



Features

- Non-contacting magnetic technology
- Highly resistant to vibration/shock
- Highly resistant to fluid/dust ingress
- Programmable slope
- Robust design for industrial applications
- Ideal memory positioning sensor
- RoHS compliant*

AMM20B Multiturn Magnetic Position Sensor

Electrical Characteristics¹ (@ 25 °C)

VDD Supply Voltage	5 V ± 10 %
Supply Current ²	
For Low Speed Processing (Code L)	12 mA max.
For High Speed Processing (Code H)	15 mA max.
Output Signal (Single)	Analog
Independent Linearity	±0.5 % (±0.3 % available on request)
Backlash	< 5 ° typ.
Effective Electrical Angle ³	
3-10 Turns	1080 °, 1440 °, 1800 °, 2160 °, 2520 °, 2880 °, 3240 ° or 3600 °
11-16 Turns	3960 °, 4320 °, 4680 °, 5040 °, 5400 °, 5760 °
Voltage Output (Programmable)	1 to 99 % VDD ±1 %
Output Resolution	12 bit @ 3600 °
Load Resistance Recommended	10K ohms to ∞
Overvoltage Protection	+20 VDC
Reverse Voltage Protection	-10 VDC

Environmental Characteristics

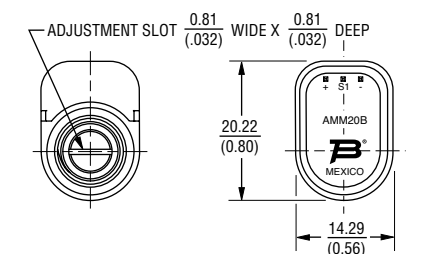
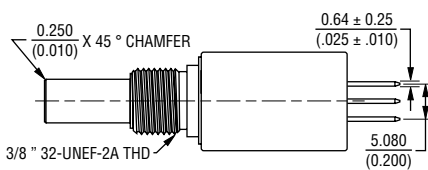
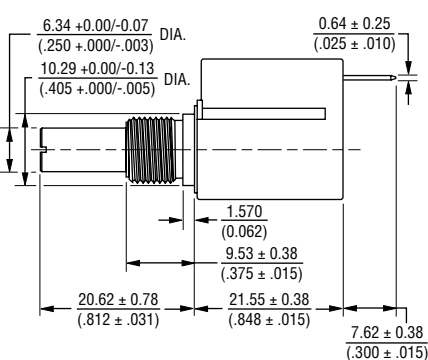
Operating and Storage Temperature	-40 ° to +125 °C
Humidity	MIL-STD-202, Method 103, Condition B
Insulation Resistance @ 500 VAC	100 MΩ min.
Rotational Life (Shaft Revolutions)	50 million
Vibration	15 G
Shock	50 G
IP Rating	IP50

Mechanical Characteristics (@ 25 °C)

Mechanical Angle	
3-10 Turns	3960 ° min.
11-16 Turns	6480 ° min.
Shaft/RPM	500 RPM max.
Torque	
Starting & Running	1.77 N-cm. (2.5 oz-in.) max.
Mounting	170-200 N-cm (15-18 lb.-in.) max.
Shaft Material	Stainless steel
Terminal Pins	Phos. Bronze, 100 % tin plated (e3)
Bearing	Bronze sleeve
Housing and Rear Lid	UL94V0
Soldering Condition	
Manual Soldering	96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire; 370 °C (700 °F) max. for 3 seconds
Wave Soldering	96.5Sn/3.0Ag/0.5Cu solder with no-clean flux; 260 °C (500 °F) max. for 5 seconds
Wash processes	Not recommended

¹At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.
² See "Processing Speed" in How to Order selection guide.
³ Other Effective Electrical Angles available. See How to Order selection guide.

Product Dimensions



TOLERANCES EXCEPT WHERE NOTED
 DECIMALS: .XX ± .50
 (.02) .XXX ± .127
 (.005)
 DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

AMM20B Multiturn Magnetic Position Sensor

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How To Order

A M M 2 0 B 5 A 1 B L A S L 3 8 0

MODEL DESIGNATOR	
Code	Description
AM	Analog Magnetic

CONFIGURATION	
Code	Description
M	Multiturn

SIZE	
Code	Description
20	20 mm

MOUNTING CONFIGURATION	
Code	Description
B	Bushing Mount, Stainless Steel Shaft: 13/16" FMS, 1/4" Dia. Bushing Material: Brass Bearing Type: Sleeve

SUPPLY VOLTAGE, V_{CC}	
Code	Description
5	5 VDC

NUMBER OF TURNS / OUTPUT TYPE		
Code		Type
3-10 Turns	11-16 Turns	
A1	B1	Analog / Single Output

INDEPENDENT LINEARITY	
Code	Description
A	$\pm 1.0\%$
B	$\pm 0.5\%$
C	$\pm 0.3\%$

EFFECTIVE ELECTRICAL ANGLE			
3-10 Turns		11-16 Turns	
Code	Description	Code	Description
24	1080° (3 Turns)	88	3960° (11 Turns)
32	1440° (4 Turns)	96	4320° (12 Turns)
40	1800° (5 Turns)	02	4680° (13 Turns)
48	2160° (6 Turns)	10	5040° (14 Turns)
56	2520° (7 Turns)	18	5400° (15 Turns)
64	2880° (8 Turns)	26	5760° (16 Turns)
72	3240° (9 Turns)		
80	3600° (10 Turns)		

DIRECTION	
Code	Description
1	CCW (Output Increasing)
3	CW (Output Increasing)

TERMINAL CONFIGURATION	
Code	Description
L	Axial PC Pin

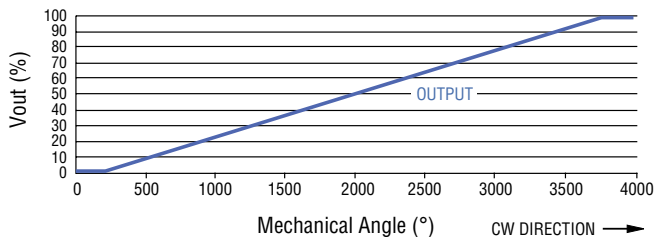
SHAFT STYLE	
Code	Description
S	Slotted

VOLTAGE RATIO $\pm 1\%$	
Code	Description
A	1-99% of VCC

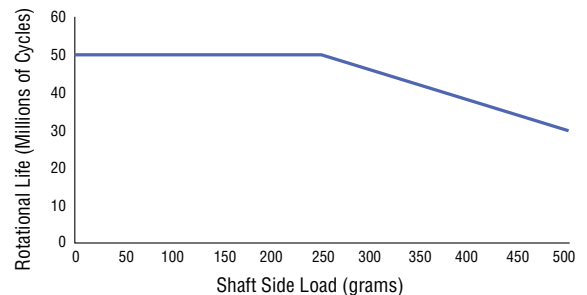
PROCESSING SPEED	
Code	Output Refresh Rate
H	High (400 μ s Typ.)
L	Low (660 μ s Typ.)

Shaded areas represent most common features.

Standard Output: 10-Turn CW Increasing (Code 380 Shown)



Rotational Life vs. Shaft Side Load



REV. 02/16

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