



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	< 10 ° 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	2.82 N-cm. (4.0 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.

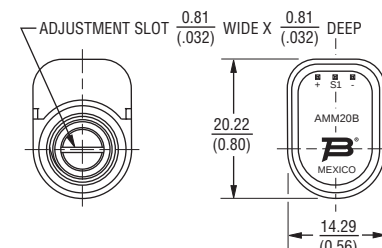
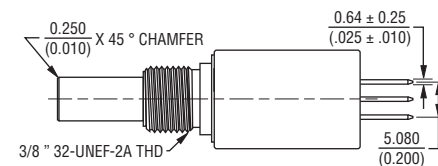
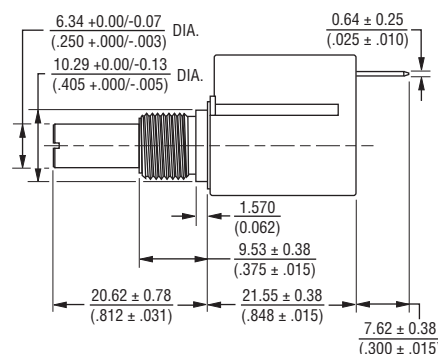
³ Other Effective Electrical Angles available. See How to Order selection guide.

Resolution

No. of Turns	EEA	Resolution
3	1080	1228
4	1440	1638
5	1800	2047
6	2160	2456
7	2520	2866
8	2880	3275
9	3240	3685

No. of Turns	EEA	Resolution
10	3600	4094
11	3960	2816
12	4320	3072
13	4680	3328
14	5040	3584
15	5400	3840
16	5760	4096

Product Dimensions



TOLERANCES EXCEPT WHERE NOTED

DECIMALS: .XX ± .50
(.02) .XXX ± .127
(.005)

DIMENSIONS: MM
(INCHES)

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

BOURNS®

A	M	M	2	0	B	5	A	1	B	L	A	S	L	3	8	0
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PROCESSING SPEED	
Code	Output Refresh Rate
H	High (400 μ s Typ.)
L	Low (660 μ s Typ.)

The graph illustrates the relationship between shaft side load and rotational life. The y-axis represents Rotational Life in millions of cycles, ranging from 0 to 60. The x-axis represents Shaft Side Load in grams, ranging from 0 to 500. The life is constant at 50 million cycles for loads up to 250 grams. Beyond 250 grams, the life decreases linearly, reaching approximately 30 million cycles at 500 grams.

Shaft Side Load (grams)	Rotational Life (Millions of Cycles)
0	50
250	50
500	30

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