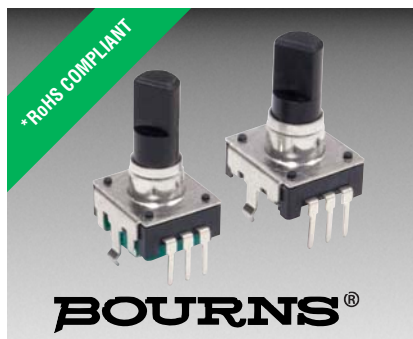




Features

- Compact design, long life and high reliability
- Momentary push switch option
- Available in a wide variety of configurations to meet many user requirements



PEC12R - 12 mm Incremental Encoder

Electrical Characteristics

Output.....	2-bit quadrature code
Contact Rating.....	10 mA @ 5 VDC
Insulation Resistance.....	10 megohms @ 250 VDC
Dielectric Withstanding Voltage	
Sea Level.....	50 VAC minimum
Electrical Travel.....	Continuous
Contact Bounce (15 RPM).....	2.0 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.....	30,000 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).....	2.04 kgf (4.5 lbs.) minimum
Weight.....	3 gm (0.1 oz.) maximum
Terminals.....	Printed circuit board terminals
Terminals.....	Printed circuit board terminals
Soldering Condition	
Wave Soldering.....	Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux: 260 °C max. for 3 ± 1 sec.
Hand Soldering.....	Not recommended
Hardware.....	One flat washer and one mounting nut supplied with each encoder with bushing

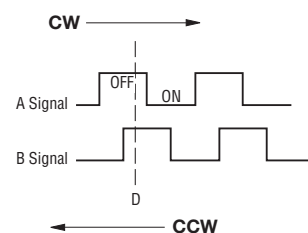
Switch Characteristics

Switch Type.....	Contact Push ON Momentary SPST
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.)
Contact Resistance.....	100 milliohms @ 5 VDC

How To Order

Model.....	PEC12R - 4 0 20 F - S 0012
Terminal/Bushing Configuration	
2 = Vertical Mount - Radial PC Pin/No Bushing	
3 = Horizontal Mount - Axial PC Pin/with Bushing	
4 = Horizontal Mount - Axial PC Pin/No Bushing	
Detent Option	
0 = No Detents	
1 = 12 Detents (available with 12 pulses only)	
2 = 24 Detents	
Standard Shaft Length	
15 = 15.0 mm (Horizontal Mount/No Bushing only)	22 = 22.5 mm
17 = 17.5 mm	25 = 25.0 mm
20 = 20.0 mm	30 = 30.0 mm
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	

Quadrature Output Table



*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.

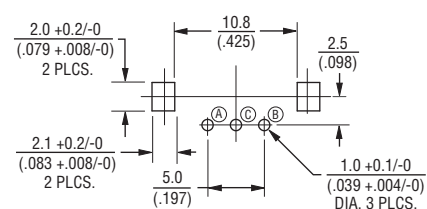
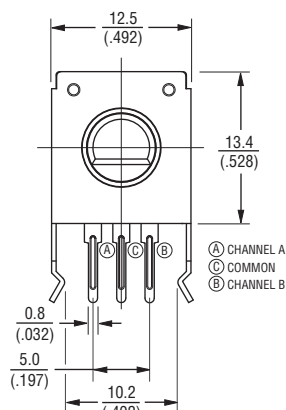
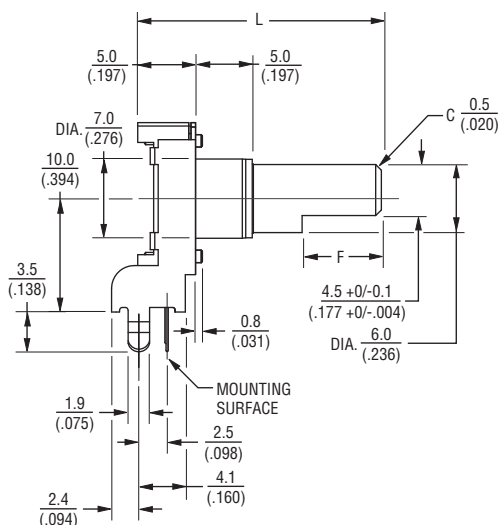
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

