20 AMP MINIATURE POWER RELAY

FEATURES
- 20 Amp switching capability, 80 Amp high inrush version available
- 5 kV dielectric strength, Isolation spacing ≥ 10 mm
- Reinforced insulation according IEC 60730-1, IEC 60335-1
- Proof tracking index (PTI/CTI) 250
- AC and DC coils available
- Compact size, low seated height of 15.7 mm
- UL / CUR file E43203
- VDE certificate 40012572

CONTACTS

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

**Ratings (max.)**

<table>
<thead>
<tr>
<th>switched power</th>
<th>switched current</th>
<th>switched voltage</th>
</tr>
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<tbody>
<tr>
<td>480 W or 5000 VA</td>
<td>20 A</td>
<td>300 VDC* or 400 VAC</td>
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* Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.

**Rated Loads**

UL, CUR

- 16 A at 250 VAC, general use

VDE

- 16 A at 250 VAC, 30k cycles, 85°C
- 16 A at 250 VAC, 10k cycles, 85°C
- 20 A at 250 VAC, 10k cycles, 85°C

**Contact material**
- AgNi (silver nickel)
- AgSnO₂ (silver tin oxide)

**Initial resistance**
≤ 100 mΩ

**GENERAL DATA**

**Life Expectancy**
- Mechanical: 3 x 10⁷ operations
- Electrical: 7 x 10⁷ operations

**Operate Time**
- 7 ms (typ.) at nominal coil voltage

**Release Time**
- 3 ms (typ.) at nominal coil voltage, without coil suppression

**Dielectric Strength**
- (at sea level for 1 min.)
  - 5000 V RMS coil to contact
  - 1000 V RMS between open contacts

**Insulation Resistance**
- 10² MΩ (min.) at 20°C, 500 VDC, 50% RH

**Isolation Spacing**
- (coil to contact) ≥ 10 mm
- (creepage) ≥ 10 mm

**Insulation**
- B250 (1 Form C, flux proof versions)
- C250 (other versions)

**Temperature Range**
- Operating DC coil types
  - -40°C (-40°F) to 85°C (185°F)
- Operating AC coil types
  - -40°C (-40°F) to 70°C (158°F)

**Vibration resistance**
- N.O. contacts
  - 20 g at 30 - 500 Hz
- N.C. contacts
  - 5 g at 20 - 500 Hz

**Shock resistance**
- 20 g

**Enclosure**
- P.B.T. polyester
- Flux proof, wash tight
- 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
  - 29.0 mm (1.142")
- Width
  - 12.7 mm (0.500")
- Height
  - 15.7 mm (0.618")

**Weight**
- 14 grams (approx.)

**Packing unit in pcs**
- 20 per carton tube / 1000 per carton box

**Compliance**
- UL 508, IEC 61810-1, IEC60335-1 (GWT), RoHS, REACH

**Nominal coil voltages**
- see coil voltage specifications tables

**Dropout**
- DC coil types
  - > 10% of nominal coil voltage
- AC coil types
  - > 15% of nominal coil voltage

**Coil Power**
- DC coil types
  - at 23°C (73°F) ambient temperature
  - 0.4 W (approx.)
  - 200 mW (typ.)
- AC coil types
  - 0.75 VA (approx.)
  - 1.7 VA
  - 0.42 VA (typ.)

**Temperature Rise**
- 26 K (47°F) at nominal coil voltage

**Max. temperature**
- Class F insulation - 155°C (311°F)

**FEATURES**

- 20 Amp switching capability, 80 Amp high inrush version available
- 5 kV dielectric strength, Isolation spacing ≥ 10 mm
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VDE

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- AgSnO₂ (silver tin oxide)

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- Mechanical: 3 x 10⁷ operations
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- 7 ms (typ.) at nominal coil voltage

**Release Time**
- 3 ms (typ.) at nominal coil voltage, without coil suppression

**Dielectric Strength**
- (at sea level for 1 min.)
  - 5000 V RMS coil to contact
  - 1000 V RMS between open contacts

**Insulation Resistance**
- 10² MΩ (min.) at 20°C, 500 VDC, 50% RH

**Isolation Spacing**
- (coil to contact) ≥ 10 mm
- (creepage) ≥ 10 mm

**Insulation**
- B250 (1 Form C, flux proof versions)
- C250 (other versions)

**Temperature Range**
- Operating DC coil types
  - -40°C (-40°F) to 85°C (185°F)
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  - -40°C (-40°F) to 70°C (158°F)

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- see coil voltage specifications tables

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  - 0.75 VA (approx.)
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- 26 K (47°F) at nominal coil voltage

