

AZ970/AZ971

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
- 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)

COIL

Power	
At Pickup Voltage (typical)	514 mW (12 and 24 VDC Coil) 573 mW (6 VDC Coil)
Max. Continuous Dissipation	5.3 W 20°C (68°F) ambient (AZ970) 4.6 W 20°C (68°F) ambient (AZ971)
Temperature Rise	56°C (101°F) nominal coil VDC (AZ970) 59°C (106°F) nominal coil VDC (AZ971)
Max. Temperature	155°C (311°F)

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)	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 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

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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RELAY ORDERING DATA — AZ970 — 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	9.8	19.0	AZ970-1A-6D	AZ970-1B-6D	AZ970-1C-6D
9	5.1	15.9	50.0	AZ970-1A-9D	AZ970-1B-9D	AZ970-1C-9D
12	6.8	21.3	90.0	AZ970-1A-12D	AZ970-1B-12D	AZ970-1C-12D
24	13.9	42.7	362.0	AZ970-1A-24D	AZ970-1B-24D	AZ970-1C-24D

RELAY ORDERING DATA — AZ971 — 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	9.4	19.0	AZ971-1A-6D	AZ971-1B-6D	AZ971-1C-6D
9	5.1	15.2	50.0	AZ971-1A-9D	AZ971-1B-9D	AZ971-1C-9D
12	6.8	20.4	90.0	AZ971-1A-12D	AZ971-1B-12D	AZ971-1C-12D
24	13.9	41.0	362.0	AZ971-1A-24D	AZ971-1B-24D	AZ971-1C-24D

*Add suffix "E" for epoxy sealed version.

MECHANICAL DATA

AZ970 Outline Dimensions and PCB Layout

Top view dimensions: .740 [18.8 ± 0.4], .906 [23.0 ± 0.4], .173 [4.4 ± 0.4]

Side view dimensions: .709 [18.0 ± 0.4]

Terminal view dimensions: 3x $\phi 0.081$ [$\phi 2.1$], .559 [14.2], .102 [2.6], .148 [3.8], .211 [5.4], .322 [8.2], .161 [4.1], .066 [1.7], .467 [11.9], 4x $\phi 0.055$ [$\phi 1.4$], .134 [3.4], .147 [3.7]

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]

AZ971 Outline Dimensions and PCB Layout

Top view dimensions: .831 [21.1 ± 0.3], 1.031 [26.2 ± 0.3], .020 [5], .138 [3.5 ± 0.5]

Side view dimensions: .831 [21.1 ± 0.3]

Terminal view dimensions: 3x $\phi 0.081$ [$\phi 2.1$], .559 [14.2], .102 [2.6], .148 [3.8], .211 [5.4], .322 [8.2], .161 [4.1], .170 [4.3], .134 [3.4], .467 [11.9], 4x $\phi 0.055$ [$\phi 1.4$], .147 [3.7]

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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2003-04-08