



Features

- Push switch option
- Compact, low profile
- High rotational life and switch life
- Metal bushing/shaft
- RoHS compliant*



PEC11L Series - 11 mm Low Profile Encoder

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).....	10 ms maximum**
RPM (Operating)	60 maximum**

Environmental Characteristics

Operating Temperature Range.....	-25 °C to +80 °C (+13 °F to +176 °F)
Storage Temperature Range.....	-40 °C to +85 °C (-40 °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

Mechanical Characteristics

Mechanical Angle	360 ° continuous
Torque	
Detent	20-200 gf-cm (0.27 to 2.8 oz-in)
Running	10 to 150 gf-cm (0.14 to 2.1 oz-in)
Mounting.....	70 N-cm (6.2 lb-in) maximum
Shaft Side Load (Static).....	2.04 kgf (4.5 lbs) minimum
Shaft Strength (Push-Pull).....	100 N (22.5 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 3-5 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
Switch Life	100,000 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.)

How To Order

PEC11L - 4 0 20 F - S 0015

Model	PEC11L - 4 0 20 F - S 0015
Terminal Configuration	4 = PC Pin Horizontal/Rear Facing
Detent Option	0 = No Detents (15, 20 pulses) 1 = 20 Detents (20 pulses) 2 = 30 Detents (15 pulses)
Standard Shaft Length	15 = 15.0 mm 20 = 20.0 mm 25 = 25.0 mm
Shaft Style	F = Metal Flatted Shaft K = Metal Knurled Shaft
Switch Configuration	S = Push Momentary Switch N = No Switch
Resolution	0015 = 15 Pulses per 360 ° Rotation 0020 = 20 Pulses per 360 ° Rotation

*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

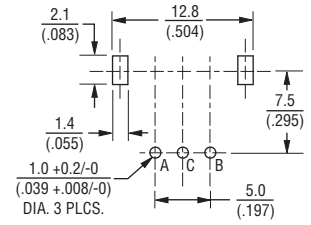
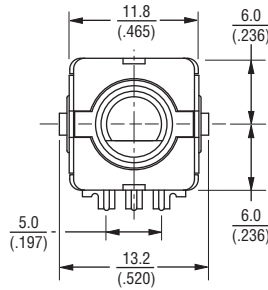
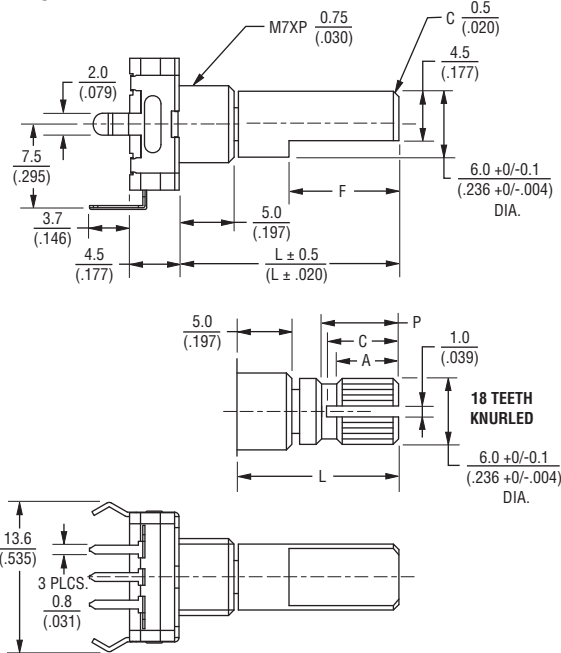
Level control, tuning and timer settings in:

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

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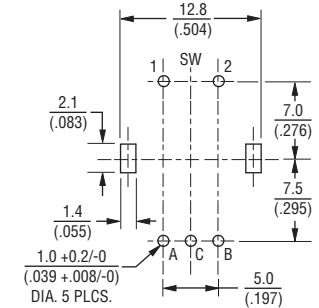
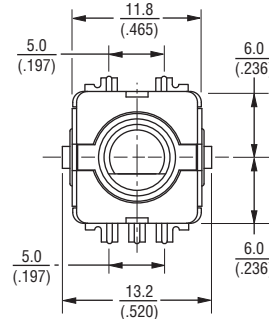
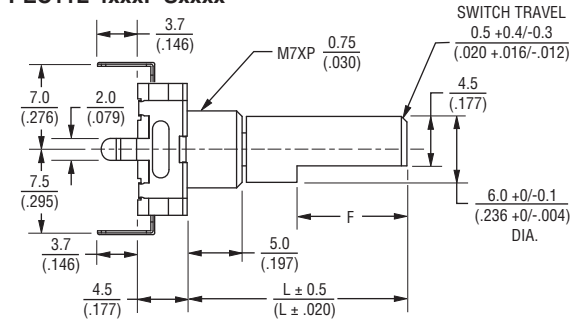
Product Dimensions

PEC11L-4xxxF-Nxxxx

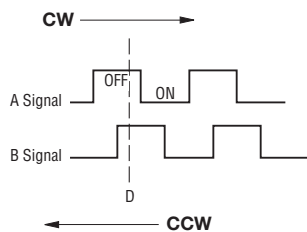


L	B	F	P	A	C	Dim.	Tol.
15 (.591)	5.0 (.197)	7.0 (.276)	7.0 (.276)	6.0 (.236)	7.0 (.276)	<10.0 (<.394)	±0.3 (±.012)
20 (.787)	7.0 (.276)	10.0 (.394)	7.0 (.276)	6.0 (.236)	7.0 (.276)	10.0 ~ 100 (.394 ~ 3.937)	±0.5 (±.020)
25 (.984)	7.0 (.276)	12.0 (.472)	12.0 (.472)	10.0 (.394)	11.0 (.433)	DIMENSIONS: $\frac{MM}{(INCHES)}$	

PEC11L-4xxxF-Sxxxx



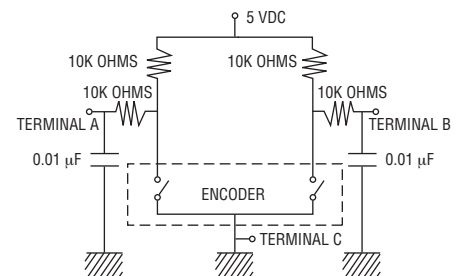
Quadrature Output Table



Switch Circuit



Suggested Filter Circuit



REV. 11/13

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