



Features

- Push switch option
- High detent torque
- High rotational life and switch life
- Metal bushing/shaft
- RoHS compliant*



PEC11H Series - 11 mm Encoder w/High Detent Force

Electrical Characteristics

| | |
|--|-----------------------|
| Output..... | 2-bit quadrature code |
| Closed Circuit Resistance | 100 milliohms maximum |
| Contact Rating..... | 10 mA @ 5 VDC |
| Insulation Resistance | 100 megohms @ 250 VDC |
| Dielectric Withstanding Voltage - Sea Level..... | 300 VAC minimum |
| Electrical Travel | Continuous |
| Contact Bounce (60 RPM)..... | 3.0 ms maximum** |
| RPM (Operating) | 60 maximum** |

Environmental Characteristics

| | |
|-----------------------------------|---|
| Operating Temperature Range | -20 °C to +70 °C (-4 °F to +158 °F) |
| Storage Temperature Range | -35 °C to +85 °C (-31 °F to +185 °F) |
| Humidity..... | MIL-STD-202, Method 103B, Condition A |
| Vibration | 10~55~10 Hz / 1 min. / Amplitude 1.5 mm |
| Shock..... | 100 G |
| Rotational Life..... | 100,000 cycles minimum |
| IP Rating..... | IP 40 |
| Moisture Sensitivity Level | 1 |

Mechanical Characteristics

| | |
|---------------------------------|---|
| Mechanical Angle | 360 ° continuous |
| Torque | |
| Detent | 210 ±70 gf-cm (2.0 ± 0.1 oz-in) |
| Mounting | 70 N-cm (6.2 lb-in) maximum |
| Shaft Strength (Push-Pull)..... | 50 N (11.2 lbs) |
| Weight | 5 gm (0.17 oz) maximum |
| Terminals | Printed circuit board terminals |
| Soldering Condition | |
| Wave Soldering..... | Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux: 260 °C ±5 °C max. for 3 ± 1 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 |
| Switch Life | 30,000 actuations minimum |
| Power Rating (Resistive Load) | 10 mA at 5 V DC |
| Switch Travel..... | 0.5 ± 0.3 mm |
| Switch Actuation Force | 610 ± 306 gf (8.47 ± 4.24 oz.-in.) |

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

**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.

Users should verify actual device performance in their specific applications.

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Applications

Level control, tuning and timer settings in:

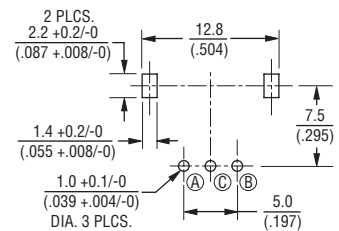
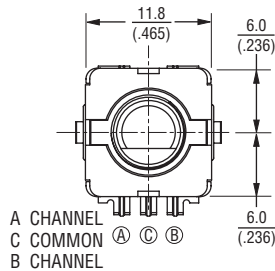
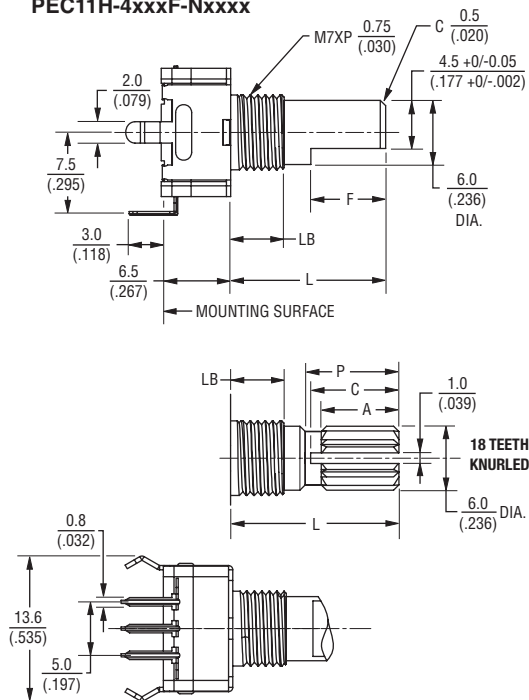
- Audio-visual equipment
- Consumer electric appliances
- Environmental controls
- Musical instrumentation
- Communications equipment

