

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 E365652
- TÜV B0887930008
- CQC 17002178200



CONTACTS

Arrangement	SPST-N.O. (1 Form A)
Ratings (max.) standard version switched power switched current high current version switched power switched current switched voltage	(resistive load) 44000 VA 90 A 69000VA 100 A 800 VAC
Rated Loads UL/CUR/	55A at 480 VAC, resistive, 85°C, 50k cycles ^[1] 55A at 690 VAC, resistive, 85°C, 20k cycles ^[1] 55A at 800 VAC, resistive, 85°C, 1k cycles ^{[1][2]} 55A at 690 VAC, resistive, 85°C, 30k cycles ^[2] 80A at 277 VAC, resistive, 85°C, 10k cycles ^[2]
high current version	100A at 480 VAC, resistive, 85°C, 1k cycles ^[1] 100A at 690 VAC, resistive, 85°C, 1k cycles ^[2]
TÜV/CQC	30A at 480 VAC, resistive, 85°C, 50k cycles ^[1] 55A at 480 VAC, resistive, 85°C, 30k cycles ^[1] 55A at 690 VAC, resistive, 85°C, 20k cycles ^[1] 55A at 690 VAC, resistive, 85°C, 30k cycles ^[2] 55A at 800 VAC, resistive, 85°C, 1k cycles ^{[1][2]} 80A at 277 VAC, resistive, 85°C, 10k cycles ^[2] 90A at 480 VAC, resistive, 85°C, 1k cycles ^[1]
high current version	100A at 480 VAC, resistive, 85°C, 1k cycles ^[1] 100A 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	(load contact) ≤ 100 m Ω (at 6V, 1A, voltage drop method) ≤ 10 m Ω (at 10A, voltage drop method)
typical	< 3 m Ω (at 6V, 1A, voltage drop method)

COIL

Nominal coil DC voltages	6, 9, 12, 24,
Dropout voltage	$\geq 5\%$ of nominal coil voltage
Holding voltage	$\geq 40\%$ of nominal coil voltage
Coil power nominal holding power at pickup voltage	(at 23 °C) 1.9 W 310mW 1.1 W
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) 1×10^6 see UL/CUR/TÜV/CQC ratings
Operate Time	40 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.) 5000 V _{RMS} 2500 V _{RMS}
Surge Voltage coil to contacts	10kV (at 1.2 x 50 μ s)
Insulation Resistance	1000 M Ω (min.) at 23°C, 500 VDC, 50% RH
Creepage coil to contact	≥ 10.0 mm
Clearance coil to contact	≥ 10.0 mm
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	10 g
Enclosure protection category material group flammability	PBT(Case) and PA46(Base) RT II, flux proof Illa UL94 V-0
Terminals	Tinned copper alloy, P. C.
Soldering max. temperature max. time	270 °C (518°F) 5 seconds
Dimensions length width height standard version low profile version	38.0 mm (1.50") 33.0 mm (1.30") 43.0 mm (1.69") 41.5 mm (1.63")
Weight	85 grams (approx.)
Compliance	UL 508, IEC 61810-1, RoHS, REACH
Packing unit in pcs	10per plastic tube / 150 per carton box

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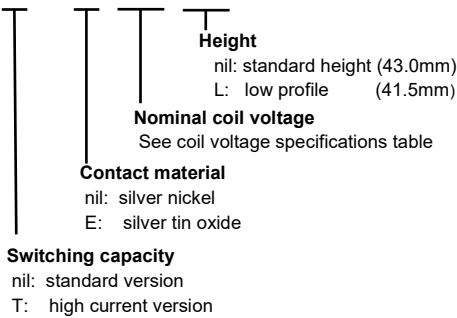
COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Min. Holding VDC	Max. Cont. VDC	Resistance Ohm \pm 10%
6	4.5	2.4	6.6	18.8
9	6.75	3.6	9.9	42.2
12	9	4.8	13.2	75
24	18	9.6	26.4	300

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

ORDERING DATA

AZSR190 -1A - D

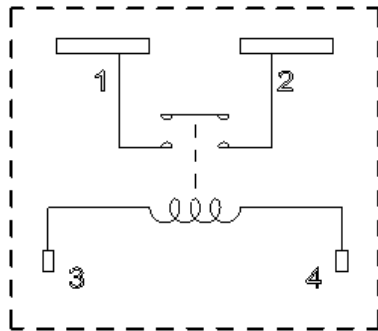


Example ordering data

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 is 35 mm²

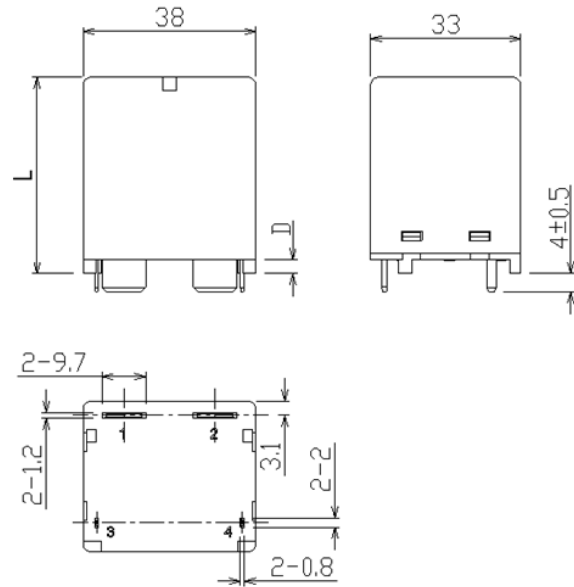


NOTES

- Specifications subject to change without notice.
- All values at 20°C (68°F) unless otherwise stated.
- 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 90A: 35mm²
- Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

MECHANICAL DATA

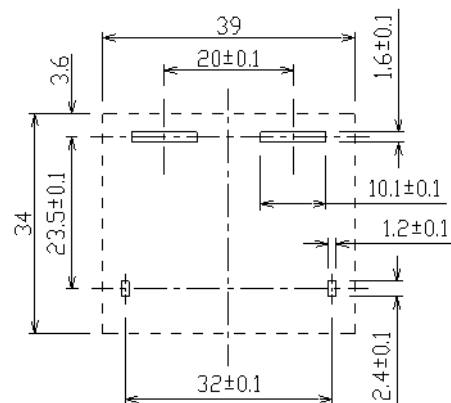
Dimensions in mm. Tolerance: \pm 0.5mm



Version	L	D
Standard	43.0	3.0
Low profile	41.5	1.5

PC BOARD LAYOUT

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



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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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