

# AZ770

## SPDT SUBMINIATURE POWER RELAY

### FEATURES

- 5kV dielectric strength, 10kV surge
- 8mm creepage and clearance
- Proof tracking index (PTI/CTI) 250
- 5 Amp switching capability (version "T" 10 Amp)
- 20A high inrush current (1 Form A)
- Epoxy sealed version available
- UL Class F insulation (155°C) standard  
Reinforced insulation, EN 60730-1 (VDE 0631, part 1),  
1 Form A: EN 60335-1 (VDE 0700, part 1)
- UL file #E44211
- VDE certificate 40006815
- UL 508, IEC61810-1, IEC60335-1 (GWT), RoHS,  
REACH



### CONTACTS

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Arrangement           | SPST (1 Form A)<br>SPDT (1 Form C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ratings               | Resistive load:<br><br>Max. switched power: 150W or 1250VA<br>(Version "T": 150W or 2500VA)<br>Max. switched current: 5A<br>(Version "T": 10A)<br>Max. switched voltage: 30VDC* or 250VAC<br><br>* Note: If switching voltage is greater than 30 VDC,<br>special precautions must be taken.<br>Please contact the factory.                                                                                                                                                                                                                     |
| Rated Load<br>UL, CUR | B300 pilot duty, 40°C<br>1000W, 250VAC, tungsten load, 40°C 6k cycles<br><br>1 Form A<br>5A at 250VAC, resistive, 100k cycles<br>5A at 30VDC, resistive, 100k cycles<br>3A at 250VAC, cos phi 0.4, 100k cycles<br>1/8HP at 125/250 VAC, 100k cycles<br>C300 pilot duty, 125/250 VAC, 100k cycles<br>TV-2 at 120VAC<br><br>1 Form C<br>3A at 250VAC, resistive, 100k cycles<br>3A at 30VDC, resistive, 100k cycles<br><br>High capacity version "T"<br>10A at 250VAC, resistive, 85°C, 100k cycles<br>15A at 120VAC, resistive, 70°C, 6k cycles |
| VDE                   | 5A at 250VAC, 85°C, 100k cycles<br>2A at 250VAC, cos phi 0.5, 85°C, 30k cycles *<br>3A at 400VAC, 85°C, 100k cycles<br><br>* change-over contact tested as make contact<br><br>High capacity version "T"<br>10A at 250VAC, 85°C, 15k cycles                                                                                                                                                                                                                                                                                                    |
| Material              | Silver nickel, silver tin oxide (high capacity<br>version "T" only), gold plating available                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Resistance            | < 100 milliohms initially                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

### GENERAL DATA

|                                                              |                                                                                            |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Life Expectancy<br>Mechanical                                | Minimum operations<br>1 x 10 <sup>6</sup>                                                  |
| Standard version<br>Electrical                               | 1 x 10 <sup>5</sup> at 5A 250VAC Res.                                                      |
| High capacity version "T"<br>Electrical                      | 1 x 10 <sup>5</sup> at 10A 250VAC Res.                                                     |
| Operate Time (max.)                                          | 8ms at nominal coil voltage                                                                |
| Release Time (max.)                                          | 4ms at nominal coil voltage<br>(with no coil suppression)                                  |
| Dielectric Strength<br>(at sea level for 1 min.)             | 5000Vrms coil to contact<br>1000Vrms between open contacts                                 |
| Surge Voltage<br>Coil to contact                             | 10,000V (at 1.2x50 µs)                                                                     |
| Insulation<br>Resistance                                     | 1000 megohms min. at 20°C, 500VDC,<br>50% RH                                               |
| Insulation<br>(according to<br>DIN VDE 0110,<br>IEC 60664-1) | C250<br>Overvoltage category: III<br>Pollution degree: 3<br>Nominal voltage: 250VAC        |
| Dropout                                                      | Greater than 5% of nominal coil voltage                                                    |
| Ambient Temperature<br>Operating<br>Storage                  | At nominal coil voltage<br>-40°C (-40°F) to 85°C (185°F)<br>-40°C (-40°F) to 105°C (221°F) |
| Vibration                                                    | 1.5mm DA at 10-55 Hz                                                                       |
| Shock                                                        | 10 g operating, 100 g damage                                                               |
| Enclosure                                                    | P.B.T. polyester                                                                           |
| Terminals                                                    | Tinned copper alloy, P.C.                                                                  |
| Max. Solder Temp.                                            | 270°C (518°F)                                                                              |
| Max. Solder Time                                             | 5 seconds                                                                                  |
| Max. Solvent Temp.                                           | 80°C (176°F)                                                                               |
| Max. Immersion Time                                          | 30 seconds                                                                                 |
| Weight (approx.)                                             | 4.6 grams                                                                                  |
| Packing unit in pcs                                          | 100 per tray / 1000 per carton box                                                         |

