

Features

- 3.3 and 5 VDC voltage supply option
- Direction/Step output (Tachometer)
- Bushing or servo mount
- Non-contacting magnetic technology
- Small size
- CMOS and TTL compatible

- Resolution from 64-512 PPR
- Long life
- High operating speed
- Highly repeatable
- Sealed option
- Magnetic technology

EMS22D - Non-Contacting Direction/Step Encoder

Electrical Characteristics	
Resolution	64 to 512 PPR
Insulation Resistance (500 VDC)	1,000 megohms
Electrical Travel	
Supply Voltage	5.0 VDC ±10 %, 3.3 VDC ±10 %
Supply Current	
Output Voltage	
	Vss+0.4 V maximum
•	Vdd-0.5 V minimum
Output Current	
	4 mA maximum
	2 mA maximum
	500 ns maximum
1 /	
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Accuracy	
	.07° or bottor
	±0.7 ° or better
	±1.4 °
Output Transition Noise	
Environmental Characteristics	
	40 °C to +125 °C (-40 °F to +257 °F)
Storage Temperature Range	55 °C to +125 °C (-67 °F to +257 °F)
Humidity	MIL-STD-202, Method 103B, Condition B
Vibration	15 G
Shock	50 G
Rotational Life	
S Bushing (@1,000 rpm)	
	100,000,000 revolutions
T & W Bushings (@1,000 rpm with 250 g side load)	
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T & W Bushings (@1,000 rpm with 250 g side load) IP Rating Mechanical Characteristics	
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Pin Configuration

Output Type	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
Direction/Step	Pulse	Direction	GND	Index	VCC*	CS**

- * Can be 5 or 3.3 VDC depending on the version.
- ** Active low chip select pin; if not used connect pin 6 to GND.



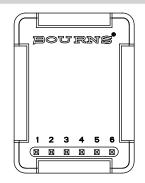
WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*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.

Users should verify actual device performance in their specific applications.

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Applications

- Material handling equipment
- Brushless DC motor commutation
- Robotics
- Automotive
- Industrial automation
- Petroleum refinery

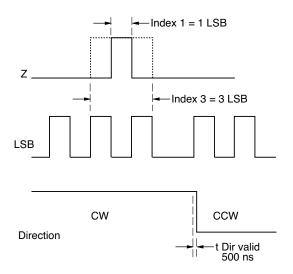
- Medical (low/medium risk)*
- Office equipment
- Audio and broadcast equipment

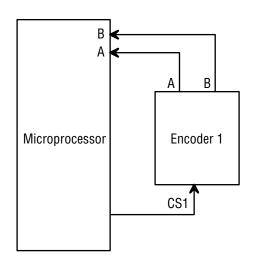
EMS22D - Non-Contacting Direction/Step Encoder

Output Type Waveform and Variant Table

Direction/Step Output

PPR	3.3 Vcc	5.0 Vcc	Index 1	Index 3
512	Х		Х	
512	Х			Х
512		Х	Х	
512		Х		Х
256	Х		Х	
256	Х			Х
256		Х	Х	
256		Х		Х
128	Х		Х	
128	Х			Х
128		Х	Х	
128		Х		Х
64	Х		Х	
64	Х			Х
64		Х	Х	
64		Х		Х





Chip Select Hardware Sample

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Consult factory for options not shown, including:

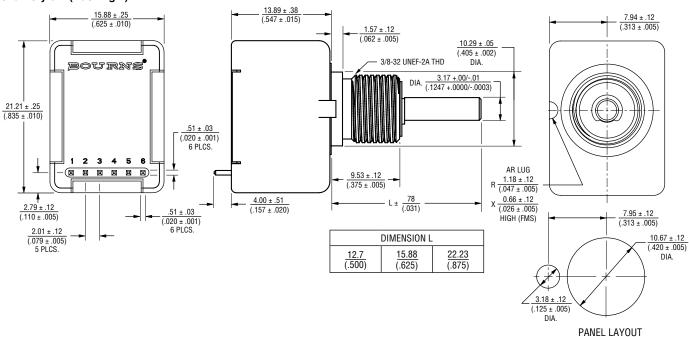
- Wire lead or cable options · Special shaft/bushing sizes and features
- Connectors
 Special performance characteristics
- Non-standard resolutions
 PCB mounting bracket

