

\*RoHS COMPLIANT



**BOURNS®**

## 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\*

# AMS22S Non-Contacting Analog Rotary 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)	10 mA max.
For High Speed Processing (Code H)	20 mA max.
Output Signal (Single)	Analog
Independent Linearity	±0.5 %
	(±0.3 % available on request)
Hysteresis	0.2 % VDD max.
Effective Electrical Angle <sup>3</sup>	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)

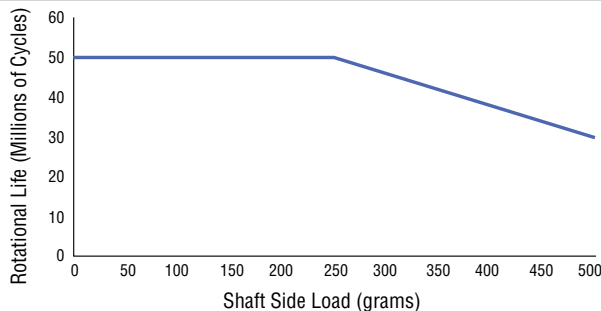
Mechanical Angle	Continuous
Shaft/RPM	200 RPM max.
Torque (Starting & Running)	1.06 N-cm. (1.5 oz-in.) max.
Shaft Material	Stainless steel
Terminals	Brass / 100 % matte tin over Ni Strike (e3)
Bearing	Bronze sleeve
Soldering Condition	
Manual Soldering	96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin 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

<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.

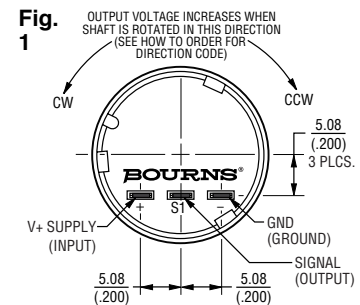
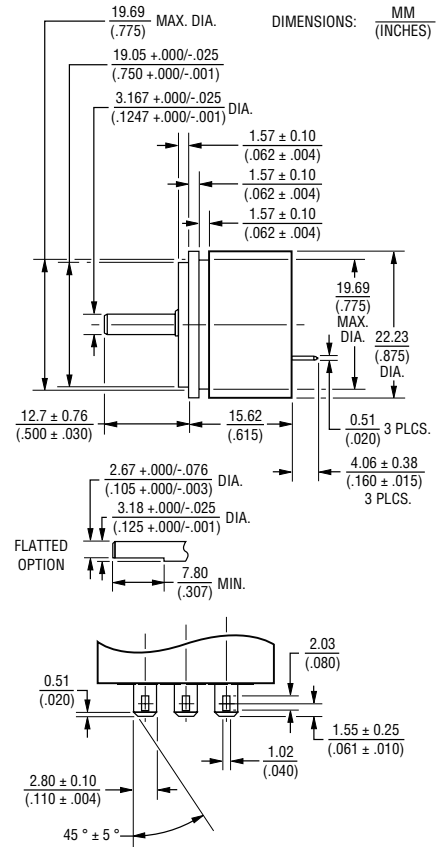
## Rotational Life vs. Shaft Side Load



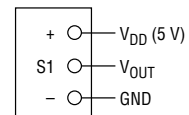
\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

