

AZ6960

8 AMP SUBMINIATURE POWER RELAY

FEATURES

- 5 kV dielectric strength
- 8 mm creepage and clearance
- Coil voltages up to 60 VDC
- Proof tracking index (PTI/CTI) 250
- Epoxy sealed versions available
- Gold plated versions available
- UL, CUR E44211
- VDE certificate 40045996



CONTACTS

Arrangement	SPST-N.O. (1 Form A) SPST-N.C. (1 Form B) SPDT (1 Form C)
Ratings (max.) switched power switched current inrush current switched voltage	(resistive load) 192 W or 2000 VA 8 A 10 A 24 VDC or 250/400 VAC
Rated Loads UL	10 A at 277 VAC, general purpose 1/2 HP at 240 VAC B300 pilot duty
VDE 1 Form A	10 A at 250 VAC, 10k cycles, resistive, 85°C ^[1] 8 A at 250 VAC, 100k cycles, resistive, 70°C ^[1] 8 A at 250 VAC, 75k cycles, resistive, 70°C ^[2] 8 A at 250 VAC, 50k cycles, resistive, 85°C ^{[1][2]} *
1 Form B	8 A at 250 VAC, 90k cycles, resistive, 70°C ^[1] 8 A at 250 VAC, 35k cycles, resistive, 85°C ^[2] *
1 Form C	8 A at 250 VAC, 25k cycles, resistive, 85°C ^[1] 8 A at 250 VAC, 65k cycles, resistive, 70°C ^[1] **
	* applies for sealed versions ** tested at N.O. contact
Contact materials	AgNi (silver nickel) ^[1] AgSnO ₂ (silver tin oxide) ^[2] gold plating available
Minimum switching voltage	5 V (AgNi, AgNi/Au) 10 V (AgSnO ₂ , AgSnO ₂ /Au)
current	5 mA (AgNi), 2 mA (AgNi/Au) 10 mA (AgSnO ₂), 2 mA (AgSnO ₂ /Au)
Initial resistance	< 100 mΩ (100 mA / 24 V)

COIL

Nominal coil DC voltages	5, 6, 9, 12, 18, 24, 48, 60
Dropout	> 10% of nominal coil voltage
Coil power at nominal voltage at pickup voltage	250 mW 126 mW
Temperature Rise	17 K (30°F) at nominal coil voltage

GENERAL DATA

Life Expectancy Mechanical Electrical	(minimum operations) 1 x 10 ⁷ 1 x 10 ⁶ at 8 A, 250 VAC, res., 70°C (158°F)
Operate Time	10 ms (typ.) at nominal coil voltage
Release Time	5 ms (typ.) at nominal coil voltage, without coil suppression
Dielectric Strength	(at sea level for 1 min.) 5000 V _{RMS} coil to contact 1000 V _{RMS} between open contacts
Isolation spacing Clearance Creepage	≥ 8 mm ≥ 8 mm
Insulation Resistance Insulation	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH (according to IEC 60664-1) Overvoltage category: III Pollution degree: 3 Nominal voltage: 400 VAC PTI/CTI: ≥ 250
Temperature Range Operating	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F)
Vibration resistance N.O. contact N.C. contact	10 g 5 g
Shock resistance N.O. contact N.C. contact	10 g 5 g
Enclosure type material group flammability	P.B.T. polyester flux proof, wash tight IIIa UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering Max. Temperature Max. Time	270 °C 5 s
Cleaning Max. Solvent Temp. Max. Immersion Time	80°C (176°F) 30 seconds
Dimensions length width height	28.5 mm (1.12") 10.1 mm (0.40") 12.5 mm (0.49")
Weight	8 grams (approx.)
Compliance	UL 508, IEC 61810-1, IEC 60335-1 (GWT) RoHS, REACH
Packing unit in pcs	10 per inner carton / 100 per carton box

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COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm $\pm 10\%$
5	3.5	15.0	102
6	4.2	18.0	144
9	6.3	27.0	330
12	8.4	36.0	580
18	12.6	54.0	1300
24	16.8	72.0	2300
48	33.6	144.0	9340
60	42.0	180.0	14000

ORDERING DATA

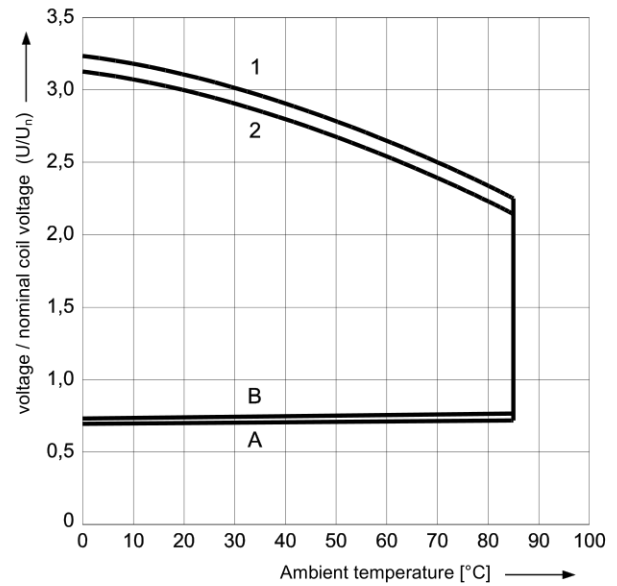
AZ6960-□□□-□□□D□□

Plating option
 nil: non plated
 A: Gold plating
Sealing option
 nil: non sealed
 E: sealed version
Coil type
 D: DC coil
Nominal coil voltage
 see coil voltage specifications table
Contact material
 B: silver nickel
 E: silver tin oxide
Contact arrangement
 1A: 1 Form A (SPST-N.O.)
 1B: 1 Form B (SPST-N.C.)
 1C: 1 Form C (SPDT)

