AZ940

MINIATURE POWER RELAY

FEATURES

- 10 Amp switching capability
- 4 kV dielectric strength
- Epoxy sealed versions available
- Gold plated versions available
- Glow wire approved versions acc. IEC60335-1 available
- Sensitive coil versions available
- UL, CUR file E44211
- VDE certificate 134326

Illustration similar

CONTACTS

Arrangement	SPST (1 Form A), SPDT (1 Form C)
Ratings (max.) switched power switched current switched voltage	(resistive load) 150 W or 2770 VA 10 A (NO), 3 A (NC) 30 VDC* or 250 VAC * Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
Rated Loads UL/CUR	**Normally open contact (NO)** 10 A at 125 VAC, gen. use, 85°C, 100k cycles [1] 10 A at 125 VAC, gen. use, 85°C, 100k cycles [2] 3) 10 A at 277 VAC, cos phi 0.4, 70°C, 10k cycles [1] 8 A at 250 VAC, gen. use, 70°C, 50k cycles [1] 5 A at 277 VAC, gen. use, 85°C, 100k cycles [1][2] 5 A at 30 VDC, resistive, 85°C, 100k cycles [1][2] 4 A at 120 VAC, resistive,105°C, 100k cycles [2] 1 A at 120 VAC, tungsten, 105°C, 6k cycles [2] 1/10 HP at 125 VAC, 70°C, 100k cycles [1] 1/6 HP at 250 VAC, 70°C, 100k cycles [1] 2.5 FLA / 15 LRA at 120 VAC, 105°C, 6k cycles [2] **Normally closed contact (NC)** 3 A at 277 VAC general use, 85°C, 100k cycles [1][2] 3 A at 30 VDC resistive, 85°C, 100k cycles [1][2]
VDE	**SPST (1 Form A) versions** 5 A at 250 VAC resistive, 85°C, 100k cycles [1] 5 A at 250 VAC resistive, 85°C, 75k cycles [2] 1) 5 A at 250 VAC resistive, 85°C, 50k cycles [2] 2) 5 A at 30 VDC resistive, 85°C, 50k cycles [2] 2) **SPDT (1 Form C) versions** 5 A (NO) / 3 A (NC) at 250 VAC res., 70°C, 100k [1] 1) 3) 5 A (NO) / 3 A (NC) at 30 VDC res., 85°C, 100k [1] 1) 5 A (NO) / 3 A (NC) at 277 VAC, 85°C, 50k [2] 1) Notes: 1) approved for standard coil versions 2) approved for sensitive coil versions 3) tested with opened vent hole
Contact materials	[1] AgNi (silver nickel) [2] $AgSnO_2$ (silver tin oxide) gold plating available
Initial resistance max. typ.	(1A / 6V, voltage drop method) 100 mΩ < 10 mΩ

GENERAL DATA

Life Expectancy mechanical electrical	(minimum operations) 1 x 10^7 1 x 10^5 at 5 A 250 VAC resistive
Operate Time max.	(at nominal coil voltage) 8 ms
Release Time max.	(at nom. coil voltage, without coil suppression) 5 ms
Dielectric Strength coil to contact between open contacts	(at sea level for 1 min.) 4000 VAC 1000 VAC
Insulation Resistance	1000 MΩ (min.) at 500 VDC, 50% RH
Creepage coil to contact	≥ 8.0 mm
Clearance coil to contact	≥ 4.5 mm (SPST versions) ≥ 4.0 mm (SPDT versions)
Insulation coil to contact	Reinforced insulation acc. IEC 60730-1 (rated voltage: 250 VAC, pollution degree: 2, overvoltage category: II)
Temperature Range operating	at nominal coil voltage -40°C (-40°F) to 105°C (221°F)
Vibration	0.062" (1.5 mm) DA at 10–55 Hz
Shock	10 g
Enclosure protection category material group	P.B.T. polyester RT II (flux proof), RT III (wash tight) IIIa
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature max. time	270°C (518°F) 5 seconds
Cleaning max. solvent temp. max. immersion time	80°C (176°F) 30 seconds
Dimensions length width height	20.5 mm (0.807") 10.2 mm (0.401") 15.7 mm (0.681")
Weight	7 grams (approx.)
Packing unit in pcs	100 per cardboard box / 500 per carton box
Compliance	UL 508, IEC 61810-1, RoHS, REACH

AZ940

COIL

Nominal coil voltages	see coil voltage specifications table
Dropout voltage	> 5% of nominal coil voltage
Power nominal at pickup voltage	(typ. at 23°C) 450 mW (standard coil) / 200 mW (sensitive coil) 253 mW (standard coil) / 113 mW (sensitive coil)
Max. temperature	155°C (311°F), class F

COIL VOLTAGE SPECIFICATIONS

Standard Coil

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	3.9	20
5	3.75	6.6	55
6	4.5	7.8	80
9	6.75	11.7	180
12	9.0	15.6	320
18	13.5	23.4	720
24	18.0	31.2	1280
48	36.0	62.4	5120

Sensitive Coil

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	4.5	45
5	3.75	7.5	125
6	4.5	9.0	180
9	6.75	13.5	400
12	9.0	18.0	720
18	13.5	27.0	1600
24	18.0	36.0	2800
48	36.0	72.0	11520

Note: All values at 23°C (73°F), upright position, terminals downward.

