

# AZ160

## 60 AMP MINIATURE POWER RELAY

### FEATURES

- 60 Amp switching capability
- Contact gap: 0.8mm standard
- Dielectric strength 4.5 kV<sub>RMS</sub>
- 10kV Surge
- UL class F insulation
- UL / CUR E365652
- TÜV: B0887930019
- CQC: 22002335876



### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A)
<b>Ratings (max.)</b> switched power switched current continuous current switched voltage	(resistive load) 28800 VA 60 A 60A 480 VAC
<b>Rated Loads</b> UL/TUV/CQC	10A Making, 40A Carrying, 10A Breaking, 460VAC, 85°C, 1s On <sup>[1]</sup> , 9s Off, 100k cycles, Res. <sup>[2]</sup> 20A Making, 60A Carrying, 20A Breaking, 480VAC, 85°C, 1s On <sup>[1]</sup> , 9s Off, 50k cycles, Res. <sup>[2]</sup> 60A, 277VAC, 60°C, 0.1s On, 10s Off, 1k cycles, Res. <sup>[2]</sup> 50A, 480VAC, 85°C, 0.1s On, 10s Off, 6k cycles, Res. <sup>[2]</sup> 40A, 480VAC, 85°C, 3s On, 3s Off, 30k cycles, Res. <sup>[2]</sup> Note: [1]: 1S On : Making 0.1s, Carrying 0.8s, Breaking 0.1s [2]: When conducting electrical durability tests, the ventilation holes should be opened.
<b>Contact material</b>	AgSnO <sub>2</sub> (silver tin oxide)
<b>Contact gap</b>	0.8 mm
<b>Contact resistance</b> initial typical	(load contact) ≤ 100 mΩ < 3 mΩ

### COIL

<b>Nominal coil DC voltages</b>	5, 9, 12, 18, 24, 48
<b>Dropout voltage</b>	> 5% of nominal coil voltage
<b>Holding voltage</b>	> 35% of nominal coil voltage
<b>Coil power</b> nominal holding power at pickup voltage	(at 23 °C) 0.9 W 110 mW 506 mW
<b>Temperature Rise</b>	70K at nom. coil voltage, 85°C
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) 1 x 10 <sup>6</sup> see ratings
<b>Operate Time</b>	20 ms (max.) at nominal coil voltage
<b>Release Time</b>	10 ms (max.) at nominal coil voltage, without coil suppression
<b>Dielectric Strength</b> coil to load contacts open load contacts	(at sea level for 1 min.) 4500 V <sub>RMS</sub> 1700 V <sub>RMS</sub>
<b>Surge Voltage</b>	10kV @1.2/50μs (coil to contacts) 2.5kV @1.2/50μs ( open load contacts)
<b>Insulation Resistance</b>	1000 MΩ (min.) at 23°C, 500 VDC, 50% RH
<b>Temperature Range</b> operating	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F)
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10–55 Hz
<b>Shock</b>	20 g
<b>Enclosure</b> protection category material group flammability	P.B.T. polyester RT II, RT III IIIa UL94 V-0
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b> max. temperature max. time	270 °C 5 s
<b>Dimensions</b> length width height	30.4mm (1.20") 15.9 mm (0.63") 25.15 mm (0.99")
<b>Weight</b>	25 grams (approx.)
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH
<b>Packing unit in pcs</b>	50 per plastic tray / 500 per carton box

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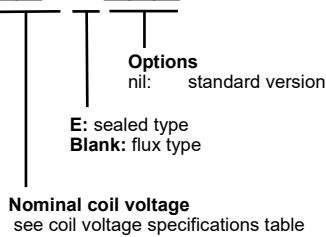
## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Min. Holding VDC	Max. Cont. VDC	Resistance Ohm $\pm$ 10%
5	3.75	1.75	6.0	27.8
9	6.75	3.15	10.8	90.0
12	9.0	4.2	14.4	160.0
18	13.5	6.3	21.6	360.0
24	18.0	8.4	28.8	640.0
48	36.0	16.8	57.6	2560.0

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

## ORDERING DATA

AZ160-1AE- D E

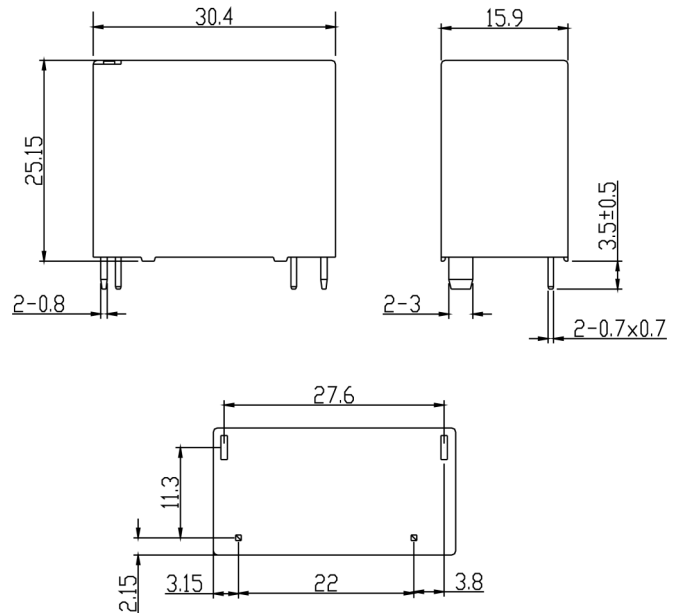


### Example ordering data

AZ160-1AE-24D 24 VDC nominal coil voltage  
AZ160-1AE-24DE 24 VDC nominal coil voltage, sealed type

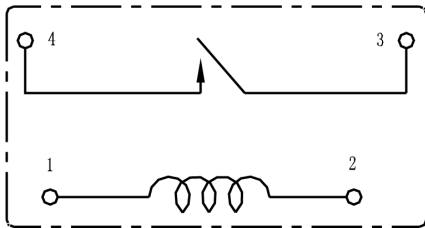
## MECHANICAL DATA

Dimensions in mm. Tolerance:  $\pm$ 0.3mm



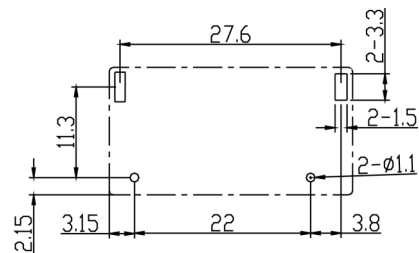
## WIRING DIAGRAMS

Viewed towards terminals



## PC BOARD LAYOUT

Viewed towards terminals.



## NOTES

- All values at 23°C (73°F).
- Relay may pull in with less than "Must Operate" value.
- Provide sufficient PCB cross section as heat spreader on terminals.
- Specifications subject to change without notice.
- The sealed type product only ensures that the product is sealed when leaving the factory; Depending on the customer's use, it may cause the product to become breathable.

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## 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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