

### Features

- Compact design, long life and high reliability
- Low cost compared to optical type encoders
- Incremental type
- Detent option



## PES12 - 12 mm Shaftless Encoder

### Electrical Characteristics

Output.....	Quadrature
Contact Rating.....	1 mA @ 5 VDC
Insulation Resistance .....	10 megohms @ 50 VDC
Dielectric Withstanding Voltage	
Sea Level.....	50 VAC minimum
Contact Bounce (60 RPM).....	2.0 ms. maximum**

### Environmental Characteristics

Operating Temperature Range.....	-10 °C to +65 °C (-14 °F to +149 °F)
Rotational Life.....	30,000 cycles minimum
IP Rating.....	IP 40

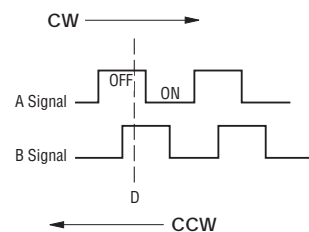
### Mechanical Characteristics

Mechanical Angle .....	360 ° continuous
Running Torque .....	30 to 200 g-cm (0.41 to 2.78 oz.-in.)
Shaft Side Load (Static).....	2.04 kgf (4.5 lbs.) minimum
Weight .....	1.5 gm (0.05 oz.)
Terminals .....	Printed circuit board terminals
Soldering Condition	
Wave Soldering.....	Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux: 260 °C ±5 °C max. for 1-3 seconds
Hand Soldering .....	300 °C max. for 3 seconds max.
Hardware .....	No hardware supplied

### How To Order

	<b>PES12 - 4 0 S - N 0024</b>
Model .....	_____
Terminal Configuration .....	_____
4 = PC Horizontal/Rear Facing	
Detent Option .....	_____
0 = No Detents	
2 = 24 Detents	
Shaft Style .....	_____
S = Shaftless	
Switch Configuration .....	_____
N = No Switch	
Resolution .....	_____
0024 = 24 Pulses per 360 ° Rotation	

### Quadrature Output Table



**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
 \*\*Devices are tested using standard noise reduction filters.  
 For optimum performance, designers should use noise reduction filters in their circuits.  
 Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.  
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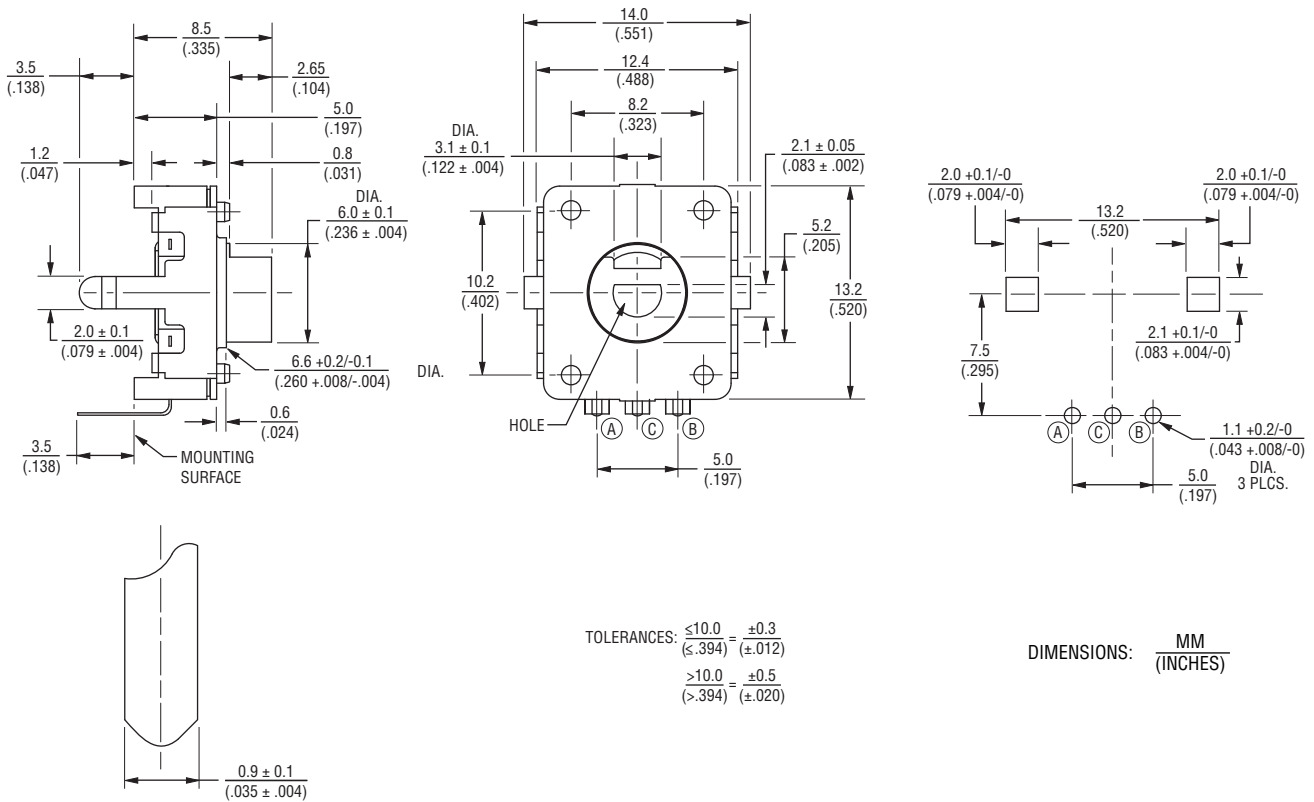
## Applications

- Audio-visual equipment
- Consumer electric appliances
- Radios
- Musical instrumentation
- Communications equipment
- Home appliances

## PES12 - 12 mm Shaftless Encoder

**BOURNS®**

### Product Dimensions



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Users should verify actual device performance in their specific applications.

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