



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.

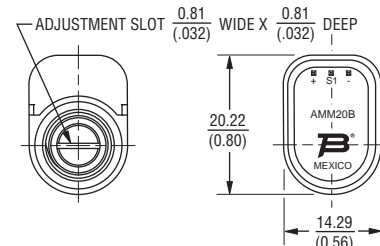
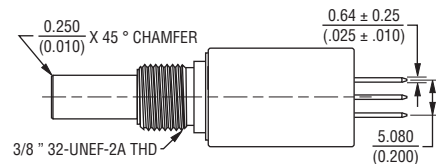
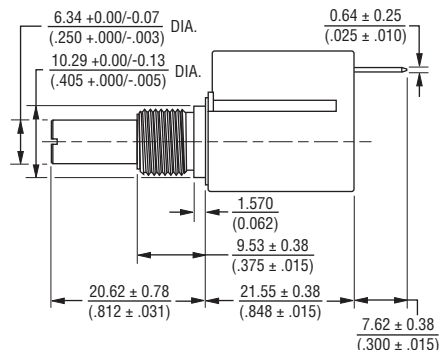
³ Other Effective Electrical Angles available. See How to Order selection guide.

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

*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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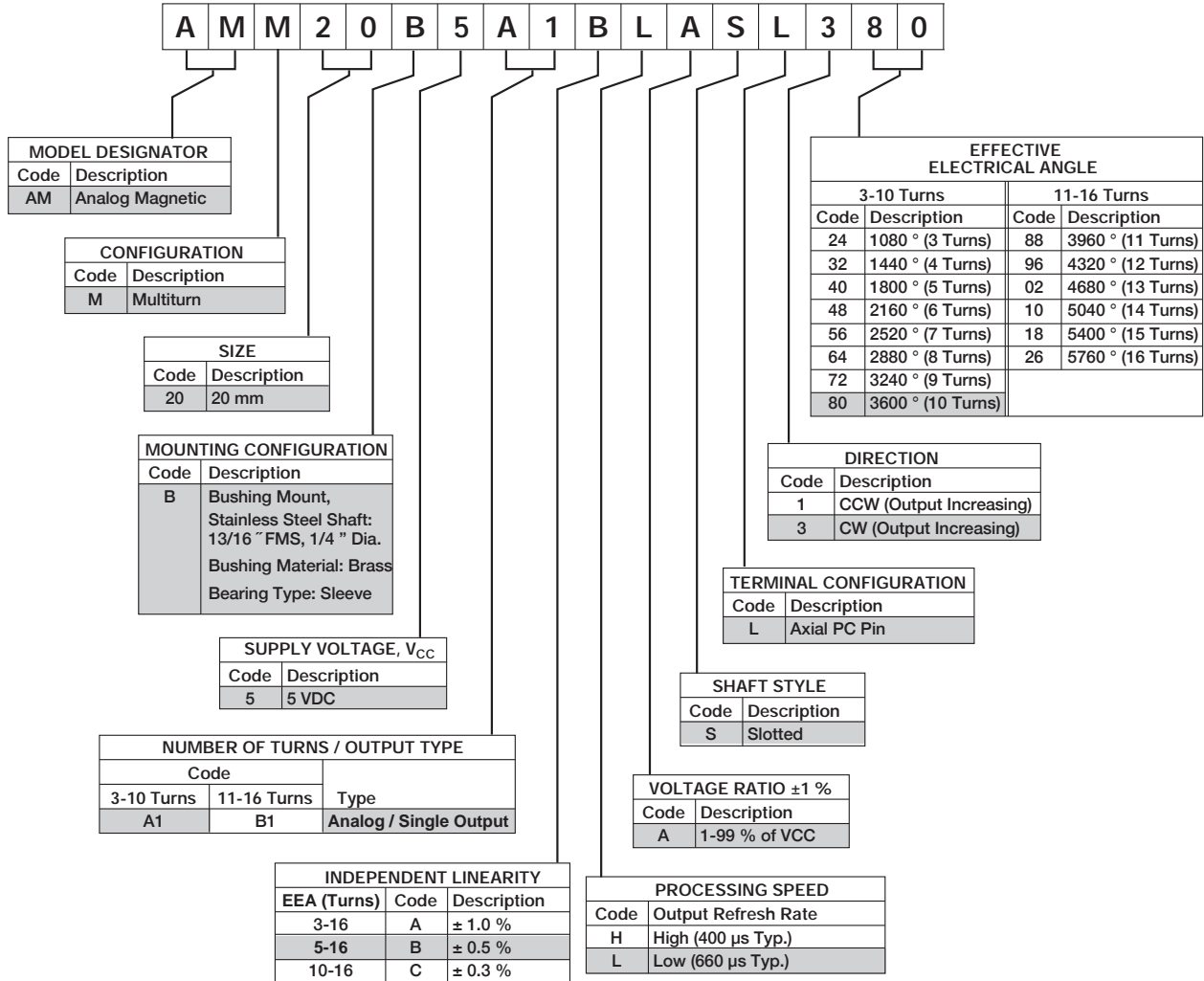


WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

AMM20B Multiturn Magnetic Position Sensor

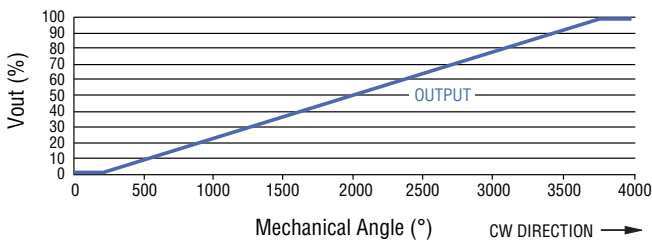
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How To Order

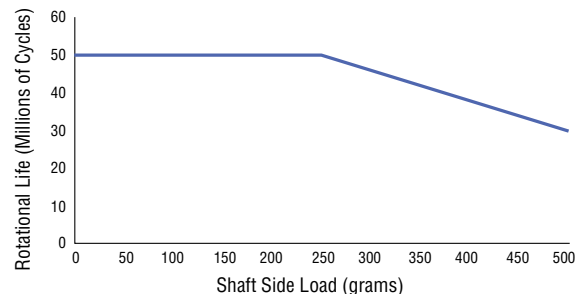


Shaded areas represent most common features.

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



Rotational Life vs. Shaft Side Load



REV. 10/19

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