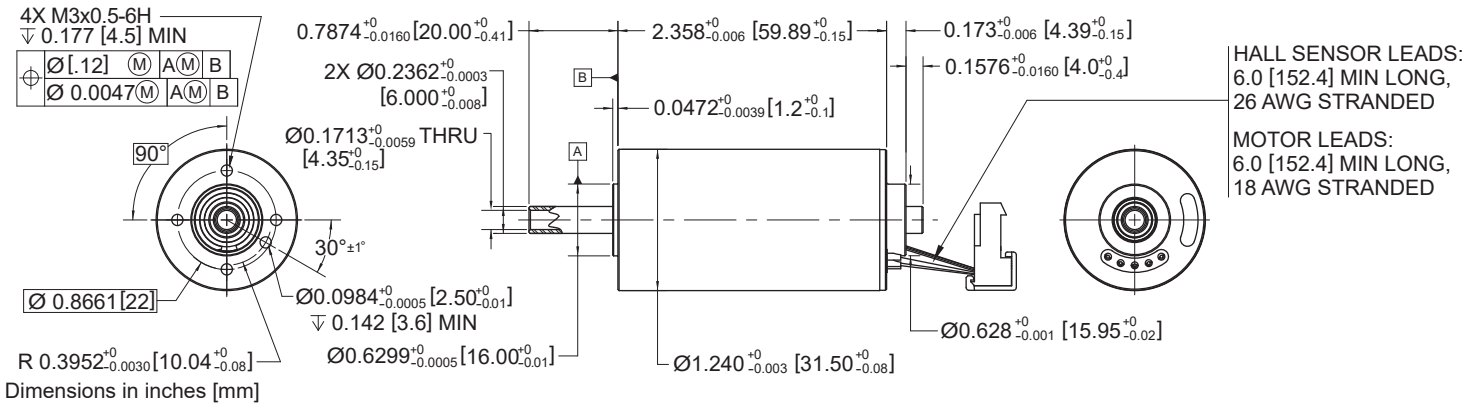


**B1210N1022 Large Bone Orthopedic Drill/Wire Driver**

Ø 1.24 inch • Brushless Slotted • 12 V



| Electrical Data                            | Symbol    | SMX B1210N1022 | Unit   |
|--|-----------|----------------|--|
| 1 Nominal Voltage                          | $U_N$     | 12.0           | Volt   |
| 2 Optimization Direction                   | -         | Bi-Directional | -  |
| 3 No Load Speed                            | $n_o$     | 14,740         | rpm  |
| 4 Typical No Load Current                  | $I_o$     | 940            | mA   |
| 5 Max. Continuous Mechanical Power (@25°C) | $P_{max}$ | 126.0          | W  |
| 6 Max. Continuous Current                  | $I_{cs}$  | 13.0           | A  |
| 7 Max. Continuous Torque                   | $T_{cs}$  | 80.8 (11.44)   | 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                        | $R/k^2$   | 1084           | $10^3/Nms$                                     |
| 11 Peak Torque                             | $T_{pk}$  | 1518.6 (215)   | mNm (oz-in)                                    |
| 12 Motor Constant                          | $k_M$     | 30.36 (4.30)   | mNm/W <sup>1/2</sup> (oz-in/W <sup>1/2</sup> ) |
| 13 Line to Line Resistance                 | $R_L$     | 0.057          | ohms   |
| 14 Inductance Phase to Phase               | $L$       | 0.03           | mH   |
| 15 Mechanical Time Constant                | $\tau_m$  | 1.54           | ms   |
| 16 Electrical Time Constant                | $\tau_e$  | 0.526          | ms   |

| General Data                                   | Symbol   | SMX B1210N1022 | Unit   |
|--|----------|----------------|--|
| 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                                      | -        | 267 (9.42)     | g (oz)   |
| 25 Rotor Inertia                               | $J_m$    | 133 (189)      | kg-cm <sup>2</sup> 10 <sup>-4</sup> (oz-in-sec <sup>2</sup> 10 <sup>-6</sup> ) |
| 26 Hall Sensor Electrical Phasing              | -        | 60             | Electrical °   |
| 27 Autoclave Cycles                            | -        | 1000+          | 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    |

