HIWIN®
Motion Control and System Technology

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TMN Series
Torque Motor Rotary Tables

• Low profile
• Easy installation
• Hollow shaft
• Resolution 4,320,000 counts/rev

*The specifications in this catalog are subject to change without notification.
### Specifications

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Unit</th>
<th>TMN42E</th>
<th>TMN71E</th>
<th>TMN93E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous torque</td>
<td>T_0</td>
<td>Nm</td>
<td>1.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Continuous current</td>
<td>I_0</td>
<td>A</td>
<td>1.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Peak torque (1sec.)</td>
<td>T_0</td>
<td>Nm</td>
<td>4.2</td>
<td>11.1</td>
</tr>
<tr>
<td>Peak current (1sec.)</td>
<td>I_0</td>
<td>A</td>
<td>4.5</td>
<td>10.2</td>
</tr>
<tr>
<td>Torque constant</td>
<td>K_0</td>
<td>Nm/A</td>
<td>0.97</td>
<td>1.09</td>
</tr>
<tr>
<td>Electrical time constant</td>
<td>T_e</td>
<td>ms</td>
<td>1.78</td>
<td>4.04</td>
</tr>
<tr>
<td>Resistance (line to line)</td>
<td>R_0</td>
<td>Ω</td>
<td>4.59</td>
<td>2.22</td>
</tr>
<tr>
<td>Inductance (line to line)</td>
<td>L</td>
<td>mH</td>
<td>8.18</td>
<td>9.02</td>
</tr>
<tr>
<td>Number of poles</td>
<td>2P</td>
<td></td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Back emf constant (line to line)</td>
<td>K_e</td>
<td>V/(rad/s)</td>
<td>0.56</td>
<td>0.63</td>
</tr>
<tr>
<td>Motor constant (at 25°C)</td>
<td>K_m</td>
<td>N/A</td>
<td>0.26</td>
<td>0.42</td>
</tr>
<tr>
<td>Thermal resistance</td>
<td>R_m</td>
<td>°C/W</td>
<td>2.55</td>
<td>1.05</td>
</tr>
<tr>
<td>Inertia of rotating parts</td>
<td>J</td>
<td>kgm²</td>
<td>0.003</td>
<td>0.008</td>
</tr>
<tr>
<td>Mass of motor</td>
<td>M_m</td>
<td>kg</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Max. axial load</td>
<td>F_a</td>
<td>N</td>
<td>600</td>
<td>1000</td>
</tr>
<tr>
<td>Max. moment load</td>
<td>M</td>
<td>Nm</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>Max. speed</td>
<td>n</td>
<td>rpm</td>
<td>700</td>
<td>600</td>
</tr>
<tr>
<td>Repeatability</td>
<td>Arc sec</td>
<td></td>
<td>±2.5</td>
<td></td>
</tr>
<tr>
<td>Accuracy*</td>
<td>Arc sec</td>
<td></td>
<td>±10</td>
<td></td>
</tr>
<tr>
<td>Motor dimension</td>
<td>WxLxH</td>
<td>mm</td>
<td>118x118x65</td>
<td>180x180x50</td>
</tr>
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*With error mapping

Except dimensions, all the specifications in the table are in ±10% of tolerance.

### Applications

- LED manufacturing and inspection
- Solar cell manufacturing
- Semi-conductor component manufacturing
- High precision index machines

### Dimensions

#### TMN42E

#### TMN71E

#### TMN93E

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