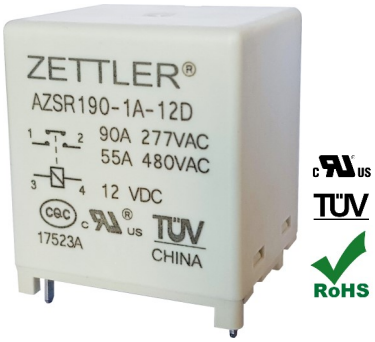
AZSR190

90/100 AMP POWER RELAY



FEATURES

- Up to 100 Amp switching capability
- Wide contact gap of ≥ 3.6 mm
- Clearance and creepage of ≥ 10 mm
- 5 kV dielectric strength, 10 kV surge withstand voltage
- UL Class F insulation (155°C)
- UL / CUR E365652
- TÜV B0887930008

CONTACTS

Arrangement	SPST-N.O. (1 Form A)
Ratings (max.)	(resistive load)
standard version	
switched power	44000 VA
switched current	90 A
high current version	
switched power	69000 VA
switched current	100 A
switched voltage	800 VAC
Rated Loads	
UL/CUR	55 A at 480 VAC, resistive, 85°C, 50k cycles [1] 55 A at 690 VAC, resistive, 85°C, 20k cycles [1] 55 A at 800 VAC, resistive, 85°C, 1k cycles [1][2] 55 A at 690 VAC, resistive, 85°C, 30k cycles [2] 80 A at 277 VAC, resistive, 85°C, 10k cycles [2]
high current version	100 A at 480 VAC, res., 85°C, 1k cycles [1] 100 A at 690 VAC, res., 85°C, 1k cycles [2]
TÜV	30 A at 480 VAC, resistive, 85°C, 50k cycles [1] 55 A at 480 VAC, resistive, 85°C, 30k cycles [1] 55 A at 690 VAC, resistive, 85°C, 20k cycles [1] 55 A at 690 VAC, resistive, 85°C, 30k cycles [2] 55 A at 800 VAC, resistive, 85°C, 1k cycles [1][2] 80 A at 277 VAC, resistive, 85°C, 10k cycles [2] 90 A at 480 VAC, resistive, 85°C, 1k cycles [1]
high current version	100 A at 480 VAC, resistive, 85°C, 1k cycles [1] 100 A at 690 VAC, resistive, 85°C, 1k cycles [2]
Contact material	AgNi - silver nickel [1] $AgSnO_2$ - silver tin oxide [2]
Contact gap	≥ 3.6 mm
Contact resistance	
initial	≤ 10 mΩ (10 A - voltage drop method)
typical	< 1 mΩ (90 A - voltage drop method)

COIL

Nominal coil DC voltages	6, 9, 12, 24
Dropout voltage	≥ 5% of nominal coil voltage
Holding voltage	≥ 40% of nominal coil voltage
Coil power	
nominal	1.9 W
at pickup voltage	1.1 W
holding power	310 mW
Temperature Rise	70 K (126°F) at nominal coil voltage
Max. temperature	Class F insulation - 155°C (311°F)

GENERAL DATA

Life Expectancy	(minimum operations)
mechanical	1×10^6
electrical	see UL/CUR/TÜV ratings
Operate Time	40 ms (max.) at nominal coil voltage
Release Time	10 ms (max.) at nominal coil voltage, without coil suppression
Dielectric Strength	(at sea level for 1 min.) 5000 V_{RMS} coil to contact 2500 V_{RMS} between open contacts
Surge Voltage	
coil to contact	10 kV (at 1.2 x 50 µs)
Insulation Resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
Creepage	
coil to contact	≥ 10.0 mm
Clearance	
coil to contact	≥ 10.0 mm
Temperature Range	(at nominal coil voltage)
operating	-40°C (-40°F) to 85°C (185°F)
Vibration resistance	1.5 mm (0.062") DA at 10–55 Hz
Shock resistance	10 g
Enclosure	P.B.T. polyester
protection category	RT II, flux proof
material group	IIIa
flammability	UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering	
max. temperature	270 °C (518°F)
max. time	5 seconds
Cleaning	
max. solvent temp.	80°C (176°F)
max. immersion time	30 seconds
Dimensions	
length	38.0 mm (1,496")
width	33.0 mm (1,300")
height	
standard version	43.0 mm (1.693")
low profile version	41.5 mm (1.634")
Weight	85 grams (approx.)
Packing unit in pcs	10 per plastic tube / 150 per carton box
Compliance	UL 508, IEC 61810-1, RoHS, REACH

