

*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

PEC16 - 16 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 @ 50 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.....	100,000 cycles minimum
Switch Life	20,000 cycles minimum
IP Rating.....	IP 40

Mechanical Characteristics

Mechanical Angle	360 ° continuous
Torque	
Running	30.6 to 204 g-cm (0.42 to 2.83 oz.-in)
Mounting	10.2 kgf. cm (8.83 lb.-in.) maximum
Shaft Side Load (Static)	3.06 kgf (6.7 lbs.) minimum
Weight	8 gm (0.28 oz.) maximum
Terminals	Printed circuit board terminals
Terminals	Printed circuit board terminals
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	One flat washer and one mounting nut supplied with each encoder.

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.)

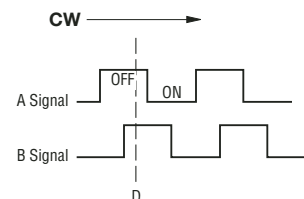
How to Order

PEC16 - 4 0 20 F - S 0012

Model	PEC16 - 4 0 20 F - S 0012
Terminal Configuration	4 = PC Horizontal/Rear Facing
2 = PC Pin Vertical/Down Facing	
Detent Option	0 = No Detents
1 = 12 Detents* (available with 12 pulses only)	
2 = 24 Detents (available with 12 or 24 pulses)	
Standard Shaft Length	20 = 20.0 mm
15 = 15 mm	
25 = 25.0 mm*	
30 = 30.0 mm*	
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	

* Not available with switch

Quadrature Output Table



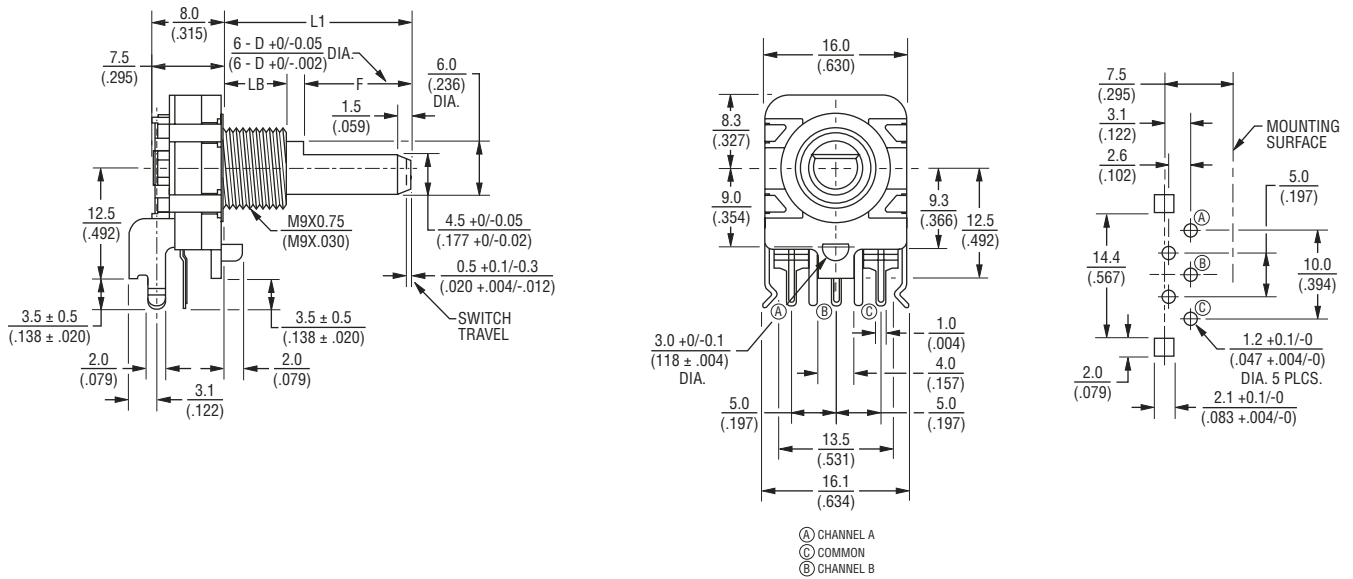
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

