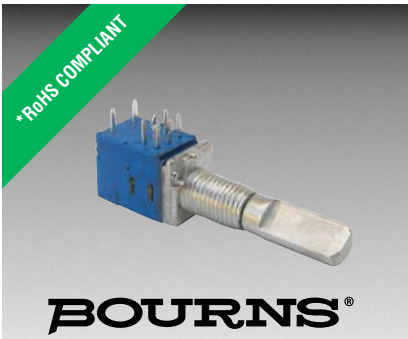




## Features

- Carbon element
- Ganging up to 8 sections available
- Knurled and flatted shaft styles
- Audio taper option
- Tracking error within 3 dB
- RoHS compliant\*



## PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

### Electrical Characteristics

Standard Resistance Range ..... 1 K ohms to 1 M ohms  
 Total Resistance Tolerance .....  $\pm 10\%$  or  $\pm 20\%$   
 Standard Tapers ..... Linear & audio  
 Maximum Operating Voltage ..... 150 VAC, 20 VDC  
 Rated Power  
   Linear Taper ..... 0.05 watts  
   Audio Taper ..... 0.025 watts  
 Noise ..... 100 mV max.  
 Insulation Resistance @ 250 VDC ..... 100 M ohms  
 Dielectric Withstanding Voltage ..... 300 VAC  
 End Resistance ..... 20 ohms max.  
 Tracking Error (-40 dB to 0 dB) .....  $\pm 3$  dB

### Environmental Characteristics

Operating Temperature ..... -10 °C to +50 °C  
 Rotational Life ..... 15,000 cycles  
 IP Rating ..... IP 40

### Switch Characteristics

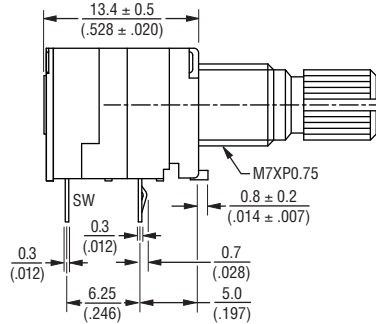
Contact Resistance ..... 50 milliohms max.  
 Rated Power ..... 3 A @ 16 VDC  
 Detent Torque ..... 400 g-cm max.  
 Switch Activation Angle ..... 50 ° max.

### Mechanical Characteristics

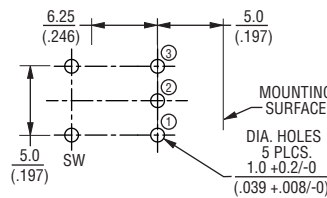
Mechanical Angle ..... 300 °  $\pm 10$  °  
 Running Torque ..... 10 to 250 g-cm  
 Stop Strength ..... 4.0 kg-cm  
 Shaft Push/Pull Strength ..... 5.0 kgf min.  
 Shaft Wobble ..... 0.6 x L/20 mm p-p max.  
 Mounting Torque ..... 7.0 kg-cm min.  
 Soldering Condition  
   Manual Soldering  
     ..... 96.5 Sn/3.0 Ag/0.5 Cu solid wire  
       or no-clean rosin cored wire  
       270 °C max. for 3 seconds  
   Wave Soldering  
     ..... 96.5 Sn/3.0 Ag/0.5 Cu solder  
       with no-clean flux  
       260 °C max. for 5 seconds  
 Wash Process ..... Not recommended  
 Mounting Hardware ..... One flat washer  
   and one mounting nut supplied  
   per potentiometer

