# AZ9861

## 40 AMP 280-ISO AUTOMOTIVE RELAY


### FEATURES

- 40Amp contact rating
- High operating temperature (125°C)
- SPST (1 Form A), SPDT (1 Form C)
- Available with shrouded weatherproof cover
- Coil suppression available
- ISO/TS 16949, ISO9001, ISO 14000

### CONTACTS

| | |
|---|---|
| **Arrangement** | SPST (1 Form A)<br>SPDT (1 Form C) |
| **Ratings** | Resistive load:<br>Max. switched power: 420 W (SPST)<br>420 W (N.O.)<br>240W (N.C.)<br>Max. switched current: 40 A (SPST) (Continuous 125°C, 1Hr)<br>40 A (N.O.)<br>30 A (N.C.)<br>*See Contact Data Table for additional ratings.<br>Max. switched voltage: 40 VDC<br>*Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory. |
| **Material** | Silver tin oxide |
| **Resistance** | < 100 milliohms initially<br>(6 V, 1 A voltage drop method) |

### COIL

| | |
|---|---|
| **Power** | |
| **At Pickup Voltage (typical)** | 0.58 W |
| **Max. Continuous Dissipation** | 3.7 W at 20°C (68°F) |
| **Temperature Rise** | 52°C (94°F) at nominal coil voltage |
| **Temperature** | Max. 180°C (356°F) |

### 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**<br>**Mechanical**<br>**Electrical** | Minimum operations<br>1 x $10^7$<br>1 x $10^5$ at 35 A 14 VDC Res. |
| **Operate Time (max.)** | 6 ms at nominal coil voltage |
| **Release Time (max.)** | 3 ms at nominal coil voltage |
| **Dielectric Strength (at sea level for 1 min.)** | 500 Vrms coil to contact<br>500 Vrms contact to contact |
| **Insulation Resistance** | 100 megohms min. at 500 VDC, 20°C<br>50% RH |
| **Dropout** | Greater than 10% of nominal coil voltage |
| **Ambient Temperature**<br>**Operating**<br>**Storage** | <br>-55°C (-67°F) to 125°C (257°F)<br>-55°C (-67°F) to 155°C (311°F) |
| **Vibration** | 10-1000Hz 19.8m/s2 |
| **Shock** | 1000 $m/s^2$ |
| **Enclosure** | P.B.T. polyester |
| **Terminals** | Tinned copper alloy<br>0.110 Quick Connect<br>Note: Allow suitable slack on leads when wiring, and do not subject the terminals to excessive force. |
| **Weight** | 20 grams (41 grams shrouded version) |


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## RELAY ORDERING DATA

**AZ9861-1C-12DC2R1**

- Blank - Standard no diode, no resistor
- R1 - 680 Ohm, ½ w resistor in parallel with 12 V coil
  2700 Ohm, ½ w resistor in parallel with 24 V coil
- D1 - 1A7 diode in parallel with coil, anode on #86 terminal
- D2 - 1A7 diode in parallel with coil, cathode on #86 terminal
- D3 - 1A4 diode in parallel with coil, anode on #86 terminal
- D4 - 1A4 diode in parallel with coil, cathode on #86 terminal
- C1 - Plastic dust cover unsealed
- C2 - Plastic dust cover sealed
- C3 - Plastic dust cover, shrouded, steel mounting bracket, unsealed
- C4 - Plastic dust cover, shrouded, steel mounting bracket, sealed
- 12D - 12 volt coil
- 24D - 24 volt coil
- 1A - SPNO Single pole normally open
- 1C - SPDT Single pole double throw
- Basic series designation - AZ9861

## RELAY ORDERING DATA

| COIL SPECIFICATIONS | | | |
|---|---|---|---|
| **Nominal Coil VDC** | **Must Operate VDC** | **Max. Continuous VDC** | **Coil Resistance ± 10%** |
| 12 | 7.2 | 21.0 | 124 |
| 24 | 14.4 | 42.0 | 360 |

