B1210N1039 Large Bone Orthopedic Saw/Reamer (14.4V) - SM

1 Nominal Voltage \(U_N\) 14.4 Volt
2 Optimization Direction - Bi-Directional -
3 No Load Speed \(n_0\) 15,746 rpm
4 Typical No Load Current \(I_0\) 514 mA
5 Max. Continuous Mechanical Power (@25°C) \(P_{\text{max}}\) 121.8 W
6 Max. Continuous Current \(I_{\text{CS}}\) 9.8 A
7 Max. Continuous Torque \(T_{\text{CS}}\) 81.2 (11.5) mNm (oz-in)
8 Back EMF Constant \(k_E\) 0.911 V/1000 rpm
9 Torque Constant \(k_T\) 8.70 (1.23) mNm/A (oz-in/A)
10 Motor Regulation \(R/k^2\) 1360 10³/Nms
11 Peak Torque \(T_{\text{PK}}\) 1211.9 (171.6) mNm (oz-in)
12 Motor Constant \(k_\mu\) 27.1 (3.84) mNm/W½ (oz-in/W½)
13 Line to Line Resistance \(R_l\) 0.103 ohms
14 Inductance Phase to Phase \(L\) 0.073 mH
15 Mechanical Time Constant \(\tau_m\) 2.74 ms
16 Electrical Time Constant \(\tau_e\) 0.709 ms

General Data
17 Gearhead Ratio - N/A Ratio
18 Ambient Working Temperature Range - 25 (77) °C (°F)
19 Max Operating Temperature Range - 155 (311) °C (°F)
20 Radial Static Force w/o Shaft Support (max) - 80.28 lbs
21 Axial Static Force w/o Shaft Support (max) - 27.17 lbs
22 Thermal Resistance \(R_h\) 8.7 °C/W
23 Thermal Time Constant \(\tau_w\) 975 s
24 Weight - 263 (9.30) g (oz)
25 Rotor Inertia \(J_m\) 133 (189) kg-cm² 10⁻⁴ (oz-in-sec² 10⁻⁶)
26 Hall Sensor Electrical Phasing - 60 Electrical °

Notes:
- Three phase motor with Wye connections
- Hall sensors: supply voltage 4.5 V - 24 V
- Typical housing material 303 SS
- Motor type has been designed and tested to achieve the stated number of autoclave cycles
- Above parameters specified for 25° C ambient temperature
- Typical shaft material 17-4 PH

<table>
<thead>
<tr>
<th>Wire</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Phase A</td>
</tr>
<tr>
<td>Brown</td>
<td>Phase B</td>
</tr>
<tr>
<td>Violet</td>
<td>Phase C</td>
</tr>
<tr>
<td>Red</td>
<td>4.5 to 24 Vdc</td>
</tr>
<tr>
<td>Yellow</td>
<td>Hall 1</td>
</tr>
<tr>
<td>Orange</td>
<td>Hall 2</td>
</tr>
<tr>
<td>White</td>
<td>Hall 3</td>
</tr>
<tr>
<td>Black</td>
<td>Supply RTN</td>
</tr>
</tbody>
</table>

**B1210N1039 Output - Efficiency Performance**

**B1210N1039 Speed - Current Performance**