

# AZ2160/AZ2161

## MINIATURE POWER RELAY

### FEATURES

- Versatility of both PC and "Trace-Saver" quick connect terminals on contacts
- 40 Amp switching capability for both N.O. and N.C. contacts
- 1 Form A, B and C contacts available
- DC coils to 120 VDC
- Life expectancy to 10 million operations
- Class B insulation for high temperature applications
- Class F (155°C) version available
- Available with an epoxy seal for automatic wave soldering and cleaning
- UL, CUR file 44211 including versions meeting UL 508 and UL 873 spacing contact rating requirements



### CONTACTS

<b>Arrangement</b>	SPDT (1 Form C) SPST (1 Form A and 1 Form B)
<b>Ratings</b>	Noninductive load: Max. switched power: 900 W or 7200 VA Max. switched current: 40 A Max. switched voltage: 30 VDC or 300 VAC  <b>UL Rating:</b> See chart for UL contact ratings. AZ2160 Series meets UL 508 Group A spacing and UL 873 refrigeration and safety control spacing requirements. AZ2161 Series meets UL 508 Group B spacing requirements.
<b>Material</b>	Silver cadmium oxide
<b>Resistance</b>	20 milliohms initially (at rated current voltage drop method)

### COIL

<b>Power</b>	
<b>At Pickup Voltage (typical)</b>	500 W
<b>Max. Continuous Dissipation</b>	2.2 W at 20°C (68°F) 1.8 W at 40°C (104°F)
<b>Temperature Rise</b>	38°C (68°F) at nominal coil voltage
<b>Temperature</b>	Max. 130°C (266°F) Class B Max. 155°C (311°F) Class F

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Unsealed relays cannot be dip cleaned.
4. Avoid thermal shock during immersion cleaning.
5. Specifications subject to change without notice.
6. Other coil resistances and sensitivities available upon request. Please contact factory.

### GENERAL DATA

<b>Life Expectancy</b> <b>Mechanical</b> <b>Electrical</b>	Minimum operations 1 x 10 <sup>7</sup> 1 x 10 <sup>5</sup> at 30 A 120 VAC Res. N.O.
<b>Operate Time (max.)</b>	Max. 12 ms Typical: 8 ms
<b>Release Time (max.)</b>	Max. 5 ms Typical: 3.5 ms
<b>Dielectric Strength (at sea level for 1 min.)</b>	Group A: 2500 Vrms contact to coil Group B: 2000 Vrms contact to coil 1500 Vrms between open contacts
<b>Insulation Resistance</b>	100 megohms min. at 500 VDC, 20°C 50% RH
<b>Dropout</b>	Greater than 10% of nominal coil voltage
<b>Ambient Temperature</b> <b>Operating</b>  <b>Storage</b>	At nominal coil voltage -55°C (-67°F) to 100°C (212°F) Class B -55°C (-67°F) to 125°C (257°F) Class F -55°C (-67°F) to 130°C (266°F) Class B -55°C (-67°F) to 155°C (311°F) Class F
<b>Vibration</b>	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, PC with "Fast-On" tabs, .250" wide, on top
<b>Max. Solder Temp.</b>	270°C (518°F)
<b>Max. Solder Time</b>	5 seconds
<b>Max. Solvent Temp.</b>	80°C (176°F)
<b>Max. Immersion Time</b>	30 seconds
<b>Weight</b>	43 grams

