



### 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

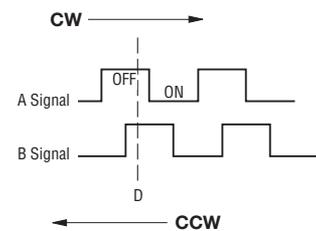
Mechanical Angle.....	360 ° continuous
Running Torque.....	30 to 200 g-cm (0.41 to 2.78 oz.-in.)
Shaft Side Load (Static).....	2.04 kgf (4.5 lbs.) minimum
Weight.....	1.5 gm (0.05 oz.)
Terminals.....	Printed circuit board terminals
Soldering Condition	
Wave Soldering.....	Sn95.5/Ag2.8/Cu0.7 solder with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



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