Example ordering data

AZ6960-1AE-9D 1 Form A, silver tin oxide, 9 VDC nominal coil voltage, non sealed, non gold plated
 AZ6960-1AE-24DE 1 Form A, silver tin oxide, 24 VDC nominal coil voltage, sealed, non gold plated
 AZ6960-1CB-12DA 1 Form C, silver nickel, 12 VDC nominal coil voltage, non sealed, gold plated

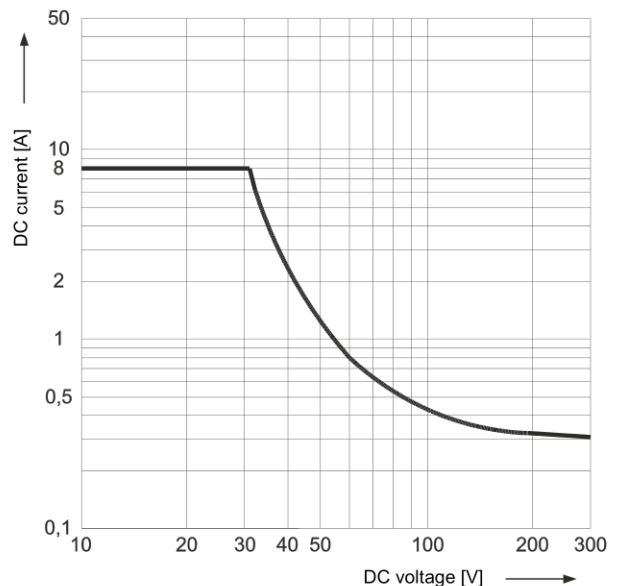
COIL OPERATING RANGE



A pull-in voltage - cold coil
B pull-in voltage - hot coil
1 maximum voltage - no load
2 maximum voltage - rated load (8 A)

DC BREAKING CAPACITY

Resistive load

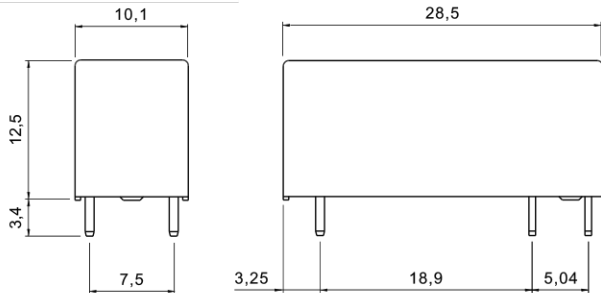


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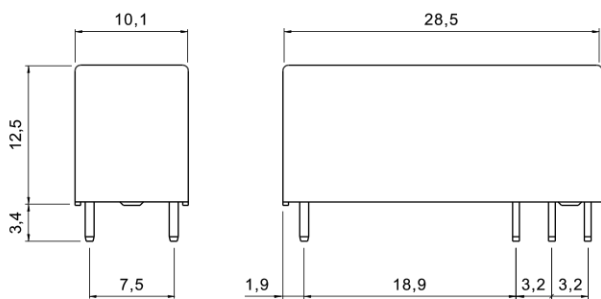
MECHANICAL DATA

Dimensions in mm

1 Form A and 1 Form B



1 Form C

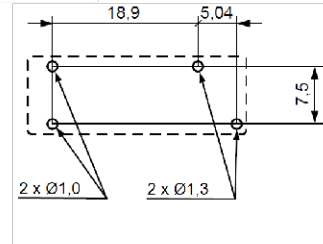


Terminal No.	Dimensions [mm]
A1(1), A2(2)	0.4 x 0.6
11(4), 12(3), 14(5)	0.6 x 0.95

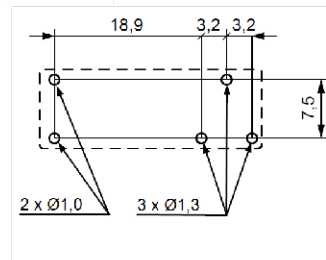
PC BOARD LAYOUT

Viewed towards terminals

1 Form A and 1 Form B



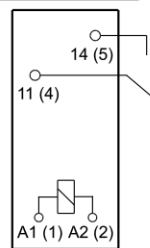
1 Form C



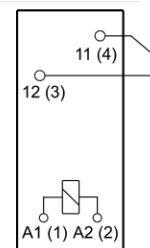
WIRING DIAGRAMS

Viewed towards terminals

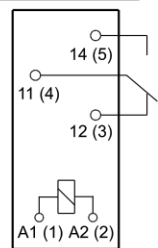
1 Form A



1 Form B



1 Form C



NOTES

1. Specifications subject to change without notice.
2. All values at 20°C (68°F) unless otherwise stated.
3. Relay may pull in with less than "Must Operate" value.
4. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf

The specification provides an overview of the most significant part features. Any individual applications and operating conditions are not taken into consideration. It is recommended to test the product under application conditions. Responsibility for the application remains with the customer. Proper operation and service life cannot be guaranteed if the part is operated outside the specified limits.

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