

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
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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	One flat washer and one mounting nut supplied with each encoder.

Switch Characteristics

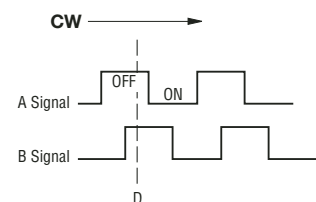
Switch Type	Contact Push ON Momentary SPST
Power Rating (Resistive Load)	10 mA at 5 V DC
Switch Travel	0.5 +0.4/-0.3 mm
Switch Actuation Force	360 +153/-102 gf (5 +2.1/-1.4 oz.-in.)

How to Order

Model	PEC16 - 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 12 or 24 pulses)
Standard Shaft Length	15 = 15 mm 20 = 20.0 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



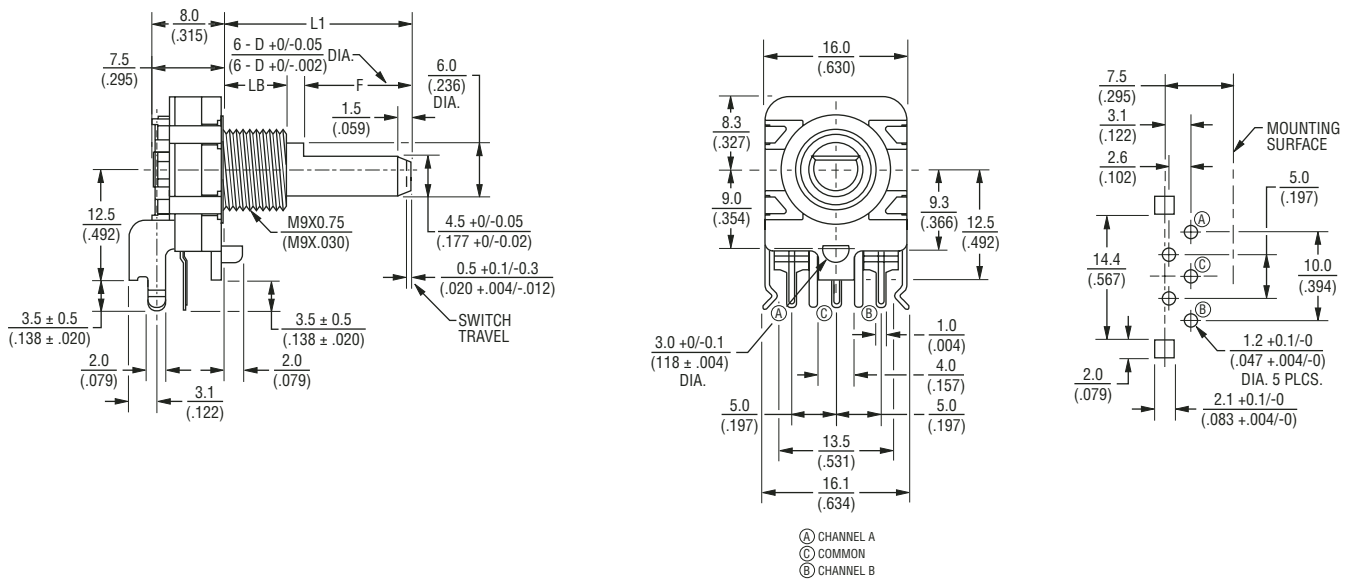
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

PEC16 - 16 mm Incremental Encoder

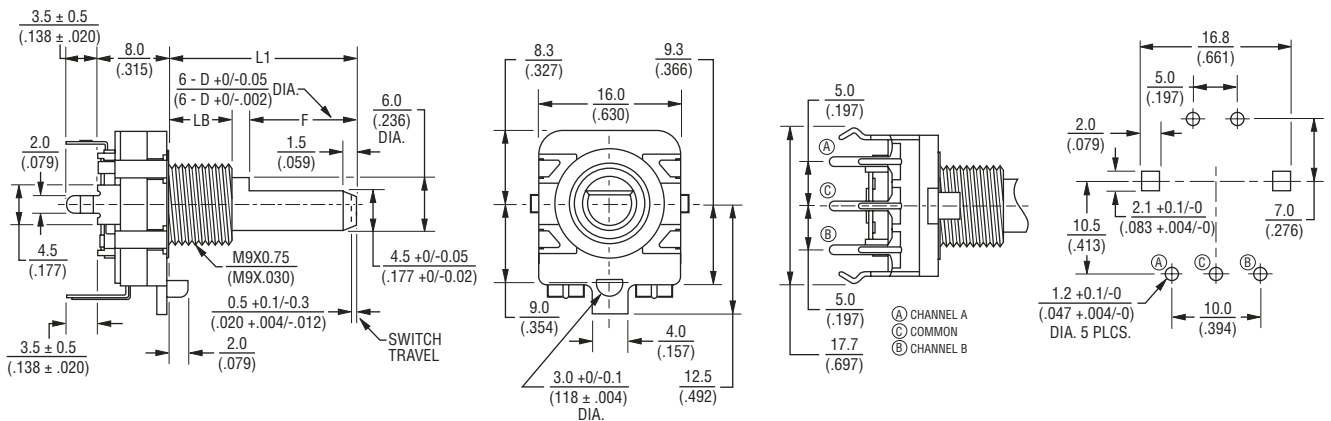
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Product Dimensions

