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 E44211
- TÜV R50394622

CONTACTS

Arrangement	SPST-N.O. (1 Form A)
Ratings (max.) switched power switched current switched voltage	(resistive load) 9000 W / 6000 W / 4800 W 100 A / 150 A 48 VDC / 60 VDC
Rated Loads **UL** **TÜV**	 100 A at 48VDC, resistive, 85°C, 10k cycles 100 A at 60 VDC, resistive, 85°C, 10k cycles 150 A at 60 VDC, resistive, 85°C, 10k cycles 48 VDC versions:100A resistive, 3k cycles 60 VDC versions:**100/**150A, resistive, 1k cycles
Contact material	$AgSnO_2$ (silver tin oxide)
Contact gap	≥ 3.0 mm
Initial resistance	≤ 100 mΩ (1 A / 6 V - voltage drop method)

COIL

Nominal coil DC voltages	see coil voltage
	≥ 5% of nominal coil voltage
Coil power nominal at pickup voltage	 3.2 W 1.8 W (typ.)
Temperature Rise	50 K (90°F) at nominal coil voltage
Max. temperature	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 mm² for 100 A versions, 50 mm² for 150 A versions.
5. Specifications subject to change without notice.

GENERAL DATA

Life Expectancy mechanical electrical 48 VDC version 60 VDC version	(minimum operations) $1x10^6$ (360 cycles/h, 10 % duty factor) $1x10^4$ at rated loads $1x10^4$ at rated loads
Operate Time	30 ms (max.) at nominal coil voltage
Release Time	10 ms (max.) at nominal coil voltage, without coil suppression
Dielectric Strength	(at sea level for 1 min.) 4000 VRMS coil to contact 1300 VRMS between open contact
Surge Voltage coil to contact	6 kV (at 1.2 x 50 µs)
Insulation resistance overvoltage pollution degree	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH III 2
Creepage coil to contact	≥ 9.0 mm
Clearance coil to contact	≥ 9.0 mm
Operating Temp. Range 100A versions 150A versions	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 65°C (149°F)
Vibration resistance	0.062" (1.5 mm) DA at 10–55 Hz
Shock resistance	10 g
Enclosure	RTII - flux proof (vented) P.B.T. polyester, UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature	 270 °C (518°F) 5 seconds
Cleaning max. solvent temp. max. immersion	 80°C (176°F) 30 seconds
Dimensions length width height	 47.6 mm (1.874”) 40.0 mm (1.575”) 45.1 mm (1.776”)
Weight	165 grams (approx.)
Packing unit in pcs	25 per tray / 50 per carton box
Compliance	UL 508, IEC 61810-1, RoHS, REACH

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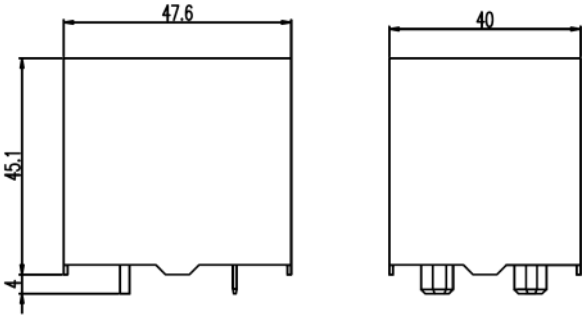
COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Resistance Ohm ± 10%	Order Number
12	9.0	45	AZDC105-1A-12D
24	18.0	180	AZDC105-1A-24D
48	36.0	720	AZDC105-1A-48D

* Add “H” to “1A” for 60 VDC rating (with blow-out magnet).
Add suffix “T” for 150 A rating (in conjunction with 60 VDC.

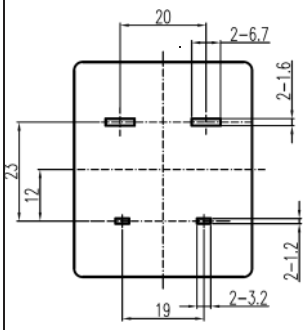
MECHANICAL DATA



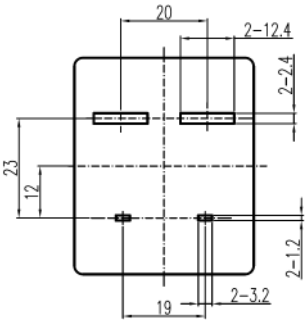
Dimensions in mm. Outline tolerance: ± 0.5 mm

PC BOARD LAYOUT

100 A versions

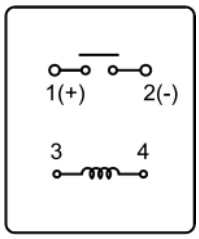


150 A versions



Dimensions in mm. Tolerance: ± 0.1 mm

WIRING DIAGRAMS



Viewed towards terminals

Notes: This relay is polarized. Observe polarity of load contacts as shown in the diagram. Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1: 35 mm² for 100 A versions, 50 mm² for 150 A versions.

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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.