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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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\*RoHS COMPLIANT



**BOURNS®**

## 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<sup>1</sup> (@ 25 °C)

VDD Supply Voltage	5 V ± 10 %
Supply Current <sup>2</sup>	
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 <sup>3</sup>	
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

<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

<sup>2</sup> See "Processing Speed" in How to Order selection guide.

<sup>3</sup> 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

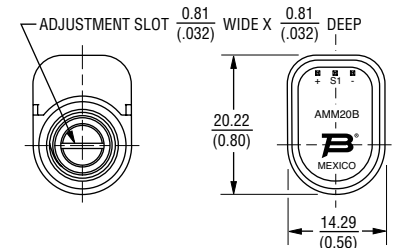
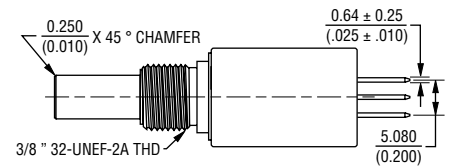
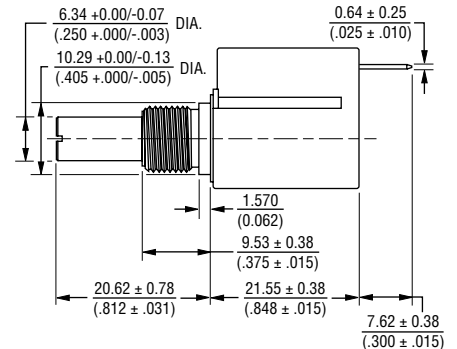
\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

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.

### Product Dimensions



TOLERANCES EXCEPT WHERE NOTED

DECIMALS: .XX ± .50 (0.02) .XXX ± .127 (0.005)

DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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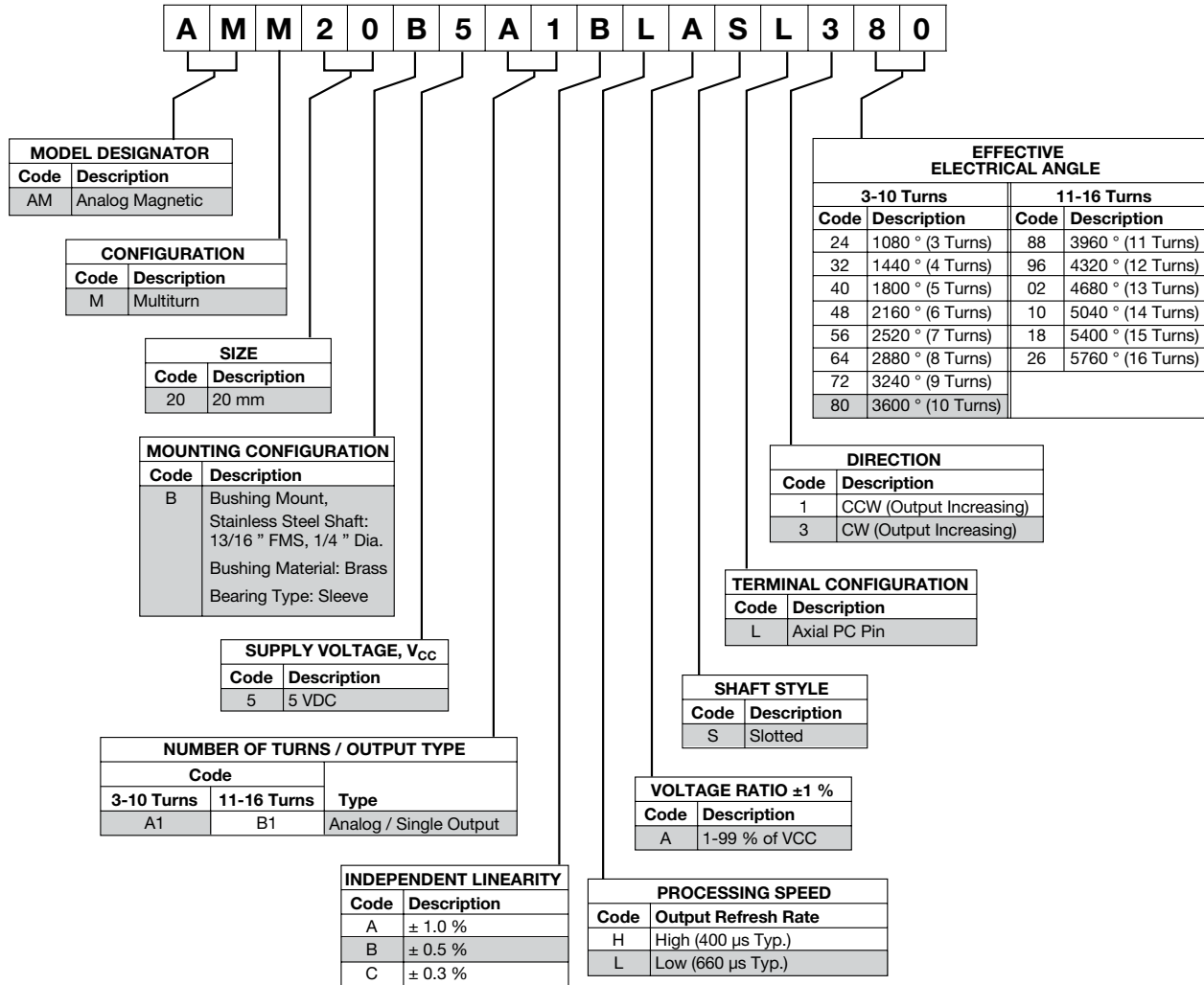
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# AMM20B Multiturn Magnetic Position Sensor

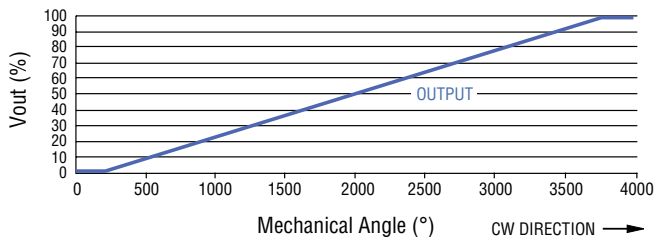
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## How To Order

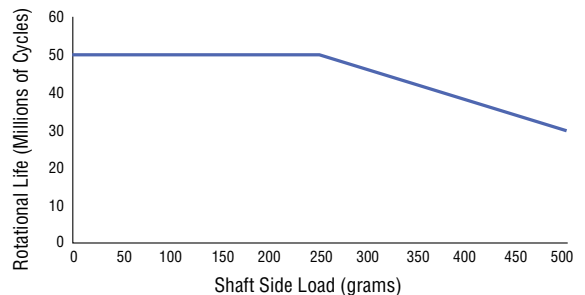


Shaded areas represent most common features.

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



### Rotational Life vs. Shaft Side Load



REV. 01/17

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