

# AZDC110

## DC HIGH VOLTAGE POWER RELAY

### FEATURES

- 10A 300VDC / 16A 180VDC switching capability
- Magnetic arc blow-out design
- 5 kV dielectric strength, 10 kV surge withstand voltage
- Ambient temperature up to 105°C (221°F)
- UL Class F insulation system
- Versions according IEC 60335-1 (GWT) available
- Compact size, low seated height of 19 mm
- UL / CUR E44211
- TÜV R 50386704



### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A)
<b>Ratings (max.)</b> switched power switched current switched voltage	(resistive load) 3000 W or 4800 VA 16 A 420 VDC or 300 VAC
<b>Rated Loads</b> <b>UL/CUR</b>	16 A at 180 VDC, gen.use/resistive, 105°C, 30k cycles 10 A at 300 VDC, gen.use/resistive, 105°C, 30k cycles 5 A at 420 VDC, gen.use/resistive, 105°C, 30k cycles 16 A at 300 VAC, gen.use/resistive, 105°C, 30k cycles
<b>TÜV</b>	16 A at 180 VDC, resistive, 30k cycles 10 A at 300 VDC, resistive, 30k cycles 5 A at 420 VDC, resistive, 30k cycles 16 A at 300 VAC, cos φ 0.75 - 0.8, 30k cycles
<b>Contact material</b>	AgSnO <sub>2</sub> (silver tin oxide)
<b>Initial resistance</b> max. typ.	(1 A / 6 V - voltage drop method) 100 mΩ < 3 mΩ

### COIL

<b>Nominal coil DC voltages</b>	see coil voltage specifications table
<b>Operative range</b>	75% to 110% of nominal coil voltage
<b>Dropout voltage</b>	≥ 5% of nominal coil voltage
<b>Coil power</b> nominal at pickup voltage (typ.)	400 mW 225 mW
<b>Temperature Rise</b>	26 K (47°F) at nominal coil voltage
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) 3 x 10 <sup>6</sup> 3 x 10 <sup>4</sup> at rated loads
<b>Operate Time</b> max. typ.	(at nominal coil voltage) 15 ms < 10 ms
<b>Release Time</b> max.	(at nom. coil voltage, without coil suppression) 5 ms
<b>Dielectric Strength</b> coil to contact between open contacts	(at sea level for 1 min.) 5000 VAC 1000 VAC
<b>Surge voltage</b> coil to contact	10 kV (at 1.2/50 μs)
<b>Insulation Resistance</b>	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
<b>Insulation</b> coil to contacts	Reinforced insulation (rated voltage: 250 VAC, pollution degree: 2, overvoltage category: II)
<b>Temperature Range</b> operating	(at nominal coil voltage) -40°C (-40°F) to 105°C (221°F)
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10-55 Hz
<b>Shock resistance</b>	10 g
<b>Enclosure</b> protection category material group flammability	P.B.T. polyester RT II, flux proof (vented) IIla UL94 V-0
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b> max. temperature max. time	270 °C (518°F) 5 seconds
<b>Cleaning</b> max. solvent temp. max. immersion time	80°C (176°F) 30 seconds
<b>Dimensions</b> length width height	29.3 mm (1.154") 12.7 mm (0.500") 19.0 mm (0.748")
<b>Weight</b>	15 grams (approx.)
<b>Packing unit in pcs</b>	25 per tray / 250 per carton box
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH

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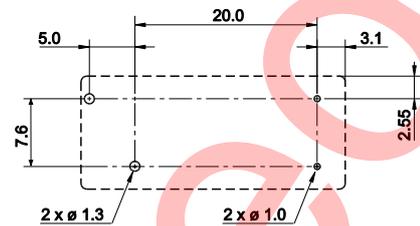
## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Nominal Power mW	Resistance Ohm $\pm 10\%$
5	3.75	400	62.5
6	4.5		90
9	6.75		203
12	9.0		360
18	13.5		810
24	18.0		1440

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

## PC BOARD LAYOUT

Layout recommendation. Dimensions in mm.  
Viewed towards terminals.



## ORDERING DATA

AZDC110-1AE-DF

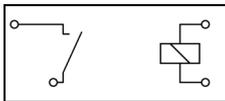
Nominal coil voltage  
see coil voltage specifications table

### Example ordering data

AZDC110-1AE-12DF 12 VDC nominal coil voltage

## WIRING DIAGRAMS

Viewed towards terminals. Shown in deenergized condition.

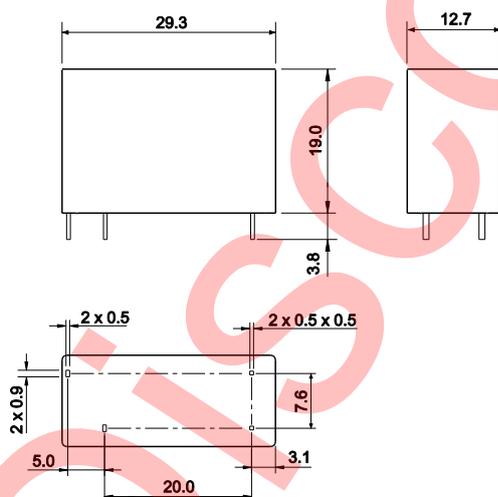


## NOTES

1. All values at reference temperature of 23°C (73°F) unless stated otherwise.
2. The relays are equipped with permanent magnets. This has to be taken into account during handling and assembly of the components.
3. For isolation between the relay's magnetic fields, it is recommended that at least a .4" (10.0 mm) space is provided between adjacent relays.
4. Relay may pull in with less than "Must Operate" value.
5. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.
6. Relay adjustment may be affected if excessive shock is applied to the relay.
7. Relay adjustment may be affected if undue pressure is exerted on the relay case.
8. Specifications subject to change without notice.

## MECHANICAL DATA

Dimensions in mm. Tolerance:  $\pm 0.1$  mm, Outline tolerance:  $\pm 0.5$  mm  
Pin dimensions for reference only and given without tin coating.



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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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## SITES FOR ZETTLER RELAYS

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