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 R50394622

Illustration similar

CONTACTS

Arrangement	SPST-N.O. (1 Form A)
Ratings (max.)	(resistive load)
switched power	9000 W / 6000W / 4800 W
switched current	100 A / 150 A
switched voltage	48 VDC / 60 VDC
Rated Loads	
UL/CUR	100/150 A at 48/60 VDC, resistive, 85°C, 10k cycles
TÜV	
48 VDC versions	rated load, resistive, 3k cycles
60 VDC versions	rated load, 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 specifications table
Dropout voltage	≥ 5% of nominal coil voltage
Coil power	
nominal	3.2 W
at pickup voltage	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	(minimum operations)
mechanical	1×10^6
electrical	(360 cycles/h, 10 % duty factor)
48 VDC versions	3×10^3 at rated loads
60 VDC versions	1×10^3 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 V_{RMS} coil to contact
	1300 V_{RMS} between open contacts
Surge Voltage	
coil to contact	6 kV (at 1.2 x 50 µs)
Insulation	
resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
overvoltage category	III
pollution degree	2
Creepage	
coil to contact	≥ 9.0 mm
Clearance	
coil to contact	≥ 9.0 mm
Operating Temp. Range	(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)
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)
max. time	5 seconds
Cleaning	
max. solvent temp.	80°C (176°F)
max. immersion time	30 seconds
Dimensions	
length	47.6 mm (1.874”)
width	40.0 mm (1.575”)
height	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%
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

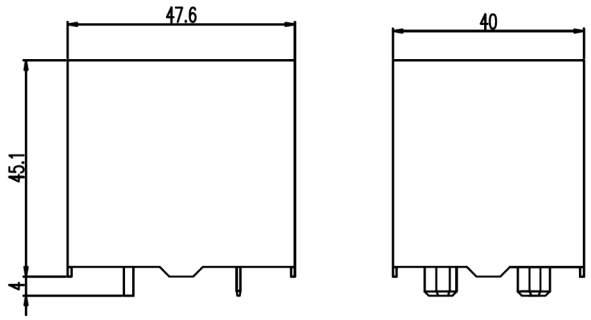
Voltage rating option
nil: 48 VDC rating
H: 60 VDC rating (with blow-out magnet)

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

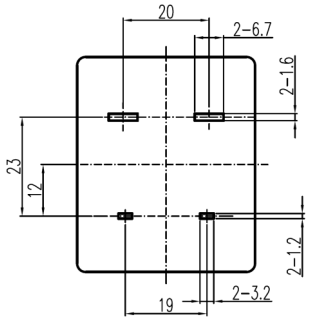
Dimensions in mm. Outline tolerance: ± 0.5 mm



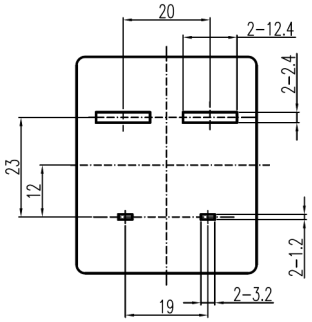
PC BOARD LAYOUT

Dimensions in mm. Tolerance: ± 0.1 mm
Viewed towards terminals.

100 A rated versions



150 A rated version



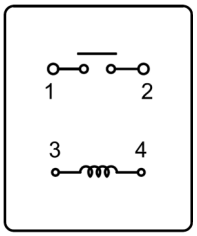
WIRING DIAGRAMS

Viewed towards terminals.

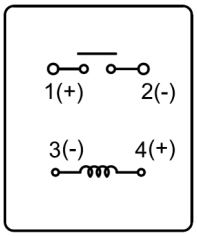
Notes: The 60 VDC rated versions are polarized. Observe polarity of load contacts and coil as shown in the diagram.

Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1: 35 mm² for 100 A versions, 50 mm² for 150 A versions.

48 VDC rated version



60 VDC rated versions



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