Level control, tuning and timer settings in:

- ## PEC12R - 12 mm Incremental Encoder

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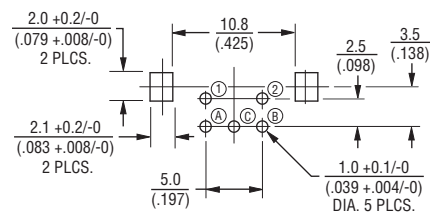
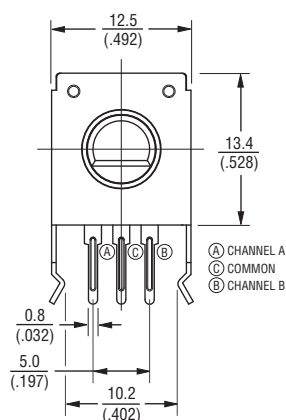
PEC12R-2xxxF-Nxxxx (Vertical Mount - Radial PC Pin/No Bushing, No Switch)



Technical drawing of a 1/2 inch NPT female fitting with a 1/2 inch NPT male plug. The drawing shows the assembly with dimensions for both parts. Key dimensions include:

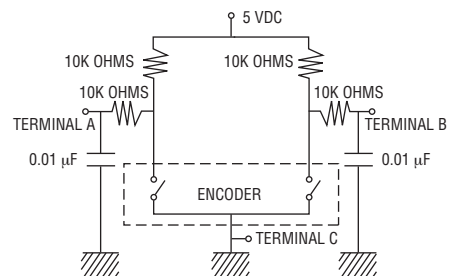
- Overall length: L
- Plug length: 5.0 ($.197$)
- Plug outer diameter: 7.0 ($.276$)
- Plug thread diameter: 6.0 ($.236$)
- Plug thread pitch: 0.5 ($.020$)
- Plug thread travel: C
- Plug thread length: F
- Plug thread diameter: $4.5 +0/-0.1$ ($.177 +0/-0.004$)
- Plug thread pitch: 0.8 ($.031$)
- Plug thread diameter: 3.5 ($.138$)
- Plug thread pitch: 1.9 ($.075$)
- Plug thread diameter: 2.4 ($.094$)
- Plug thread pitch: 3.5 ($.138$)
- Plug thread pitch: 5.1 ($.201$)
- Plug thread diameter: 6.0 ($.236$)
- Plug thread pitch: $4.5 +0/-0.1$ ($.177 +0/-0.004$)
- Plug thread pitch: 0.8 ($.031$)
- Plug thread diameter: 3.5 ($.138$)
- Plug thread pitch: 1.9 ($.075$)
- Plug thread diameter: 2.4 ($.094$)

The mounting surface is indicated.



1 2

Suggested Filter Circuit



L	$\frac{17.5}{(.688)}$	$\frac{20.0}{(.787)}$	$\frac{22.5}{(.886)}$	$\frac{25.0}{(.984)}$	$\frac{30.0}{(1.181)}$
F	$\frac{5.0}{(.197)}$	$\frac{7.0}{(.276)}$	$\frac{7.0}{(.276)}$	$\frac{12.0}{(.472)}$	$\frac{12.0}{(.472)}$

$$\begin{aligned} \text{TOLERANCE: } \frac{<10}{(<.400)} &= \frac{\pm 0.3}{(\pm .012)} \\ \frac{\geq 10}{(\geq .400)} &= \frac{\pm 0.5}{(\pm .020)} \end{aligned}$$