**Max. temperature**
- Class F insulation - 155°C (311°F)
### DC Coil Voltage Specifications

<table>
<thead>
<tr>
<th>Nominal Coil VDC</th>
<th>Must Operate VDC</th>
<th>Max. Cont. VDC</th>
<th>Nom. Current mA ± 10%</th>
<th>Resistance Ohm ± 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2.1</td>
<td>7.6</td>
<td>136</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>3.5</td>
<td>12.7</td>
<td>83.3</td>
<td>60</td>
</tr>
<tr>
<td>6</td>
<td>4.2</td>
<td>15.3</td>
<td>66.7</td>
<td>90</td>
</tr>
<tr>
<td>9</td>
<td>6.3</td>
<td>22.9</td>
<td>45.0</td>
<td>200</td>
</tr>
<tr>
<td>12</td>
<td>8.4</td>
<td>30.6</td>
<td>33.3</td>
<td>360</td>
</tr>
<tr>
<td>18</td>
<td>12.6</td>
<td>45.9</td>
<td>25.4</td>
<td>710</td>
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<tr>
<td>24</td>
<td>16.8</td>
<td>61.2</td>
<td>16.7</td>
<td>1440</td>
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<tr>
<td>36</td>
<td>25.2</td>
<td>92.0</td>
<td>11.5</td>
<td>3140</td>
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<tr>
<td>48</td>
<td>33.6</td>
<td>122</td>
<td>8.42</td>
<td>5700</td>
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<tr>
<td>60</td>
<td>42.0</td>
<td>153</td>
<td>8.0</td>
<td>7500</td>
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<tr>
<td>110</td>
<td>77.0</td>
<td>280</td>
<td>4.37</td>
<td>25200</td>
</tr>
</tbody>
</table>

### AC Coil Voltage Specifications

<table>
<thead>
<tr>
<th>Nominal Coil VAC</th>
<th>Must Operate VAC</th>
<th>Max. Cont. VAC</th>
<th>Nom. Current mA ± 10%</th>
<th>Resistance Ohm ± 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>9.0</td>
<td>18.0</td>
<td>63.0</td>
<td>100</td>
</tr>
<tr>
<td>24</td>
<td>18.0</td>
<td>36.0</td>
<td>31.3</td>
<td>400</td>
</tr>
<tr>
<td>48</td>
<td>36.0</td>
<td>72.0</td>
<td>15.6</td>
<td>1550</td>
</tr>
<tr>
<td>60</td>
<td>45.0</td>
<td>90.0</td>
<td>12.5</td>
<td>2600</td>
</tr>
<tr>
<td>110</td>
<td>82.5</td>
<td>165.0</td>
<td>6.8</td>
<td>8900</td>
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<tr>
<td>115</td>
<td>86.3</td>
<td>172.5</td>
<td>6.5</td>
<td>9600</td>
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<tr>
<td>120</td>
<td>90.0</td>
<td>180.0</td>
<td>6.3</td>
<td>10200</td>
</tr>
<tr>
<td>220</td>
<td>165.0</td>
<td>330.0</td>
<td>3.4</td>
<td>35500</td>
</tr>
<tr>
<td>230</td>
<td>172.5</td>
<td>345.0</td>
<td>3.3</td>
<td>38500</td>
</tr>
<tr>
<td>240</td>
<td>180.0</td>
<td>360.0</td>
<td>3.1</td>
<td>42500</td>
</tr>
</tbody>
</table>

### Ordering Data

- **AZ764-** [Contact arrangement]
- **Sealing option** nil: flux proof - non sealed  E: wash tight - sealed
- **Coil type** D: DC coil type  A: AC coil type
- **Nominal coil voltage** see coil voltage specifications tables
- **Contact material** nil: silver nickel  E: silver tin oxide  T: silver tin oxide - 80 Amp high inrush version
- **Example ordering data**
  - AZ764-1AE-9D  1 Form A (SPST-N.O.), silver tin oxide, 9 VDC nominal coil voltage, flux tight version
  - AZ764-1AT-12D  1 Form A (SPST-N.O.), silver tin oxide, 80 Amp high inrush version, 12 VDC nominal coil voltage, flux tight version
  - AZ764-1C-24DE  1 Form C (SPDT), silver nickel, 24 VDC nominal coil voltage, wash tight version
  - AZ764-1A-230A  1 Form A (SPST-N.O.), silver nickel, 230 VAC coil
NOTES

1. Specifications subject to change without notice.
2. All values at 23°C (73°F) unless otherwise stated.
3. Relay may pull in with less than "Must Operate" value.
4. 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 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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