

# AZSR131

## 35 AMP MINIATURE POWER RELAY

### FEATURES

- 35 Amp switching capability
- 4.5 kV dielectric strength, 10 kV surge
- 1.8 mm and 2.3 mm contact gap versions available
- UL Class F insulation system (155°C)
- EN 60335-1 (GWT) approved version available
- TÜV: B 088793 0015
- UL/cUR file: E365652
- CQC: 17002168255



### CONTACTS

<b>Arrangement</b>	SPST-NO (1 Form A)
<b>Ratings (max.)</b> switched power switched current continuous current switched voltage	(resistive load) 9695 VA 35 A 35 A 277 VAC
<b>Rated Loads</b> <b>UL/cUR</b>	26 A at 277 VAC, resistive, 85°C, 50k cycles 35 A at 277 VAC, resistive, 85°C, 30k cycles
<b>TÜV/CQC</b>	22 A at 277 VAC, resistive, 70°C, 100k cycles 26 A at 277 VAC, resistive, 85°C, 50k cycles 33 A at 277 VAC, cos phi 0.8, 85°C, 50k cycles 35 A at 277 VAC, cos phi 0.8, 85°C, 30k cycles
<b>Contact material</b>	AgSnO <sub>2</sub> - silver tin oxide
<b>Contact gap</b> standard version option (200) version	1.8 mm 2.3 mm
<b>Contact resistance</b> initial typical	≤ 100 mΩ (1 A / 6 V - voltage drop method) < 3 mΩ (35 A / 6 V - voltage drop method)

### COIL

<b>Nominal coil DC voltages</b>	5, 9, 12, 18, 24, 48
<b>Dropout voltage</b>	> 5% of nominal coil voltage
<b>Holding voltage</b>	> 35% of nominal coil voltage
<b>Coil power</b> nominal holding power at pickup voltage	(at 23°C) 1.4 W 172 mW 790 mW
<b>Temperature Rise</b>	70 K (126°F) at nom. coil voltage, 35 A/85°C
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical standard version option (200) version electrical	(minimum operations) 3 x 10 <sup>5</sup> (1.8 mm contact gap version) 1 x 10 <sup>5</sup> (2.3 mm contact gap version) see UL/cUR/TÜV/CQC ratings
<b>Operate Time</b> max. typ.	(at nominal coil voltage) 20 ms 10 ms
<b>Release Time</b> max. typ.	(at nom. coil voltage, without coil suppression) 10 ms 2 ms
<b>Dielectric Strength</b>  standard version option (200) version	(at sea level for 1 min.) 4500 VAC coil to contact 2500 VAC between open contacts 3500 VAC between open contacts
<b>Surge voltage</b> coil to contact	10 kV (at 1.2 x 50 μs)
<b>Isolation spacing</b> clearance creepage	≥ 6.4 mm ≥ 7.5 mm
<b>Insulation Resistance</b>	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
<b>Insulation Type</b> coil to contacts	Reinforced insulation (rated voltage ≤ 300 VAC, pollution degree: 2, overvoltage category: II)
<b>Temperature Range</b> operating	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F)
<b>Vibration resistance</b>	1.5 mm (0.062") DA at 10–55 Hz
<b>Shock resistance</b>	20 g
<b>Enclosure</b> type material group flammability	PBT polyester; LCP RT II, flux proof Illa UL94 V-0
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b> max. temperature max. time	270 °C 5 s
<b>Dimensions</b> length width height	30.4 mm (1.20") 15.9 mm (0.63") 25.15 mm (0.99")
<b>Weight</b>	25 grams (approx.)
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH
<b>Packing unit in pcs</b>	50 per tray / 500 per carton box

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# AZSR131

## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC		Min. Holding VDC	Max. Coil VDC	Resistance Ohm $\pm$ 10%
	1.8 mm	2.3 mm			
5	3.5	3.75	1.75	6.0	18
9	6.3	6.75	3.15	10.8	58
12	8.4	9.0	4.2	14.4	103
18	12.6	13.5	6.3	21.6	230
24	16.8	18.0	8.4	28.8	410
48	33.6	36.0	16.8	57.6	1650

