AZ2150

MINIATURE POWER RELAY

FEATURES

- 40 Amp switching capability
- 1 Form A, B and C contacts available
- Life expectancy to 10 million operations
- Class F (155°C) version available
- Available with an epoxy seal for automatic wave soldering and immersion cleaning
- Proof Tracking Index (PTI/CTI) 175
- UL, CUR file E44211 including versions meeting UL 508 and UL 873 spacing and contact rating requirements
- VDE certificate 40023154 (AZ2150-1A and 1C only)

CONTACTS

Arrangement	SPST-N.O. (1 Form A) SPST-N.C. (1 Form B), SPDT (1 Form C)
Ratings (max.)	(resistive load)
switched power	900 W or 10.000 VA
switched current	40 A (Form A), 30 A (Form B)
switched voltage	30 VDC* or 300 VAC
	* Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
Rated Loads	
UL/CUR	See chart for UL/CUR approved contact ratings
VDE	**1 Form A - class F coil wire** 30 A at 250 VAC, resistive, 30k cycles @ 85°C [2] 25 A at 250 VAC, resistive, 10k cycles @ 35°C [1] 20 A at 263 VAC, cos phi 0,7 30k cycles @ 85°C [2]
	1 Form A - class B coil wire 20 A at 250 VAC, resistive, 10k cycles @ 35°C [1]
	1 Form C NO: 20 A at 250 VAC, resistive,10k cycles @ 40°C [1] NC: 10 A at 250 VAC, resistive,10k cycles @ 40°C [1]
	1 Form C - class F coil wire NO: 20 A at 250 VAC, resistive, 30k cycles @ 40°C [2] NC: 10 A at 250 VAC, resistive, 30k cycles @ 40°C [2]
Contact materials	AgCdO - silver cadmium oxide [1] $AgSnO_2$ - silver tin oxide [2]
Initial resistance	< 20 mΩ (at rated current, voltage drop method)

COIL

Nominal coil DC voltages	see coil voltage specifications table
Dropout	> 10% of nominal coil voltage
Coil power	
nominal	0.9 W (approx.)
max. continuous	2.2 W at 20°C (68°F) ambient 1.8 W at 40°C (104°F) ambient
at pickup voltage	500 mW (typ.)
Temperature Rise	43 K (77°F) at nominal coil voltage
Max. temperature	130°C (266°F) - class B coil wire 155°C (311°F) - class F coil wire

GENERAL DATA

Life Expectancy	(minimum operations)
mechanical	1 x 10^7
electrical	1 x 10^5 at 30 A 120 VAC resistive (N.O.)
Operate Time	8 ms (typ.), 12 ms (max.) at nominal coil voltage
Release Time	3.5 ms (typ.), 5 ms (max.) at nominal coil voltage, w/o coil suppression
Dielectric Strength	(at sea level for 1 min.)
coil to load contacts	2500 V_{RMS} 4000 V_{RMS} (high dielectric strength version)
open load contacts	1500 V_{RMS}
Insulation Resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
Temperature Range	(at nominal coil voltage)
operating	-55°C (-67°F) to 105°C (221°F)
Vibration resistance	1.5 mm (0.062") DA at 10–55 Hz
Shock	20 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	31.8 mm (1.25”)
width	26.9 mm (1.06”)
height	19.1 mm (0.751”)
Weight	25 grams (approx.)
Compliance	UL 508, IEC 61810-1
Packing unit in pcs	40 per plastic tray / 400 per carton box

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UL/CUR APPROVED CONTACT RATINGS (AgCdO)

