

## 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

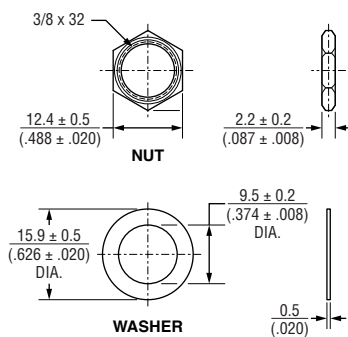
### Environmental Characteristics

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.

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### 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.

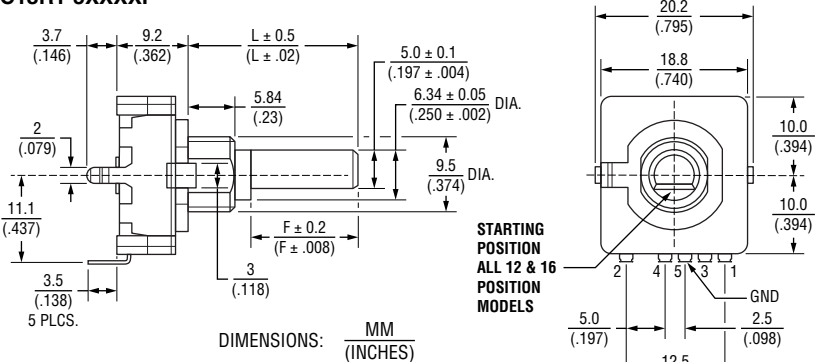
### Additional Information

Click these links for more information:

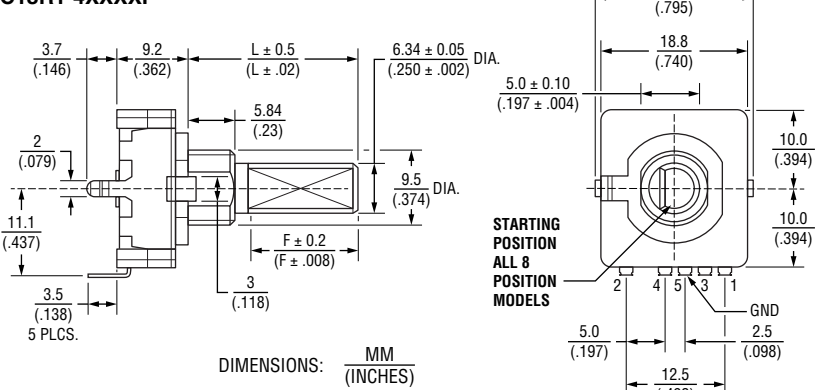


### Product Dimensions

#### PAC18R1-3XXXXF



#### PAC18R1-4XXXXF

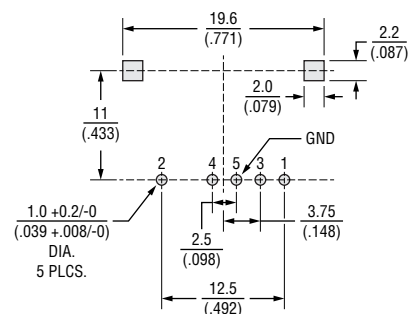


### Shaft Configurations

L	19.5 (0.768)	21.5 (0.846)	28.9 (1.138)
F	6.5 (0.256)	13.66 (0.548)	15.7 (0.618)

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



**Asia-Pacific:** Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

**EMEA:** Tel: +36 88 885 877 • Email: eurocus@bourns.com

**The Americas:** Tel: +1-951 781-5500 • Email: americus@bourns.com

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REV. 07/21

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