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

## ORDERING DATA

AZSR131-1AE-D

### Options

nil: standard version  
(200): 2.3 mm contact gap version

### Material option

nil: standard version  
GW: glow wire test approved version

### Nominal coil voltage

see coil voltage specifications table

## Example ordering data

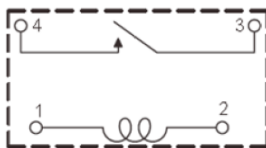
AZSR131-1AE-12D 12 VDC nominal coil voltage, 1.8 mm contact gap

AZSR131-1AE-24DGW 24 VDC nominal coil voltage, glow wire test approved version, 1.8 mm contact gap

AZSR131-1AE-9D(200) 9 VDC nominal coil voltage, 2.3 mm contact gap

## WIRING DIAGRAMS

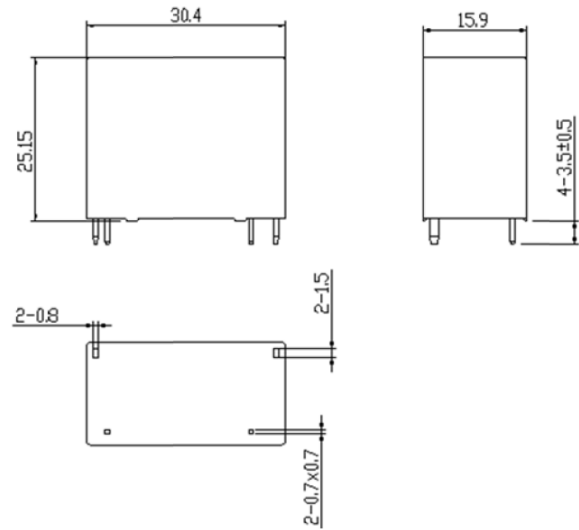
Viewed towards terminals.



## MECHANICAL DATA

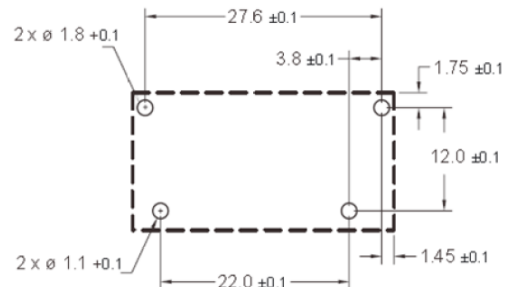
Dimensions in mm. If not stated otherwise, tolerance:  $\pm$ 0.3 mm

Note: Pin dimensions for reference only and given without tin coating.



## 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. RTII (flux proof) relays must not be washed, immersion cleaned or conformal coated.
8. Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC61810-1 at 35A is 6 mm<sup>2</sup>.
9. Specifications subject to change without notice.

# AZSR131

## 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

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## SITES FOR ZETTLER RELAYS

### NORTH AMERICA

American Zettler, Inc.  
[www.azettler.com](https://www.azettler.com)  
[sales@azettler.com](mailto:sales@azettler.com)

### EUROPE

Zettler Electronics, GmbH  
[www.zettlerelectronics.com](https://www.zettlerelectronics.com)  
[office@zettlerelectronics.com](mailto:office@zettlerelectronics.com)

Zettler Electronics, Poland  
[www.zettlerelectronics.pl](https://www.zettlerelectronics.pl)  
[office@zettlerelectronics.pl](mailto:office@zettlerelectronics.pl)

### CHINA

Zettler Group, China  
[www.zettlercn.com](https://www.zettlercn.com)  
[relay@zettlercn.com](mailto:relay@zettlercn.com)

### ASIA PACIFIC

Zettler Electronics (HK) Ltd.  
[www.zettlerhk.com](https://www.zettlerhk.com)  
[sales@zettlerhk.com](mailto:sales@zettlerhk.com)



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