## CONTACT DATA [2)]

| Load voltage | Load type | | Load current A | | | On/Off ratio | | Electrical endurance OPS | Contact material | Load wiring diagram [1)] | Ambient temp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1C | | 1A | On s | Off s | | | | |
| | | | NO | NC | NO | | | | | | |
| 13.5VDC | Resistive | Make | 35 | 20 | 35 | 2 | 2 | $1\times10^5$ | $AgSnO_2$ | See diagram 1 | 23°C |
| | | Break | 35 | 20 | 35 | | | | | | |
| | Lamp | Make | 150 | -- | 150 | 2 | 2 | $1\times10^5$ | $AgSnO_2$ | See diagram 2 | |
| | | Break | 30 | -- | 30 | | | | | | |
| | Inductive | Make | 80 | -- | 80 | 2 | 2 | $1\times10^5$ | $AgSnO_2$ | See diagram 3 | |
| | | Break | 33 | -- | 33 | | | | | | |

1.) The load wiring diagrams are listed below (Ratings of NO, NC are tested based on different samples seperately):

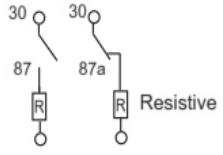


diagram 1

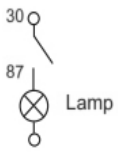


diagram 2

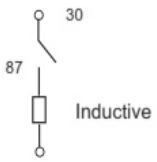


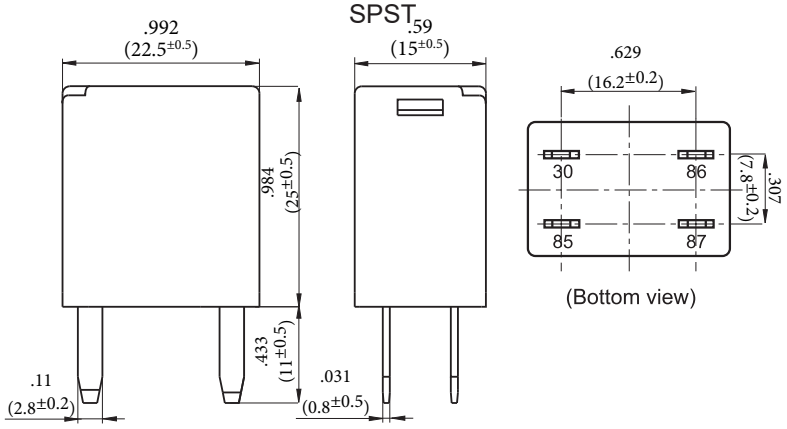
diagram 3

2.) Loads mentioned in this chart are for relay with no parallel diode or Zener diode.

