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 Characteristics[1] (@ 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

[1] At 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.

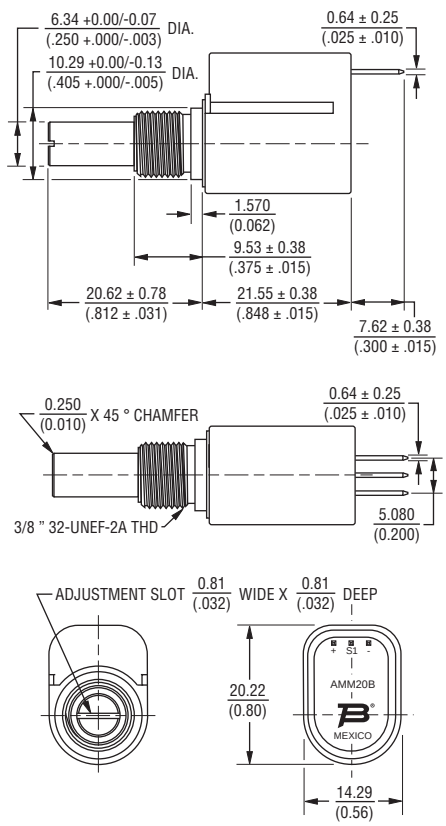
Resolution

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

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

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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AMM20B Multiturn Magnetic Position Sensor

BOURNS®

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		
3-10 Turns	11-16 Turns	Type
A1	B1	Analog / Single Output

INDEPENDENT LINEARITY

EEA (Turns)	Code	Description
3-16	A	± 1.0 %
5-16	B	± 0.5 %
10-16	C	± 0.3 %

PROCESSING SPEED

Code	Output Refresh Rate
H	High (400 µs Typ.)
L	Low (660 µs Typ.)

VOLTAGE RATIO ±1 %

Code	Description
A	1-99 % of VCC

SHAFT STYLE

Code	Description
S	Slotted

TERMINAL CONFIGURATION

Code	Description
L	Axial PC Pin

DIRECTION

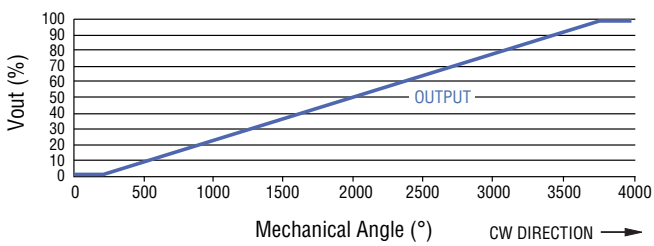
Code	Description
1	CCW (Output Increasing)
3	CW (Output Increasing)

EFFECTIVE ELECTRICAL ANGLE

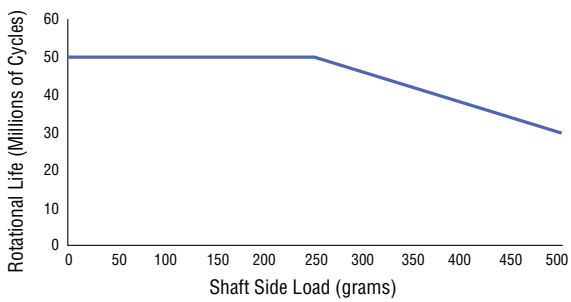
3-10 Turns		11-16 Turns	
Code	Description	Code	Description
24	1080 ° (3 Turns)	88	3960 ° (11 Turns)
32	1440 ° (4 Turns)	96	4320 ° (12 Turns)
40	1800 ° (5 Turns)	02	4680 ° (13 Turns)
48	2160 ° (6 Turns)	10	5040 ° (14 Turns)
56	2520 ° (7 Turns)	18	5400 ° (15 Turns)
64	2880 ° (8 Turns)	26	5760 ° (16 Turns)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

Shaded areas represent most common features.

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



Rotational Life vs. Shaft Side Load



REV. 10/19

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