



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



PEC16 - 16 mm Incremental Encoder

Electrical Characteristics

| | |
|---------------------------------|-----------------------|
| Output..... | 2-bit quadrature 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 | 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

PEC16 - 4 0 20 F - S 0012

| | |
|--|-------|
| Model | PEC16 |
| Terminal Configuration | 4 |
| 2 = PC Pin Vertical/Down Facing | |
| 4 = PC Horizontal/Rear Facing | |
| Detent Option | 0 |
| 0 = No Detents | |
| 1 = 12 Detents (available with 12 pulses only) | |
| 2 = 24 Detents (available with 24 pulses only) | |
| Standard Shaft Length | 20 |
| 15 = 15 mm | |
| 20 = 20.0 mm | |
| 25 = 25.0 mm ¹ | |
| 30 = 30.0 mm ¹ | |
| Shaft Style | F |
| F = Insulated Flatted Shaft | |
| Switch Configuration | S |
| S = Push Momentary Switch | |
| N = No Switch | |
| Resolution | 0012 |
| 0012 = 12 Pulses per 360 ° Rotation | |
| 0024 = 24 Pulses per 360 ° Rotation | |

Quadrature Output Table



Switch Circuit



¹ Not available with switch

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

**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.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

Applications

Level control, tuning and timer settings in:

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

PEC16 - 16 mm Incremental Encoder

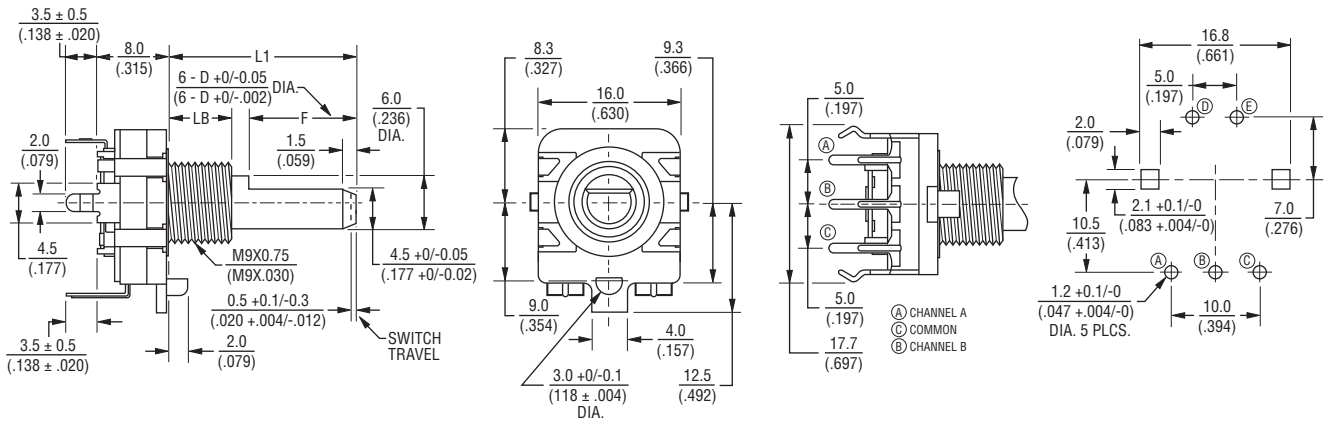
BOURNS®

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

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PEC16 - 16 mm Incremental Encoder

BOURNS®

Product Dimensions

PEC16-2xxxF-Nxxxx



PEC16-4xxxF-Nxxxx



Panel Hole Detail



| | | | | |
|----|----------------|----------------|----------------|-----------------|
| L1 | 15.0 (.591) | 20.0 (.787) | 25.0 (.984) | 30.0 (1.181) |
| LB | 5.0 (.197) | 7.0 (.276) | 7.0 (.276) | 7.0 (.276) |
| F | 7.0 (.276) | 12.0 (.472) | 12.0 (.472) | 12.0 (.472) |

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

REV. 03/13

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