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.)	(resistive load)
switched power	192 W or 2000 VA
switched current	8 A
inrush current	10 A
switched voltage	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, resitive, 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, resitive, 85°C [2] *
1 Form C	8 A at 250 VAC, 25k cycles, resistive, 85°C [1] 8 A at 250 VAC, 65k cycles, resitive, 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	250 mW
at pickup voltage	126 mW
Temperature Rise	17 K (30°F) at nominal coil voltage

GENERAL DATA

Life Expectancy	(minimum operations)
Mechanical	1×10^7
Electrical	1×10^6 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	≥ 8 mm
Creepage	≥ 8 mm
Insulation Resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
Insulation	(according to IEC 60664-1) Overvoltage category: III Pollution degree: 3 Nominal voltage: 400 VAC PTI/CTI: ≥ 250
Temperature Range	(at nominal coil voltage)
Operating	-40°C (-40°F) to 85°C (185°F)
Vibration resistance	
N.O. contact	10 g
N.C. contact	5 g
Shock resistance	
N.O. contact	10 g
N.C. contact	5 g
Enclosure	P.B.T. polyester
type	flux proof, wash tight
material group	IIIa
flammability	UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering	
Max. Temperature	270 °C
Max. Time	5 s
Cleaning	
Max. Solvent Temp.	80°C (176°F)
Max. Immersion Time	30 seconds
Dimensions	
length	28.5 mm (1.12")
width	10.1 mm (0.40")
height	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 ± 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)

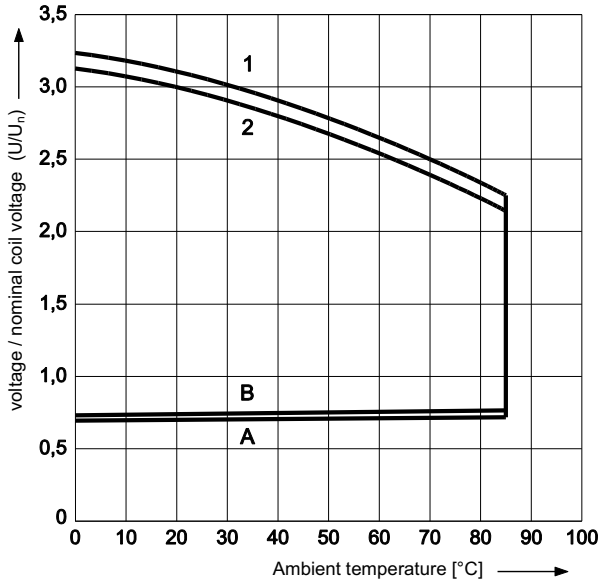
Example ordering data

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

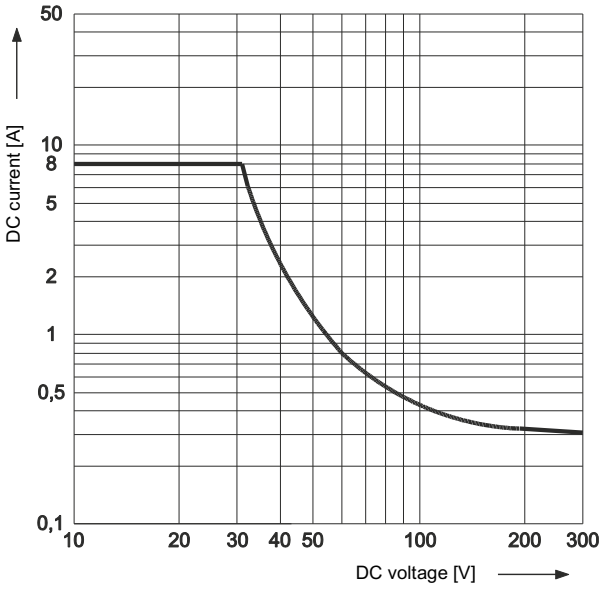
COIL OPERATING RANGE



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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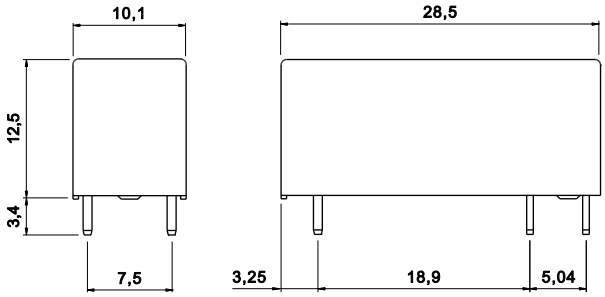
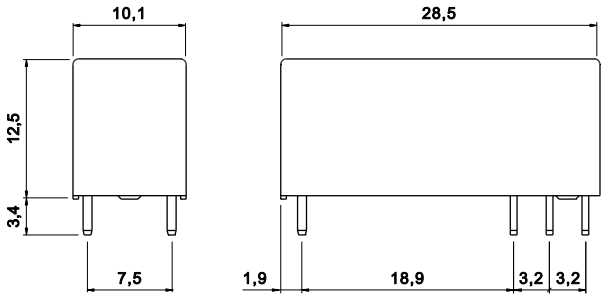
MECHANICAL DATA

Dimensions in mm

1 Form A and 1 Form B



1 Form C

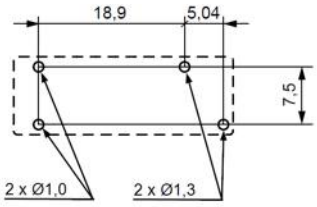


Terminal No.	Dimensions [mm]
A1(1), A2(2)	0.4 x 0.6
11(4), 12(3), 14(5)	0.6 x 0.95

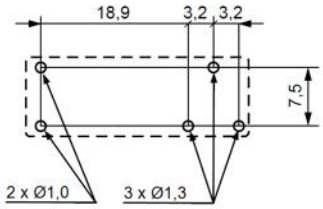
PC BOARD LAYOUT

Viewed towards terminals

1 Form A and 1 Form B



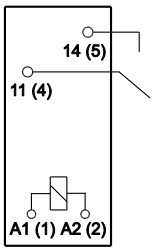
1 Form C



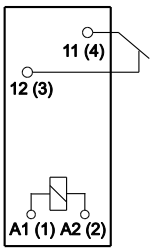
WIRING DIAGRAMS

Viewed towards terminals

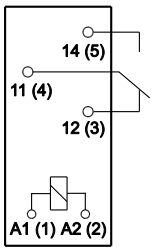
1 Form A



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.