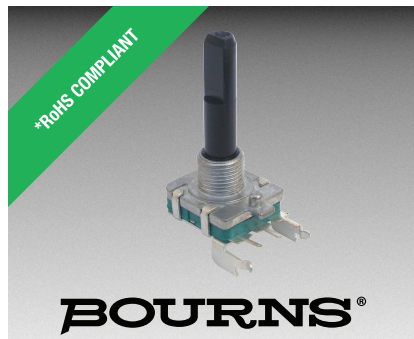




Features

- 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



PEC16 - 16 mm Incremental Encoder

Electrical Characteristics

Output.....	2-bit quadrature code
Closed Circuit Resistance	3 ohms maximum
Contact Rating	1 mA @ 5 VDC
Insulation Resistance	10 megohms @ 50 VDC
Dielectric Withstanding Voltage	
Sea Level.....	50 VAC minimum
Electrical Travel	Continuous
Contact Bounce (15 RPM).....	5.0 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.....	100,000 cycles minimum
Switch Life	20,000 cycles minimum
IP Rating.....	IP 40
Moisture Sensitivity Level	1
ESD Classification (HBM).....	N/A

Mechanical Characteristics

Mechanical Angle	360 ° continuous
Torque	
Detent	30 to 90 gf-cm (0.41 to 1.24 oz.-in)
Running	10 to 70 gf-cm (0.13 to 0.97 oz.-in)
Mounting	10.2 kgf. cm (8.83 lb.-in.) maximum
Shaft Side Load (Static).....	3.06 kgf (6.7 lbs.) minimum
Weight	8 gm (0.28 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 3-5 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
Power Rating (Resistive Load).....	10 mA at 5 V DC
Switch Travel	0.5 +0.4/-0.3 mm
Switch Actuation Force	360 +153/-102 gf (5 +2.1/-1.4 oz.-in.)

How To Order

Model	PEC16 - 4 0 20 F - S 0012
Terminal Configuration	
2 = PC Pin Vertical/Down Facing 4 = PC Horizontal/Rear Facing	
Detent Option	
0 = No Detents 1 = 12 Detents 2 = 24 Detents	
Standard Shaft Length	
15 = 15 mm 25 = 25.0 mm ¹	
20 = 20.0 mm 30 = 30.0 mm ¹	
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	

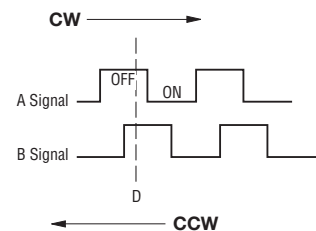
¹ Not available with switch.

Additional Information

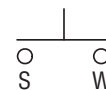
Click these links for more information:



Quadrature Output Table



Switch Circuit



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. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.



CAUTION

Do not store product in high temperature and humidity, direct sunlight and/or places where corrosive gases may be generated. Please use product within 6 months from the date of delivery and promptly after unpacking.

Level control, tuning and timer settings in:

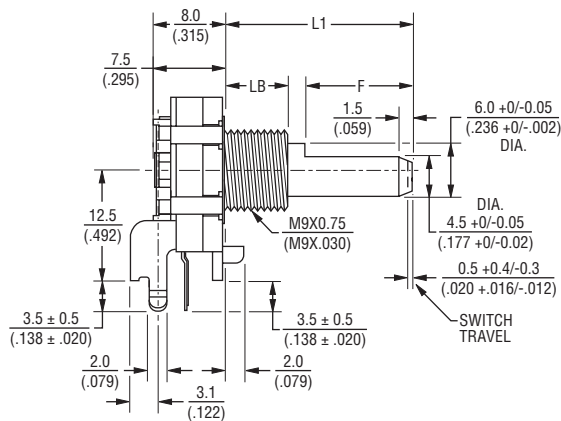
- Audio-visual equipment
- Consumer electric appliances
- Radios
- Musical instrumentation
- Communications equipment

