



**THE DATASHEET OF  
AZ943-1AH-24DE**



## 15 AMP MINIATURE PCB RELAY

### FEATURES

- 15 Amp switching capability
- Available in SPST-N.O. and SPDT versions
- Flux tight and sealed versions available
- UL Class F insulation system (155°C) available
- RoHS compliant
- UL / CUR file E44211
- TÜV file R50161256
- VDE certificate 40047375



Illustration similar



### CONTACTS

<b>Arrangement</b>	SPST (1 Form A), SPDT (1 Form C)
<b>Ratings (max.)</b> switched power switched current switched voltage	(resistive load) 280 W or 2770 VA 15 A (AC), 10 A (DC) 30 VDC or 277 VAC
<b>Rated Loads</b> UL/CUR	<p><b>SPST (1 Form A)</b> 15 A at 125 VAC, gen. use, 6k cycles, 70°C 12 A at 125 VAC, gen. use, 100k cycles, 85°C 10 A at 277 VAC, gen. use, 100k cycles, 70°C 10 A at 277 VAC, gen. use, 100k cycles, 85°C* 10 A at 277 VAC, gen. use, 20k cycles, 85°C 10 A at 277 VAC, resistive, 100k cycles, 105°C* 12 A at 120 VAC, resistive, 6k cycles, 70°C TV-5 at 120 VAC, 70°C 500 W at 120 VAC, Tungsten, 70°C 9.8 FLA, ½HP at 125 VAC, 6k cycles, 70°C 125 VA at 120 VAC, Pilot Duty, 100k cycles, 70°C 10 A at 28 VDC, resistive, 100k cycles, 70°C</p> <p><b>SPDT (1 Form C)</b> 10 A at 277 VAC, resistive, 100k cycles, 105°C, (NO)* 7 A at 277 VAC, resistive, 50k cycles, 105°C, (NC)* 5 A at 277 VAC, resistive, 100k cycles, 105°C, (NC)* 10 A at 120 VAC, resistive, 100k cycles, 70°C, (NO) 10 A at 120 VAC, resistive, 6k cycles, 70°C, (NC) 10 A at 277 VAC, gen. use, 100k cycles, 70°C, (NO/NC) 10 A at 277 VAC, gen. use, 20k cycles, 85°C, (NO) 8 A at 125 VAC, gen. use, 100k cycles, 85°C, (NO)* 9.8 FLA, 58.8 LRA, ½HP at 125 VAC, 6k cyc., 70°C (NO) 10 A at 28 VDC, resistive, 100k cycles, 70°C (NO/NC)</p>
TÜV	12 A at 125 VAC, resistive, 85°C, 10k cycles 10 A at 277 VAC, resistive, 85°C, 10k cycles 5 A at 250 VAC, resistive, 85°C, 25k cycles <b>SPST (1 Form A) only</b> 10 A at 277 VAC, resistive, 85°C, 25k cycles
VDE	10 A at 250 VAC, resistive, 70°C, 50k cycles (NO) 12 A at 125 VAC, resistive, 25°C, 50k cycles (NO) <b>SPDT (1 Form C) only</b> 5 A at 250 VAC, resistive, 70°C, 50k cycles, (NC)
Notes: * tested with open vent hole	
<b>Contact material</b>	AgSnO <sub>2</sub> (silver tin oxide), gold plating available
<b>Initial resistance</b> max. typ.	(1A / 6V, voltage drop method) 100 mΩ < 15 mΩ

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) 1 x 10 <sup>7</sup> 1 x 10 <sup>5</sup> at 10 A, 277 VAC, resistive
<b>Operate Time</b>	10 ms (max.) at nominal coil voltage
<b>Release Time</b>	5 ms (max.) at nominal coil voltage, without coil suppression
<b>Dielectric Strength</b>	(at sea level for 1 min.) 1500 V <sub>RMS</sub> coil to contact 750 V <sub>RMS</sub> between open contacts
<b>Insulation Resistance</b>	100 MΩ (min.) at 20°C, 500 VDC, 50% RH
<b>Temperature Range</b> operating	(at nominal coil voltage) -40°C (-40°F) to 70°C (158°F) class B -40°C (-40°F) to 105°C (221°F) class F
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10–55 Hz
<b>Shock resistance</b>	10 g
<b>Enclosure</b>	P.B.T. polyester
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b> max. temperature max. time	270 °C (518°F) 5 seconds
<b>Cleaning</b> max. solvent temp. max. immersion time	(sealed versions only) 80°C (176°F) 30 seconds
<b>Dimensions</b> length width height	19.0 mm (0.748") 15.3 mm (0.600") 15.7 mm (0.615")
<b>Weight</b>	10 grams (approx.)
<b>Packing unit in pcs</b>	20 per plastic tube / 1000 per carton box
<b>Compliance</b>	UL 508, IEC 61810-1, EC 60335-1 (GWT), RoHS, REACH