### Product Dimensions

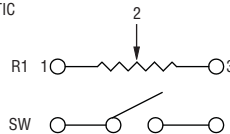
PTR901



RECOMMENDED PCB LAYOUT

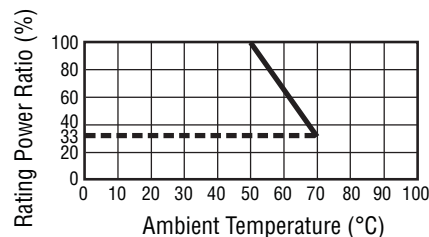


SCHEMATIC

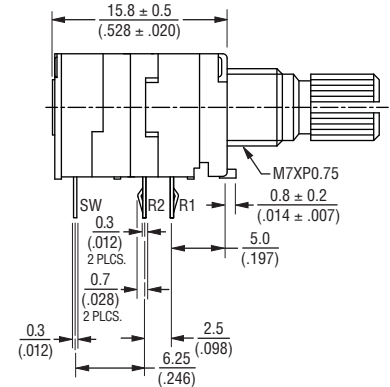


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

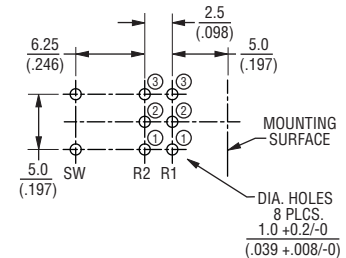
### Derating Curve



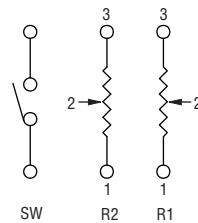
PTR902



RECOMMENDED PCB LAYOUT



SCHEMATIC



### Standard Resistance Table

| Resistance (Ohms) | Resistance Code |
|-------------------|-----------------|
| 1,000             | 102             |
| 2,000             | 202             |
| 5,000             | 502             |
| 10,000            | 103             |
| 20,000            | 203             |
| 50,000            | 503             |
| 100,000           | 104             |
| 200,000           | 204             |
| 500,000           | 504             |
| 1,000,000         | 105             |

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
 Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
 Users should verify actual device performance in their specific applications.

## Applications

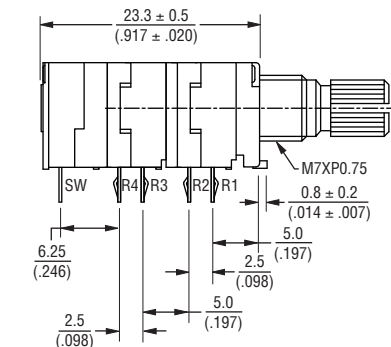
- Audio/TV sets
- Automotive sound systems
- Amplifiers/mixers/drum machines/synthesizers/DJ equipment
- Multimedia sound systems
- Portable electronics

## PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

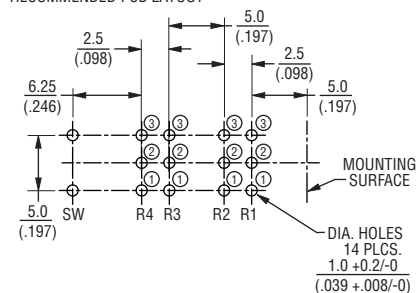
**BOURNS®**

### Product Dimensions

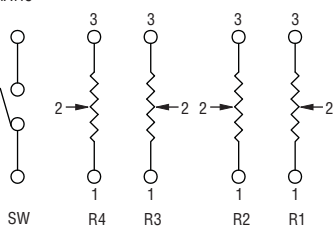
#### PTR904



#### RECOMMENDED PCB LAYOUT

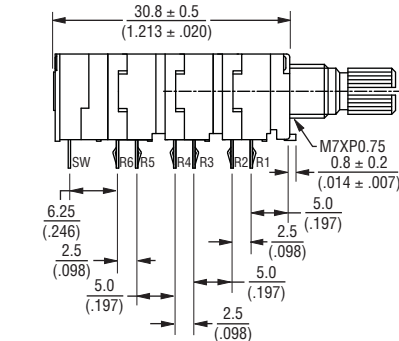


#### SCHEMATIC

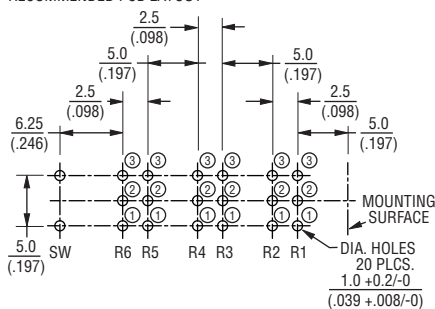


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

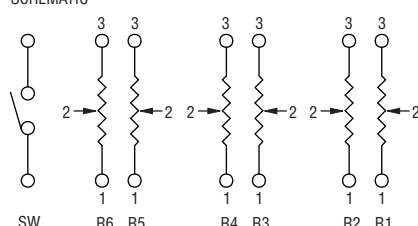
#### PTR906



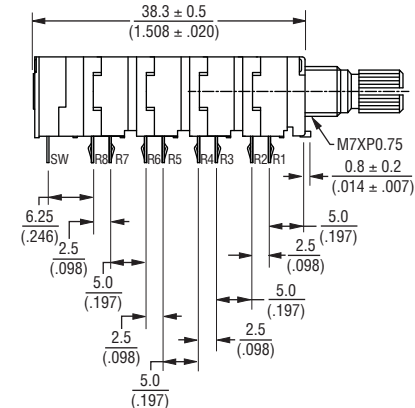
#### RECOMMENDED PCB LAYOUT



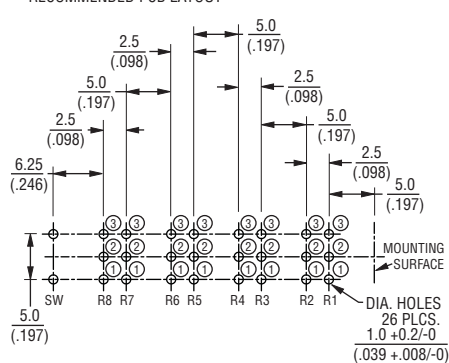
#### SCHEMATIC



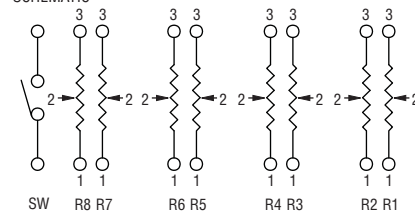
#### PTR908



#### RECOMMENDED PCB LAYOUT



#### SCHEMATIC



Specifications are subject to change without notice.

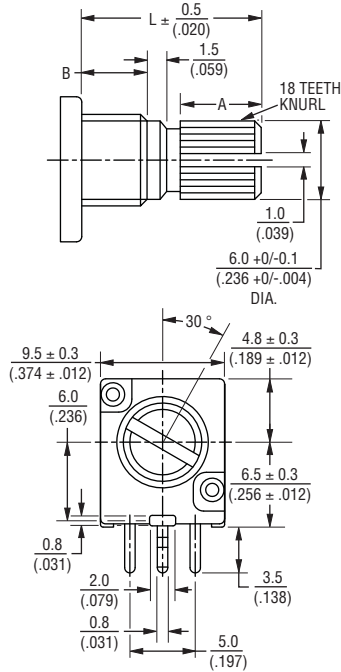
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# PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

**BOURNS®**

## Product Dimensions

### SHAFT STYLE "K"

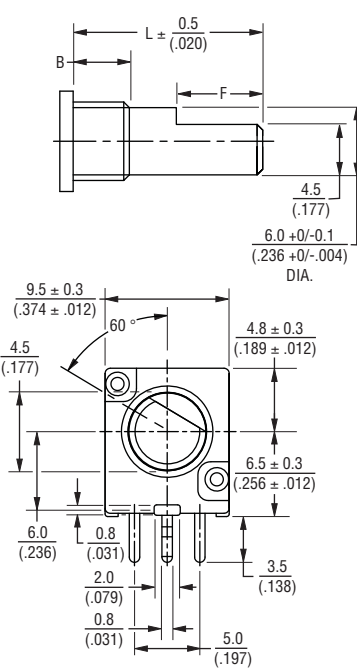


SHAFT SHOWN IN CCW POSITION

|   |              |              |              |
|---|--------------|--------------|--------------|
| L | 15<br>(.591) | 20<br>(.787) | 25<br>(.984) |
| B | 5<br>(.197)  | 7<br>(.276)  | 10<br>(.394) |
| A | 6<br>(.236)  | 10<br>(.394) | 12<br>(.472) |

