Features

- Push switch option
- Compact, rugged design
- High reliability
- Metal bushing/shaft

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*RoHS COMPLIANT

PEC11R Series - 12 mm Incremental Encoder

Electrical Characteristics

Output..2-bit quadrature code
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 (15 RPM)...2.0 ms maximum**
RPM (Operating) ....60 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
   Detent ....30 to 90 gf-cm (0.41 to 1.25 oz-in)
   Running ....10 to 70 gf-cm (0.14 to 0.97 oz-in)
   Mounting ....10.2 kgf.cm (8.83 lb.-in.) maximum
Shaft Side Load (Static)...2.04 kgf (4.5 lbs.) minimum
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 max. for 3 ±1 sec.
     Hand Soldering .... Not recommended
Hardware .... One flat washer and one mounting nut supplied with each encoder

Switch Characteristics
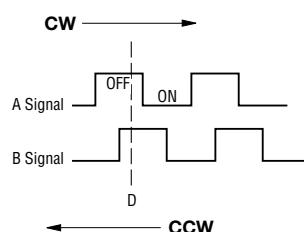
Switch Type ....Contact Push ON Momentary SPST
Power Rating (Resistive Load) .... 10 mA at 5 V DC
Switch Travel ....0.5 ± 0.3 mm
Switch Actuation Force ....610 ± 306 gf (8.47 ± 4.24 oz.-in.)
Contact Resistance ....100 milliohms @ 5 VDC

How To Order

PEC11R - 4 0 20 F - S 0012

Model
Terminal Configuration
  4 = PC Pin Horizontal/Rear Facing
Detent Option
  0 = No Detents (12, 18, 24 pulses)
  1 = 18 Detents (18 pulses)
  2 = 24 Detents (12, 24 pulses)
  3 = 12 Detents (12, 24 pulses)
Standard Shaft Length
  15 = 15.0 mm
  20 = 20.0 mm
  25 = 25.0 mm
  30 = 30.0 mm
Shaft Style
  F = Metal Flatted Shaft
  K = Metal Knurled Shaft[1]
Switch Configuration
  S = Push Momentary Switch
  N = No Switch
Resolution
  0012 = 12 Pulses per 360 ° Rotation
  0018 = 18 Pulses per 360 ° Rotation
  0024 = 24 Pulses per 360 ° Rotation

[1] Metal knurled shaft without switch is available in 15, 20 and 30 mm shaft lengths.
  Metal knurled shaft with push momentary switch is available in 15 and 20 mm shaft lengths.

Quadrature Output Table

CW ⟶

A Signal — OFF | ON

B Signal

D

⟵ CCW

## Applications

Level control, tuning and timer settings in:
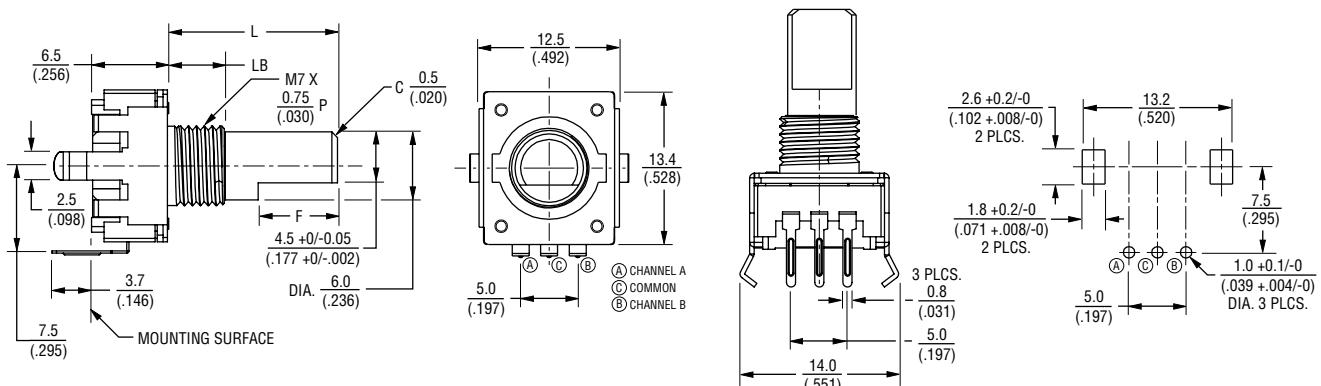
- Audio-visual equipment
- Consumer electric appliances
- Radios
- Musical instrumentation
- Communications equipment

