Along with the standard Type 3 and Type 5, the Moog Type3-EF and Type 5-EF Rotary Incremental Actuators are new additions to the rotary incremental actuator lines. The design is based on a recently developed ultra fine step angle permanent magnet stepper motors which in combination with the standard harmonic drive gear reducers produces extra fine output step resolution. The new line of actuator offers quiet operation, low weight, zero-backlash and high output torsional stiffness. All of the electrical elements, such as motors and position sensors, can be redundant with little or no change in actuator envelope.
# ULTRA FINE ANGLE ROTARY INCREMENTAL ACTUATOR

## SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>Type 3-EF</th>
<th>Type 5-EF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Step Angle</td>
<td>0.0015</td>
<td>0.001</td>
</tr>
<tr>
<td>Steps Per Revolution</td>
<td>240,000</td>
<td>360,000</td>
</tr>
<tr>
<td>Transmission Ratio</td>
<td>160:1</td>
<td>200:1</td>
</tr>
<tr>
<td>Motor Step Angle (degree)</td>
<td>0.24</td>
<td>0.2</td>
</tr>
<tr>
<td>Max. Output Step Rate (pulses/sec)</td>
<td>1000</td>
<td>800</td>
</tr>
<tr>
<td>Max. Output Speed (deg/sec)</td>
<td>1.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Running Torque (lb-in)</td>
<td>250</td>
<td>325</td>
</tr>
<tr>
<td>Un-powered Holding Torque (lb-in)</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>