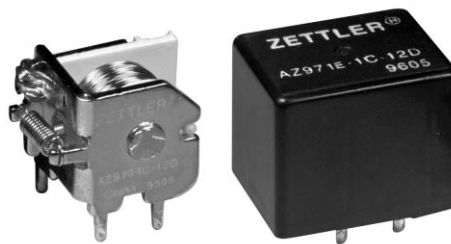


# AZ970E/AZ971E

## 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

<b>Arrangement</b>	SPST (1 Form A) SPST (1 Form B) SPDT (1 Form C)
<b>Ratings</b>	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 Max. carry current: 60 A * If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
<b>Minimum Load</b>	5 VDC, 0.1 A
<b>Material</b>	Silver alloy
<b>Resistance</b>	< 100 milliohms initially (24 V, 1 A voltage drop method)

### COIL

<b>Power</b>	
<b>At Pickup Voltage (typical)</b>	514 mW (12 and 24 VDC Coil) 573 mW (6 VDC Coil)
<b>Max. Continuous Dissipation</b>	4.8 W 20°C (68°F) ambient (AZ970E) 3.8 W 20°C (68°F) ambient (AZ971E)
<b>Temperature Rise</b>	60°C (108°F) nominal coil VDC (AZ970E) 75°C (135°F) nominal coil VDC (AZ971E)
<b>Max. Temperature</b>	200°C (392°F)

### GENERAL DATA

<b>Life Expectancy</b> <b>Mechanical</b> <b>Electrical</b>	Minimum operations 5 x 10 <sup>6</sup> operations 1 x 10 <sup>5</sup> operations at rated load
<b>Operate Time (typical)</b>	3 ms at nominal coil voltage
<b>Release Time (typical)</b>	5 ms at nominal coil voltage (with no coil suppression)
<b>Dielectric Strength (at sea level for 1 min.)</b>	500 VDC coil to contact 500 VDC between open contacts
<b>Insulation Resistance</b>	100 megohms min. at 20°C, 500 VDC, 50% RH
<b>Dropout</b>	Greater than 6% of nominal coil voltage
<b>Ambient Temperature</b> <b>AZ970 Operating</b> <b>AZ970 Storage</b> <b>AZ971 Operating</b> <b>AZ971 Storage</b>	At nominal coil voltage -40°C (-40°F) to 140°C (284°F) -40°C (-40°F) to 200°C (392°F) -40°C (-40°F) to 125°C (257°F) -40°C (-40°F) to 175°C (347°F)
<b>Vibration</b>	0.062" DA at 10–55 Hz
<b>Shock</b>	10 g
<b>Enclosure</b>	P.B.T. polyester
<b>Terminals</b>	Tinned copper alloy, P.C.
<b>Max. Solder Temp.</b>	270°C (518°F)
<b>Max. Solder Time</b>	5 seconds
<b>Max. Solvent Temp.</b>	80°C (176°F)
<b>Max. Immersion Time</b>	30 seconds
<b>Weight</b>	20 grams

### 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.

**ZETTLER** electronics

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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 $\pm 10\%$	Form A (SPST)	Form B (SPST)	Form C (SPDT)
6	3.3	9.0	19.0	AZ970E-1A-6D	AZ970E-1B-6D	AZ970E-1C-6D
9	5.1	14.7	50.0	AZ970E-1A-9D	AZ970E-1B-9D	AZ970E-1C-9D
12	6.8	19.6	90.0	AZ970E-1A-12D	AZ970E-1B-12D	AZ970E-1C-12D
24	13.9	39.3	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 $\pm 10\%$	Form A (SPST)	Form B (SPST)	Form C (SPDT)
6	3.3	8.1	19.0	AZ971E-1A-6D	AZ971E-1B-6D	AZ971E-1C-6D
9	5.1	14.7	50.0	AZ971E-1A-9D	AZ971E-1B-9D	AZ971E-1C-9D
12	6.8	17.6	90.0	AZ971E-1A-12D	AZ971E-1B-12D	AZ971E-1C-12D
24	13.9	35.4	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

Top view dimensions: .760 [19.3] (width), .945 [24] (depth).  
 Side view dimensions: .715 [18.2] (height), .170 [4.3] (base offset).  
 Terminal view dimensions: 3x  $\phi$ .081 [ $\phi$ 2.1] (coil holes), .563 [14.3] (coil length), .106 [2.7] (coil offset), .165 [4.2] (coil offset), .232 [5.9] (coil offset), .134 [3.4] (coil offset), .090 [2.3] (coil offset), .130 [3.3] (coil offset), .476 [12.1] (coil offset), .433 [11] (coil offset), .087 [2.2] (coil offset), 4x  $\phi$ .055 [ $\phi$ 1.4] (terminals).

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

Top view dimensions: .866 [22] (width), 1.040 [26.4] (depth).  
 Side view dimensions: .878 [22.3] (height), .020 [.5] (base offset), .126 [3.2] (base offset).  
 Terminal view dimensions: 3x  $\phi$ .081 [ $\phi$ 2.1] (coil holes), .563 [14.3] (coil length), .106 [2.7] (coil offset), .165 [4.2] (coil offset), .232 [5.9] (coil offset), .134 [3.4] (coil offset), .170 [4.3] (coil offset), .130 [3.3] (coil offset), .476 [12.1] (coil offset), .433 [11] (coil offset), .087 [2.2] (coil offset), 4x  $\phi$ .055 [ $\phi$ 1.4] (terminals).

Viewed towards terminals

### Wiring Diagrams

**FORM C**

**FORM B**

**FORM A**

Viewed towards terminals

Dimensions in inches with metric equivalents in parentheses. Tolerance:  $\pm 0.010$ "

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