# PEC11R Series - 12 mm Incremental Encoder
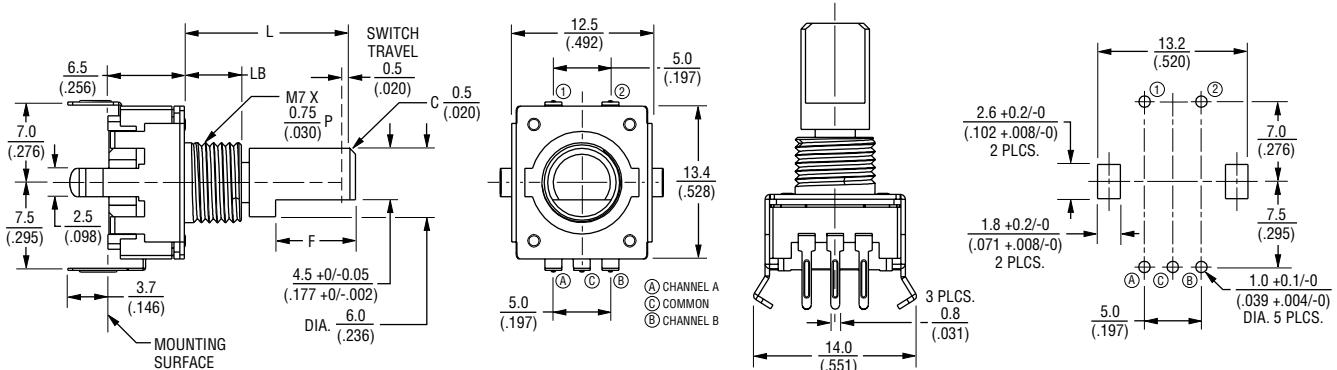
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## Product Dimensions

PEC11R-4xxxF-Nxxxx

PEC11R-4xxxF-Sxxxx

L	LB	F
15 (.591)	5.0 (.197)	7.0 (.276)
20 (.787)	7.0 (.276)	10.0 (.394)
25 (.984)	7.0 (.276)	12.0 (.472)
30 (1.181)	7.0 (.276)	12.0 (.472)
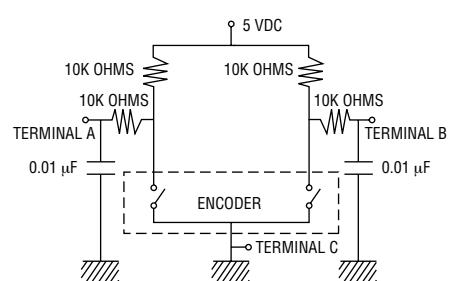
DIMENSIONS: $\dfrac{MM}{(INCHES)}$

TOLERANCES: $< \dfrac{10}{(.394)} = \pm \dfrac{0.3}{(.012)}$

$\geq \dfrac{10}{(.394)} = \pm \dfrac{0.5}{(.020)}$

Switch Circuit

Suggested Filter Circuit
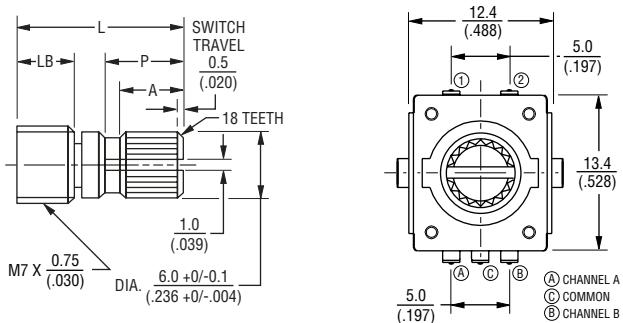
Product Dimensions