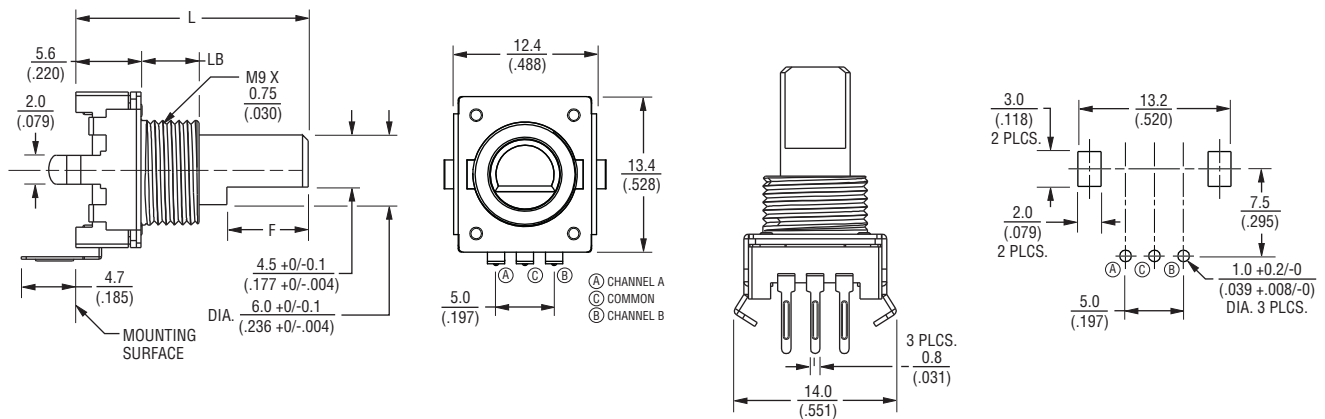
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PEC12R - 12 mm Incremental Encoder

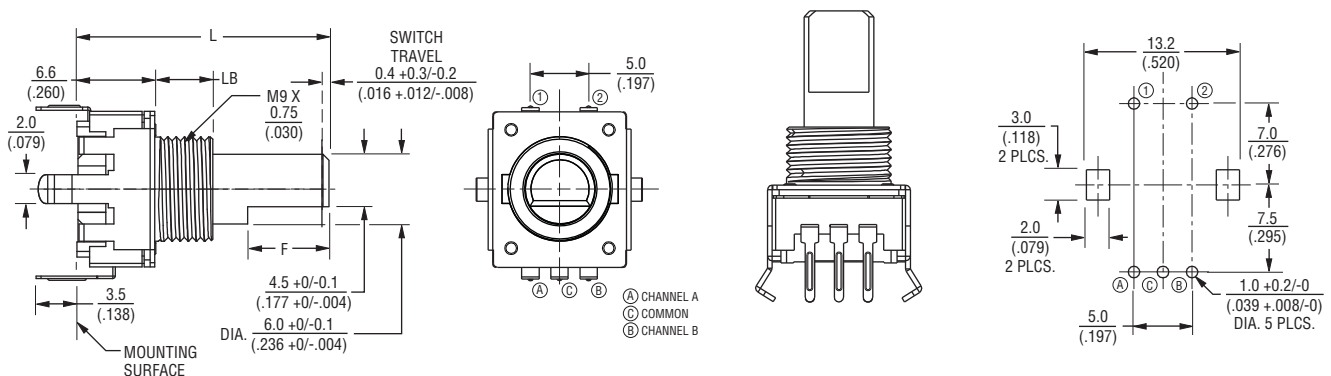
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Product Dimensions

PEC12R-3xxxF-Nxxxx (Horizontal Mount - Axial PC Pin/with Bushing, No Switch)



PEC12R-3xxxF-Sxxxx (Horizontal Mount - Axial PC Pin/with Bushing, Push Momentary Switch)



L	17.5 (.688)	20.0 (.787)	22.5 (.886)	25.0 (.984)	30.0 (1.181)
LB	5.0 (.197)	5.0 (.197)	7.0 (.276)	7.0 (.276)	7.0 (.276)
F	5.0 (.197)	7.0 (.276)	7.0 (.276)	12.0 (.472)	12.0 (.472)

