AZ2250

MINIATURE POWER RELAY

FEATURES

- 40 Amp switching capability
- 1 Form A, B and C contacts available
- AC and DC coils available
- High dielectric strength version available
- Life expectancy to 10 million operations
- Class F (155°C) version standard
- Epoxy sealed version available for automatic wave soldering and immersion cleaning
- UL, CUR file E44211
- VDE certificate 40049064

CONTACTS

Arrangement	SPST-N.O. (1 Form A) SPST-N.C. (1 Form B), SPDT (1 Form C)
Ratings (max.)	(resistive load)
1 Form A	
switched power	1120 W or 11080 VA
switched current	40 A
switched voltage	28 VDC* or 277 VAC
1 Form B	
switched power	420 W or 4155 VA
switched current	15 A
switched voltage	28 VDC* or 277 VAC
1 Form C	
switched power	840 W or 8310 VA (N.O.), 560 W or 5540 VA (N.C.)
switched current	30 A (N.O.), 20 A (N.C.)
switched voltage	28 VDC* or 277 VAC
	* Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
Contact materials	AgCdO - silver cadmium oxide $AgSnO_2$ - silver tin oxide
Initial resistance	< 50 mΩ (24 V, 1 A - voltage drop method)

COIL

Nominal coil voltages	see coil voltage specifications tables
Dropout	
DC coils	> 10% of nominal coil voltage
AC coils	> 20% of nominal coil voltage
Coil power	at 20°C (68°F) ambient temperature
DC coils	
nominal	0.9 W (approx.)
max. continuous	1.7 W
at pickup voltage	500 mW (typ.)
AC coils	
nominal	see coil voltage specifications tables
max. continuous	2.7 VA
at pickup voltage	1.4 VA (typ.)
Temperature Rise	43 K (77°F) at nominal coil voltage
Max. temperature	155°C (311°F)

GENERAL DATA

Life Expectancy	(minimum operations)
mechanical	1×10^7
electrical	1×10^5 at 30 A, 250 VAC (1 Form A)
Operate Time	15 ms (max.) DC coil, at nominal coil voltage
Release Time	10 ms (max.) DC coil, at nominal coil voltage, w/o coil suppression
Dielectric Strength	(at sea level for 1 min.)
coil to contact	2500 V_{RMS} 4000 V_{RMS} (high dielectric strength version)
between open contacts	1500 V_{RMS}
Insulation Resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
Temperature Range	(at nominal coil voltage)
operating	
DC coils	-40°C (-40°F) to 85°C (185°F)
AC coils	-40°C (-40°F) to 70°C (158°F)
Vibration resistance	1.5 mm (0.062") DA at 10–55 Hz
Shock	10 g
Enclosure	P.B.T. polyester
Terminals	Tinned copper alloy, P. C.
Soldering	
max. temperature	270°C (518°F)
max. time	5 seconds
Cleaning	
max. solvent temp.	80°C (176°F)
max. immersion time	30 seconds
Dimensions	
length	32.2 mm (1.268")
width	27.0 mm (1.063")
height	20.1 mm (0.791")
Weight	36 grams (approx.)
Compliance	UL 508, IEC 61810-1 $AgSnO_2$ version: RoHS, REACH
Packing unit in pcs	40 per plastic tray / 400 per carton box

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AZ2250

UL/CUR APPROVED CONTACT RATINGS

1 Form A
40 A at 277 VAC, General Use, 40°C, 6k cycles * [1]
40 A at 277 VAC, General Use, 30°C, 6k cycles * [2]
30 A at 277 VAC, General Use, 80°C, 6k cycles [1][2]
30 A at 28 VDC, Resistive, 80°C, 6k cycles [1]
30 A at 28 VDC, General Use, 80°C, 6k cycles [2]
24 A at 240 VAC, Resistive, 60°C, 100k cycles [2]
16.7 A at 240 VAC, Resistive, 105°C, 100k cycles * [2]
28 A at 277 VAC, General Use, 80°C, 100k cycles [1]
20 FLA / 60 LRA at 277 VAC, 80°C, 30k cycles [1]
2 HP at 250 VAC [1][2]
1 HP at 125 VAC [1][2]

1 Form B
15 A at 277 VAC, General Use, 80°C, 6k cycles [1][2]
10 A at 28 VDC, General Use, 80°C, 6k cycles [1][2]
10 FLA / 33 LRA at 277 VAC, 80°C, 30k cycles [1]
½ HP at 250VAC [1][2]
¼ HP at 125 VAC [1]

1 Form C (N.O.)
30 A at 277 VAC, General Use, 80°C, 6k cycles [1][2]
20 A at 277 VAC, General Use, 80°C, 6k cycles [1]
20 A at 28 VDC, Resistive, 80°C, 6k cycles [1]
20 A at 28 VDC, General Use, 80°C, 6k cycles [2]
20 FLA / 60 LRA at 277 VAC, 80°C, 30k cycles [1]
2 HP at 250 VAC [1][2]
1 HP at 125 VAC [1][2]

1 Form C (N.C.)
20 A at 277 VAC, General Use, 80°C, 6k cycles [1][2]
10 A at 28 VDC, Resistive, 80°C, 6k cycles [1]
10 A at 28 VDC, General Use, 80°C, 6k cycles [2]
10 FLA / 33 LRA at 277 VAC, 80°C, 30k cycles [1]
½ HP at 250 VAC [1][2]
¼ HP at 125 VAC [1][2]

