

# 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

<b>Arrangement</b>	SPST-N.O. (1 Form A) SPST-N.C. (1 Form B), SPDT (1 Form C)
<b>Ratings (max.)</b>	(resistive load) switched power 900 W or 10000 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.
<b>Rated Loads</b>	See chart for UL/CUR approved contact ratings
UL/CUR	
VDE	<b>1 Form A - class F coil wire</b> 25 A at 250 VAC, 10k cycles, resistive <b>1 Form A - class B coil wire</b> 20 A at 250 VAC, 10k cycles, resistive <b>1 Form C</b> NO: 20 A at 250 VAC, 10k cycles, resistive NC: 10 A at 250 VAC, 10k cycles, resistive
<b>Contact materials</b>	AgCdO - silver cadmium oxide
<b>Initial resistance</b>	< 20 mΩ (at rated current, voltage drop method)

### COIL

<b>Nominal coil DC voltages</b>	see coil voltage specifications table
<b>Dropout</b>	> 10% of nominal coil voltage
<b>Coil power</b>	
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.)
<b>Temperature Rise</b>	43 K (77°F) at nominal coil voltage
<b>Max. temperature</b>	130°C (266°F) - class B coil wire 155°C (311°F) - class F coil wire

### GENERAL DATA

<b>Life Expectancy</b>	(minimum operations) mechanical $1 \times 10^7$ electrical $1 \times 10^5$ at 30 A 120 VAC resistive (N.O.)
<b>Operate Time</b>	8 ms (typ.), 12 ms (max.) at nominal coil voltage
<b>Release Time</b>	3.5 ms (typ.), 5 ms (max.) at nominal coil voltage, w/o coil suppression
<b>Dielectric Strength</b>	(at sea level for 1 min.) 2500 V <sub>RMS</sub> coil to contact 1500 V <sub>RMS</sub> between open contacts
<b>Insulation Resistance</b>	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
<b>Temperature Range</b>	(at nominal coil voltage) operating -55°C (-67°F) to 105°C (221°F)
<b>Vibration resistance</b>	1.5 mm (0.062") DA at 10–55 Hz
<b>Shock</b>	20 g
<b>Enclosure</b>	P.B.T. polyester
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b>	max. Temperature 270°C (518°F) max. Time 5 seconds
<b>Cleaning</b>	max. Solvent Temp. 80°C (176°F) max. Immersion Time 30 seconds
<b>Dimensions</b>	length 31.8 mm (1.25") width 26.9 mm (1.06") height 19.1 mm (0.751")
<b>Weight</b>	25 grams (approx.)
<b>Compliance</b>	UL 508, IEC 61810-1
<b>Packing unit in pcs</b>	40 per plastic tray / 400 per carton box

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## UL/CUR APPROVED CONTACT RATINGS

Load type	Cycles	Volts	Form A	Form B	Form C	
			N.O.	N.C.	N.O.	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 <sup>1)</sup>	240 VAC	15 A	-	-	-
	30,000 <sup>1)</sup>	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 <sup>3)</sup>	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 <sup>2)4)</sup>	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 <sup>2)</sup>	240 VAC	60 LRA 20 FLA	-	60 LRA 20 FLA	-
	30,000 <sup>2)</sup>	125 VAC	60 LRA 20 FLA	30 LRA 12 FLA	60 LRA 20 FLA	30 LRA 12 FLA
	30,000 <sup>2)</sup>	120 VAC	82.8 LRA 13.8 FLA	-	82.8 LRA 13.8 FLA	-

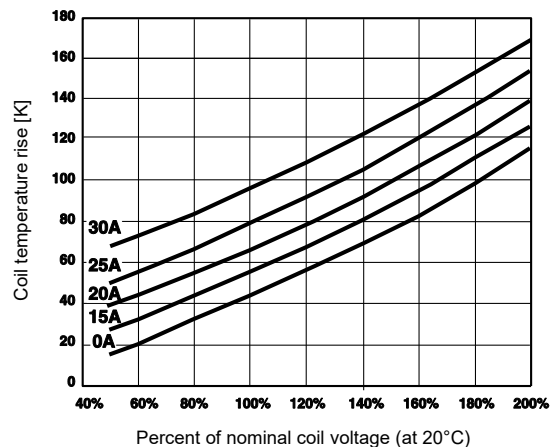
### Notes to table UL/CUR APPROVED CONTACT RATINGS

- 1) Ambient temperature: 98°C max. for sealed version, 105°C max. for unsealed 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

## COIL VOLTAGE SPECIFICATIONS

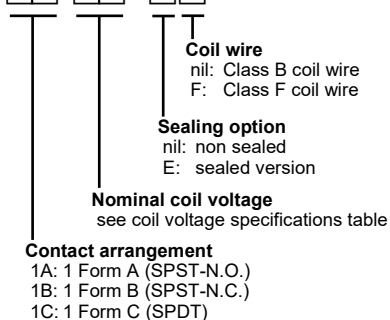
Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
5	3.75	7.3	27
6	4.5	8.9	40
9	6.75	13.9	97
12	9.0	17.5	155
15	11.25	22.5	256
18	13.5	27.4	380
24	18.0	36.1	660
48	36.0	68.4	2560
70	52.5	104.4	5500
110	82.5	163.2	13450

## COIL TEMPERATURE RISE



## ORDERING DATA

AZ2150-□□-□□D□□



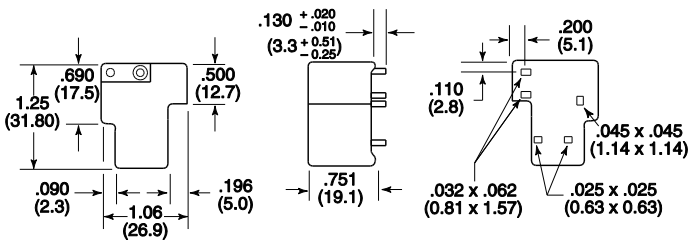
### Example ordering data

- 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

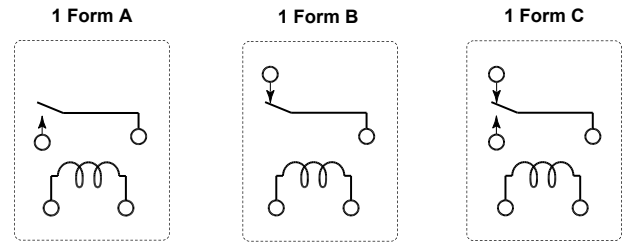
## MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses. Tolerance:  $\pm .010$ "



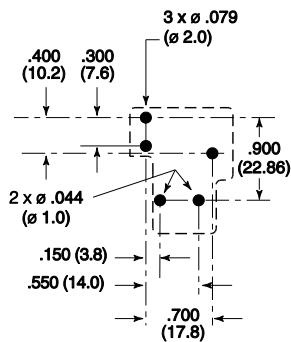
## WIRING DIAGRAMS

Viewed towards terminals



## PC BOARD LAYOUT

Dimensions in inches with metric equivalents in parentheses. Tolerance:  $\pm .010$ "  
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.

## 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](http://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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