



## Features

- Low profile incremental encoder
- High-class rotational feel
- Haptic detent feedback
- RoHS compliant\*

# PER21 - 21 mm Low Profile Incremental Ring Encoder

### Additional Information

Click these links for more information:



### Electrical Characteristics

Output.....2-bit quadrature code  
 Contact Rating..... 10 mA @ 5 V DC  
 Insulation Resistance  
 ..... 100 megohms @ 250 V DC  
 Dielectric Withstanding Voltage  
 Sea Level.....300 V AC  
 Electrical Travel.....Continuous  
 Contact Bounce (15 RPM)..... 3 ms max.\*\*

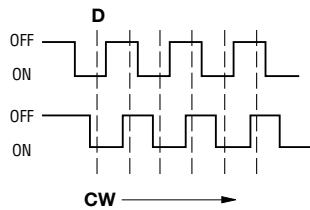
### Environmental Characteristics

Operating Temperature..... -10 °C to +60 °C  
 Storage Temperature..... -40 °C to +85 °C

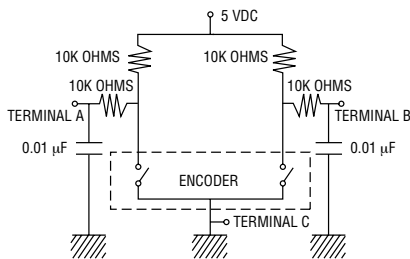
### Mechanical Characteristics

RPM (Operating) ..... 60 max.  
 Mechanical Angle ..... 360 ° continuous  
 Detent Torque ..... 70 to 170 gf-cm  
 Rotational Life..... 50,000 cycles  
 Soldering Condition  
 Wave Soldering..... 260 °C for 3 seconds  
 Manual Soldering... 300 °C for 3 seconds

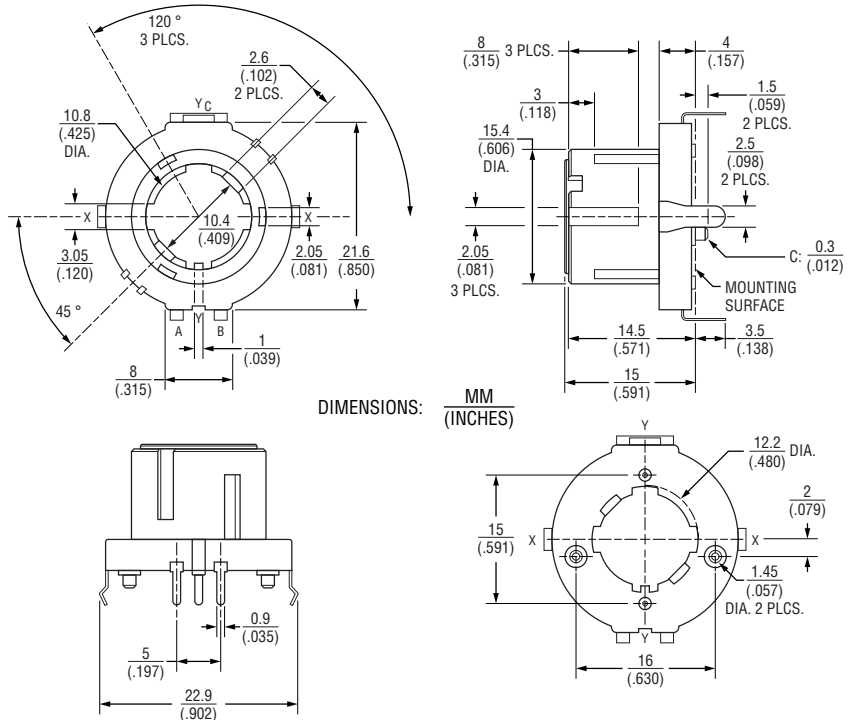
### Quadrature Output Table



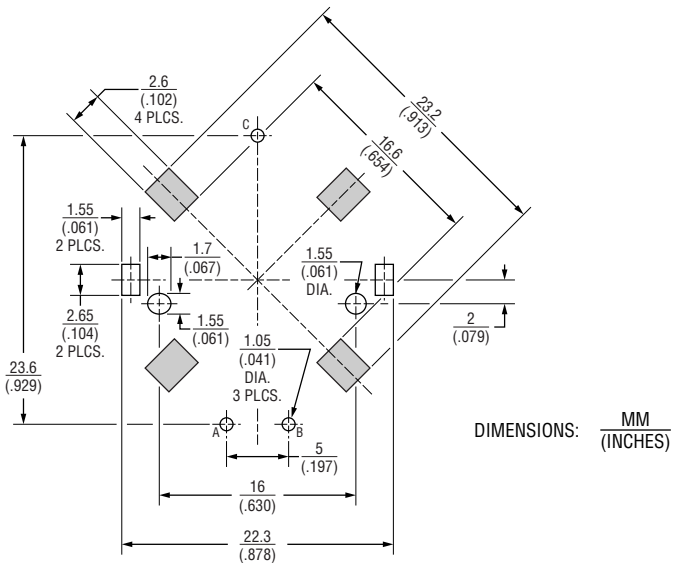
### Suggested Filter Circuit



### Product Dimensions



### Recommended PCB Layout



**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.

**WARNING**  
 Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://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](http://www.bourns.com/docs/legal/disclaimer.pdf).

# PER21 - 21 mm Low Profile Incremental Ring Encoder

**BOURNS®**

## How To Order

PER21 1 - P1 15 - N 0009

Model	_____	_____	_____	_____	_____
Number of Units	_____	_____	_____	_____	_____
1 = Single					
Orientation	_____	_____	_____	_____	_____
P = PC Pins Down Facing					
Detent Option	_____	_____	_____	_____	_____
1 = 18 Detents (9 Pulses)					
Ring Height	_____	_____	_____	_____	_____
15 = 15 mm					
Switch Configuration	_____	_____	_____	_____	_____
N = No Switch					
Resolution	_____	_____	_____	_____	_____
0009 = 9 Pulses per 360 ° Rotation					

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REV. 07/21

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Users should verify actual device performance in their specific applications.

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