

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

COIL

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

GENERAL DATA

Life Expectancy Mechanical Electrical	Minimum operations 5 x 10 ⁶ operations 1 x 10 ⁵ operations at rated load
Operate Time (typical)	3 ms at nominal coil voltage
Release Time (typical)	5 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 AZ970 Operating AZ970 Storage AZ971 Operating AZ971 Storage	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)
Vibration	0.062" 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

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

Logistic Design (UK) Limited. Unit 3, Eagle Centre Way, Luton LU4 9US www.zettlerrelay.com sales@zettlerrelay.com
Telephone +44 (0) 1582 599 600 Fax +44 (0) 1582 599 700

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 ϕ .081 [2.1] (hole spacing), .563 [14.3] (total width), .106 [2.7] (terminal offset), .165 [4.2] (terminal offset), .232 [5.9] (terminal offset), .134 [3.4] (terminal offset), .090 [2.3] (terminal offset), .130 [3.3] (terminal offset), .476 [12.1] (terminal offset), .433 [11] (terminal offset), .087 [2.2] (terminal offset), 4x ϕ .055 [1.4] (terminal diameter).
 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 [0.5] (base offset), .126 [3.2] (base offset).
 Terminal view dimensions: 3x ϕ .081 [2.1] (hole spacing), .563 [14.3] (total width), .106 [2.7] (terminal offset), .165 [4.2] (terminal offset), .232 [5.9] (terminal offset), .134 [3.4] (terminal offset), .170 [4.3] (terminal offset), .130 [3.3] (terminal offset), .476 [12.1] (terminal offset), .433 [11] (terminal offset), .087 [2.2] (terminal offset), 4x ϕ .055 [1.4] (terminal diameter).
 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 "

ZETTLER electronics

Logistic Design (UK) Limited. Unit 3, Eagle Centre Way, Luton LU4 9US www.zettlerrelay.com sales@zettlerrelay.com
 Telephone +44 (0) 1582 599 600 Fax +44 (0) 1582 599 700