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## RELAY ORDERING DATA

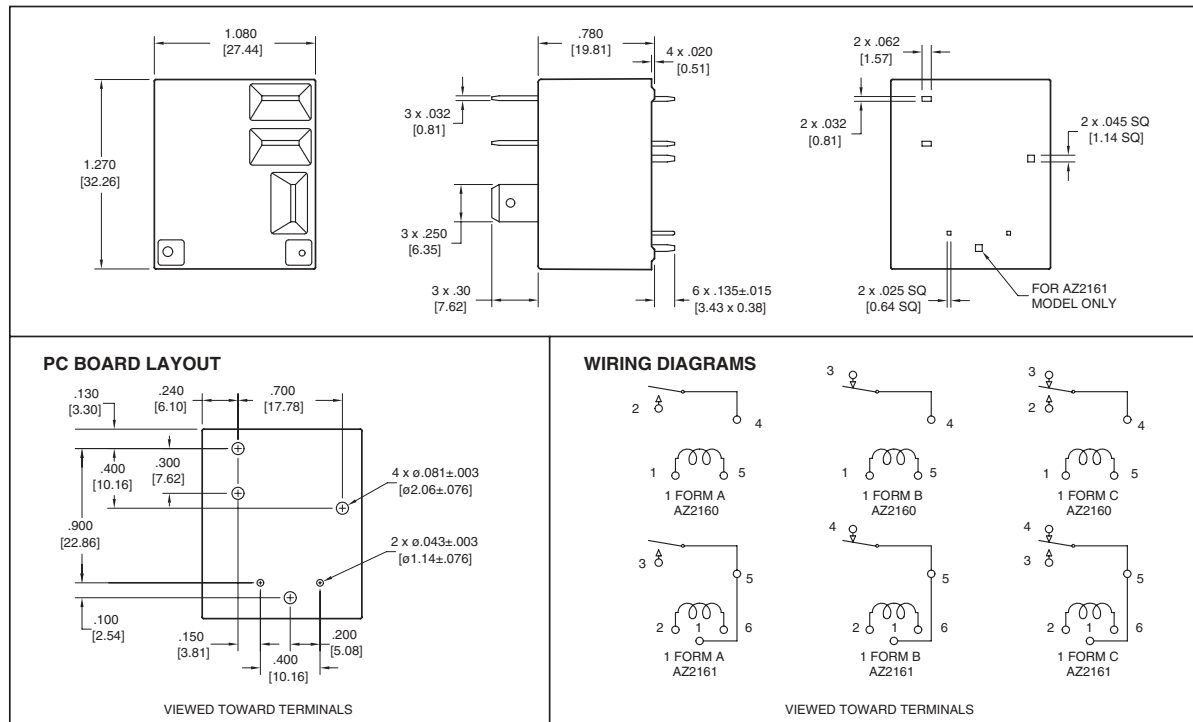
STANDARD RELAYS: 1 Form A (SPST): UL 508 Group A; UL 873 Version					
COIL SPECIFICATIONS				ORDER NUMBER*	
Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Coil Resistance $\pm 10\%$	Unsealed	Epoxy Sealed
5	3.75	7.3	27	AZ2160-1A-5D	AZ2160-1A-5DE
6	4.50	8.9	40	AZ2160-1A-6D	AZ2160-1A-6DE
9	6.75	13.9	97	AZ2160-1A-9D	AZ2160-1A-9DE
12	9.00	17.5	155	AZ2160-1A-12D	AZ2160-1A-12DE
15	10.50	22.5	256	AZ2160-1A-15D	AZ2160-1A-15DE
18	13.50	27.4	380	AZ2160-1A-18D	AZ2160-1A-18DE
24	18.00	36.1	660	AZ2160-1A-24D	AZ2160-1A-24DE
48	36.00	68.4	2360	AZ2160-1A-48D	AZ2160-1A-48DE
70	52.50	104.4	5500	AZ2160-1A-70D	AZ2160-1A-70DE

STANDARD RELAYS: 1 Form A (SPST): UL 508 Group B Version					
COIL SPECIFICATIONS				ORDER NUMBER*	
Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Coil Resistance $\pm 10\%$	Unsealed	Epoxy Sealed
5	3.75	7.3	27	AZ2161-1A-5D	AZ2161-1A-5DE
6	4.50	8.9	40	AZ2161-1A-6D	AZ2161-1A-6DE
9	6.75	13.9	97	AZ2161-1A-9D	AZ2161-1A-9DE
12	9.00	17.5	155	AZ2161-1A-12D	AZ2161-1A-12DE
15	10.50	22.5	256	AZ2161-1A-15D	AZ2161-1A-15DE
18	13.50	27.4	380	AZ2161-1A-18D	AZ2161-1A-18DE
24	18.00	36.1	660	AZ2161-1A-24D	AZ2161-1A-24DE
48	36.00	68.4	2360	AZ2161-1A-48D	AZ2161-1A-48DE
70	52.50	104.4	5500	AZ2161-1A-70D	AZ2161-1A-70DE
110	82.50	163.2	13450	AZ2161-1A-110D	AZ2161-1A-110DE

\*Substitute "1B" or "1C" in place of the "1A" to indicate 1 Form B and 1 Form C respectively. To indicate Class F version add suffix "F".

