Surgical Motor Solutions

B1210N1035 Large Bone Orthopedic Drill/Wire Driver

Dimensions in inches [mm]

B1210N1035 Unit

1 Nominal Voltage $U_N$ 12.0 Volt
2 Optimization Direction - Bi-Directional -
3 No Load Speed $n_0$ 15,749 rpm
4 Typical No Load Current $I_o$ 616 mA
5 Max. Continuous Mechanical Power (@25°C) $P_{max}$ 122.0 W
6 Max. Continuous Current $I_{CS}$ 11.8 A
7 Max. Continuous Torque $T_{CS}$ 81.5 (11.5) mNm (oz-in)
8 Back EMF Constant $k_E$ 0.759 V/1000 rpm
9 Torque Constant $k_T$ 7.25 (1.03) mNm/A (oz-in/A)
10 Motor Regulation $R/k^2$ 1350 10³/Nm
11 Peak Torque $T_{PK}$ 1220 (173) mNm (oz-in)
12 Motor Constant $k_M$ 27.2 (3.85) mNm/W½ (oz-in/W½)
13 Line to Line Resistance $R_L$ 0.071 ohms
14 Inductance Phase to Phase $L$ 0.051 mH
15 Mechanical Time Constant $\tau_M$ 2.73 ms
16 Electrical Time Constant $\tau_E$ 0.718 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 $R_{TH}$ 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 10⁻⁶ (oz-in-sec² 10⁻⁶)
26 Hall Sensor Electrical Phasing - 60 Electrical °
27 Autoclave Cycles - 500+ Cycles

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

Electrical Data

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B1210N1035 Output - Efficiency Performance

B1210N1035 Speed - Current Performance