

\*RoHS COMPLIANT



**BOURNS®**

## Features

- Compact design, long life and high reliability
- Low cost compared to optical type encoders
- Available in a wide variety of configurations to meet many user requirements

## Applications

Level control, tuning and timer settings in:

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

# PEC12 - 12 mm Incremental Encoder

### Electrical Characteristics

Output .....	2-bit gray code
Closed Circuit Resistance .....	3 ohms maximum
Contact Rating .....	1 mA @ 5 VDC
Insulation Resistance .....	10 megohms @ 250 VDC
Dielectric Withstanding Voltage	
Sea Level .....	50 VAC minimum
Electrical Travel .....	Continuous
Contact Bounce (15 RPM) .....	5.0 ms. maximum
RPM (Operating) .....	100 maximum

### Environmental Characteristics

Operating Temperature Range .....	-30 °C to +70 °C (-22 °F to +158 °F)
Storage Temperature Range .....	-40 °C to +85 °C (-40 °F to +185 °F)
Humidity .....	MIL-STD-202, Method 103B, Condition B
Vibration .....	30 G
Contact Bounce .....	10-55-10 Hz / 1 min. / Amplitude 1.5 mm
Shock .....	100 G
Rotational Life .....	30,000 cycles minimum
Switch Life .....	20,000 cycles minimum
IP Rating .....	IP 40

### Mechanical Characteristics

Mechanical Angle .....	360 ° continuous
Running Torque .....	30.6 to 204 g-cm (0.42 to 2.83 oz.-in.)
Shaft Side Load (Static) .....	2.04 kgf (4.5 lbs.) minimum
Weight .....	3 gm (0.1 oz.) maximum
Terminals .....	Printed circuit board terminals
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Soldering Condition	
Wave Soldering .....	Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux: 260 °C max. for 3-5 seconds
Hand Soldering .....	Not recommended
Hardware .....	No hardware supplied

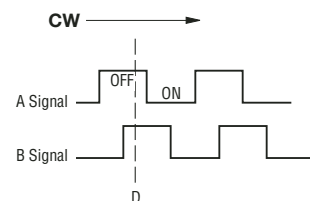
### Switch Characteristics

Switch Type .....	Contact Push ON Momentary SPST
Power Rating (Resistive Load) .....	10 mA at 5 V DC
Switch Travel .....	0.5 +0.4/-0.3 mm
Switch Actuation Force .....	360 +153/-102 gf (5 +2.1/-1.4 oz.-in.)

### How to Order

Model	PEC12 - 4 0 20 F - S 0012
Terminal Configuration	2 = PC Pin Vertical/Down Facing 4 = PC Horizontal/Rear Facing
Detent Option	0 = No Detents 1 = 12 Detents (available with 12 pulses only) 2 = 24 Detents (available with 24 pulses only)
Standard Shaft Length	17 = 17.5 mm 20 = 20.0 mm 25 = 25.0 mm 30 = 30.0 mm (available with switch option only)
Shaft Style	F = Insulated Flatted Shaft
Switch Configuration	S = Push Momentary Switch N = No Switch
Resolution	0012 = 12 Pulses per 360 ° Rotation 0024 = 24 Pulses per 360 ° Rotation