PEC16 - 16 mm Incremental Encoder

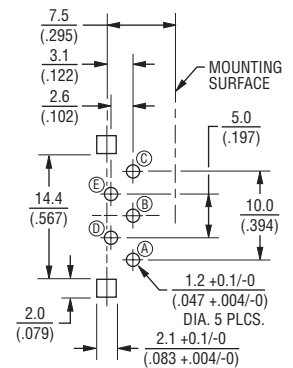
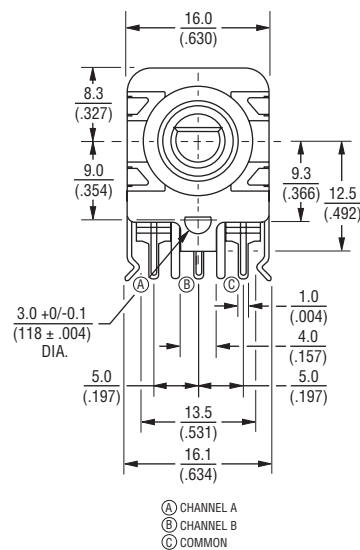
BOURNS®

Product Dimensions

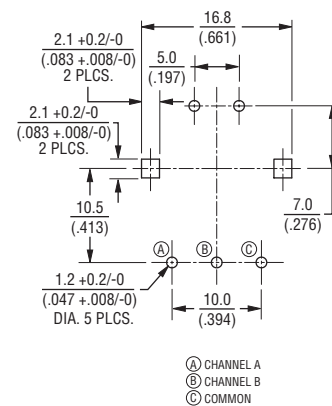
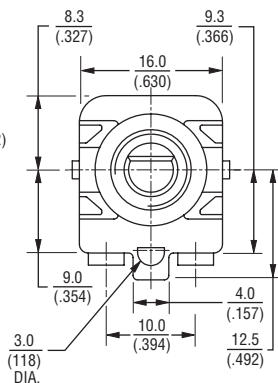
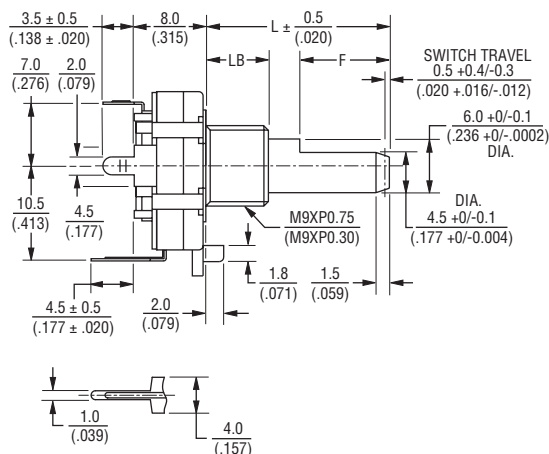
PEC16-2xxxF-Sxxxx



L1	$\frac{15.0}{(.591)}$	$\frac{20.0}{(.787)}$	$\frac{25.0}{(.984)}$	$\frac{30.0}{(1.181)}$
LB	$\frac{5.0}{(.197)}$	$\frac{7.0}{(.276)}$	$\frac{7.0}{(.276)}$	$\frac{7.0}{(.276)}$
F	$\frac{7.0}{(.276)}$	$\frac{12.0}{(.472)}$	$\frac{12.0}{(.472)}$	$\frac{12.0}{(.472)}$



PEC16-4xxF-Sxxx



L	$\frac{15.0}{(.591)}$	$\frac{20.0}{(.787)}$
LB	$\frac{5.0}{(.197)}$	$\frac{7.0}{(.276)}$
F	$\frac{7.0}{(.276)}$	$\frac{12.0}{(.472)}$

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

Specifications are subject to change without notice.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

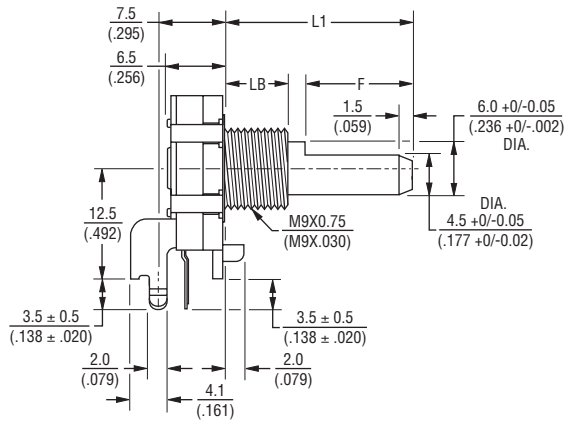
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PEC16 - 16 mm Incremental Encoder