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11/28/17

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## COIL

|                                              |                                                                                                                 |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Power</b>                                 |                                                                                                                 |
| <b>At Pickup Voltage (typical)</b>           | 253mW (standard coil)<br>113mW (sensitive coil)<br>130mW (sensitive coil high capacity version "T")             |
| <b>Max. Continuous Dissipation</b>           | 760 mW at 20°C (68°F) ambient                                                                                   |
| <b>Temperature Rise (at nominal voltage)</b> | 41°C (74°F) standard coil<br>22°C (40°F) sensitive coil<br>27°C (49°F) sensitive coil high capacity version "T" |
| <b>Temperature</b>                           | Max. 155°C (311°F)                                                                                              |

## NOTES

1. All values at 20°C (68°F)
2. Relay may pull in with less than "Must Operate" value.
3. The vibration resistance is 0.6mm DA at 10–55 Hz for the N.C. contact, if vibration is in length direction.
4. Specifications subject to change without notice.

## RELAY ORDERING DATA

| STANDARD COIL - TYPE 1 FOOTPRINT |                  |                     |                              |               |               |
|----------------------------------|------------------|---------------------|------------------------------|---------------|---------------|
| COIL SPECIFICATIONS              |                  |                     |                              | ORDER NUMBER* |               |
| Nominal Coil VDC                 | Must Operate VDC | Max. Continuous VDC | Coil Resistance Ohm $\pm 10$ | Form A (SPST) | Form C (SPDT) |
| 3                                | 2.25             | 3.9                 | 20                           | AZ770-1A-3D   | AZ770-1C-3D   |
| 5                                | 3.75             | 6.6                 | 55                           | AZ770-1A-5D   | AZ770-1C-5D   |
| 6                                | 4.50             | 7.8                 | 80                           | AZ770-1A-6D   | AZ770-1C-6D   |
| 9                                | 6.75             | 11.7                | 180                          | AZ770-1A-9D   | AZ770-1C-9D   |
| 12                               | 9.00             | 15.6                | 320                          | AZ770-1A-12D  | AZ770-1C-12D  |
| 18                               | 13.50            | 23.4                | 720                          | AZ770-1A-18D  | AZ770-1C-18D  |
| 24                               | 18.00            | 31.2                | 1,280                        | AZ770-1A-24D  | AZ770-1C-24D  |
| 48                               | 36.00            | 62.4                | 5,120                        | AZ770-1A-48D  | AZ770-1C-48D  |

\* "1A" or "1C" denote silver nickel contacts.

Substitute "AZ770T-1AE" in place of "AZ770-1A" for high capacity version.

Add suffix "E" at the end of order number for sealed version.

Add suffix "K" at the end of order number for different footprint (Type 2); not available for high capacity version "T".

Add suffix "G" at the end of order number for gold plated contacts.

| SENSITIVE COIL (STANDARD VERSION) - TYPE 1 FOOTPRINT |                  |                     |                                |               |
|------------------------------------------------------|------------------|---------------------|--------------------------------|---------------|
| COIL SPECIFICATIONS                                  |                  |                     |                                | ORDER NUMBER* |
| Nominal Coil VDC                                     | Must Operate VDC | Max. Continuous VDC | Coil Resistance Ohm $\pm 10\%$ | Form A (SPST) |
| 3                                                    | 2.25             | 5.1                 | 45                             | AZ770-1A-3DS  |
| 5                                                    | 3.75             | 8.5                 | 125                            | AZ770-1A-5DS  |
| 6                                                    | 4.50             | 10.2                | 180                            | AZ770-1A-6DS  |
| 9                                                    | 6.75             | 15.3                | 400                            | AZ770-1A-9DS  |
| 12                                                   | 9.00             | 20.4                | 720                            | AZ770-1A-12DS |
| 18                                                   | 13.50            | 30.6                | 1,600                          | AZ770-1A-18DS |
| 24                                                   | 18.00            | 40.8                | 2,800                          | AZ770-1A-24DS |

\* "1A" or "1C" denote silver nickel contacts.

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Add suffix "K" at the end of order number for different footprint (Type 2).

Add suffix "G" at the end of order number for gold plated contacts.

