

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

### Switch Characteristics

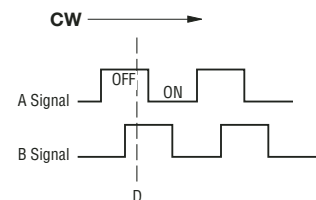
Switch Type .....	Contact Push ON Momentary SPST
Power Rating (Resistive Load) .....	1 mA at 5 V DC
Switch Travel .....	0.5 +0.4/-0.3 mm
Switch Actuation Force .....	360 +153/-102 gf (5 +2.1/-1.4 oz.-in.)

### How to Order

Model	PEC16 - 4 0 20 F - S 0012
Terminal Configuration	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 24 pulses only)	
Standard Shaft Length	20 = 20.0 mm
15 = 15 mm	
25 = 25.0 mm (available with switch option only)	
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	

\* 12 detent version not available with switch

### Quadrature Output Table

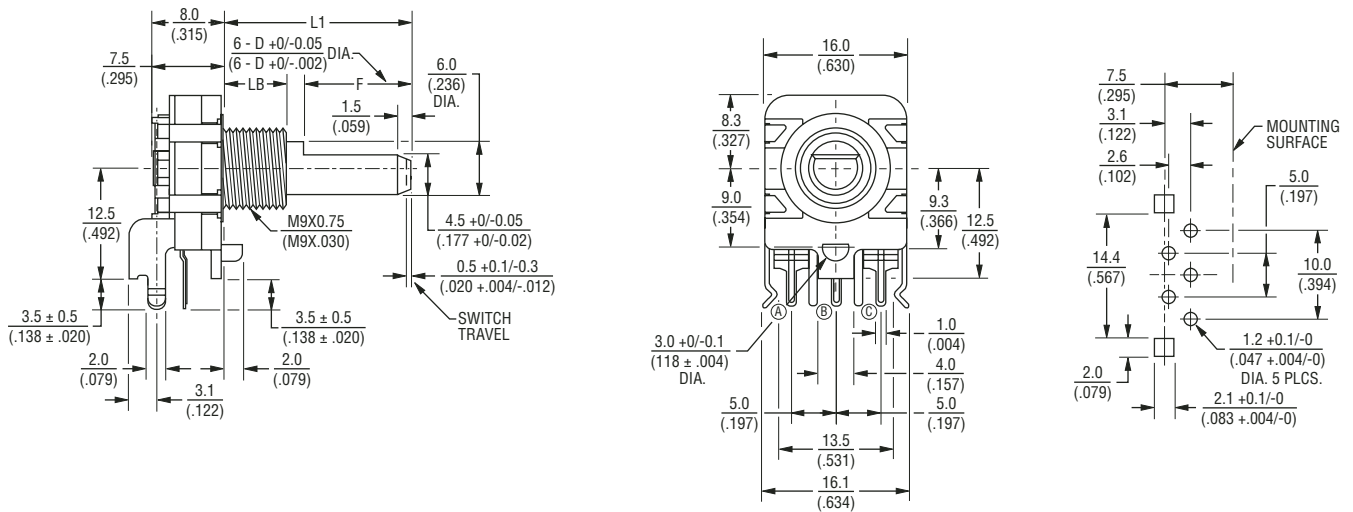


# PEC16 - 16 mm Incremental Encoder

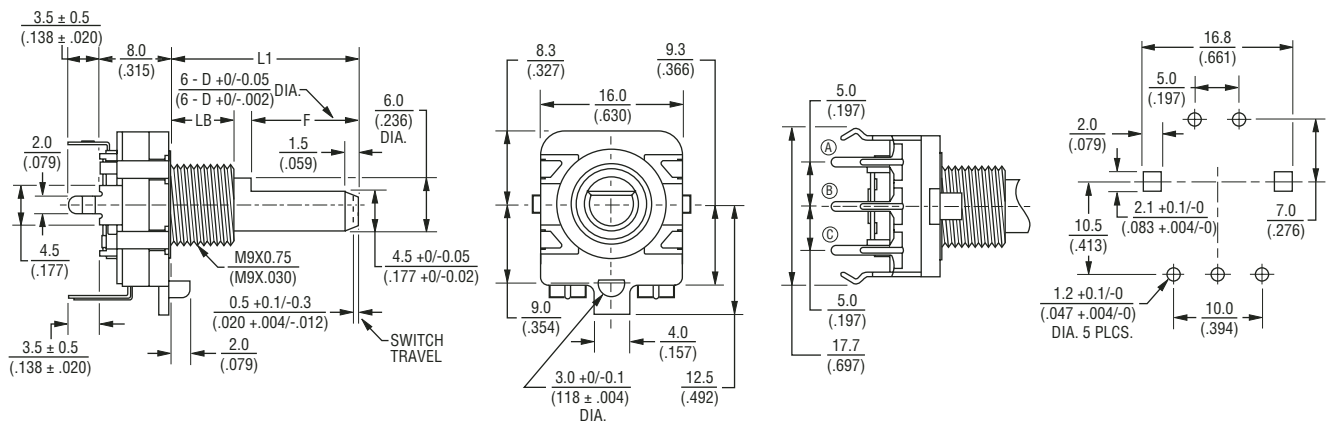
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## Product Dimensions

