

AZEV140

40 AMP POWER RELAY

FEATURES

- 40 Amp nominal switching capability
- Isolated N.C. signal contact for welding monitoring
- Withstands up to 1850 Amp short circuit current
- Wide contact gap of ≥ 2.25 mm
- Dielectric strength 4 kV_{RMS}
- UL / CUR: E365652
- TÜV: B0887930016
- CQC: CQC20002276475



CONTACTS

Arrangement load contact signal contact	SPST-N.O. (1 Form A) SPST-N.C. (1 Form B) coupled to load contact
Ratings (max.) switched power switched current switched voltage signal contact	(resistive load) 22000 VA 50 A 440 VAC 10mA at 12 VDC
Rated Loads TÜV/CQC/UL/CUR load contact signal contact	40 A at 440 VAC, resistive, 85°C, 30k cycles 32 A at 440 VAC, resistive, 85°C, 50k cycles 50 A at 440 VAC, resistive, 85°C, 6k cycles 20 A make, 50 A carry, 20 A break at 440 VAC, resistive, 85°C, 50k cycles 10 mA at 12 VDC, 85°C, 50k cycles
Contact material load contact signal contact	AgSnO ₂ (silver tin oxide) AgNi+Au (silver nickel, gold plated)
Contact gap load contact	≥ 2.25 mm
Contact resistance initial typical	(load contact) ≤ 50 m Ω < 3 m Ω

COIL

Nominal coil DC voltages	5, 9, 12, 24, 48
Dropout voltage	> 5% of nominal coil voltage
Holding voltage	> 35% of nominal coil voltage
Coil power nominal holding power at pickup voltage	(at 23 °C) 2.1 W 258 mW 1.2 W
Temperature Rise	70 K (126°F) at nominal coil voltage, 85°C
Max. temperature	Class F insulation - 155°C (311°F)

GENERAL DATA

Life Expectancy mechanical electrical	(minimum operations) 1 x 10 ⁶ see UL/CUR/TÜV/CQC ratings
Operate Time	30 ms (max.) at nominal coil voltage
Release Time	10 ms (max.) at nominal coil voltage, without coil suppression
Dielectric Strength open load contacts coil to load contacts open signal contacts coil to signal contacts signal to load contacts	(at sea level for 1 min.) 2500 V _{RMS} 4000 V _{RMS} 500 V _{RMS} 500 V _{RMS} 4000 V _{RMS}
Pulse current capability	(based on requirements of IEC 62752) ≥ 1.50 kA, ≥ 6.0 kA ² s (based on requirements of IEC 62955) ≥ 1.85 kA, ≥ 4.5 kA ² s
Surge voltage open load contacts coil to load contacts signal to load contacts	6 kV 6 kV 6 kV
Insulation Resistance	1000 M Ω (min.) at 23°C, 500 VDC, 50% RH
Temperature Range operating	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F)
Vibration resistance	0.062" (1.5 mm) DA at 10–55 Hz
Enclosure protection category material group flammability	P.B.T. polyester RT II, flux proof IIIa UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature max. time	270 °C 5 s
Dimensions length width height	35.0 mm (1.38") 16.0 mm (0.63") 28.0 mm (1.10")
Weight	35 grams (approx.)
Compliance	UL 508, IEC 61810-1, RoHS, REACH designed to meet requirements of IEC 62752 and IEC 62955
Packing unit in pcs	50 per plastic tray / 400 per carton 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	11.8
9	6.75	3.15	10.8	38.4
12	9.0	4.2	14.4	68.5
24	18.0	8.4	28.8	274
48	36.0	16.8	57.6	1096

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

ORDERING DATA

AZEV140-1AE - D

Nominal coil voltage
see coil voltage specifications table

Signal contact

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

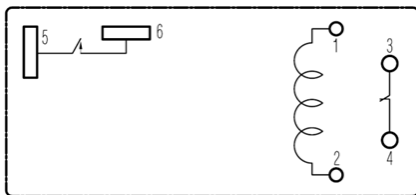
Example ordering data

AZEV140-1AE-24D Without signal contact, 24VDC coil

AZEV140-1AE1BG-12D With 1 Form B signal contact, 12VDC coil

WIRING DIAGRAMS

Viewed towards terminals

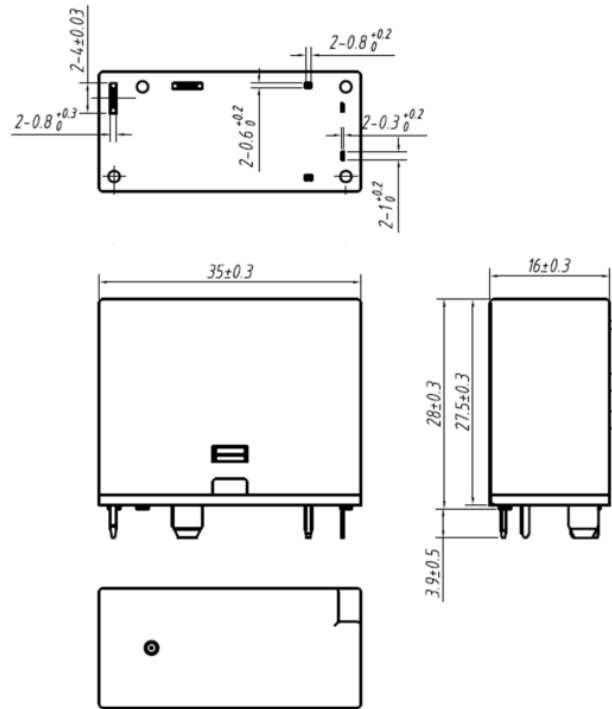


NOTES

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.

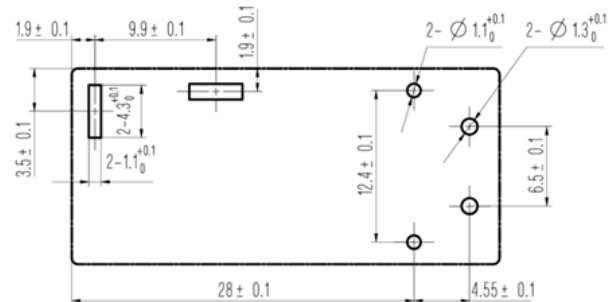
MECHANICAL DATA

Dimensions in mm. Tolerance: ± 0.3 mm if not stated otherwise.



PC BOARD LAYOUT

Suggested PCB layout. Viewed towards terminals. Dimensions in mm.



IEC 62752 / IEC 62955 Short Circuit Withstand

Compliance with IEC 62752 or similar standards 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 AZEV140 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 IEC 62752 or similar standards in the context of their individual application design.

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page 2 of 3

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AZEV140

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.

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SITES FOR ZETTLER RELAYS

NORTH AMERICA

American Zettler, Inc.
www.azettler.com
sales@azettler.com

EUROPE

Zettler Electronics, GmbH
www.zettlerelectronics.com
office@zettlerelectronics.com

Zettler Electronics, Poland
www.zettlerelectronics.pl
office@zettlerelectronics.pl

CHINA

Zettler Group, China
www.zettlercn.com
relay@zettlercn.com

ASIA PACIFIC

Zettler Electronics (HK) Ltd.
www.zettlerhk.com
sales@zettlerhk.com



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