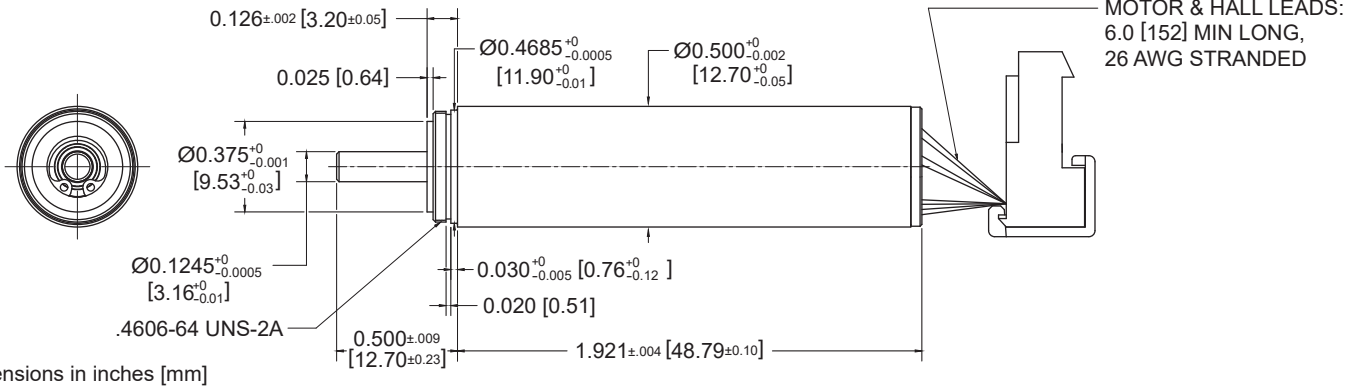


B0512N1035 Spine Drill

Ø 0.5 inch • Brushless Slotted • 48 V



Dimensions in inches [mm]

Electrical Data		Symbol	SM B0512N1035	Unit
1	Nominal Voltage	$U_N$	48.0	Volt
2	Optimization Direction	-	Bi-Directional	-
3	No Load Speed	$n_o$	97,400	rpm
4	Typical No Load Current	$I_o$	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 <sup>1/2</sup> (oz-in/W <sup>1/2</sup> )
13	Line to Line Resistance	$R_L$	1.33	ohms
14	Inductance Phase to Phase	L	0.094	mH
15	Mechanical Time Constant	$\tau_m$	2.62	ms
16	Electrical Time Constant	$\tau_e$	0.071	ms

General Data		Symbol	SM B0512N1035	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)	-	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	$\tau_w$	485	s
24	Weight	-	38.5 (1.36)	g (oz)
25	Rotor Inertia	$J_m$	3.15 (4.46)	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	-	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