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)

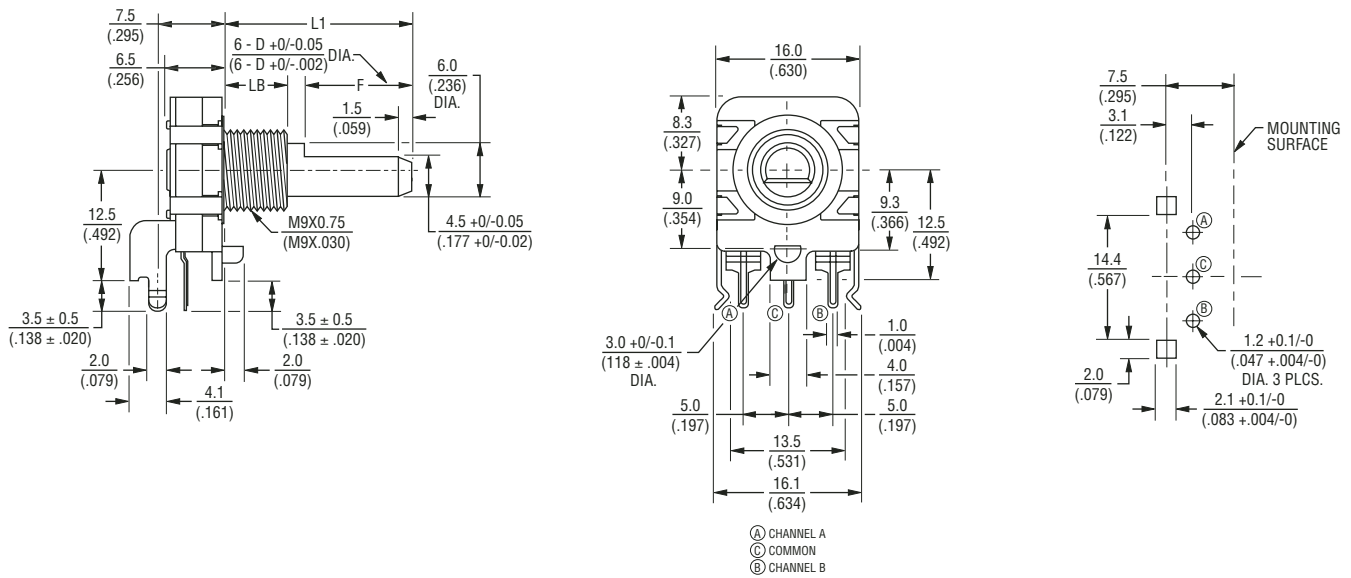
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

PEC16 - 16 mm Incremental Encoder

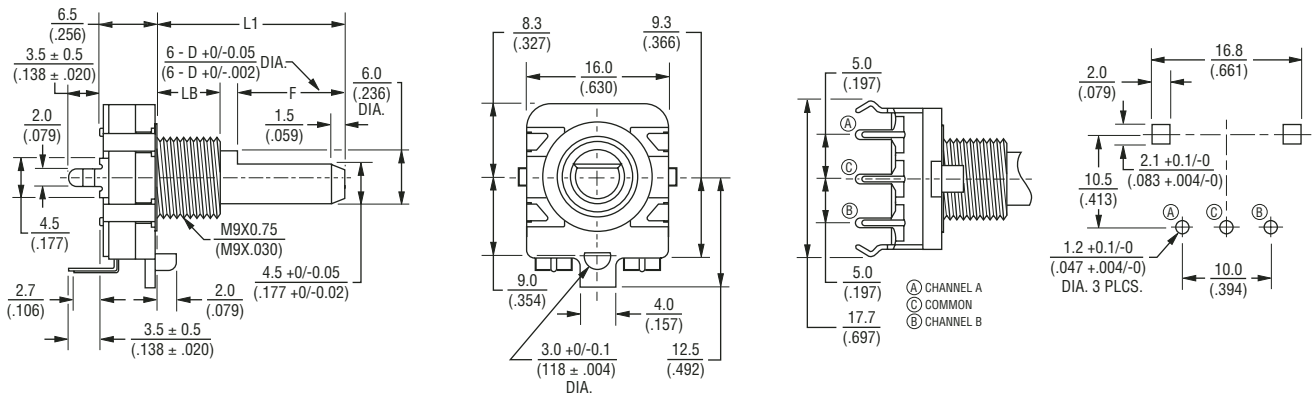
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Product Dimensions

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