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AZSR190

COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Min. Holding VDC	Max. Cont. VDC	Resistance Ohm ± 10%
6	4.5	2.4	6.6	18.8
9	6.75	3.6	9.9	42.2
12	9.0	4.8	13.2	75.0
24	18.0	9.6	26.4	300

ORDERING DATA

AZSR190□-1A□-□□D□

Height
nil: standard height (43.0 mm)
L: low profile (41.5 mm)

Nominal coil voltage
see coil voltage specifications table

Contact material
nil: silver nickel
E: silver tin oxide

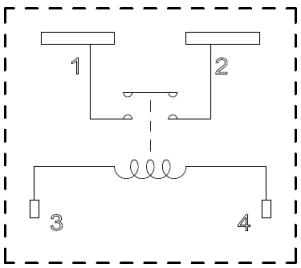
Switching capacity
nil: standard version
T: high current version

Example ordering data

AZSR190-1A-12DL	Standard version, contact material: silver nickel, 12 VDC nominal coil voltage, low profile
AZSR190T-1A-12D	High current version, contact material: silver nickel, 12 VDC nominal coil voltage, standard height
AZSR190-1AE-9DL	Standard version, contact material: silver tin oxide, 9 VDC nominal coil voltage, low profile

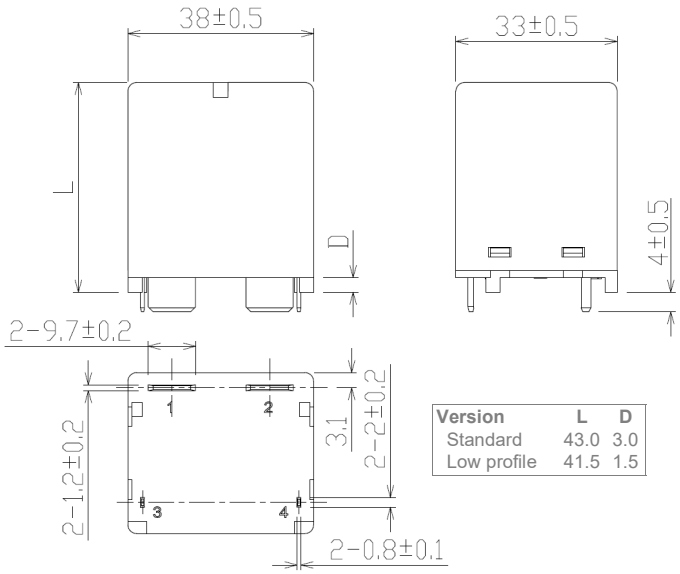
WIRING DIAGRAMS

Viewed towards terminals.
Note: Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1 at 90A: 35 mm².



MECHANICAL DATA

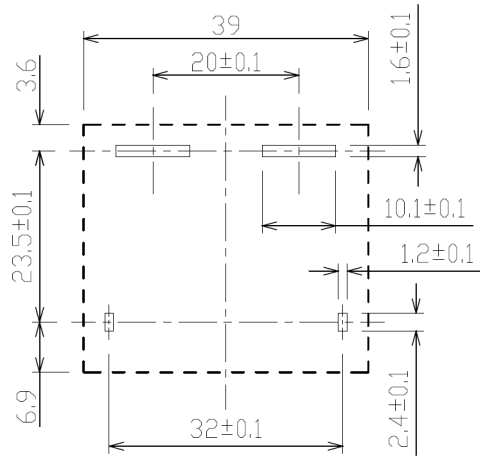
Dimensions in mm. Tolerance: ± 0.5 mm unless otherwise stated



Version	L	D
Standard	43.0	3.0
Low profile	41.5	1.5

PC BOARD LAYOUT

Dimensions in mm. Tolerance: ± 0.1 mm unless otherwise stated
Viewed towards terminals.



NOTES

1. Specifications subject to change without notice.
2. All values at 20°C (68°F) unless otherwise stated.
3. Relay may pull in with less than “Must Operate” value.
4. Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1 at 90A: 35 mm²
5. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf

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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