### COIL

<b>Nominal coil DC voltages</b>	5, 6, 9, 12, 18, 24, 36, 48
<b>Dropout voltage</b>	≥ 10% of nominal coil voltage
<b>Coil power</b> nominal at pickup voltage max. cont. dissipation	360 mW 203 mW 1.8 W at 20°C (68°F) class B 2.4 W at 20°C (68°F) class F
<b>Temperature Rise</b>	32 K (58°F) at nominal coil voltage
<b>Max. temperature</b>	130°C (266°F) class B 155°C (311°F) class F

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## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm $\pm 10\%$
5	3.8	11.2	70
6	4.5	13.4	100
9	6.8	20.1	225
12	9.0	26.8	400
18	13.5	40.2	900
24	18.0	53.4	1600
36	27.0	80.1	3600
48	36.0	107.3	6400

## ORDERING DATA

AZ943-□□H-□□D□□□□□□

### Material option

nil: standard version  
GW: IEC 60335-1 (GWT) approved  
(no TÜV approval)

### Thermal class option

nil: Class B coil wire  
F: Class F coil wire

### Plating option

nil: non plated  
G: gold plating (no TÜV/VDE approval)

### Sealing option

nil: non sealed, flux proof  
E: sealed version, wash tight

### Nominal coil voltage

see coil voltage specifications table

### Contact arrangement

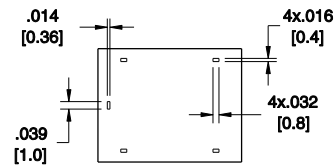
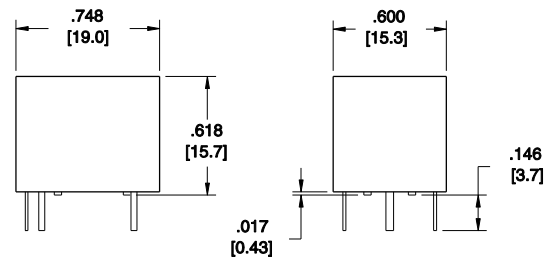
1A: 1 Form A (SPST-N.O.)  
1C: 1 Form C (SPDT)

### Example ordering data

AZ943-1AH-9D	1 Form A, 9 VDC nominal coil voltage, non sealed, class B coil wire
AZ943-1CH-12DEF	1 Form C, 12 VDC nominal coil voltage, sealed version, class F coil wire
AZ943-1CH-24DFGW	1 Form C, 24 VDC nominal coil voltage, non sealed, class F coil wire, EN 60335-1 (GWT) approved

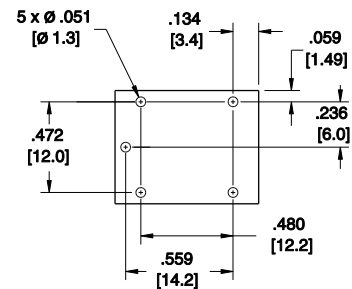
## MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses.  
Tolerance:  $\pm 0.010"$



## PC BOARD LAYOUT

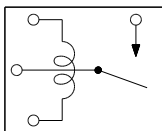
Recommendation for PC board layout.  
Dimensions in inches with metric equivalents in parentheses.  
Viewed towards terminals.



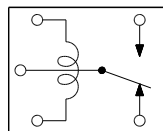
## WIRING DIAGRAMS

Viewed towards terminals.

1 Form A



1 Form C



## NOTES

- All values at reference temperature of 23°C (73°F) unless stated otherwise.
- Relay may pull in with less than "Must Operate" value.
- "Max. Continuous Voltage" is the maximum voltage the coil can endure for a short period of time.
- Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.
- Relay adjustment may be affected if excessive shock is applied to the relay.
- Relay adjustment may be affected if undue pressure is exerted on the relay case.
- Unsealed relays should not be dip cleaned.
- Specifications subject to change without notice.

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## 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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