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



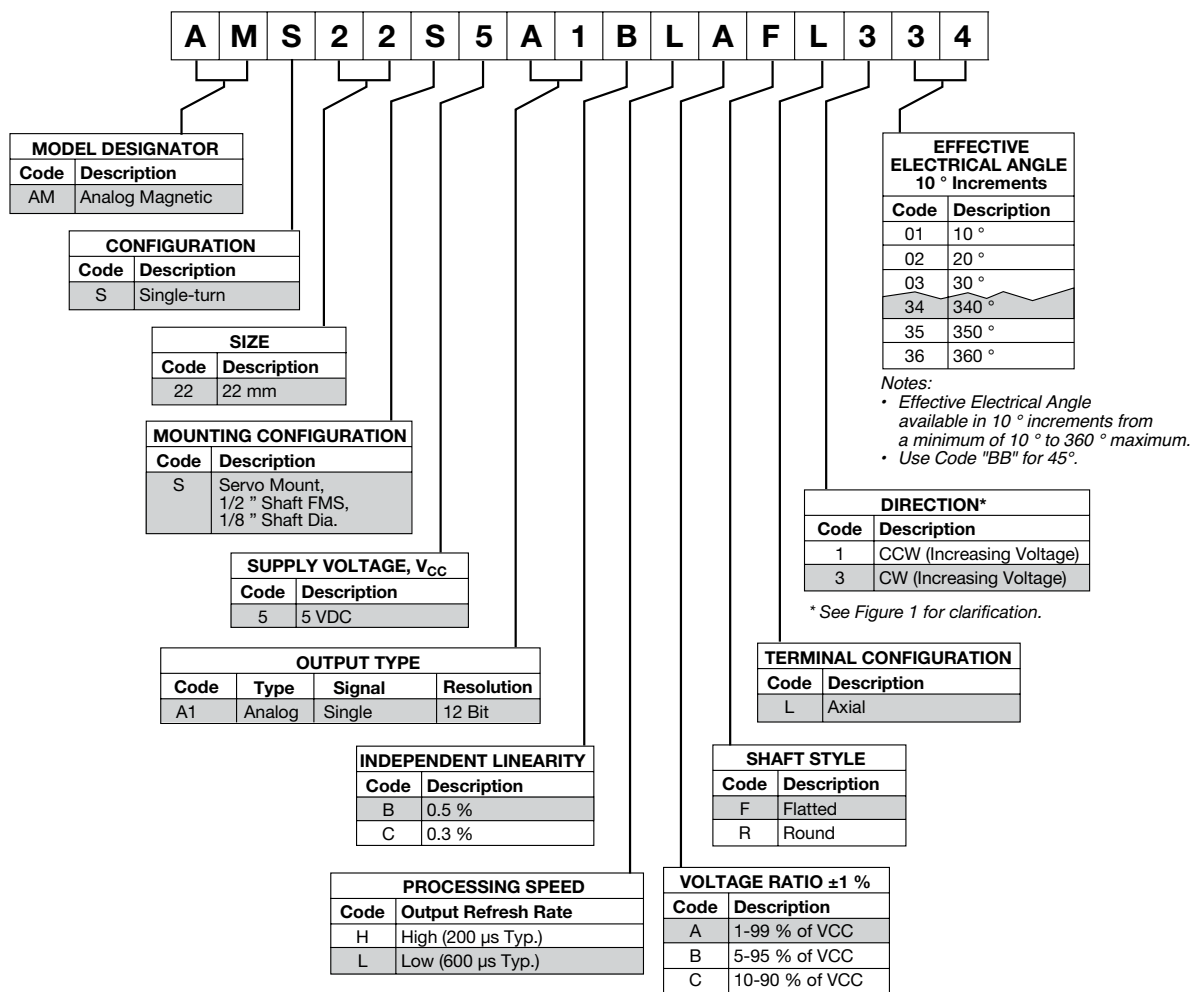
## Schematic



# AMS22S Non-Contacting Analog Rotary Position Sensor

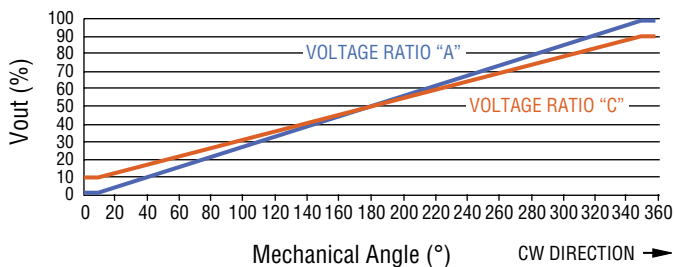
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## How To Order



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. 01/17

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