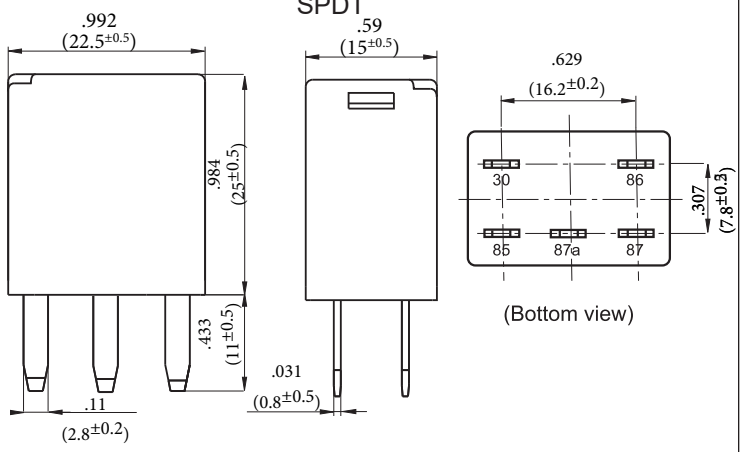
# AZ9861

## MECHANICAL DATA

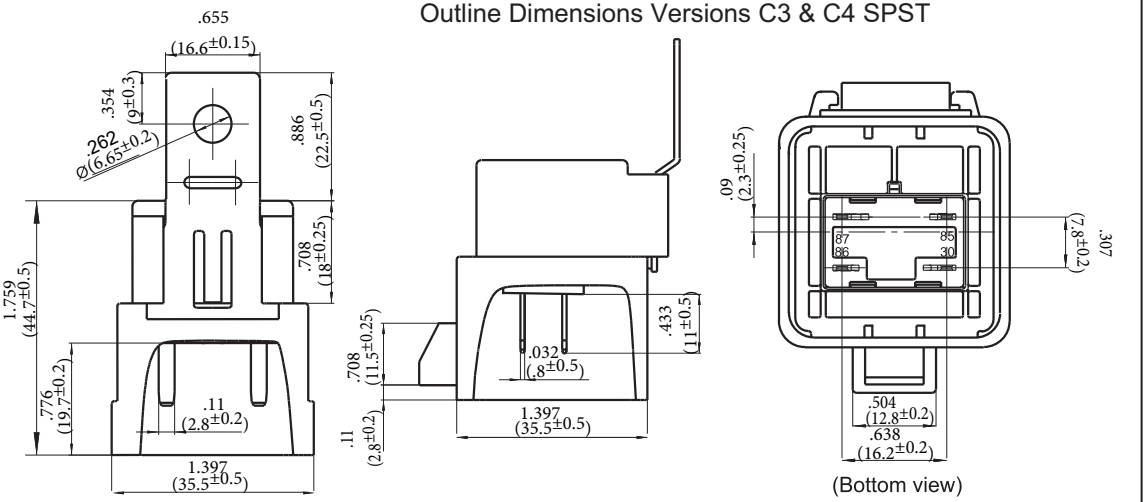
Outline Dimensions
Versions C1 & C2
SPST




Outline Dimensions
Versions C1 & C2
SPDT

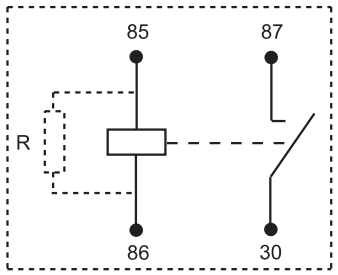



Outline Dimensions Versions C3 & C4 SPST

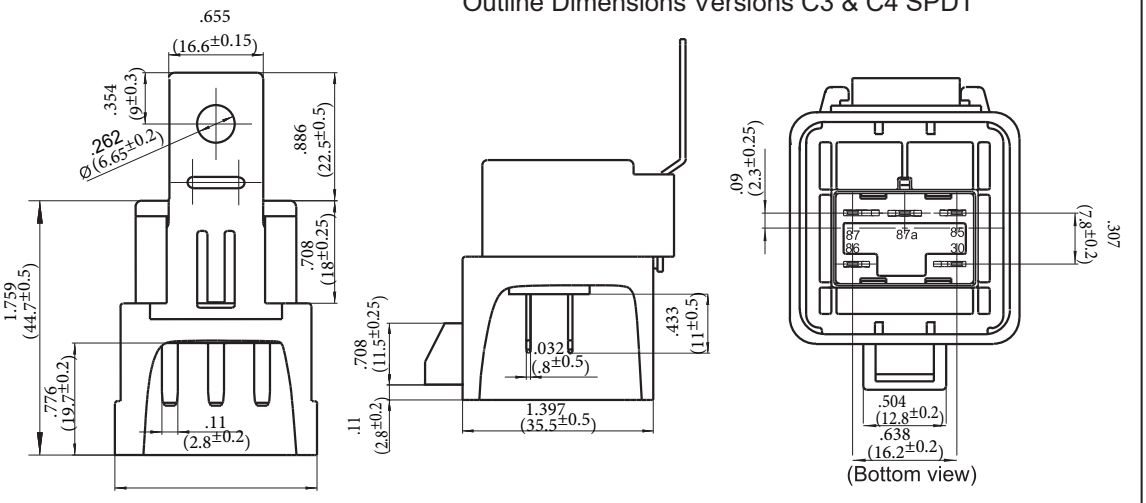



Wiring Diagram

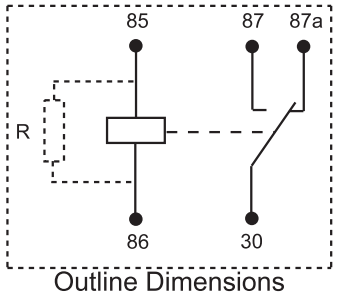
SPST




Outline Dimensions Versions C3 & C4 SPDT




SPDT




Outline Dimensions

Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"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6/30/20

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