

# AZEV116

## 16 AMP POWER RELAY

### FEATURES

- 16 Amp nominal switching capability
- Isolated N.C. signal contact for welding monitoring
- Withstands up to 1020 Amp short circuit current
- Wide contact gap of  $\geq 2.25$  mm
- Dielectric strength 4 kV<sub>RMS</sub>
- UL / CUR E365652
- TÜV B0887930014
- CQC 19002216104



### CONTACTS

|   |   |
|---|---|
| <b>Arrangement</b><br>load contact<br>signal contact  | SPST-N.O. (1 Form A)<br>SPST-N.C. (1 Form B) coupled to load contact  |
| <b>Ratings (max.)</b><br>switched power<br>switched current<br>switched voltage<br>signal contact | (resistive load)<br>6400 VA<br>20 A<br>400 VAC<br>10 mA at 12 VDC   |
| <b>Rated Loads</b><br><b>UL/CUR</b><br>load contact<br><br>signal contact                         | 16 A at 277 VAC, resistive, 85°C, 50k cycles<br>20 A at 277 VAC, resistive, 85°C, 30k cycles<br><br>10 mA at 12 VDC, 85°C, 50k cycles |
| <b>TÜV</b><br>load contact<br><br>signal contact  | 16 A at 400 VAC, resistive, 85°C, 50k cycles<br>20 A at 277 VAC, resistive, 85°C, 30k cycles<br><br>10 mA at 12 VDC, 85°C, 50k cycles |
| <b>CQC</b><br>load contact<br><br>signal contact  | 16 A at 400 VAC, resistive, 85°C, 50k cycles<br>20 A at 277 VAC, resistive, 85°C, 30k cycles<br><br>10 mA at 12 VDC, 85°C, 50k cycles |
| <b>Contact material</b><br>load contact<br>signal contact   | AgSnO <sub>2</sub> (silver tin oxide)<br>AgNi+Au (silver nickel, gold plated)   |
| <b>Contact gap</b><br>load contact  | $\geq 2.25$ mm  |
| <b>Contact resistance</b><br>initial<br>typical   | (load contact)<br>$\leq 50$ m $\Omega$<br>< 3 m $\Omega$  |

### COIL

|  |  |
|--|--|
| <b>Nominal coil DC voltages</b>                                    | 5, 9, 12, 24, 48                         |
| <b>Dropout voltage</b>   | > 5% of nominal coil voltage             |
| <b>Holding voltage</b>   | > 35% of nominal coil voltage            |
| <b>Coil power</b><br>nominal<br>holding power<br>at pickup voltage | (at 23 °C)<br>1.55 W<br>190 mW<br>875 mW |
| <b>Temperature Rise</b>  | 70 K (126°F) at nom. coil voltage, 85°C  |
| <b>Max. temperature</b>  | Class F insulation - 155°C (311°F)       |

### GENERAL DATA

|  |  |
|--|--|
| <b>Life Expectancy</b><br>mechanical<br>electrical   | (minimum operations)<br>$1 \times 10^5$<br>see UL/CUR/TÜV ratings  |
| <b>Operate Time</b>  | 30 ms (max.) at nominal coil voltage   |
| <b>Release Time</b>  | 10 ms (max.) at nominal coil voltage,<br>without coil suppression  |
| <b>Dielectric Strength</b><br>Between open Form A contacts<br>Between Form A contact and coil<br>Between open Form B contacts<br>Between Form B contact and coil<br>Between Form A contact and<br>Between Form B contact | (at sea level for 1 min.)<br>2500 V <sub>RMS</sub><br>4000 V <sub>RMS</sub><br>500 V <sub>RMS</sub><br>500 V <sub>RMS</sub><br>4000 V <sub>RMS</sub> |
| <b>Pulse current capability</b><br>AZEV116   | (based on requirements of IEC<br>62752)<br>$\geq 1.02$ kA; $\geq 2.5$ kA <sup>2</sup> s  |
| <b>Insulation Resistance</b>   | 1000 M $\Omega$ (min.) at 23°C, 500 VDC,<br>50% RH   |
| <b>Temperature Range</b><br>operating  | (at nominal coil voltage)<br>-40°C (-40°F) to 85°C (185°F)   |
| <b>Vibration resistance</b>  | 0.062" (1.5 mm) DA at 10–55 Hz   |
| <b>Enclosure</b><br>protection category<br>material group<br>flammability  | P.B.T. polyester<br>RT II, flux proof<br>IIIa<br>UL94 V-0  |
| <b>Terminals</b>   | Tinned copper alloy, P. C.   |
| <b>Soldering</b><br>max. temperature<br>max. time  | 270 °C<br>5 s  |
| <b>Dimensions</b><br>length<br>width<br>height   | 35.0 mm (1.38")<br>16.0 mm (0.63")<br>27.9 mm (1.10")  |
| <b>Weight</b>  | 35 grams (approx.)   |
| <b>Compliance</b>  | UL 508, IEC 61810-1, RoHS, REACH<br>designed to meet requirements of<br>IEC 62752  |
| <b>Packing unit in pcs</b>   | 50 per plastic tray / 400 per carton<br>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            | 16.15                    |
| 9                | 6.75             | 3.15             | 10.8           | 52.3                     |
| 12               | 9.0              | 4.2              | 14.4           | 93.0                     |
| 24               | 18.0             | 8.4              | 28.8           | 372                      |
| 48               | 36.0             | 16.8             | 57.6           | 1488                     |