EMS22D - Non-Contacting Direction/Step Encoder

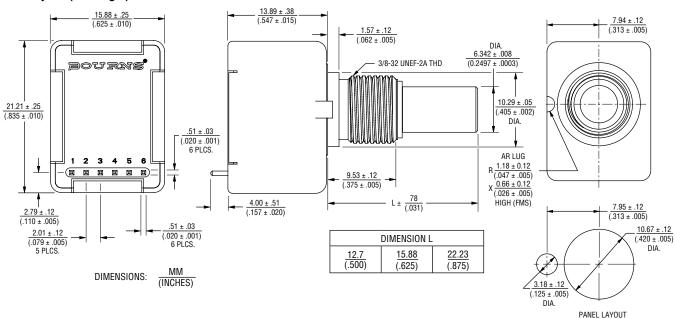
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Product Dimensions

Shaft Style D (Bushing T)



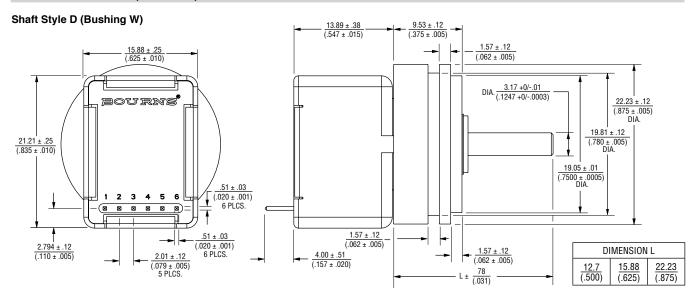
Shaft Style B (Bushing S)

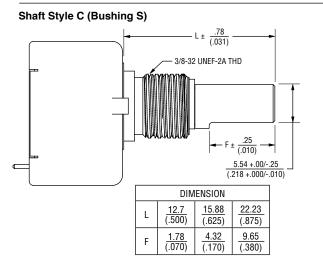


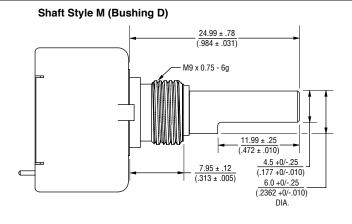
EMS22D - Non-Contacting Direction/Step Encoder

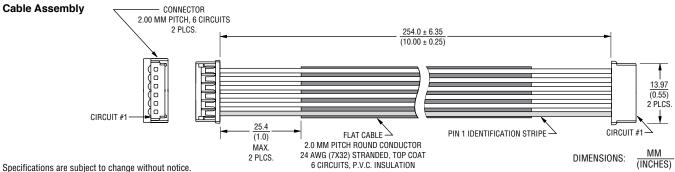
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Product Dimensions (Continued)



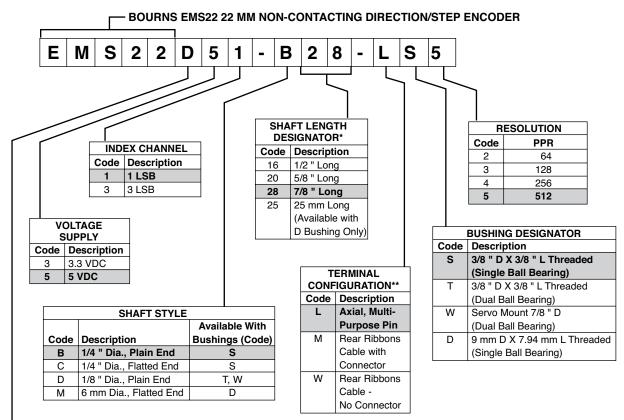






Users should verify actual device performance in their specific applications.

How To Order



OUTPUT TYPE		
Code	Description	
D	Direction/Step	

^{*} Shaft length measured from mounting surface.

^{**} Standard ribbon cable is 10 inches long. Consult factory for other lengths.

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