Surgical Motor Solutions

B0912N4024 Small Bone Orthopedic Saw

Ø 0.872 inch • Brushless Slotted • 9.6 V

Electrical Data

- Nominal Voltage: \( U_N \) = 9.6 Volt
- Optimization Direction: Bi-Directional
- No Load Speed: \( n_0 \) = 12,851 rpm
- Typical No Load Current: \( I_0 \) = 1250 mA
- Max. Continuous Mechanical Power (@25°C): \( P_{\text{max}} \) = 111.6 W
- Max. Continuous Current: \( I_{\text{CS}} \) = 14.52 A
- Max. Continuous Torque: \( T_{\text{CS}} \) = 88.8 (12.6) mNm (oz-in)
- Back EMF Constant: \( k_E \) = 0.747 V/1000 rpm
- Torque Constant: \( k_T \) = 6.42 (0.909) mNm/A (oz-in/A)
- Motor Regulation: \( R/k^2 \) = 970 10^3/Nms
- Peak Torque: \( T_{\text{pk}} \) = 1534.5 (217.3) mNm (oz-in)
- Motor Constant: \( k_m \) = 11.89 (1.68) mNm/W½ (oz-in/W½)
- Line to Line Resistance: \( R_L \) = 0.040 ohms
- Inductance Phase to Phase: \( L \) = 0.009 mH
- Mechanical Time Constant: \( \tau_m \) = 3.77 ms
- Electrical Time Constant: \( \tau_e \) = 0.225 ms

General Data

- Gearhead Ratio: 3:1
- Ambient Working Temperature Range: 25 (77) °C (°F)
- Max Operating Temperature Range: 155 (311) °C (°F)
- Radial Static Force w/o Shaft Support (max): 47.28 lbs
- Axial Static Force w/o Shaft Support (max): 64.50 lbs
- Thermal Resistance: \( R_{\text{th}} \) = 10.2 °C/W
- Thermal Time Constant: \( \tau_w \) = 926 s
- Weight: 191 (6.74) g (oz)
- Rotor Inertia: \( J_m \) = 24.7 (35.0) kg-cm² 10⁻⁶ (oz-in-sec² 10⁻⁶)
- 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

Wire Description

- Blue: Phase A
- Brown: Phase B
- Violet: Phase C
- Red: 4.5 to 24 Vdc
- Yellow: Hall 1
- Orange: Hall 2
- White: Hall 3
- Black: Supply RTN

B0912N4024 Output - Efficiency Performance

B0912N4024 Speed - Current Performance