



Features

- Non-contacting magnetic technology
- Highly resistant to vibration/shock
- Highly resistant to fluid/dust ingress
- Programmable at factory for zero position
- Robust design for industrial applications
- Highly repeatable

■ RoHS compliant*

AMS22B Non-Contacting Analog Rotary Position Sensor

Electrical Characteristics¹ (@ 25 °C)

VDD Supply Voltage	5 V ± 10 %
Supply Current	20 mA max.
Output Signal (Single)	Analog
Independent Linearity	±0.5 % (±0.3 % available on request)
Hysteresis	0.2 % VDD max.
Effective Electrical Angle ²	340 °
Programmable Electrical Angle	10 ° to 360 ° (10 ° increments)
Voltage Output (Programmable)	1 to 99 % VDD ±1 %
Output Resolution	12 bit @ 360 °
Load Resistance Recommended	10K ohms to ∞
Overvoltage Protection	+20 VDC
Reverse Voltage Protection	-10 VDC

Environmental Characteristics

Operating Temperature	-40 ° to +125 °C
Moisture Resistance	MIL-STD-202, Method 106
Insulation Resistance @ 500 VAC	500 MΩ min.
Rotational Life (Shaft Revolutions)	50 million
Vibration	15 G
Shock	50 G
IP Rating	IP50
ESD Rating	2 kV max.

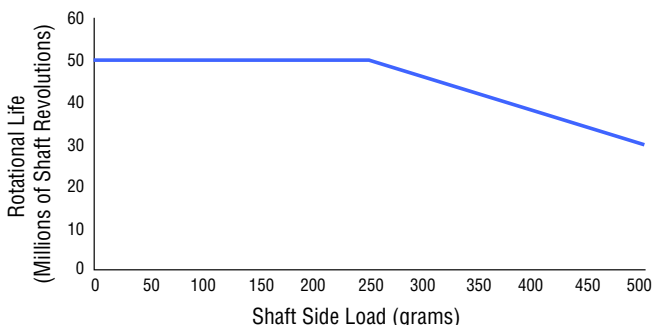
Mechanical Characteristics (@ 25 °C)

Mechanical Angle	Continuous (340 ° +4/-0 stops available)
Shaft/RPM	500 RPM max.
Torque	
Starting & Running	1.06 N-cm. (1.5 oz-in.) max.
Mounting	170-200 N-cm (15-18 lb.-in.) max.
Shaft Material	Stainless steel
Terminals	Brass / 100 % matte tin over Ni Strike (e3)
Bearing	Bronze sleeve
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.

²Other Effective Electrical Angles available. See How to Order selection guide.

Rotational Life vs. Side Load



Product Dimensions

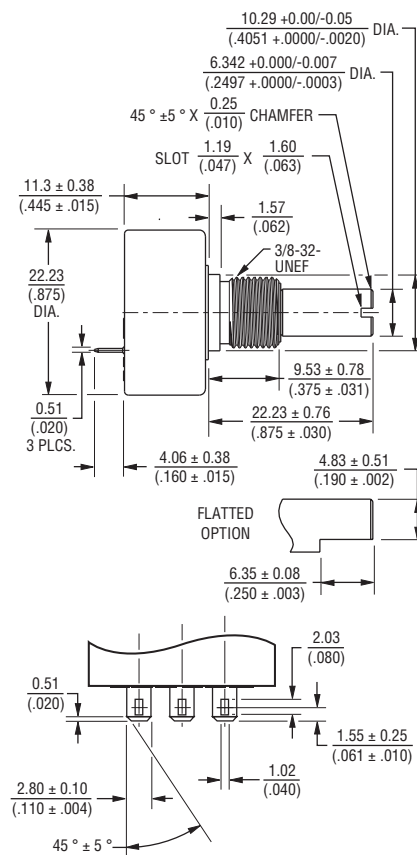
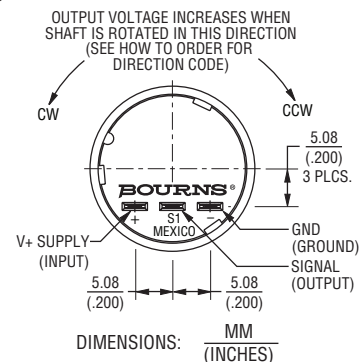
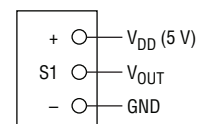


