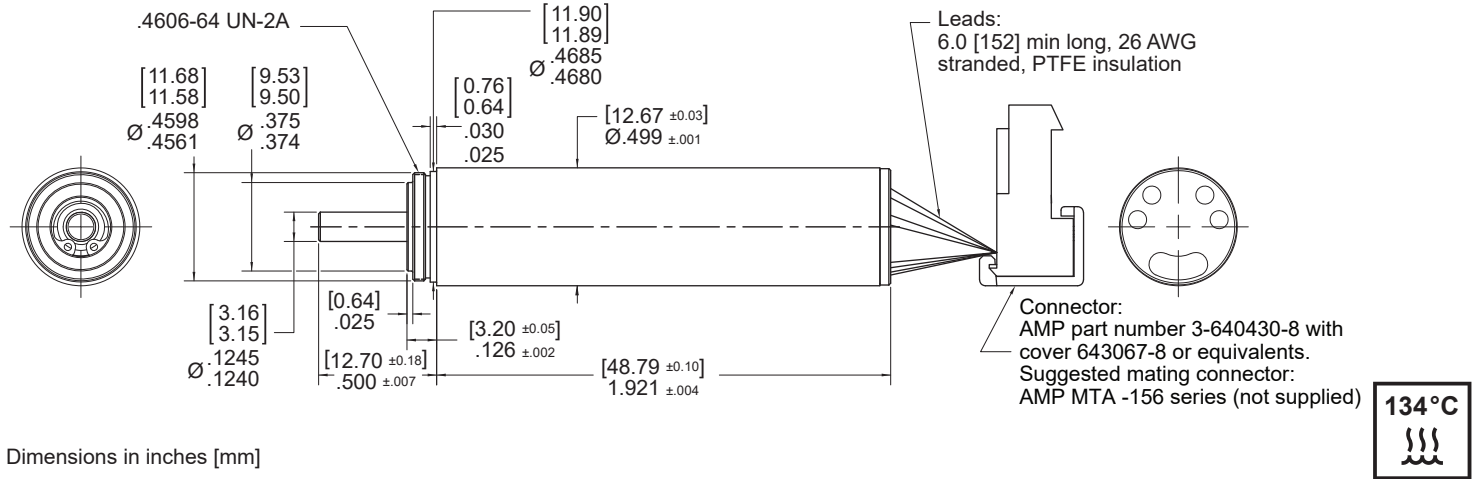


**B0512A1 Spine Drill Surgical Motor**

Ø 0.5 inch • Brushless Slotted



Dimensions in inches [mm]

Electrical Data	Symbol	B0512A1000	B0512A1001	Unit
1 Nominal Voltage	$U_N$	48	24	Volt
2 Optimization Direction	-	Symmetrical	Symmetrical	-
3 No Load Speed	$n_0$	97'400	96'000	rpm
4 Typical No Load Current	$I_0$	120	269	mA
5 Max. Continuous Mechanical Power (@25°C)	$P_{max}$	87.4	87.4	W
6 Max. Continuous Current	$I_{cs}$	2.02	3.63	A
7 Max. Continuous Torque	$T_{CS}$	9.5	8.28	mNm (oz-in)
8 Back EMF Constant	$k_E$	0.515	0.25	V/1000 rpm
9 Torque Constant	$k_T$	4.92 (0.7)	2.39 (0.34)	mNm/A (oz-in/A)
10 Motor Regulation	$R/k^2$	55	72	$10^3/Nms$
11 Peak Torque	$T_{pk}$	176 (24.9)	139 (19.8)	mNm (oz-in)
12 Motor Constant	$k_M$	4.27 (0.61)	3.73 (0.53)	mNm/W <sup>1/2</sup> (oz-in/W <sup>1/2</sup> )
13 Line to Line Resistance	$R_L$	1.33	0.41	ohms
14 Inductance Phase to Phase	$L$	0.094	0.028	mH
15 Mechanical Time Constant	$\tau_m$	2.62	3.42	ms
16 Electrical Time Constant	$T_e$	0.07	0.068	ms

General Data				
17 Gearhead Ratio	-	N/A	N/A	Ratio
18 Ambient Working Temperature Range	-	-30 to +135 (-22 to +275)	-30 to +135 (-22 to +275)	°C (°F)
19 Maximum Winding Temperature	-	155 (311)	155 (311)	°C (°F)
20 Radial Static Force w/o Shaft Support (max)	-	68.2 (15.3)	40.5 (9.1)	N (lbs)
21 Axial Static Force w/o Shaft Support (max)	-	14.8 (3.3)	3.5 (0.8)	N (lbs)
22 Thermal Resistance	$R_{th}$	15.9	15.9	°C/W
23 Thermal Time Constant	$T_w$	485	485	s
24 Weight	-	39 (1.36)	45.2 (1.59)	g (oz)
25 Rotor Inertia	$J_m$	3.15 (4.45)	3.15 (4.45)	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	60	Electrical °
27 Autoclave Cycles	-	1000+	1000+	Cycles

\*Also available without Hall sensors

Wire	Description
Blue	Phase A
Brown	Phase B
Violet	Phase C
Red	4.5 to 24 Vdc
Yellow	Sensor 1
Orange	Sensor 2
White	Sensor 3
Black	GND