ORDERING DATA

AZ940-□□□-□□D□□□

Plating option
nil: no plating
G: gold plated

Sealing option
nil: non sealed (RT II - flux tight)
E: sealed version (RT III - wash tight)

Coil option
nil: standard coil
S: sensitive coil (1 Form A versions only)

Coil type
D: DC coil

Nominal coil voltage
see coil voltage specifications

Contact material
B: silver nickel
E: silver tin oxide

Contact arrangement
1A: SPST (1 Form A)
1C: SPDT (1 Form C)

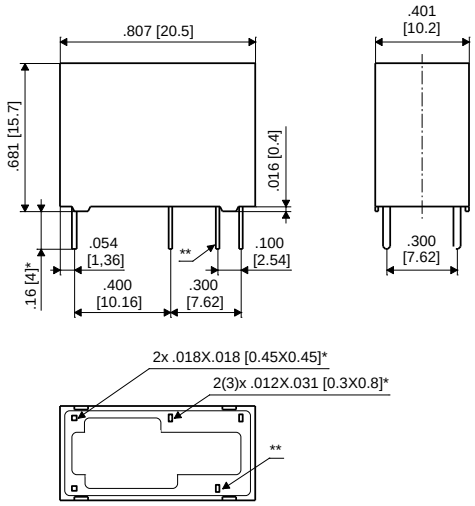
Example ordering data

AZ940-1CE-5D	1 Form C contact arrangement, silver tin oxide contact material, 5 VDC coil voltage, flux tight
AZ940-1AB-24DSE	1 Form A contact arrangement, silver nickel contact material, 24 VDC coil voltage, sensitive coil, wash tight

MECHANICAL DATA

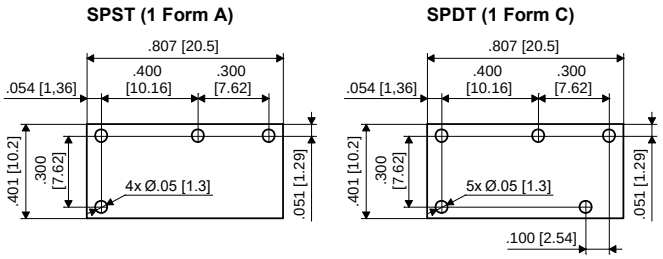
Dimensions in inches with metric equivalents in parentheses. Tolerance: ±.01”

Notes: * Pin dimensions for reference only and given without tin coating.
** Only for SPDT (1 Form C) contact arrangement versions.



PC BOARD LAYOUT

Layout recommendation. Viewed towards terminals. Pin grid is a multiple of 0.1”.
Dimensions in inches with metric equivalents in parentheses.



WIRING DIAGRAM

Viewed towards terminals. Shown in deenergized condition.

NOTES

1. All values at reference temperature of 23°C (73°F) unless stated otherwise.
2. Relay may pull in with less than “Must Operate” value.
3. “Max. Continuous Voltage” is the maximum voltage the coil can endure for a short period of time.
4. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.
5. Relay adjustment may be affected if excessive shock is applied to the relay.
6. Relay adjustment may be affected if undue pressure is exerted on the relay case.
7. Specifications subject to change without notice.

DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from the regional ZETTLER relay websites. 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.

ZETTLER GROUP

Building on a foundation of more than a century of expertise in German precision engineering, ZETTLER Group is a world-class enterprise, engaged in the design, manufacturing, sales and distribution of electronic components. Our industry leadership is based on a unique combination of engineering competence and global scale.

For more information on other ZETTLER Group companies, please visit zettler-group.com. For support on this product or other ZETTLER relays, please visit one of the group sites below.

SITES FOR ZETTLER RELAYS

NORTH AMERICA

American Zettler, Inc.
www.azettler.com
sales@azettler.com

EUROPE

Zettler Electronics, GmbH
www.zettlerelectronics.com
office@zettlerelectronics.com

Zettler Electronics, Poland
www.zettlerelectronics.pl
office@zettlerelectronics.pl

CHINA

Zettler Group, China
www.zettlercn.com
relay@zettlercn.com

ASIA PACIFIC

Zettler Electronics (HK) Ltd.
www.zettlerhk.com
sales@zettlerhk.com