Load type	Cycles	Volts	Form A N.O.	Form B N.C.	Form C N.O.	Form C N.C.
General purpose (inductive)	100,000	240 VAC	30 A	15 A	30 A	15 A
	30,000	277 VAC	30 A	30 A	30 A	30 A
Resistive	100,000	240 VAC	30 A	15 A	-	-
	100,000	30 VDC	20 A	10 A	20 A	10A
	100,000	277 VAC	20 A	-	-	-
	100,000 [1]	240 VAC	15 A	-	-	-
	30,000 [1]	250 VAC	23 A	-	-	-
	25,000	240 VAC	20 A	10 A	20 A	10 A
	6,000	277 VAC	12 A	6 A	12 A	6 A
	6,000	250 VAC	40 A	-	40 A	-
Ballast	6,000	277 VAC	6 A	3 A	6 A	3 A
Pilot Duty	100,000	277 VAC	764 VA	-	764 VA	-
	100,000	125 VAC	690 VA	-	690 VA	-
	30,000	125 VAC	800 VA	-	800 VA	-
	6,000	240 VAC	1152 VA	768 VA	1152 VA	768 VA
	6,000	125 VAC	800 VA	290 VA	800 VA	290 VA
Motor Load	100,000	125 VAC	¾ HP	-	¾ HP	-
	100,000	277 VAC	¾ HP	-	¾ HP	-
	30,000	125 VAC	1 HP	-	1 HP	-
	6,000	125 VAC	1 HP	¼ HP	1 HP	¼ HP
	6,000	240 VAC	2 HP	1 HP	2 HP	2 HP
	6,000 [3]	240 VAC	3 HP	-	-	-
Tungsten	6,000	120 VAC	5 A	3 A	5 A	3 A
	6,000	240 VAC	5 A	3 A	5 A	3 A
	6,000	125 VAC	15 A	-	15 A	-
TV-5	25,000	120 VAC	TV-5	-	TV-5	TV-3
TV-3	25,000	120 VAC	-	TV-3	-	TV-3
Definite Purpose	100,000	277 VAC	60 LRA 20 FLA	-	60 LRA 20 FLA	-
	100,000	125 VAC	82.8 LRA 27 FLA	-	82.8 LRA 27 FLA	-
	100,000 [2] [4]	240 VAC	75 LRA 15 FLA	-	-	-
	30,000	240 VAC	80 LRA 30 FLA	33 LRA 10 FLA	60 LRA 30 FLA	33 LRA 10 FLA
	30,000	125 VAC	96 LRA 30 FLA	33 LRA 10 FLA	60 LRA 30 FLA	33 LRA 10 FLA
	30,000 [2]	240 VAC	60 LRA 20 FLA	-	60 LRA 20 FLA	-
	30,000 [2]	125 VAC	60 LRA 20 FLA	30 LRA 12 FLA	60 LRA 20 FLA	30 LRA 12 FLA
	30,000 [2]	120 VAC	82.8 LRA 13.8 FLA	-	82.8 LRA 13.8 FLA	-

Notes to table UL/CUR APPROVED CONTACT RATINGS

1) Ambient temperature: 98°C max. for sealed version, 105°C max. for unsealed class F version (reduced contact load)
2) Ambient temperature: 85°C
3) Ambient temperature: 65°C
4) Tested per UL 60730-1A/CSA 60730-1A using 1 sec. On, 9 sec. Off at 0.4 to 0.5 power factor for overload test

UL/CUR APPROVED CONTACT RATINGS ($AgSnO_2$)

Load type	Cycles	Volts	Form A N.O.	Form B N.C.	Form C N.O.	Form C N.C.
General Use	100,000	125 VAC	30 A	15 A	30 A	15 A
	100,000	240 VAC	20 A	15 A	20 A	15 A
	30,000	277 VAC	30 A	30 A	30 A	30 A
	100,000	30 VDC	20 A	10 A	20 A	10 A
Resistive	6,000	250 VAC	40 A	-	-	-
	100,000 [1]	240 VAC	30 A	-	-	-
	80,000 [2]	240 VAC	20.3 A	-	20.3 A	-
	100,000 [2]	240 VAC	18 A	-	18 A	-
	6,000 [2]	240 VAC	-	17 A	-	17 A
Motor Load	6,000	250 VAC	1 HP	-	1 HP	1 HP