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11/28/17

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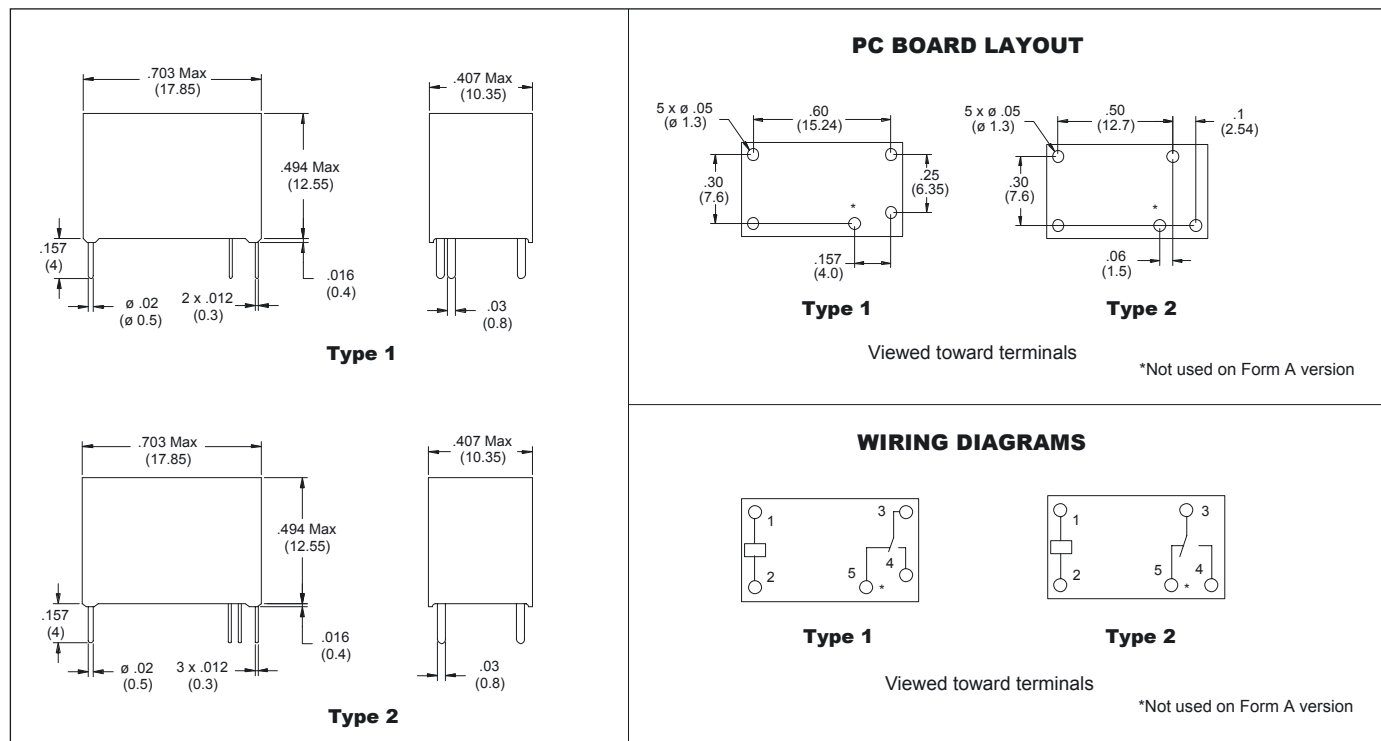
| SENSITIVE COIL (HIGH CAPACITY VERSION "T") - TYPE 1 FOOTPRINT |                  |                     |                                |                 |
|---------------------------------------------------------------|------------------|---------------------|--------------------------------|-----------------|
| COIL SPECIFICATIONS                                           |                  |                     |                                | ORDER NUMBER*   |
| Nominal Coil VDC                                              | Must Operate VDC | Max. Continuous VDC | Coil Resistance Ohm $\pm 10\%$ | Form A (SPST)   |
| 3                                                             | 2.25             | 5.1                 | 38                             | AZ770T-1AE-3DS  |
| 5                                                             | 3.75             | 8.5                 | 108                            | AZ770T-1AE-5DS  |
| 6                                                             | 4.50             | 10.2                | 155                            | AZ770T-1AE-6DS  |
| 9                                                             | 6.75             | 15.3                | 350                            | AZ770T-1AE-9DS  |
| 12                                                            | 9.00             | 20.4                | 620                            | AZ770T-1AE-12DS |
| 18                                                            | 13.50            | 30.6                | 1,390                          | AZ770T-1AE-18DS |
| 24                                                            | 18.00            | 40.8                | 2,480                          | AZ770T-1AE-24DS |
| 48                                                            | 36.00            | 81.6                | 9,920                          | AZ770T-1AE-48DS |

\* "1AE" denote silver tin oxide contacts.

Add suffix "E" at the end of order number for sealed version.

Add suffix "G" at the end of order number for gold plated contacts.

## MECHANICAL DATA



Dimensions in inches with metric equivalents in parentheses. Tolerance:  $\pm .010$ "

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11/28/17

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This 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.