### 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)

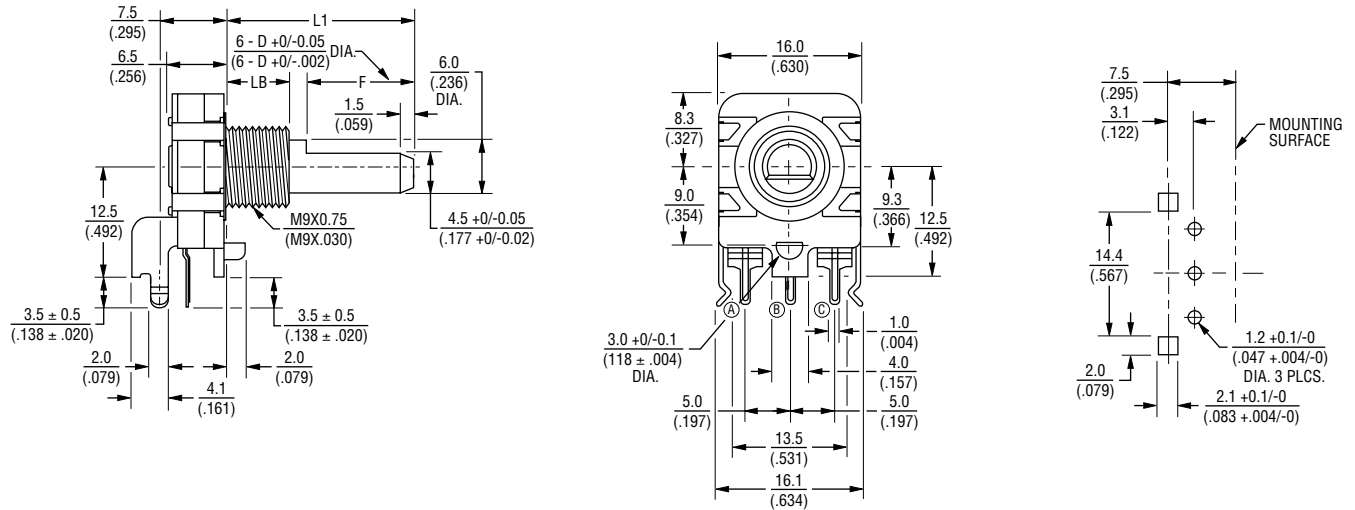
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

# PEC16 - 16 mm Incremental Encoder

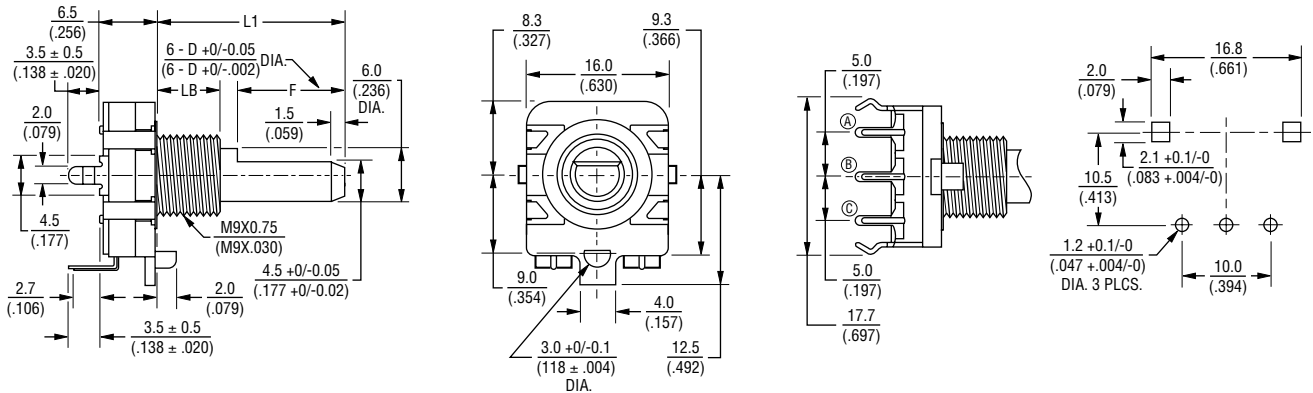


## Product Dimensions

### PEC16-2xxxF-Nxxxx



### PEC16-4xxxF-Nxxxx



L1	$\frac{15.0}{(.591)}$	$\frac{20.0}{(.787)}$
LB	$\frac{5.0}{(.197)}$	$\frac{7.0}{(.276)}$
F	$\frac{7.0}{(.276)}$	$\frac{12.0}{(.472)}$

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