

# AZSR165

## 65 AMP POWER RELAY

### FEATURES

- Up to 80 Amp switching capability
- Wide contact gap of  $\geq 3.0$  mm
- Clearance and creepage of  $\geq 10$  mm
- 5 kV dielectric strength, 10 kV surge withstand voltage
- UL Class F insulation (155°C)
- UL / CUR E365652
- TÜV B0887930008
- CQC 17002178200



### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A)
<b>Ratings (max.)</b> switched power switched current carrying current switched voltage	(resistive load) 43200 VA 80 A 65 A 690 VAC
<b>Rated Loads</b> UL/CUR/TÜV/CQC	80 A at 540 VAC, resistive, 85°C, 1k cycles <sup>[1][2]</sup> 10 A make - 65 A carry - 10 A break at 690 VAC, resistive, 85°C, 100k cycles <sup>[1]</sup> 20 A make - 65 A carry - 20 A break at 690 VAC, resistive, 85°C, 30k cycles <sup>[1]</sup> 20 A make - 65 A carry - 20 A break at 690 VAC, resistive, 85°C, 100k cycles <sup>[2]</sup>
<b>Contact materials</b>	AgNi - silver nickel <sup>[1]</sup> AgSnO <sub>2</sub> - silver tin oxide <sup>[2]</sup>
<b>Contact gap</b>	$\geq 3.0$ mm
<b>Contact resistance</b> initial typical	$\leq 10$ m $\Omega$ (10 A - voltage drop method) < 1 m $\Omega$ (65 A - voltage drop method) <sup>[1]</sup>

### COIL

<b>Nominal coil DC voltages</b>	6, 9, 12, 24
<b>Dropout voltage</b>	$\geq 5\%$ of nominal coil voltage
<b>Holding voltage</b>	$\geq 40\%$ of nominal coil voltage
<b>Coil power</b> nominal at pickup voltage holding power	2.2 W 1.25 W 360 mW
<b>Temperature Rise</b>	70 K (126°F) at nominal coil voltage
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) $1 \times 10^6$ see UL/CUR/TÜV/CQC ratings
<b>Operate Time</b> max. typical	(at nominal coil voltage) 40 ms < 25 ms
<b>Release Time</b> max. typical	(at nominal coil voltage) 10 ms (without coil suppression) < 5 ms (suppression with Z-diode at $2 \times U_{nom.}$ )
<b>Dielectric Strength</b>	(at sea level for 1 min.) 5000 V <sub>RMS</sub> coil to contact 2500 V <sub>RMS</sub> between open contacts
<b>Surge Voltage</b> coil to contact	10 kV (at 1.2 x 50 $\mu$ s)
<b>Insulation Resistance</b>	1000 M $\Omega$ (min.) at 20°C, 500 VDC, 50% RH
<b>Creepage</b> coil to contact	$\geq 10.0$ mm
<b>Clearance</b> coil to contact	$\geq 10.0$ mm
<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>	10 g
<b>Enclosure</b> type material group flammability	P.B.T. polyester RT II, flux proof IIIa UL94 V-0
<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	80°C (176°F) 30 seconds
<b>Dimensions</b> length width height	38.0 mm (1.496") 33.0 mm (1.300") 41.5 mm (1.634")
<b>Weight</b>	76 grams (approx.)
<b>Packing unit in pcs</b>	10 per plastic tube / 150 per carton box
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH

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## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Min. Holding VDC	Max. Cont. VDC	Resistance Ohm $\pm$ 10%
6	4.5	2.4	6.6	16.2
9	6.75	3.6	9.9	36.8
12	9.0	4.8	13.2	65.0
24	18.0	9.6	26.4	262

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

## ORDERING DATA

AZSR165-1A  -  DL

Nominal coil voltage  
see coil voltage specifications table

Contact material  
nil: silver nickel  
E: silver tin oxide

### Example ordering data

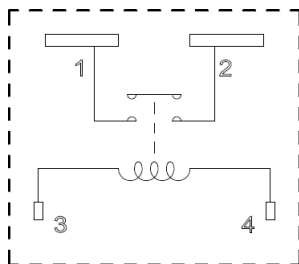
AZSR165-1A-12DL Contact material: silver nickel, 12 VDC nom. coil voltage

AZSR165-1AE-9DL Contact material: silver tin oxide, 9 VDC nom. coil voltage

## WIRING DIAGRAMS

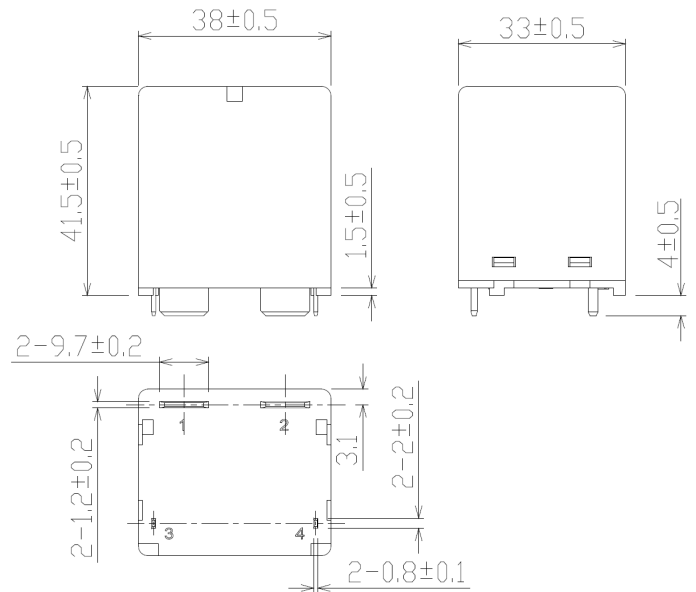
Viewed towards terminals.

Note: Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1 at 65A is 16 mm<sup>2</sup>.



## MECHANICAL DATA

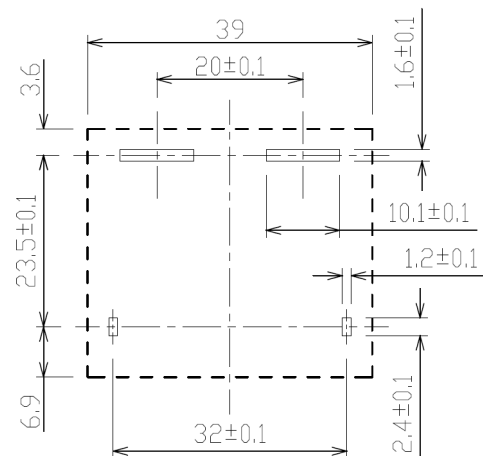
Dimensions in mm. Tolerance:  $\pm$  0.5 mm unless otherwise stated



## PC BOARD LAYOUT

Recommendation for PC board layout.

Dimensions in mm. Viewed towards terminals.



## NOTES

- Specifications subject to change without notice.
- All values at 23°C (73°F).
- Relay may pull in with less than "Must Operate" value.
- Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1 at 65A: 16 mm<sup>2</sup>
- Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

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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.

## ZETTLER GROUP

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### NORTH AMERICA

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

### EUROPE

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

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

### CHINA

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

### ASIA PACIFIC

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



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