



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	
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).....	3.06 kgf (6.7 lbs.) minimum
Weight	8 gm (0.28 oz.) maximum
Terminals	Printed circuit board terminals
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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

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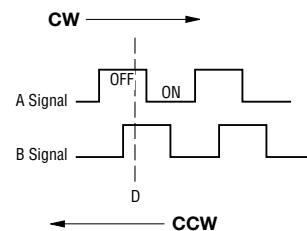


[SAMPLES](#)

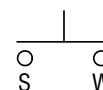


[CONTACT](#)

Quadrature Output Table



Switch Circuit



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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. 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:

- ## PEC16 - 16 mm Incremental Encoder

Product Dimensions

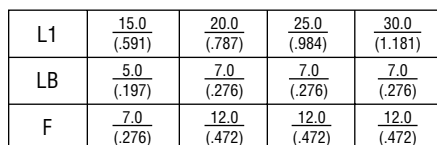
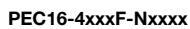
Figure 1 is a dimensional drawing of the mounting surface of the 100-pin DIP package. The drawing shows a top-down view of the package with dimensions in inches and millimeters. Key dimensions include: Pin 1 location (7.5 (.295) from left edge, 3.1 (.122) from top edge), Pin 2 location (2.6 (.102) from left edge), Pin 10 location (14.4 (.567) from left edge), Pin 20 location (10.0 (.394) from right edge), Pin 30 location (1.2 ± 0.1/0 (.047 ± .004/0) from right edge), Pin 40 location (2.1 ± 0.1/0 (.083 ± .004/0) from right edge), and Pin 50 location (2.0 (.079) from left edge). A dashed line indicates the mounting surface.

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	$\frac{7.0}{(.276)}$	$\frac{12.0}{(.472)}$	$\frac{12.0}{(.472)}$	$\frac{12.0}{(.472)}$

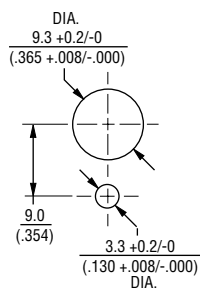
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BOURNS®

PEC16-2xxxF-Nxxxx



Panel Hole Detail



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