Notes to table UL/CUR APPROVED CONTACT RATINGS—AgSnO

1) Ambient temperature: 70°C
2) Ambient temperature: 105°C

ORDERING DATA

AZ2150-□□□-□□D□□□

Dielectric strength
nil: 2.500 V_{RMS}
T: 4.000 V_{RMS} (AgSnO2 contact material only)

Coil wire
nil: Class B coil wire
(not VDE approved and not available in all regions)
F: Class F coil wire

Sealing option
nil: non sealed
E: sealed version

Nominal coil voltage
see coil voltage specifications table

Contact material
nil: silver cadmium oxide (AgCdO)
(not VDE approved and not available in all regions)
E: silver tin oxide ($AgSnO_2$)

Contact arrangement
1A: 1 Form A (SPST-N.O.)
1B: 1 Form B (SPST-N.C.)
1C: 1 Form C (SPDT)

Example ordering data

AZ2150-1A-9D	1 Form A, 9 VDC nominal coil voltage, non sealed, class B coil wire
AZ2150-1C-24DEF	1 Form C, 24 VDC nominal coil voltage, sealed, class F coil wire
AZ2150-1AE-12DEFT	1 Form A, 12 VDC nominal coil voltage, sealed, 4.000 V_{RMS} dielectric strength, class F coil wire

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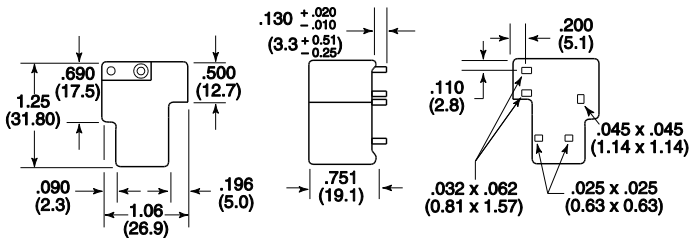
AZ2150

COIL VOLTAGE SPECIFICATIONS

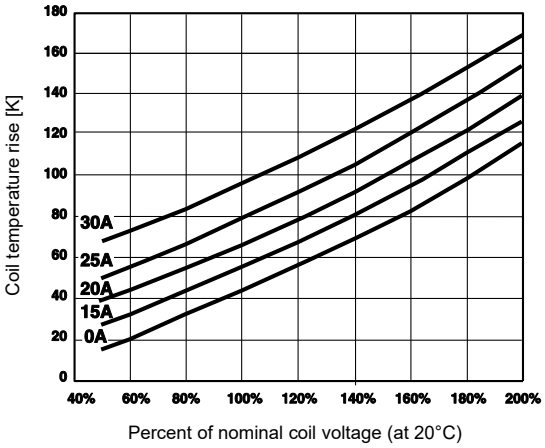
Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
5	3.75	7.3	27
6	4.5	8.9	40
9	6.75	13.9	97
12	9.0	17.5	155
15	11.25	22.5	256
18	13.5	27.4	380
24	18.0	36.1	660
48	36.0	68.4	2560
70	52.5	104.4	5500
110	82.5	163.2	13450

MECHANICAL DATA

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

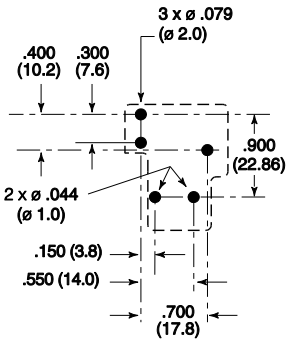


COIL TEMPERATURE RISE



PC BOARD LAYOUT

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

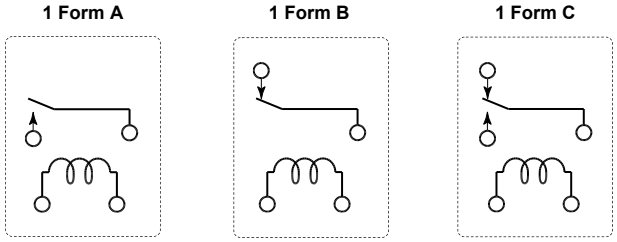


NOTES

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. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

WIRING DIAGRAMS

Viewed towards terminals



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

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