[1] denotes AgCdO (silver cadmium oxide) contacts
[2] denotes $AgSnO_2$ (silver tin oxide) contacts
* For DC coil types only

VDE APPROVED CONTACT RATINGS

1 Form A
30 A at 250 VAC, resistive, 30k cycles [1]
40 A at 250 VAC, resistive, 6k cycles [2]
15 A at 250 VAC, cos phi = 0.4, 85°C, 100k cycles [1][2]

1 Form B
15 A at 250 VAC, resistive, 30k cycles [1]

1 Form C (N.O.)
30 A at 250 VAC, resistive, 30k cycles [1]
20 A at 250 VAC, resistive, 85°C, 100k cycles [2]

1 Form C (N.C.)
15 A at 250 VAC, resistive, 30k cycles [1]
10 A at 250 VAC, resistive, 85°C, 100k cycles [2]

[1] denotes AgCdO (silver cadmium oxide) contacts
[2] denotes $AgSnO_2$ (silver tin oxide) contacts

Note: AC coil types and 18 VDC coil type are not VDE approved

DC COIL SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
5	3.75	6.5	27
6	4.5	7.8	40
9	6.75	11.7	97
12	9.0	15.6	155
15	11.25	19.5	256
18	13.5	23.4	380
24	18.0	31.2	660
48	36.0	62.4	2560
110	82.5	143	13450

AC COIL SPECIFICATIONS (50/60 Hz)

Nominal Coil VAC	Must Operate VAC	Max. Continuous VAC	Nom. Coil Power VA
12	9.6	13.8	2.3
24	19.2	27.6	2.1
120	96	138	2.3
220	176	286	2.2
240	192	286	2.6
277	220	319	2.2

ORDERING DATA

AZ2250-□□□T-□□□□□F

Dielectric strength
nil: 2500 V_{RMS}
T: 4000 V_{RMS}

Sealing option
nil: non sealed
E: sealed version

Coil type
D: DC coil
A: AC coil

Nominal coil voltage
see coil voltage specifications tables

Contact material
nil: silver cadmium oxide
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)

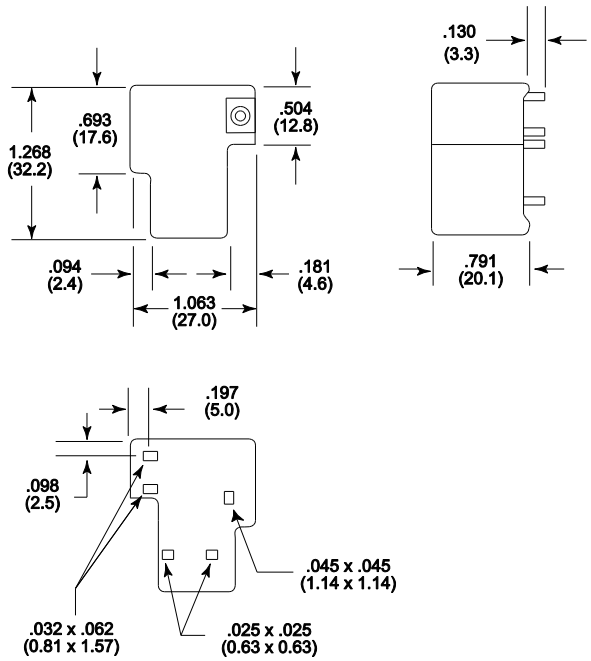
Example ordering data

AZ2250-1AT-9DF	1 Form A, silver cadmium oxide, 9 VDC nominal coil voltage, DC coil, non sealed, dielec. strength 2500 V_{RMS}
AZ2250-1CET-24DETF	1 Form C, silver tin oxide, 24 VDC nominal coil voltage, DC coil, sealed, dielectric strength 4000 V_{RMS}
AZ2250-1AET-240AF	1 Form A, silver tin oxide, 240 VAC nom. coil voltage, AC coil, non sealed, dielectric strength 2500 V_{RMS}

AZ2250

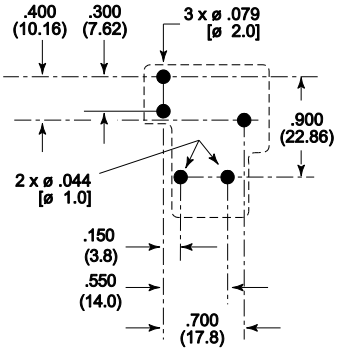
MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"



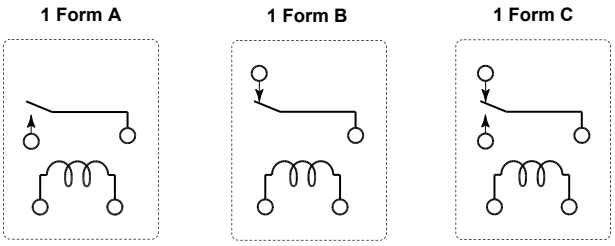
PC BOARD LAYOUT

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"
Viewed towards terminals



WIRING DIAGRAMS

Viewed towards terminals



NOTES

1. Specifications subject to change without notice.
2. All values at 20°C (68°F).
3. Relay may pull in with less than “Must Operate” value.
4. Unsealed relays should not be dip cleaned.
5. AC coil types and 18 VDC coil type are not VDE approved.
6. 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.