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

TOLERANCE: $\frac{<10}{(<.400)} = \frac{\pm 0.3}{(\pm .012)}$

$\frac{\geq 10}{(\geq .400)} = \frac{\pm 0.5}{(\pm .020)}$

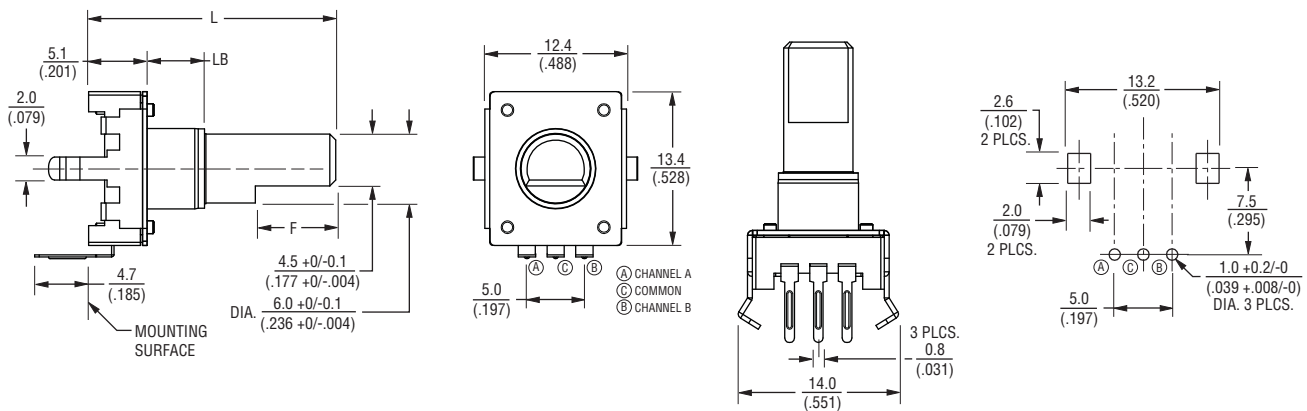
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PEC12R - 12 mm Incremental Encoder

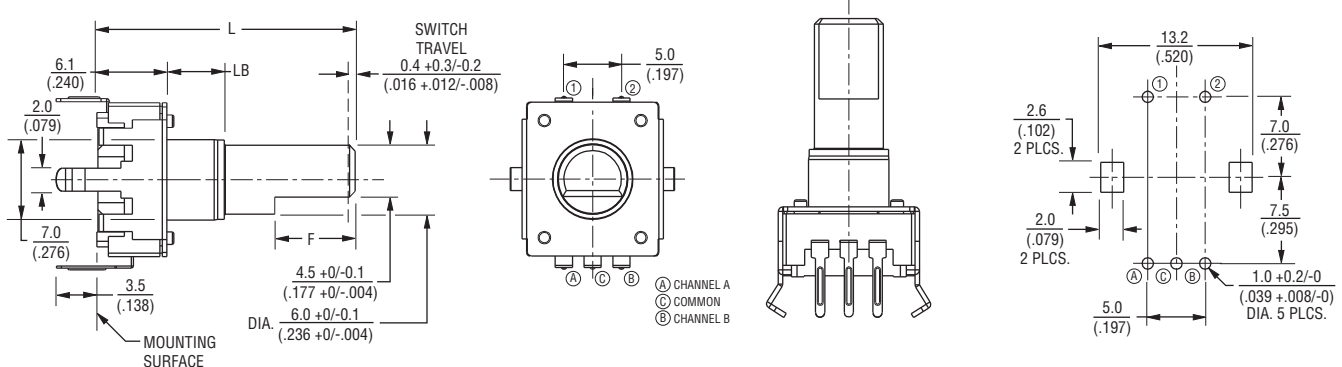
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Product Dimensions

PEC12R-4xxxF-Nxxxx (Horizontal Mount - Axial PC Pin/No Bushing, No Switch)



PEC12R-4xxxF-Sxxxx (Horizontal Mount - Axial PC Pin/No Bushing, Push Momentary Switch)



L	15.0 (.591)	17.5 (.688)	20.0 (.787)	22.5 (.886)	25.0 (.984)	30.0 (1.181)
LB	2.0 (.079)	5.0 (.197)	5.0 (.197)	5.0 (.197)	5.0 (.197)	5.0 (.197)
F	5.0 (.197)	5.0 (.197)	7.0 (.276)	7.0 (.276)	12.0 (.472)	12.0 (.472)

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

TOLERANCE: $\frac{<10}{(<.400)} = \frac{\pm 0.3}{(\pm .012)}$
 $\frac{\geq 10}{(\geq .400)} = \frac{\pm 0.5}{(\pm .020)}$

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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
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- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

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- Защиту от снятия компонента с производства.
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