

# AZSR143

## 50 AMP MINIATURE POWER RELAY

### FEATURES

- 50 Amp switching capability
- Contact gap: 1.8mm standard / 2.0mm available
- Dielectric strength 4.5 kV<sub>RMS</sub>
- 10kV Surge
- UL class F insulation
- UL / CUR E365652
- TÜV B0887930015
- CQC 19002227975



Illustration similar



### CONTACTS

Arrangement	SPST-N.O. (1 Form A)
Ratings (max.) switched power switched current continuous current switched voltage	(resistive load) 19200 VA 50 A 50 A 480 VAC
Rated Loads UL/CUR/CQC	43 A at 277 VAC, resistive, 85°C, 30k cycles 33 A at 277 VAC, resistive, 105°C, 30k cycles 50 A at 277 VAC, resistive, 85°C, 6k cycles 20 A make, 50 A carry, 20 A break at 277 VAC, resistive, 85°C, 50k cycles
TÜV	43 A at 277 VAC, resistive, 85°C, 30k cycles 40 A at 480 VAC, resistive, 85°C, 30k cycles 33 A at 277 VAC, resistive, 105°C, 30k cycles 50 A at 277 VAC, resistive, 85°C, 6k cycles 20 A make, 50 A carry, 20 A break at 480 VAC, resistive, 85°C, 50k cycles
Contact material	AgSnO <sub>2</sub> (silver tin oxide)
Contact gap standard version option (103) version	≥ 1.8 mm ≥ 2.0 mm
Contact resistance initial typical	≤ 100 mΩ < 3 mΩ

### COIL

Nominal coil DC voltages	5, 9, 12, 18, 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) 1.6 W 196 mW 900 mW
Temperature Rise	70 K at nom. coil voltage, 85°C
Max. temperature	Class F insulation - 155°C (311°F)

### GENERAL DATA

Life Expectancy mechanical electrical	(minimum operations) 1 x 10 <sup>5</sup> see UL/CUR/TÜV/CQC ratings
Operate Time	20 ms (max.) at nominal coil voltage
Release Time	10 ms (max.) at nominal coil voltage, without coil suppression
Dielectric Strength coil to load contacts open load contacts	(at sea level for 1 min.) 4500 V <sub>RMS</sub> 2500 V <sub>RMS</sub>
Surge Voltage coil to contacts	10kV @1.2/50µs
Insulation Resistance	1000 MΩ (min.) at 23°C, 500 VDC, 50% RH
Insulation Type coil to contacts	Reinforced insulation (rated voltage ≤ 300 VAC, pollution degree: 2, overvoltage category: II) Basic insulation (rated voltage > 300 VAC, pollution degree: 2, overvoltage category: II)
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
Shock	20 g
Enclosure material protection category material group flammability	P.B.T. polyester RT II, flux proof IIla UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature max. time	270 °C 5 s
Dimensions length width height	30.4 mm (1.20") 15.9 mm (0.63") 25.15 mm (0.99")
Weight	25 grams (approx.)
Compliance	UL 508, IEC 61810-1, RoHS, REACH
Packing unit in pcs	50 per plastic tray / 500 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	15.5
9	6.75	3.15	10.8	50.5
12	9.0	4.2	14.4	90.0
18	13.5	6.3	21.6	202.5
24	18.0	8.4	28.8	360.0
48	36.0	16.8	57.6	1440

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

## ORDERING DATA

AZSR143-1AE-D

### Options

nil: standard version  
(103): 2.0 mm contact gap version

### Nominal coil voltage

see coil voltage specifications table

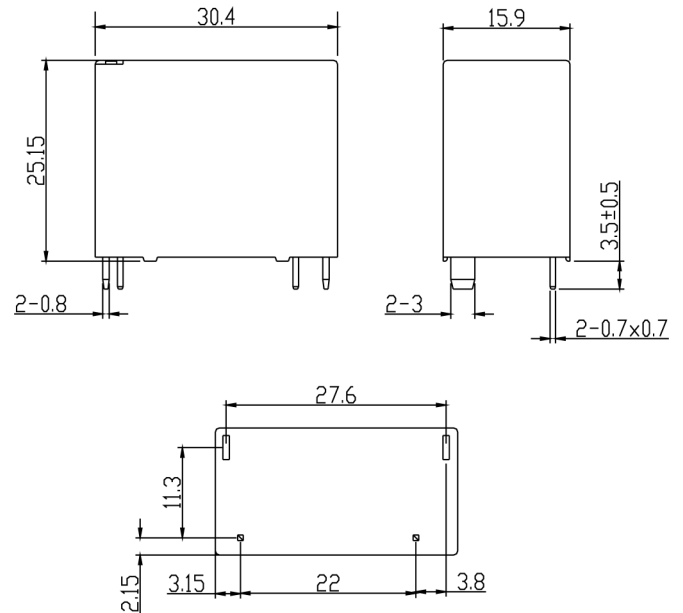
### Example ordering data

AZSR143-1AE-24D 24 VDC nominal coil voltage, 1.8 mm contact gap

AZSR143-1AE-24D(103) 24 VDC nominal coil voltage, 2.0 mm contact gap

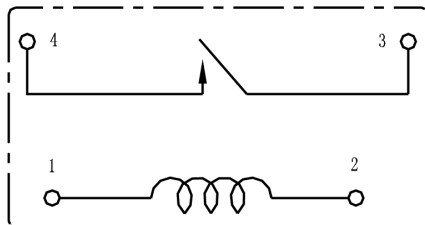
## MECHANICAL DATA

Dimensions in mm. Tolerance:  $\pm 0.3$ mm



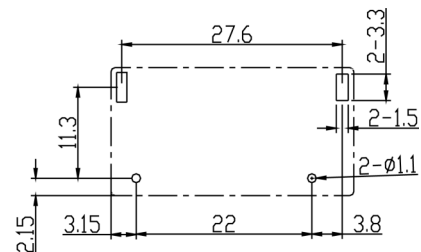
## WIRING DIAGRAMS

Viewed towards terminals



## PC BOARD LAYOUT

Layout recommendation. Viewed towards terminals. Dimensions in mm.



## 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. Provide sufficient PCB cross section as heat spreader on load terminals.
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.
6. 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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