AZ743

10 AMP DUAL POLE MINIATURE POWER RELAY

FEATURES

- 10 Amp switching capability
- 5 kV dielectric strength, Isolation spacing ≥ 10 mm
- Reinforced insulation according IEC 60730-1, IEC 60335-1
- Glow wire approved versions acc. IEC 60335-1 available
- DC coil and AC coil versions
- Compact size, low seated height of 15.7 mm
- UL / CUR file E44211
- VDE certificate 40006031

CONTACTS

Arrangement	DPST-NO (2 Form A) DPDT (2 Form C)
Ratings (max.) switched power switched current switched voltage	(resistive load) 2x 240 W or 2770 VA 2x 10 A 125 VDC* or 440 VAC * Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
Rated Loads	see section UL/VDE approved ratings
Contact material	AgNi / AgNi+Au (silver nickel / Au plating) $AgSnO_2$ / $AgSnO_2$+Au (silver tin oxide / Au plating)
Initial resistance max. typ.	 100 mΩ (1A / 6VDC, voltage drop method) < 10 mΩ (at rated current)

COIL

Nominal coil voltages	see coil voltage specifications tables
Dropout DC coil types AC coil types	 > 10% of nominal coil voltage > 15% of nominal coil voltage
Coil power DC coil types nominal at pickup voltage AC coil types nominal at pickup voltage	typ. at 23°C (73°F) coil temperature 400 mW 200 mW 0.75 VA 0.42 VA
Temperature Rise DC coil types	 typ. 26 K (47°F) at nominal coil voltage
Max. temperature	155°C (311°F), class F insulation system

GENERAL DATA

Life Expectancy mechanical electrical	(minimum operations) 1 x 10^7 see UL/CUR/VDE rated loads
Operate Time max. typ.	(at nominal coil voltage) 15 ms (DC coil) 7 ms (DC coil), 10 ms (AC coil)
Release Time max. typ.	(at nom. coil voltage, without coil suppression) 8 ms 4 ms
Dielectric Strength coil to contacts between contact sets between open contacts	(at sea level for 1 min.) 5000 VAC 3000 VAC 1000 VAC
Surge voltage coil to contacts	(1.2/50 µs) 10 kV
Insulation Resistance	1000 MΩ (min.) at 23°C, 500 VDC, 50% RH
Isolation spacing clearance creepage	(coil to contact) ≥ 10 mm ≥ 10 mm
Insulation coil to contacts	 Reinforced insulation (rated voltage: 250 VAC, pollution degree: 3, overvoltage category: III)
Temperature Range operating DC coil types AC coil types	 (at nominal coil voltage) -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 70°C (158°F)
Vibration resistance	0.062" (1.5 mm) DA at 10–55 Hz
Shock resistance	10 g
Enclosure protection category material group	P.B.T. polyester RT II - flux proof, RT III - wash tight IIIa
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature max. time	 270 °C (518°F) 5 seconds
Cleaning max. solvent temp. max. immersion time	(RT III - wash tight versions only) 80°C (176°F) 30 seconds
Dimensions length width height	 29.0 mm (1.142") 12.7 mm (0.500") 15.7 mm (0.618")
Weight	16 grams (approx.)
Packing unit in pcs	50 per plastic tray / 500 per carton box
Compliance	UL 508, IEC 61810-1, RoHS, REACH

AZ743

UL, CUR / VDE APPROVED RATINGS

UL, CUR	**2 Form A / 2 Form C** 10 A at 250 VAC, resistive, 85°C, 30k cycles, (NO) [2] 10 A at 250 VAC, resistive, 85°C, 6k cycles, (NC) [2] 10 A at 277 VAC, general use, 85°C, 20k cycles, (NO) [1] 8 A at 277 VAC, resistive, 85°C, 50k cycles [1][2] 5 A at 277 VAC, general use, 85°C, 100k cycles [2] 1/2 HP at 250 VAC, 85°C, (NO) [2] 1/2 HP at 240 VAC, 85°C, 1k cycles, (NO) [1] 1/4 HP at 125 VAC, 85°C, (NO) [2] B300, 85°C, 6k cycles, (NO) [1] 8 A at 24 VDC, resistive, 85°C, 50k cycles, (NO) [1] 8 A at 24 VDC, resistive, 85°C, 20k cycles, (NC) [1]
VDE	**2 Form A - DC coil** 8 A at 250 VAC, resistive, 20k cycles, 85°C [2] 8 A at 250 VAC, cos phi 0.4, 50k cycles, 85°C [1] 5 A at 400 VAC, resistive, 100k cycles, 85°C [1] **2 Form A - AC coil** 8 A at 250 VAC, 50k cycles, 70°C [1] 8 A at 250 VAC, 50k cycles, 70°C [2] 1) **2 Form C - DC coil** 8 A at 250 VAC, resistive, 20k cycles, 85°C [2] 8 A at 250 VAC, cos phi 0.4, 30k cycles, 85°C [1] **2 Form C - AC coil** 8 A at 250 VAC, 30k cycles, 70°C [1][2]

[1] denotes AgNi / AgNi+Au (silver nickel / gold plated) contact material
[2] denotes $AgSnO_2$ / $AgSnO_2$+Au (silver tin oxide / gold plated) contact material