PEC16 - 16 mm Incremental Encoder

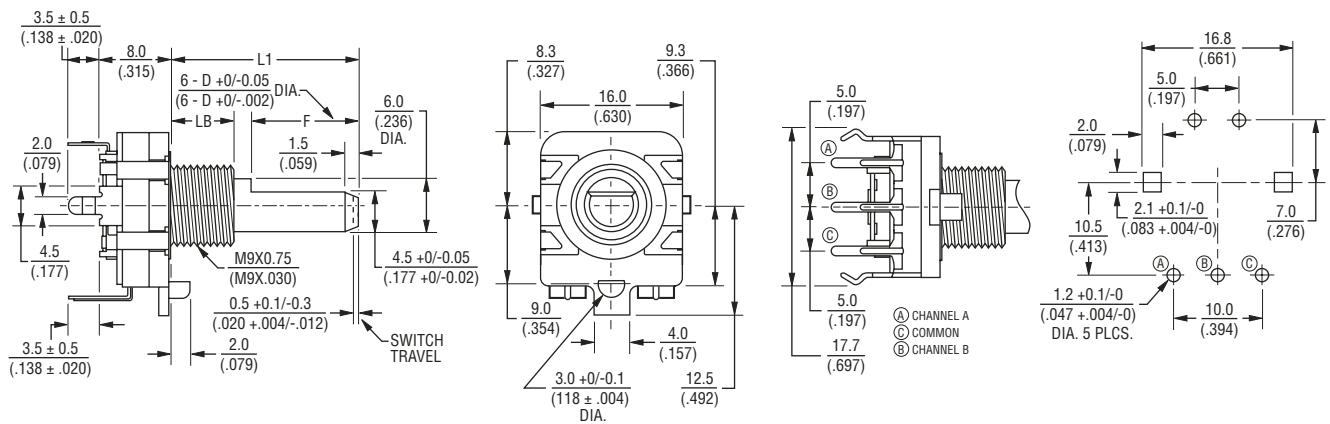
BOURNS®

Product Dimensions

PEC16-2xxxF-Sxxxx



PEC16-4xxxF-Sxxxx



L1	15.0 (.591)	20.0 (.787)
LB	5.0 (.197)	7.0 (.276)
F	7.0 (.276)	12.0 (.472)

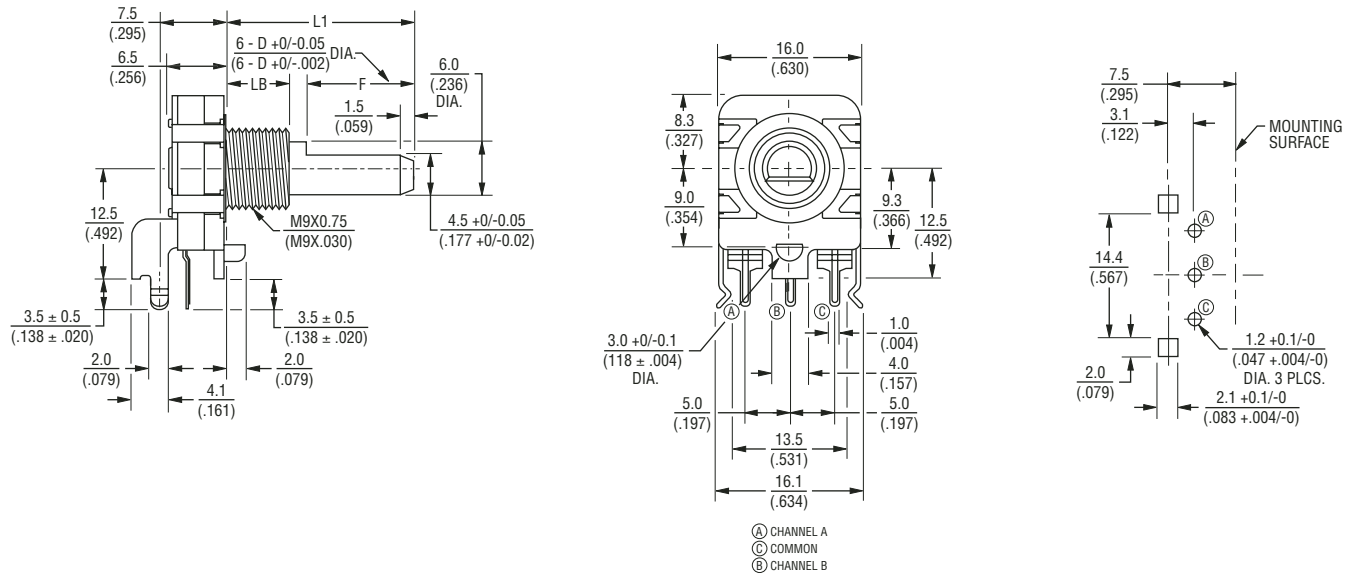
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

PEC16 - 16 mm Incremental Encoder

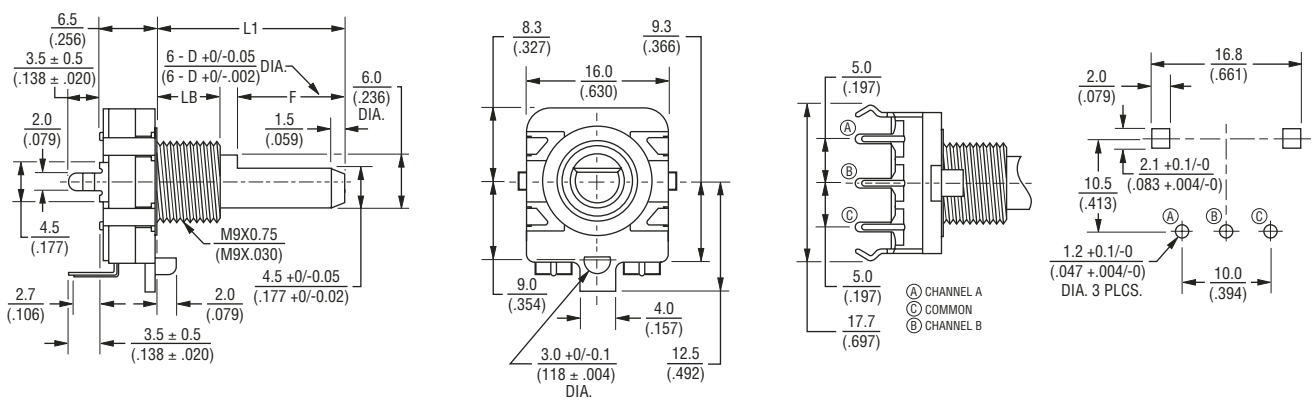
BOURNS®

Product Dimensions

PEC16-2xxxF-Nxxxx



PEC16-4xxxF-Nxxxx



L1	15.0 (.591)	20.0 (.787)
LB	5.0 (.197)	7.0 (.276)
F	7.0 (.276)	12.0 (.472)

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