PEC11R-4xxxK-Nxxxx

L	LB	P	A
15 (.591)	5.0 (.197)	7.0 (.276)	6.0 (.236)
20 (.787)	7.0 (.276)	7.0 (.276)	6.0 (.236)
30 (1.181)	7.0 (.276)	16.0 (.630)	12.0 (.472)

PEC11R-4xxxK-Sxxxx

L	LB	P	A
15 (.591)	5.0 (.197)	7.0 (.276)	6.0 (.236)
20 (.787)	7.0 (.276)	7.0 (.276)	6.0 (.236)

DIMENSIONS: $\dfrac{MM}{(INCHES)}$

TOLERANCES: $< \dfrac{10}{(.394)} = \pm \dfrac{0.3}{(.012)}$

$\geq \dfrac{10}{(.394)} = \pm \dfrac{0.5}{(.020)}$

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

 PEC11R-4015F-N0024 PEC11R-4215F-N0024 PEC11R-4125F-S0018 PEC11R-4225F-N0024 PEC11R-4015F-S0024 PEC11R-4015K-N0024 PEC11R-4215K-N0024 PEC11R-4020F-S0024 PEC11R-4230F-S0024 PEC11R-4020F-S0018 PEC11R-4220F-S0024 PEC11R-4215K-S0024 PEC11R-4225F-S0012 PEC11R-4215K-S0012 PEC11R-4020K-S0024 PEC11R-4220F-N0024 PEC11R-4220K-S0024 PEC11R-4115F-N0018 PEC11R-4230F-N0024 PEC11R-4020F-N0024 PEC11R-4215F-S0012 PEC11R-4220F-N0012 PEC11R-4125F-N0018 PEC11R-4015K-S0024 PEC11R-4130F-S0018 PEC11R-4220F-S0012 PEC11R-4220K-N0024 PEC11R-4225F-S0024 PEC11R-4120F-S0018 PEC11R-4025F-N0024 PEC11R-4115F-S0018 PEC11R-4020F-N0012 PEC11R-4215F-N0012 PEC11R-4020F-S0012 PEC11R-4230F-S0012 PEC11R-4215F-S0024 PEC11R-4215K-N0012 PEC11R-4025F-S0018 PEC11R-4115K-S0018 PEC11R-4220K-S0012 PEC11R-4315K-S0012 PEC11R-4030F-N0018 PEC11R-4030F-S0018 PEC11R-4120K-N0018 PEC11R-4015F-S0012 PEC11R-4315F-N0012 PEC11R-4030F-N0024 PEC11R-4020K-S0012 PEC11R-4325F-N0012 PEC11R-4130F-N0018 PEC11R-4030F-S0024 PEC11R-4225K-S0024 PEC11R-4330F-S0012 PEC11R-4015F-N0018 PEC11R-4030F-S0012 PEC11R-4325F-S0012 PEC11R-4025F-N0012 PEC11R-4020K-N0012 PEC11R-4330F-N0012 PEC11R-4120K-S0018 PEC11R-4320F-N0012 PEC11R-4025F-N0018 PEC11R-4025F-S0024 PEC11R-4015F-S0018 PEC11R-4315F-S0012 PEC11R-4020K-N0018 PEC11R-4330F-S0024 PEC11R-4230F-N0012 PEC11R-4020F-N0018 PEC11R-4225F-N0012 PEC11R-4320F-S0012 PEC11R-4120F-N0018 PEC11R-4220K-N0012 PEC11R-4015F-N0012 PEC11R-4320K-N0012 PEC11R-4025F-S0012 PEC11R-4030F-N0012 PEC11R-4015K-N0018 PEC11R-4320K-S0012