

# AZDC105

## DC HIGH CURRENT POWER RELAY

### FEATURES

- 150A 60VDC / 100A 60VDC / 100A 48VDC switching capability
- Magnetic arc blow-out design
- 4 kV dielectric strength, 6 kV surge withstand voltage
- UL Class F insulation (155°C)
- UL / CUR file E44211
- TÜV R 50394622



Illustration similar

### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A)
<b>Ratings (max.)</b>	(resistive load)
switched power	9000 W / 6000W / 4800 W
switched current	100 A / 150 A
switched voltage	48 VDC / 60 VDC
<b>Rated Loads</b>	
<b>UL/CUR</b>	100/150 A at 48/60 VDC, resistive, 85°C, 10k cycles
<b>TÜV</b>	
48 VDC versions	rated load, resistive, 3k cycles
60 VDC versions	rated load, resistive, 1k cycles
<b>Contact material</b>	AgSnO <sub>2</sub> (silver tin oxide)
<b>Contact gap</b>	≥ 3.0 mm
<b>Initial resistance</b>	≤ 100 mΩ (1 A / 6 V - voltage drop method)

### COIL

<b>Nominal coil DC voltages</b>	see coil voltage specifications table
<b>Dropout voltage</b>	≥ 5% of nominal coil voltage
<b>Coil power</b>	
nominal	3.2 W
at pickup voltage	1.8 W (typ.)
<b>Temperature Rise</b>	50 K (90°F) at nominal coil voltage
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. These relays are equipped with permanent magnets. This has to be taken into account during handling and assembly of the components.
4. Provide sufficient PCB cross section on load terminals.  
Recommended wiring cross section according to IEC 61810-1:2015:  
35 mm<sup>2</sup> for 100 A versions, 50 mm<sup>2</sup> for 150 A versions.
5. Specifications subject to change without notice.

### GENERAL DATA

<b>Life Expectancy</b>	(minimum operations)
mechanical	1 x 10 <sup>6</sup>
electrical	(360 cycles/h, 10 % duty factor)
48 VDC versions	3 x 10 <sup>3</sup> at rated loads
60 VDC versions	1 x 10 <sup>3</sup> at rated loads
<b>Operate Time</b>	30 ms (max.) at nominal coil voltage
<b>Release Time</b>	10 ms (max.) at nominal coil voltage, without coil suppression
<b>Dielectric Strength</b>	(at sea level for 1 min.)
	4000 V <sub>RMS</sub> coil to contact
	1300 V <sub>RMS</sub> between open contacts
<b>Surge Voltage</b>	
coil to contact	6 kV (at 1.2 x 50 μs)
<b>Insulation</b>	
resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
overvoltage category	III
pollution degree	2
<b>Creepage</b>	
coil to contact	≥ 9.0 mm
<b>Clearance</b>	
coil to contact	≥ 9.0 mm
<b>Operating Temp. Range</b>	(at nominal coil voltage)
100 A versions	-40°C (-40°F) to 85°C (185°F)
150 A versions	-40°C (-40°F) to 65°C (149°F)
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10–55 Hz
<b>Shock resistance</b>	10 g
<b>Enclosure</b>	RTII - flux proof (vented)
	P.B.T. polyester, UL94 V-0
<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	47.6 mm (1.874")
width	40.0 mm (1.575")
height	45.1 mm (1.776")
<b>Weight</b>	165 grams (approx.)
<b>Packing unit in pcs</b>	25 per tray / 50 per carton box
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH

**ZETTLER electronics GmbH**

- **A ZETTLER GROUP Company**

Junkersstr. 3, D-82178 Puchheim, Germany

phone: +49 89 800 97-0  
fax: +49 89 800 97-200

office@ZETTLERelectronics.com  
www.ZETTLERelectronics.com

This product specification is to be used only together with the application notes which can be downloaded from [www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf](http://www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf)

page 1 of 2      2023-05-17

# AZDC105

## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Resistance Ohm $\pm 10\%$
12	9.0	45
24	18.0	180
48	36.0	720

## ORDERING DATA

AZDC105-1A ☐ - ☐ D ☐

### Current rating option

nil: 100 A rating

T: 150 A rating (in conjunction with 60 VDC voltage rating only - option 'H')

### Nominal coil voltage

see coil voltage specifications table

### Voltage rating option

nil: 48 VDC rating

H: 60 VDC rating (with blow-out magnet)

### Example ordering data

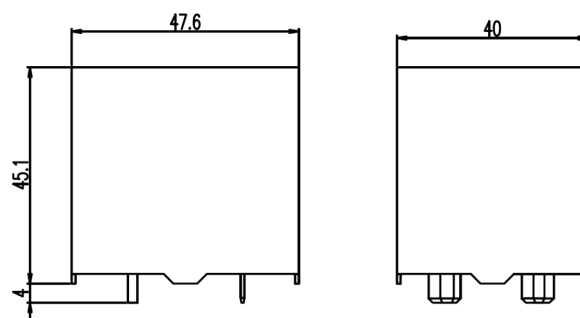
AZDC105-1A-12D 100 A 48 VDC contact rating, 12 VDC nom. coil voltage

AZDC105-1AH-24D 100 A 60 VDC contact rating, 24 VDC nom. coil voltage

AZDC105-1AH-24DT 150 A 60 VDC contact rating, 24 VDC nom. coil voltage

## MECHANICAL DATA

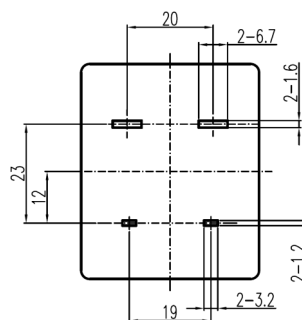
Dimensions in mm. Outline tolerance:  $\pm 0.5$  mm



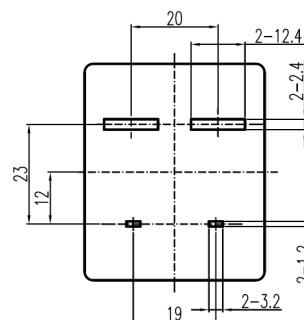
## PC BOARD LAYOUT

Dimensions in mm. Tolerance:  $\pm 0.1$  mm  
Viewed towards terminals.

### 100 A rated versions



### 150 A rated version



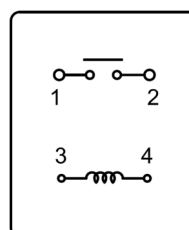
## WIRING DIAGRAMS

Viewed towards terminals.

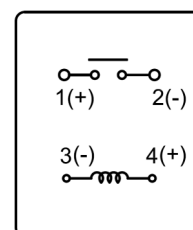
Notes: The 60 VDC rated versions are polarized. Observe polarity of load contacts and coil as shown in the diagram.

Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1: 35 mm<sup>2</sup> for 100 A versions, 50 mm<sup>2</sup> for 150 A versions.

### 48 VDC rated version



### 60 VDC rated versions



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page 2 of 2 2023-05-17