

## Features

- Low profile absolute encoder
- High-class rotational feel
- Haptic detent feedback
- Sealed shaft
- Insulated plastic shaft and bushing
- RoHS compliant\*

## PAC18R - 18 mm Low Profile Absolute Encoder

### Electrical Characteristics

Output..... 4-bit gray code  
 Contact Rating..... 1 mA @ 10 VDC  
 Insulation Resistance  
 ..... 10 megohms minimum @ 500 VDC  
 Dielectric Withstanding Voltage  
 Sea Level..... 500 VAC minimum  
 Contact Resistance .... 100 ohms maximum

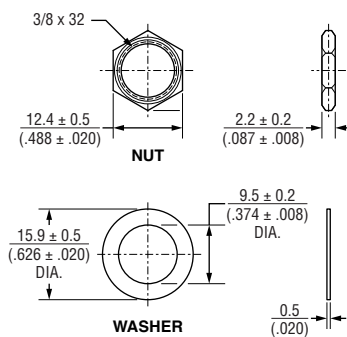
### Environmental Characteristics

Operating Temperature Range  
 ..... -35 °C to +70 °C (-22 °F to +158 °F)  
 Storage Temperature Range  
 ..... -40 °C to +80 °C (-40 °F to +185 °F)  
 IP Rating..... IP 64

### Mechanical Characteristics

RPM (Operating) ..... 60 maximum  
 Mechanical Angle ..... 360 ° continuous  
 Torque  
 Starting and Running ..... 10 to 200 gf-cm  
 Detent ..... 350 to 650 gf-cm  
 Mounting ..... 7 kgf-cm maximum  
 Rotational Life..... 30,000 cycles minimum  
 Soldering Condition  
 Wave Soldering..... 260 °C for 3 seconds  
 Manual Soldering... 350 °C for 3 seconds  
 Hardware..... One flat washer and one hex nut supplied with threaded bushing versions

### Hardware



**WARNING**  
 Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex. 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).

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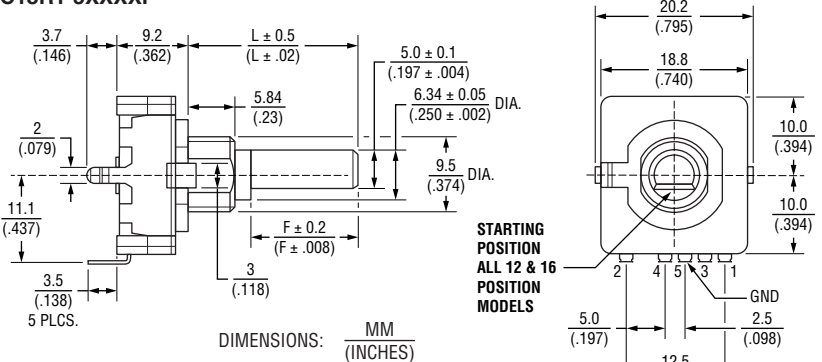
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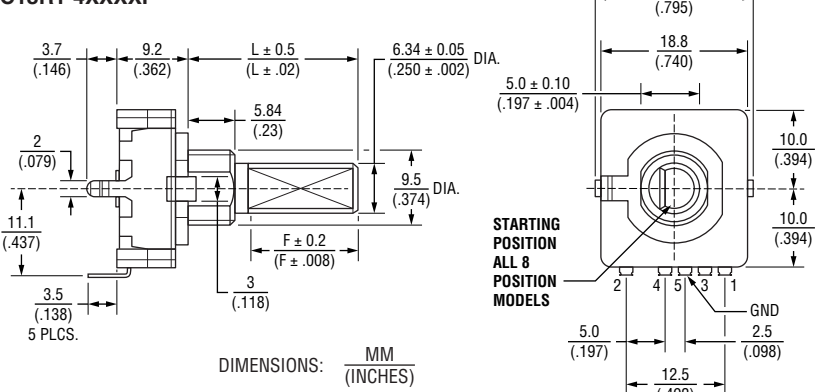
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### Product Dimensions

#### PAC18R1-3XXXXF



#### PAC18R1-4XXXXF

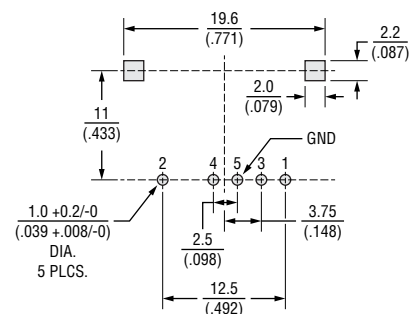


### Shaft Configurations

L	19.5 (.768)	21.5 (.846)	28.9 (1.138)
F	6.5 (.256)	13.66 (.548)	15.7 (.618)

Dimensions: MM (INCHES)

### Recommended PCB Layout



# PAC18R - 18 mm Low Profile Absolute Encoder



## Pin Out Code 8 Positions

Position	Angle in °	P1	P2	P3	P4
1	0	0	0	0	0
2	45	0	1	0	0
3	90	1	1	0	0
4	135	1	1	1	0
5	180	0	1	1	0
6	225	0	1	1	1
7	270	0	0	1	1
8	315	0	0	1	0

## Pin Out Code 12 Positions

Position	Angle in °	P1	P2	P3	P4
1	0	0	0	0	0
2	30	1	0	0	0
3	60	1	1	0	0
4	90	0	1	0	0
5	120	0	1	1	0
6	150	1	1	1	0
7	180	1	0	1	0
8	210	0	0	1	0
9	240	0	0	1	1
10	270	1	0	1	1
11	300	1	0	0	1
12	330	0	0	0	1

## Pin Out Code 16 Positions

Position	Angle in °	P1	P2	P3	P4
1	0	0	0	0	0
2	22.5	1	0	0	0
3	45	1	1	0	0
4	67.5	0	1	0	0
5	90	0	1	1	0
6	112.5	1	1	1	0
7	135	1	0	1	0
8	157.5	0	0	1	0
9	180	0	0	1	1
10	202.5	1	0	1	1
11	225	1	1	1	1
12	247.5	0	1	1	1
13	270	0	1	0	1
14	292.5	1	1	0	1
15	315	1	0	0	1
16	337.5	0	0	0	1

## How To Order

**PAC18R 1 - 4 1 D 19 F**

Model Series \_\_\_\_\_

Number of Units \_\_\_\_\_  
1 = Single

Orientation \_\_\_\_\_  
3 = PC-Pins Down Facing, Bushing without Thread  
4 = PC-Pins Down Facing, Bushing with Thread

Position Option \_\_\_\_\_  
1 = 8 Positions  
2 = 12 Positions  
3 = 16 Positions

Detents \_\_\_\_\_  
N = No Detents  
D = Detents (Positions)

Shaft Length \_\_\_\_\_  
19 = 19.5 mm  
21 = 21.5 mm  
28 = 28.9 mm

Shaft Type \_\_\_\_\_  
F = Insulated Flatted Shaft



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