Note: 1) tested with RTII flux proof versions

ORDERING DATA

AZ743-□□□-□□□□□F

Class F insulation

Plating option
nil: non plated
A: gold plated contacts

Sealing option
nil: flux proof - non sealed
E: wash tight - sealed

Coil type
D: DC coil type
A: AC coil type

Nominal coil voltage
see coil voltage specifications tables

Contact material
Nil: silver cadmium oxide—not available in all regions
B: silver nickel - AgNi
E: silver tin oxide - $AgSnO_2$

Contact arrangement
2A: 2 Form A (DPST-NO)
2C: 2 Form C (DPDT)

Example ordering data

AZ743-2AE-9DF	2 Form A (DPST-NO), silver tin oxide, 9 VDC nominal coil voltage, flux proof, non gold plated
AZ743-2CB-12DEAF	2 Form C (DPDT), silver nickel, 12 VDC nominal coil voltage, wash tight version, gold plated contacts
AZ743-2AE-230AF	2 Form A (DPST-NO), silver tin oxide, 230 VAC coil voltage, flux proof, non gold plated

COIL VOLTAGE SPECIFICATIONS

DC coils

Nominal Coil VDC	Must Operate VDC	Max. Coil VDC	Nom. Current mA (ref.)	Resistance Ohm
5	3.5	10.2	80.6	62 ±10%
6	4.2	12.3	66.7	90 ±10%
9	6.3	18.3	45.0	200 ±10%
12	8.4	24.7	33.3	360 ±10%
15	10.5	30.9	26.7	562 ±10%
18	12.6	37.0	22.2	810 ±10%
24	16.8	49.4	16.7	1440 ±10%
48	33.6	98.0	8.3	5760 ±15%
60	42.0	112.9	8.0	7500 ±15%
110	77.0	206.9	4.4	25200 ±15%

AC coils

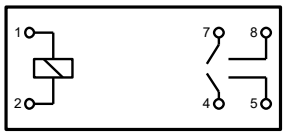
Nominal Coil VAC	Must Operate VAC	Max. Coil VAC	Nom. Current mA (ref.)	Resistance Ohm
24	18.0	31.2	31.6	350 ±10%
115	86.3	149.5	6.6	8100 ±15%
230	172.5	299.0	3.2	32500 ±15%

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

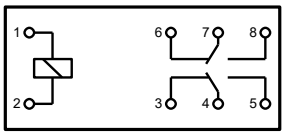
WIRING DIAGRAMS

Viewed towards terminals.

2 Form A



2 Form C

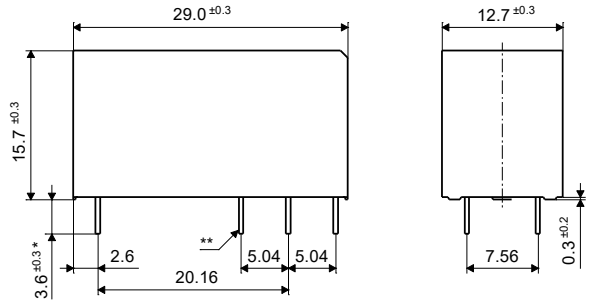


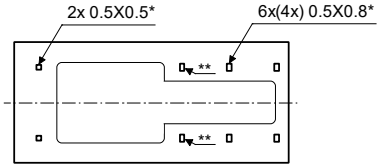
AZ743

MECHANICAL DATA

Dimensions in mm. If not stated otherwise, tolerance: ±0.2 mm

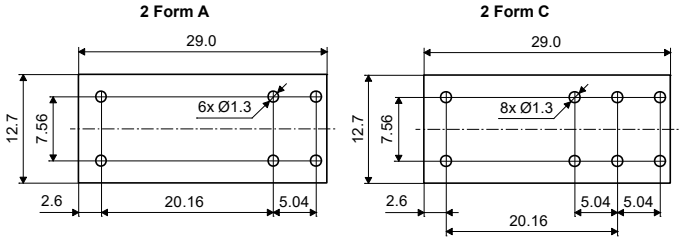
Notes: * Pin dimensions for reference only and given without tin coating.
** Only for 2 Form C (DPDT) contact arrangement versions.





PC BOARD LAYOUT

Layout recommendation. Dimensions in mm. Viewed towards terminals.



NOTES

1. All values at reference temperature of 23°C (73°F) unless stated otherwise.
2. Relay may pull in with less than “Must Operate” value.
3. “Maximum Coil Voltage” is the maximum voltage the coil can endure for a short period of time.
4. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.
5. Relay adjustment may be affected if excessive shock is applied to the relay or if undue pressure is exerted on the relay case.
6. Substances containing silicone or phosphorus must be avoided in the vicinity to the relay as these will shorten its service life.
7. With gold plated contacts a minimum load of 10mA/5V/50mW is recommended.
8. RTII (flux proof) relays must not be washed, immersion cleaned or conformal coated.
9. Specifications subject to change without notice.

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

Building on a foundation of more than a century of expertise in German precision engineering, ZETTLER Group is a world-class enterprise, engaged in the design, manufacturing, sales and distribution of electronic components. Our industry leadership is based on a unique combination of engineering competence and global scale.

For more information on other ZETTLER Group companies, please visit ZETTLER-group.com. For support on this product or other ZETTLER relays, please visit one of the group sites below.

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