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

## ORDERING DATA

AZEV116-1AE  -  D

**Nominal coil voltage**  
see coil voltage specifications table

**Signal contact**  
nil: without signal contact  
1BG: equipped with 1 Form B signal contact

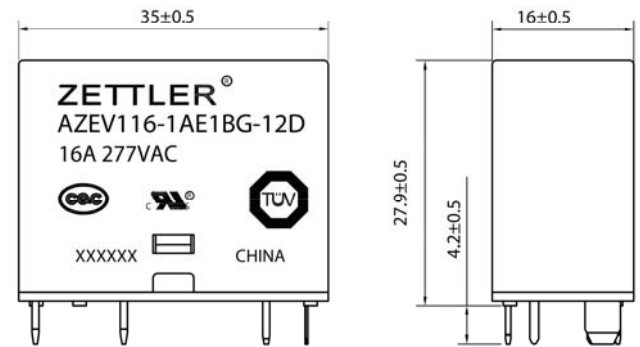
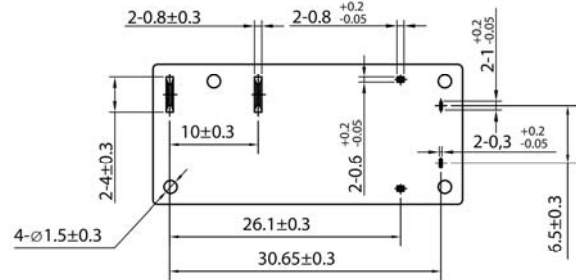
### Example ordering data

AZEV116-1AE-24D Without signal contact, 24 VDC coil

AZEV116-1AE1BG-12D With 1 Form B signal contact, 12 VDC coil

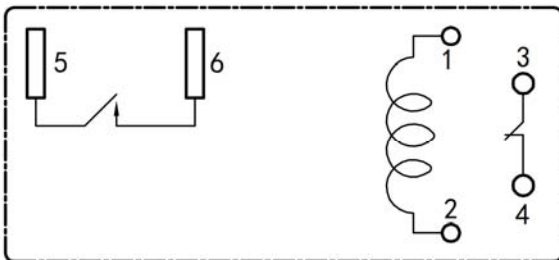
## MECHANICAL DATA

Dimensions in mm.



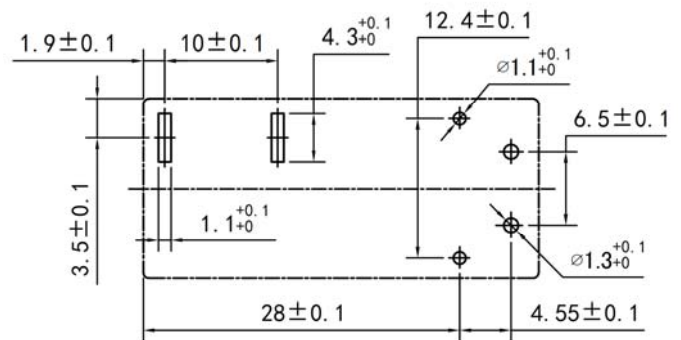
## WIRING DIAGRAMS

Viewed towards terminals



## PC BOARD LAYOUT

Viewed towards terminals. Dimensions in mm.



## NOTES

1. All values at 23°C (73°F).
2. Relay may pull in with less than "Must Operate" value.
3. Provide sufficient PCB cross section as heat spreader on terminals.
4. Specifications subject to change without notice.

## IEC62752 Short Circuit Withstand

Compliance with IEC62752 for short circuit withstand is a function of both relay design and PCB layout. ZETTLER's relay design and applications engineering teams have developed a set of applications notes that contain important design suggestions to optimize the performance of the AZEV116 relay with respect to its short circuit current withstand capability. Please contact your local ZETTLER relay office for these important application notes and suggestions.

In addition, as the overall performance depends on multiple factors such as part arrangement and trace routing, compliance cannot be generically guaranteed by ZETTLER. We strongly encourage customers to conduct their own short circuit tests in accordance with IEC62752 in the context of their individual application design.

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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 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

Building on a foundation of more than a century of expertise in German precision engineering, ZETTLER Group is a world-class enterprise, engaged in the design, manufacturing, sales and distribution of electronic components. Our industry leadership is based on a unique combination of engineering competence and global scale.

For more information on other ZETTLER Group companies, please visit [zettler-group.com](http://zettler-group.com). For support on this product or other ZETTLER relays, please visit one of the group sites below.

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