Figure 1



Schematic



*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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Applications

- Patient platform positioning feedback
- Pneumatic control valve position feedback
- Draw wire position sensors
- Remote communications antenna positioning
- Actuator motor position feedback
- Automated manufacturing robotics
- Tilt control and tilt positioning feedback
- Foot pedal, steering, lift-and-shuttle and suspension systems

AMS22B Non-Contacting Analog Rotary Position Sensor

BOURNS®

How To Order

AMS22B

MODEL DESIGNATOR

Code	Description
AM	Analog Magnetic

CONFIGURATION

Code	Description
S	Single-turn

SIZE

Code	Description
22	22 mm

MOUNTING CONFIGURATION

Code	Description
B	Bushing Mount 7/8" Shaft FMS, 1/4" Shaft Dia.

SUPPLY VOLTAGE, V_{CC}

Code	Description
5	5 VDC

OUTPUT TYPE

Code	Type	Signal	Resolution
A1	Analog	Single	12 Bit

INDEPENDENT LINEARITY

Code	Description
B	0.5 %
C	0.3 %

PROCESSING SPEED

Code	Output Refresh Rate
H	High (200 μ s Typ.)

HARD STOP

Code	Description
N	Continuous
S	Hard Stop (340 \pm 4/-0 $^\circ$)

**EFFECTIVE ELECTRICAL ANGLE
10 $^\circ$ Increments**

Code	Description
01	10 $^\circ$
02	20 $^\circ$
03	30 $^\circ$
34	340 $^\circ$
35	350 $^\circ$
36	360 $^\circ$

Notes:

- Effective Electrical Angle available in 10 $^\circ$ increments from a minimum of 10 $^\circ$ to 360 $^\circ$ maximum.
- Use Code "BB" for 45 $^\circ$.

DIRECTION*

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

* See Figure 1 for clarification.

TERMINAL CONFIGURATION

Code	Description
L	Axial

SHAFT STYLE

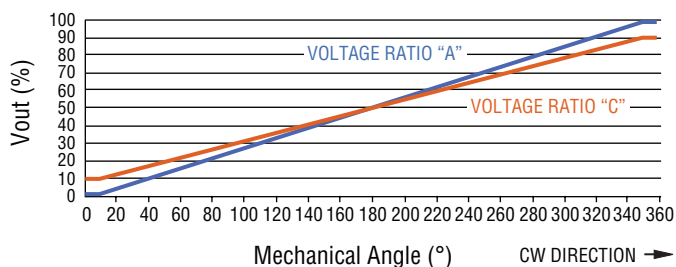
Code	Description
F	Flatted
S	Slotted

VOLTAGE RATIO \pm 1 %

Code	Description
A	1-99 % of VCC
B	5-95 % of VCC
C	10-90 % of VCC

Shaded areas represent most common features.

Standard Output: 1-Turn CW Increasing (Code 334 Shown)



Resolution

EEA	Resolution	EEA	Resolution	EEA	Resolution
10	114	130	1479	260	2958
20	228	140	1593	270	3072
30	341	150	1707	280	3186
40	455	160	1820	290	3300
45	512	170	1934	300	3413
50	569	180	2048	310	3527
60	683	190	2162	320	3641
70	796	200	2276	330	3755
80	910	210	2389	340	3868
90	1024	220	2503	350	3982
100	1138	230	2617	360	4096
110	1252	240	2731		
120	1365	250	2844		

REV. 06/20

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