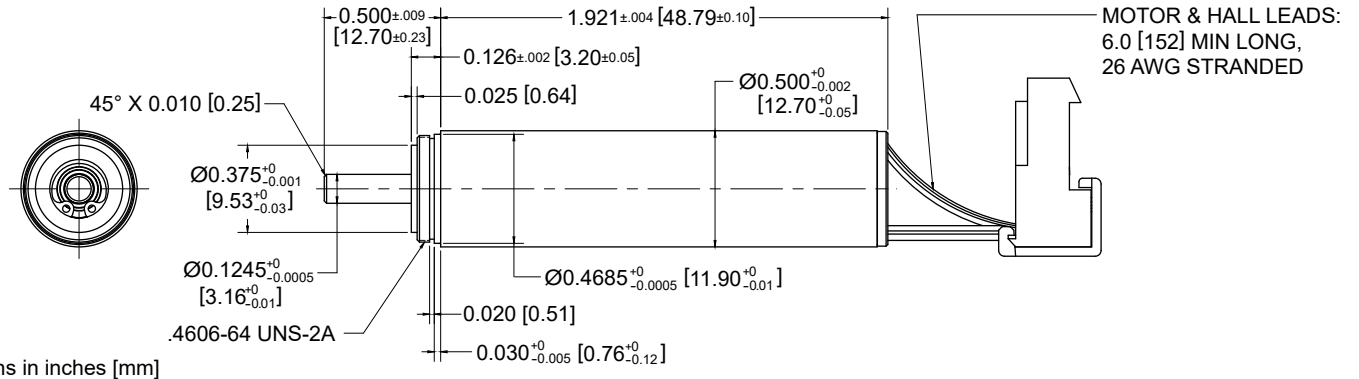


B0512N1029 Spine Drill

Ø 0.5 inch • Brushless Slotted • 48 V



Dimensions in inches [mm]

Electrical Data	Symbol	SMX B0512N1029	Unit
1 Nominal Voltage	U_N	48.0	Volt
2 Optimization Direction	-	Bi-Directional	-
3 No Load Speed	n_0	97,400	rpm
4 Typical No Load Current	I_0	120	mA
5 Max. Continuous Mechanical Power (@25°C)	P_{max}	87.4	W
6 Max. Continuous Current	I_{cs}	2.02	A
7 Max. Continuous Torque	T_{cs}	9.5 (1.34)	mNm (oz-in)
8 Back EMF Constant	k_E	0.515	V/1000 rpm
9 Torque Constant	k_T	4.92 (0.70)	mNm/A (oz-in/A)
10 Motor Regulation	R/k^2	54944	$10^3/Nms$
11 Peak Torque	T_{pk}	176.1 (24.9)	mNm (oz-in)
12 Motor Constant	k_M	4.27 (0.607)	mNm/W ^{1/2} (oz-in/W ^{1/2})
13 Line to Line Resistance	R_L	1.33	ohms
14 Inductance Phase to Phase	L	0.094	mH
15 Mechanical Time Constant	T_m	2.62	ms
16 Electrical Time Constant	T_e	0.07	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)	-	15.34	lbs
21 Axial Static Force w/o Shaft Support (max)	-	3.33	lbs
22 Thermal Resistance	R_{th}	15.9	°C/W
23 Thermal Time Constant	T_w	485	s
24 Weight	-	38.5 (1.36)	g (oz)
25 Rotor Inertia	J_m	3.15 (4.46)	kg-cm ² 10 ⁻⁴ (oz-in-sec ² 10 ⁻⁶)
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

