PEC12 - 12 mm Incremental Encoder

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

Electrical Characteristics
- Output: 2-bit quadrature code
- Closed Circuit Resistance: 0.3 ohms maximum
- Insulation Resistance: 10 megohms @ 250 VDC
- Dielectric Withstanding Voltage: 50 VAC minimum
- Electrical Travel: Continuous
- Sea Level: 50 VAC minimum
- Insulation Resistance: 10 megohms @ 250 VDC
- Contact Rating: 1 mA @ 5 VDC
- Closed Circuit Resistance: 3 ohms maximum

Environmental Characteristics
- Operating Temperature Range: -30 °C to +70 °C (-22 °F to +168 °F)
- Storage Temperature Range: -40 °C to +85 °C (-40 °F to +185 °F)
- Vibration: 10-55-10 Hz / 1 min. / Amplitude 1.5 mm
- Shock: 30 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: 0.204 to 204 g-cm (0.22 to 2.04 oz-in.)
- Shaft Side Load (Static): 3 gbm (0.01 oz-in.) maximum
- Terminals: Printed circuit board terminals
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- Soldering Condition: Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux: 260 °C max. for 3-5 seconds
- Wave 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: 0.05-0.4/0.3 mm
- Switch Actuation Force: 360 +153-102 g (±2+/-1.4 oz-in.)

How To Order
- Model: PEC12 - 4 0 20 F - S 0012
- Terminal Configuration: 2 = Vertical Mount/Down Facing PC Pin
- 4 = Horizontal Mount/Rear Facing PC Pin
- 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
- Shaft Style: F = Insulated Flattened 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

**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.
Customers 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

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Product Dimensions

PEC12-2xxxF-Sxxxx (Vertical Mount)

PEC12-4xxxF-Sxxxx (Horizontal Mount)

<table>
<thead>
<tr>
<th>L (mm)</th>
<th>17.5</th>
<th>20.0</th>
<th>25.0</th>
<th>30.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (mm)</td>
<td>1.97</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
</tr>
</tbody>
</table>

DIMENSIONS: MM

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Product Dimensions

PEC12-2xxxF-Nxxxx

PEC12-4xxxF-Nxxxx

<table>
<thead>
<tr>
<th>L (MM)</th>
<th>17.5 (0.688)</th>
<th>20.0 (0.787)</th>
<th>25.0 (0.984)</th>
<th>30.0 (1.181)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (MM)</td>
<td>5.0 (.197)</td>
<td>7.0 (.276)</td>
<td>12.0 (.472)</td>
<td>12.0 (.472)</td>
</tr>
</tbody>
</table>

Dimensions: MM (INCHES)

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