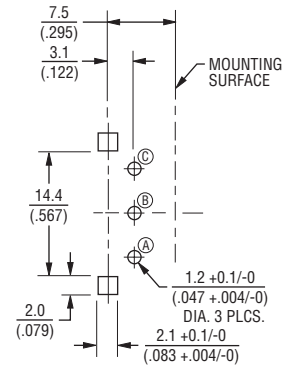
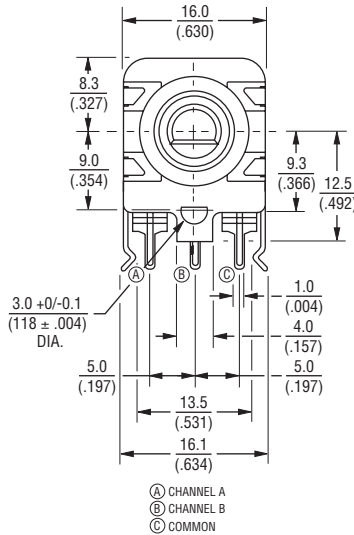
BOURNS®

Product Dimensions

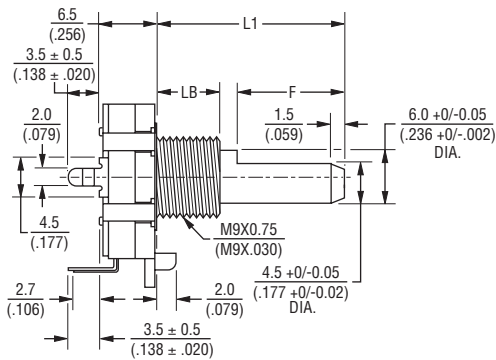
PEC16-2xxxF-Nxxxx



L1	15.0 (.591)	20.0 (.787)	25.0 (.984)	30.0 (1.181)
LB	5.0 (.197)	7.0 (.276)	7.0 (.276)	7.0 (.276)
F	7.0 (.276)	12.0 (.472)	12.0 (.472)	12.0 (.472)

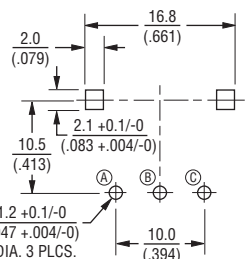
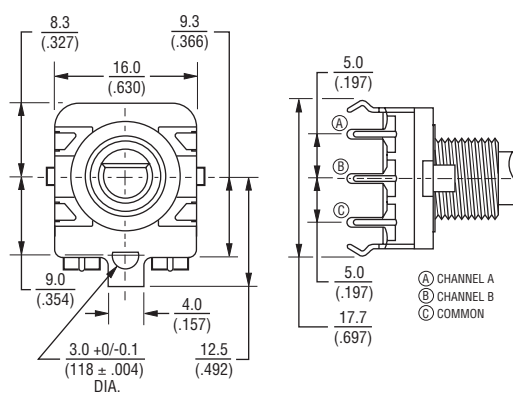


PEC16-4xxxF-Nxxxx

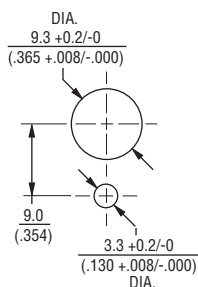


L1	15.0 (.591)	20.0 (.787)	25.0 (.984)	30.0 (1.181)
LB	5.0 (.197)	7.0 (.276)	7.0 (.276)	7.0 (.276)
F	7.0 (.276)	12.0 (.472)	12.0 (.472)	12.0 (.472)

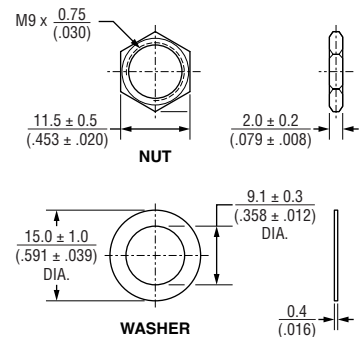
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$



Panel Hole Detail



Hardware



REV. 03/13/23

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Users should verify actual device performance in their specific applications.

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