



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



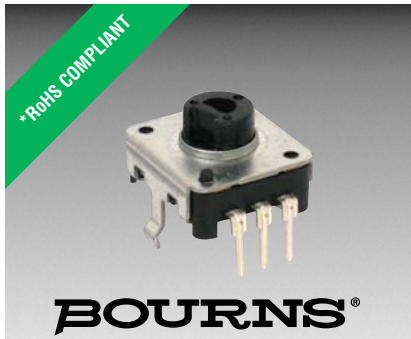
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### Features

- 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

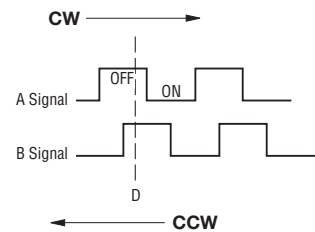
Mechanical Angle.....	360 ° continuous
Running Torque.....	30 to 200 g-cm (0.41 to 2.78 oz.-in.)
Shaft Side Load (Static).....	2.04 kgf (4.5 lbs.) minimum
Weight.....	1.5 gm (0.05 oz.)
Terminals..... Printed circuit board terminals	
Soldering Condition	
Wave Soldering.....	Sn95.5/Ag2.8/Cu0.7 solder with 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

**PES12 - 4 0 S - N 0024**

Model.....	PES12
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



\*RoHS Directive 2002/95/EC Jan 27 2003 including 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.

Customers should verify actual device performance in their specific applications.