### Quadrature Output Table

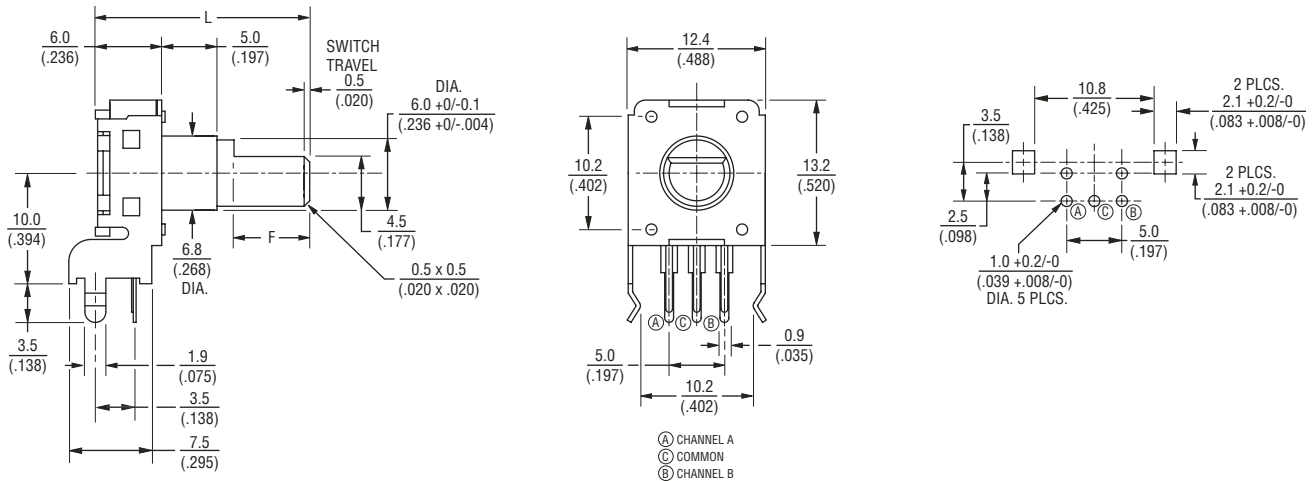


# PEC12 - 12 mm Incremental Encoder

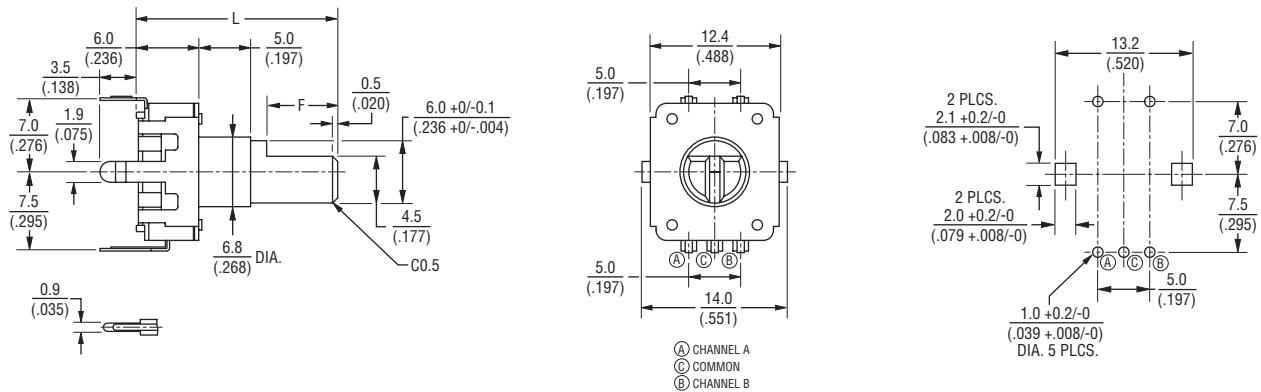
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## Product Dimensions

### PEC12-2xxxF-Sxxxx



### PEC12-4xxxF-Sxxxx



L	17.5 (.688)	20.0 (.787)	25.0 (.984)	30.0 (1.181)
F	5.0 (.197)	7.0 (.276)	12.0 (.472)	12.0 (.472)

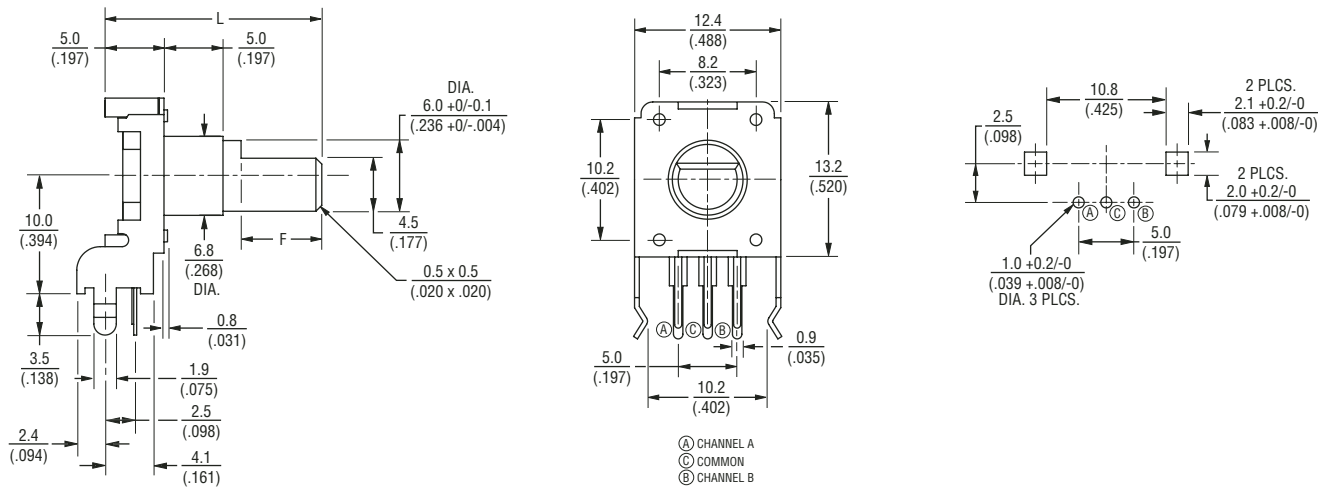
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

# PEC12 - 12 mm Incremental Encoder

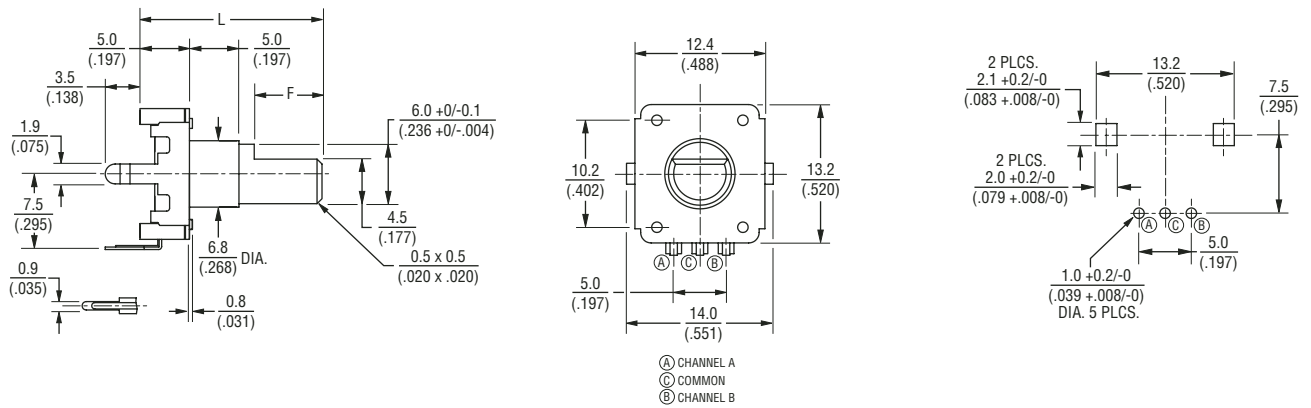
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## Product Dimensions

### PEC12-2xxxF-Nxxxx



### PEC12-4xxxF-Nxxxx



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