## MECHANICAL DATA



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

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## UL/CUR File E44211 Approved Contact Ratings

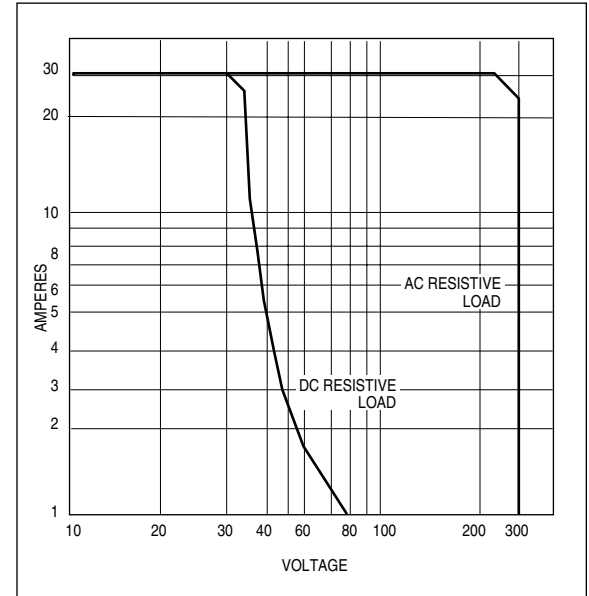
Load Type	Cycles	Volts	Form A (NO)	Form B (NC)	Form C	
					NO	NC
General Purpose (Inductive)	100,000	125 or 240VAC	30A	15A	30A	15A
	30,000	277VAC	30A	30A	30A	30A
Resistive	100,000	125 or 240VAC	30A	15A	—	—
	100,000	30VDC	20A	10A	20A	10A
	100,000	277VAC	20A	—	—	—
	100,000 *	240VAC	15A	—	—	—
	6,000	250VAC	40A	—	40A	—
Ballast	6,000	125, 240 or 277VAC	6A	3A	6A	3A
	6,000	277VAC	20A	—	—	—
Pilot Duty	6,000	125VAC	800 VA	290VA	800VA	290VA
	30,000	125VAC	800 VA	—	690 VA	—
	100,000	125VAC	690 VA	—	470 VA	275VA
	6,000	240VAC	1152 VA	768VA	1152 VA	768 VA
	100,000	277VAC	764 VA	—	764 VA	—
Motor Load	6,000	125VAC	1HP	1/4HP	1HP	1/4HP
	6,000***	240VAC	3HP	1HP	2HP	1HP
	30,000	125VAC	1HP	—	1HP	—
	100,000	125 or 277 VAC	3/4 HP	—	3/4 HP	—
Definite Purpose	30,000 **	120VAC	82.8 LRA 13.8 FLA	— —	82.8LRA 13.8 FLA	— —
	30,000	125VAC	96LRA 30FLA	33LRA 10FLA	60LRA 20FLA	33LRA 10FLA
	30,000 **	125VAC	60 LRA 20 FLA	30 LRA 12 FLA	60 LRA 20 FLA	30LRA 12FLA
(LRA-Locked Rotor)	100,000	125VAC	82.8LRA 27 FLA	— —	82.8 LRA 27 FLA	— —
(FLA-Full Load)	30,000	240VAC	80 LRA 30 FLA	33 LRA 10 FLA	60 LRA 20 FLA	33 LRA 10 FLA
	30,000 **	240VAC	41.4 LRA 6.9 FLA	— —	41.4 LRA 6.9 FLA	— —
	100,000	277VAC	60LRA 20FLA	— —	60LRA 20FLA	— —
Tungsten	6,000	125VAC	15A	—	15A	3A
	6,000	240VAC	5A	—	5A	3A
	6,000	120VAC	—	3A	—	—
	6,000	240VAC	—	3A	—	—
TV-5	25,000	120VAC	TV-5	—	TV-5	TV-3
TV-3	25,000	120VAC	—	TV-3	—	TV-3

\* Ambient temperature 96°C (208°F) max. sealed and 105°C (221°F) unsealed.

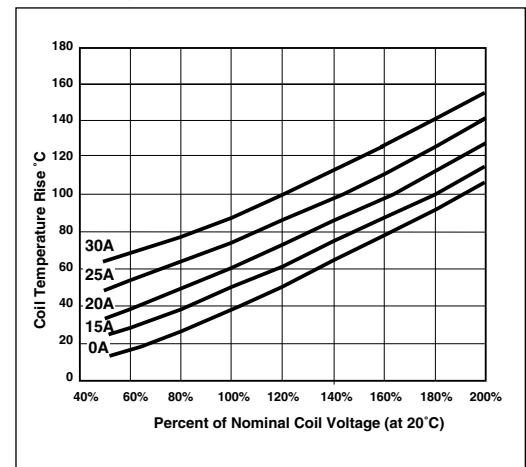
\*\* Ambient temperature 85°C (185°F) max. sealed and unsealed.

\*\*\* Ambient temperature 65°C (149°F) max. sealed and unsealed.

## Maximum Switching Capacity



## Coil Temperature Rise



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This 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.