**Features**

- **33mm Round Body**
- **Compact Size and Power Density**
- **Cost-Effective Replacement for Brush DC Motors**
- **Long Life and Highly Reliable**
- **Can be Customized for**
  - Maximum Speed
  - Winding Current
  - Shaft Options
  - Cables and Connectors

The BLWR13 Series Brushless DC Motors come in a compact package with high power density. These motors are cost-effective solutions to many velocity control applications. The star wound motor comes in a standard 8-lead configuration. We can also customize the winding to perfectly match your voltage, current, and maximum operating speed. Special shaft modifications, cables and connectors are available upon request.

<table>
<thead>
<tr>
<th>Model #</th>
<th>Rated Voltage (V)</th>
<th>Rated Speed (RPM)</th>
<th>Rated Power (W)</th>
<th>Peak Torque (oz-in)</th>
<th>Rated Current (A)</th>
<th>Line to Line Resistance (ohms)</th>
<th>Line to Line Inductance (mH)</th>
<th>Torque Constant (oz-in/sec)</th>
<th>Rotor Inertia (oz-in-sec^2)</th>
<th>Weight (lbs)</th>
<th>&quot;L&quot; Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLWR132S-12V-3000</td>
<td>12</td>
<td>3000</td>
<td>4</td>
<td>2.0</td>
<td>7.1</td>
<td>0.57</td>
<td>4.45</td>
<td>2.00</td>
<td>3.82</td>
<td>0.000193</td>
<td>0.25</td>
</tr>
<tr>
<td>BLWR132S-24V-3000</td>
<td>24</td>
<td>3000</td>
<td>7</td>
<td>3.1</td>
<td>9.3</td>
<td>0.48</td>
<td>12.8</td>
<td>7.00</td>
<td>6.64</td>
<td>0.000193</td>
<td>0.25</td>
</tr>
<tr>
<td>BLWR132S-24V-4000</td>
<td>24</td>
<td>4000</td>
<td>21</td>
<td>7.0</td>
<td>21</td>
<td>2.17</td>
<td>3.64</td>
<td>1.62</td>
<td>3.24</td>
<td>0.000193</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Note: Other speed options, custom leadwires, cables, connectors, and windings are available upon request.
DIMENSIONS

All units are in (mm)

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Wire Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Phase U</td>
</tr>
<tr>
<td>Red</td>
<td>Phase V</td>
</tr>
<tr>
<td>Black</td>
<td>Phase W</td>
</tr>
<tr>
<td>Yellow</td>
<td>Hall +5V</td>
</tr>
<tr>
<td>Blue</td>
<td>Hall 1</td>
</tr>
<tr>
<td>Orange</td>
<td>Hall 2</td>
</tr>
<tr>
<td>Brown</td>
<td>Hall 3</td>
</tr>
<tr>
<td>White</td>
<td>Hall Ground</td>
</tr>
</tbody>
</table>

Hall Sensor Specifications

Supply Voltage: 4.5VDC to 28VDC
Current, I_{on}: 10mA max
Current, I_{off}: 11.3mA max
Rated Sinking Current: 20mA
Saturation Voltage: 0.4VDC max @ 25°C
Output Leakage Current: 10μA
Output Switching Time @ 25°C
  Rise, 10% to 90%: 1.5μs
  Fall, 90% to 10%: 1.5μs
Output Type: Open Collector

Winding Type: Star, 4 Poles
Max. Radial Force: 15N @ 10mm from the flange
Hall Effect Angle: 120 degree electrical angle
Max. Axial Force: 10N
Shaft Run Out: 0.025mm
Insulation Class: Class B
Radial Play: 0.02mm@450g
Dielectric Strength: 500VDC for one minute
End Play: 0.08mm@450g
Insulation Resistance: 100MOhm, 500VDC