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

### SHAFT STYLE "F"



SHAFT SHOWN IN CCW POSITION

|   |              |              |              |
|---|--------------|--------------|--------------|
| L | 15<br>(.591) | 20<br>(.787) | 25<br>(.984) |
| B | 5<br>(.197)  | 7<br>(.276)  | 10<br>(.394) |
| F | 7<br>(.276)  | 12<br>(.472) | 12<br>(.472) |

## How To Order

**PTR90 1 - 2 0 20 K - B 203**

Model

- PTR90 = With Rotary Switch

No. of Sections

- 1 = 1 Section
- 2 = 2 Sections
- 3 = 3 Sections
- 4 = 4 Sections
- 5 = 5 Sections
- 6 = 6 Sections
- 8 = 8 Sections

Pin Style

- 1 = PC Pins vertical/down facing and  $\pm 10\%$  Total Resistance Tolerance
- 2 = PC Pins vertical/down facing and  $\pm 20\%$  Total Resistance Tolerance

Center Detent Option

- 0 = No Detent
- 2 = Center Detent

Standard Shaft Length

- 15 = 15 mm
- 20 = 20 mm
- 25 = 25 mm

Shaft Styles

- K = Knurled Type Shaft (Metal) 18 Toothed Serration Type
- F = Flatted Metal Shaft

Resistance Taper (See Taper Charts)

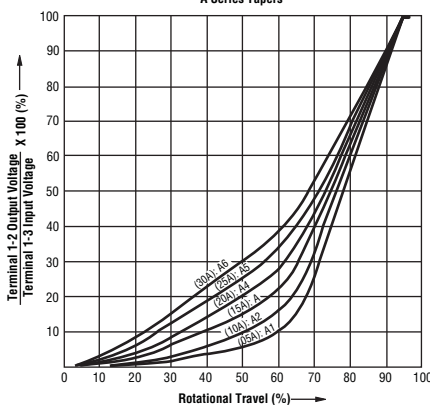
Taper Series followed by Curve Number

Resistance Code (See Table)

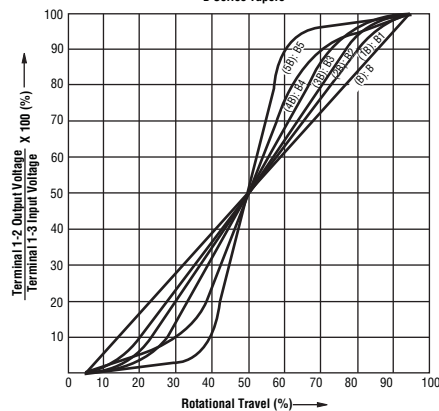
Other shaft styles available.

## Tapers

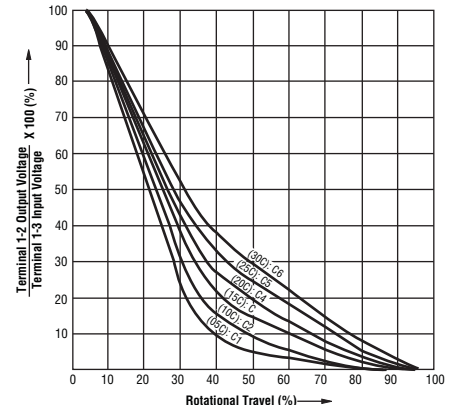
A Series Tapers



B Series Tapers



C Series Tapers



REV. 12/14

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