**escap 16N28 & 16N38**

Precious metal commutation system - 9 segments

D.C. Motor

1.7 Watt

### Specifications

- **Measuring values**
  - Measuring voltage: V
  - No-load speed: rpm
  - Average no-load current: mA
  - Typical starting voltage: V

- **Max. recommended values**
  - Max. continuous current: A
  - Max. continuous torque: mNm (oz-in)
  - Max. angular acceleration: 10° rad/s²

- **Intrinsic parameters**
  - Back-EMF constant: V/1000 rpm
  - Torque constant: mNm/A (oz-in/A)
  - Terminal resistance: Ω
  - Motor regulation: Ω/Nms
  - Rotor inductance: mH
  - Rotor inertia: kgm² . 10⁻⁷
  - Mechanical time constant: ms

### Measured values

<table>
<thead>
<tr>
<th></th>
<th>-114</th>
<th>-210E</th>
<th>-208E</th>
<th>-207E</th>
<th>-106</th>
<th>-205E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring voltage</td>
<td>V</td>
<td>4.0</td>
<td>7.5</td>
<td>9.0</td>
<td>12.0</td>
<td>16.0</td>
</tr>
<tr>
<td>No-load speed</td>
<td>rpm</td>
<td>8900</td>
<td>9700</td>
<td>8900</td>
<td>10800</td>
<td>10200</td>
</tr>
<tr>
<td>Average no-load current</td>
<td>mA</td>
<td>18.9</td>
<td>13.3</td>
<td>8.4</td>
<td>7.7</td>
<td>6.3</td>
</tr>
<tr>
<td>Typical starting voltage</td>
<td>V</td>
<td>0.06</td>
<td>0.15</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Max. continuous current</td>
<td>A</td>
<td>0.77</td>
<td>0.42</td>
<td>0.29</td>
<td>0.24</td>
<td>0.19</td>
</tr>
<tr>
<td>Max. continuous torque</td>
<td>mNm (oz-in)</td>
<td>3.2 (0.45)</td>
<td>2.9 (0.4)</td>
<td>2.7 (0.4)</td>
<td>2.4 (0.35)</td>
<td>2.7 (0.4)</td>
</tr>
<tr>
<td>Max. angular acceleration</td>
<td>10° rad/s²</td>
<td>102</td>
<td>94</td>
<td>108</td>
<td>120</td>
<td>125</td>
</tr>
</tbody>
</table>

### Intrinsic parameters

- Back-EMF constant: V/1000 rpm
- Torque constant: mNm/A (oz-in/A)
- Terminal resistance: Ω
- Motor regulation: Ω/Nms
- Rotor inductance: mH
- Rotor inertia: kgm² . 10⁻⁷
- Mechanical time constant: ms

### Additional Information

- **Thermal resistance:**
  - Rotor-body: 7 °C/W
  - Body-ambient: 28 °C/W

- **Thermal time constant:**
  - Rotor / stator: 7 s / 390 s

- **Max. rated coil temperature:** 100 °C (210 °F)

- **Recom. ambient temperature range:**
  - -30 °C to +65 °C (-22 °F to +150 °F)

- **Viscous damping constant:**
  - 0.04 x 10⁻⁶ Nms

- **Max. axial static force for press-fit:**
  - 100 N

- **End play:**
  - ≤ 150 µm

- **Radial play:**
  - ≤ 30 µm

- **Shaft runout:**
  - ≤ 10 µm

- **Max. side load at 5 mm from mounting face:**
  - Sleeve bearings: 1.5 N
  - Ball bearings: 3 N

- **Motor fitted with sleeve bearings:** (ball bearings optional)

- **With rear shaft extention, the no-load current is 50% higher**

### Availability

Availability: see enclosed document at the end of the catalogue.

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Specifications subject to change without prior notice.