

# AZ9405

## 10 AMP MINIATURE POWER RELAY

### FEATURES

- 10 A switching capability
- Available in SPST-N.O. and SPDT versions
- 4 kV dielectric strength, 8 kV surge withstand voltage
- Epoxy sealed version available
- Standard and sensitive coil available
- UL Class F insulation (155°C) standard
- Compact size, low seated height of 15.2 mm
- UL, CUR file E44211
- TÜV R50304647



### CONTACTS

**Arrangement** SPST-N.O. (1 Form A), SPDT (1 Form C)

**Ratings (max.)** (resistive load)  
switched power 150 W or 1400 VA  
switched current 10 A  
switched voltage 30 VDC\* or 277 VAC

\* Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.

#### Rated Loads

UL

##### 1 Form A

10 A at 125 VAC, resistive, 85°C, 100k cycles  
5 A at 277 VAC, gen.use/resistive, 85°C, 100k cycles  
5 A at 30 VDC, gen.use/resistive, 85°C, 100k cycles  
 $\frac{1}{10}$  HP at 125/250 VAC, 100k cycles

##### 1 Form C (N.O. contact)

5 A at 277 VAC, gen.use/resistive, 85°C, 100k cycles  
5 A at 30 VDC, gen.use/resistive, 85°C, 100k cycles  
 $\frac{1}{10}$  HP at 125/250 VAC, 100k cycles

##### 1 Form C (N.C. contact)

3 A at 277 VAC, gen.use/resistive, 85°C, 100k cycles  
3 A at 30 VDC, gen.use/resistive, 85°C, 100k cycles

#### TÜV

##### 1 Form A

10 A at 125 VAC, resistive, 85°C, 100k cycles  
5 A at 277 VAC, resistive, 85°C, 100k cycles

##### 1 Form C (N.O. contact)

5 A at 277 VAC, resistive, 85°C, 100k cycles  
5 A at 30 VDC, resistive, 85°C, 100k cycles

##### 1 Form C (N.C. contact)

3 A at 277 VAC, resistive, 85°C, 100k cycles  
3 A at 30 VDC, resistive, 85°C, 100k cycles

**Contact material** AgSnO<sub>2</sub> (silver tin oxide)

**Initial resistance** ≤ 100 mΩ (1 A / 6 V - voltage drop method)

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Specifications subject to change without notice.

### GENERAL DATA

**Life Expectancy** (minimum operations)  
mechanical  $1 \times 10^7$   
electrical  $1 \times 10^5$  at rated loads

**Operate Time** (max.) at nominal coil voltage  
standard coil 10 ms  
sensitive coil 15 ms

**Release Time** 5 ms (max.) at nominal coil voltage, without coil suppression

**Dielectric Strength** (at sea level for 1 min.)  
4000 V<sub>RMS</sub> coil to contact  
1000 V<sub>RMS</sub> between open contacts

**Surge voltage** 8 kV (at 1.2 x 50 μs) coil to contact

**Insulation Resistance** 1000 MΩ (min.) at 20°C, 500 VDC, 50% RH  
**Clearance** 4 mm (1 Form A), 3 mm (1 Form C)  
**Creepage** 6 mm (1 Form A), 5 mm (1 Form C)

**Temperature Range** (at nominal coil voltage)  
operating -40°C (-40°F) to 85°C (185°F)

**Vibration resistance** 0.062" (1.5 mm) DA at 10–55 Hz  
**Shock** 10 g operating

**Enclosure** P.B.T. polyester, 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 20.0 mm (0.787")  
width 10.0 mm (0.394")  
height 15.2 mm (0.598")  
**Weight** 7 grams (approx.)

**Compliance** UL 508, IEC 61810-1, RoHS, REACH

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This product specification to be used only together with the application notes which can be downloaded from [www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf](http://www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf)

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## COIL

<b>Nominal coil DC voltages</b>	see coil voltage specifications tables
<b>Dropout</b>	> 5% of nominal coil voltage
<b>Nominal power</b>	
standard coil	400 mW
sensitive coil	200 mW
<b>Power at pickup voltage</b>	(typ.)
standard coil	225 mW
sensitive coil	113 mW
<b>Max. continuous dissipation</b>	
standard coil	676 mW
sensitive coil	338 mW
<b>Temperature Rise</b>	(at nominal coil voltage)
standard coil	42 K (76°F)
sensitive coil	24 K (44°F)
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

## COIL VOLTAGE SPECIFICATIONS

### Standard Coil

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	3.9	22.5
5	3.75	6.5	63
6	4.5	7.8	90
9	6.75	11.7	203
12	9.0	15.6	360
18	15.5	23.4	810
24	18.0	31.2	1440
48	36.0	62.4	5760

### Sensitive Coil

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	3.9	45
5	3.75	6.5	125
6	4.5	7.8	180
9	6.75	11.7	400
12	9.0	15.6	720
18	13.5	23.4	1620
24	18.0	31.2	2800

## ORDERING DATA

AZ9405-□□-□□D□□F

**Sealing option**  
 nil: non sealed  
 E: sealed version  
**Coil option**  
 nil: standard coil  
 S: sensitive coil  
**Nominal coil voltage**  
 see coil voltage specifications tables  
**Contact arrangement**  
 1A: 1 Form A (SPST-N.O.)  
 1C: 1 Form C (SPDT)

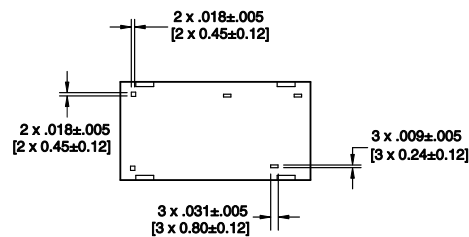
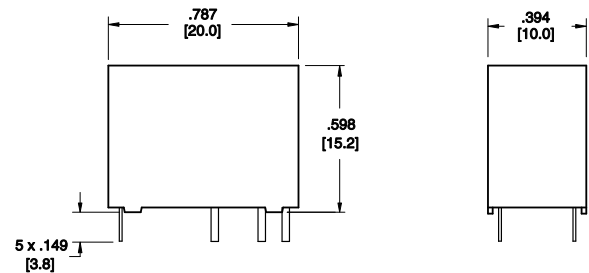
### Example ordering data

AZ9405-1A-5DF 1 Form A, 5 VDC coil voltage, standard coil, non sealed

AZ9405-1A-12DSEF 1 Form A, 12 VDC coil voltage, sensitive coil, sealed

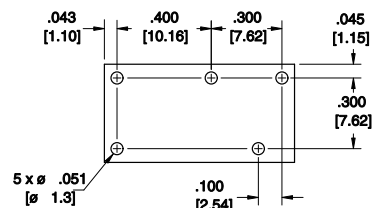
## MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"



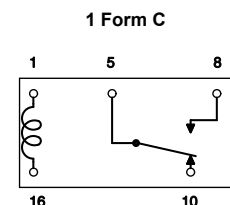
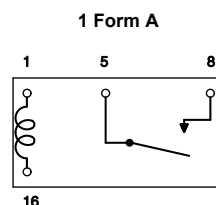
## PC BOARD LAYOUT

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"  
Viewed towards terminals.



## WIRING DIAGRAMS

Viewed towards terminals.



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