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Product Dimensions

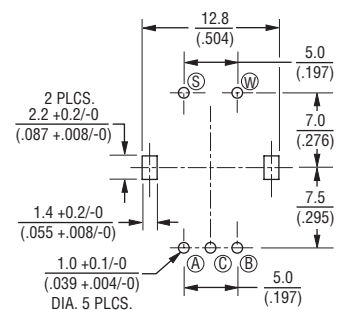
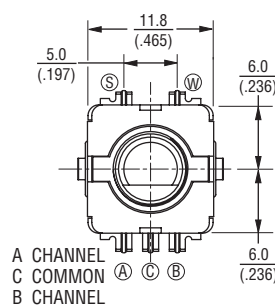
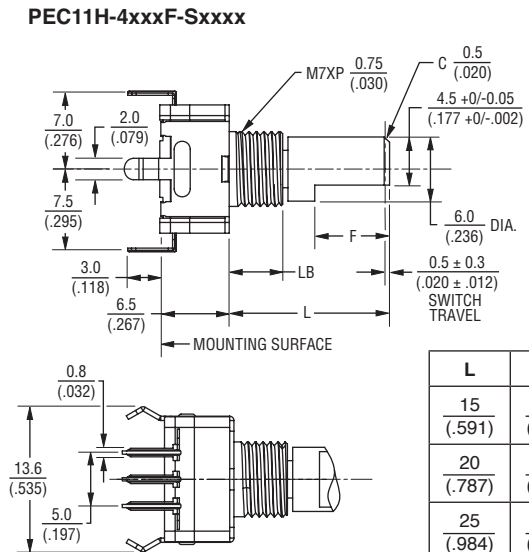
PEC11H-4xxxF-Nxxxx



| L | LB | F | P | A | C |
|--------------|---------------|----------------|----------------|----------------|----------------|
| 15 (.591) | 5.0 (.197) | 5.0 (.197) | 7.0 (.276) | 6.0 (.236) | 6.0 (.236) |
| 20 (.787) | 7.0 (.276) | 10.0 (.394) | 7.0 (.276) | 6.0 (.236) | 7.0 (.276) |
| 25 (.984) | 7.0 (.276) | 12.0 (.472) | 12.0 (.472) | 10.0 (.394) | 11.0 (.433) |

| Dim. | Tol. |
|------------------------------|-----------------|
| <10.0 (<.394) | ±0.3 (±.012) |
| 10.0 ~ 100 (.394 ~ 3.937) | ±0.5 (±.020) |

PEC11H-4xxxF-Sxxxx



| L | LB | F |
|--------------|---------------|----------------|
| 15 (.591) | 5.0 (.197) | 5.0 (.197) |
| 20 (.787) | 7.0 (.276) | 10.0 (.394) |
| 25 (.984) | 7.0 (.276) | 12.0 (.472) |

| Dim. | Tol. |
|------------------------------|-----------------|
| <10.0 (<.394) | ±0.3 (±.012) |
| 10.0 ~ 100 (.394 ~ 3.937) | ±0.5 (±.020) |

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How To Order

Model **PEC11H - 4 0 20 F - S 0020**

Terminal Configuration _____
 4 = PC Pin Horizontal/Rear Facing

Detent Option _____
 0 = 16 Detents (8, 16 pulses) 2 = 24 Detents (24 pulses)
 1 = 20 Detents (20 pulses) 3 = 30 Detents (15 pulses)

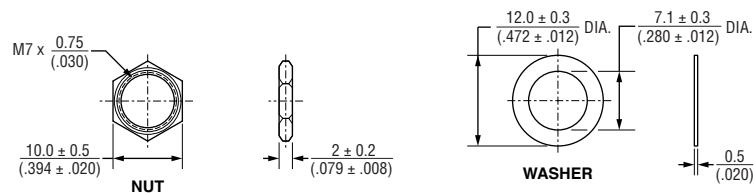
Standard Shaft Length _____
 15 = 15.0 mm 25 = 25.0 mm
 20 = 20.0 mm 30 = 30.0 mm

Shaft Style _____
 F = Metal Flatted Shaft
 K = Metal Knurled Shaft

Switch Configuration _____
 S = Push Momentary Switch
 N = No Switch

Resolution _____
 0008 = 8 Pulses per 360 ° Rotation 0020 = 20 Pulses per 360 ° Rotation
 0015 = 15 Pulses per 360 ° Rotation 0024 = 24 Pulses per 360 ° Rotation
 0016 = 16 Pulses per 360 ° Rotation

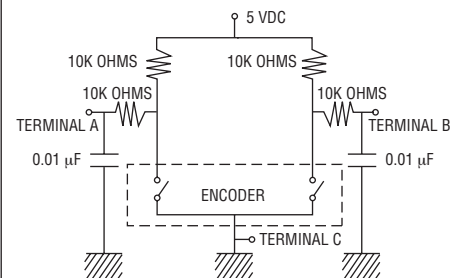
Hardware



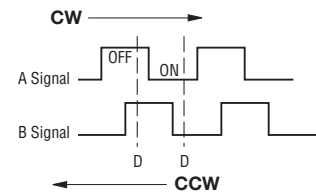
Switch Circuit



Suggested Filter Circuit



Quadrature Output Table



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