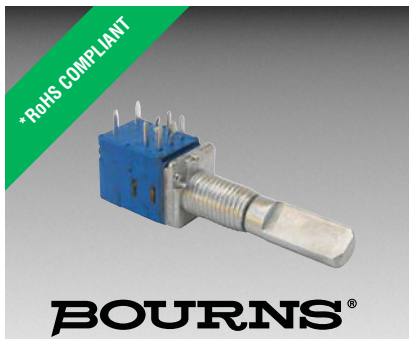




## Features

- 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

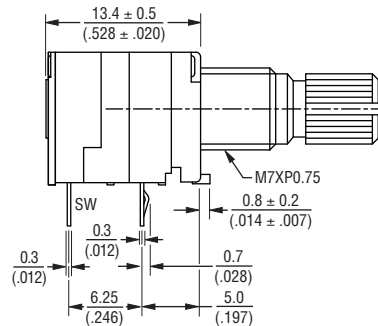
Contact Resistance ..... 50 milliohms max.  
 Rated Power ..... 3 A @ 16 VDC  
 Detent Torque ..... 400 g-cm max.  
 Switch Activation Angle ..... 50 ° max.

### Mechanical Characteristics

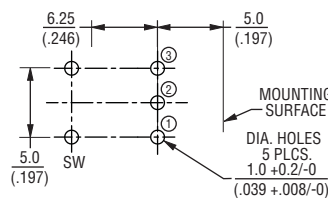
Mechanical Angle .....  $300^\circ \pm 10^\circ$   
 Running Torque ..... 10 to 250 g-cm  
 Stop Strength ..... 4.0 kg-cm  
 Shaft Push/Pull Strength ..... 5.0 kgf min.  
 Shaft Wobble ..... 0.6 x L/20 mm p-p max.  
 Mounting Torque ..... 7.0 kg-cm min.  
 Soldering Condition  
   Manual Soldering  
     ..... 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

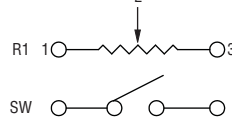
PTR901



RECOMMENDED PCB LAYOUT

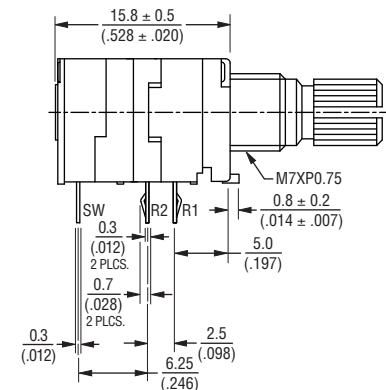


SCHEMATIC

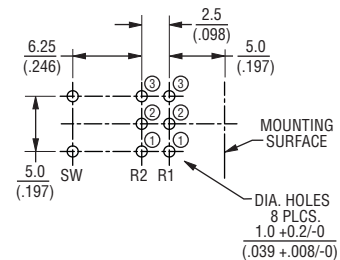


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

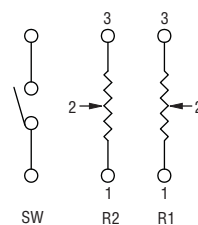
PTR902



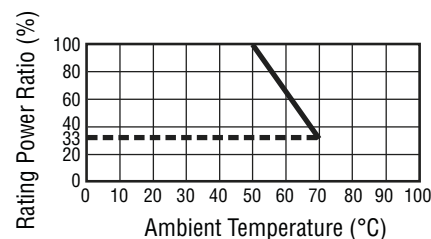
RECOMMENDED PCB LAYOUT



SCHEMATIC



### Derating Curve



### 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             |



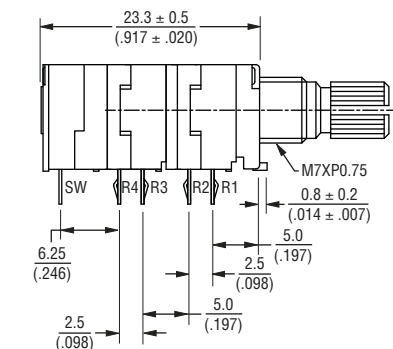
**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
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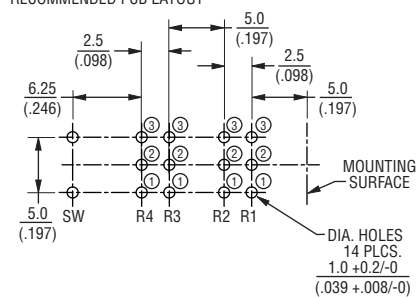
- Audio/TV sets
- Amplifiers/mixers/drum machines/synthesizers/DJ equipment
- Multimedia sound systems
- Portable electronics

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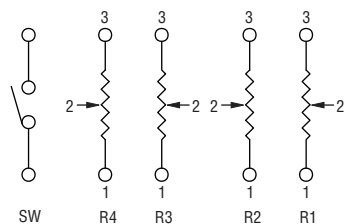
**PTR904**



## RECOMMENDED PCB LAYOUT

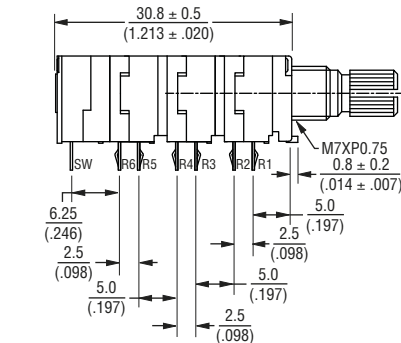


### SCHEMATIC

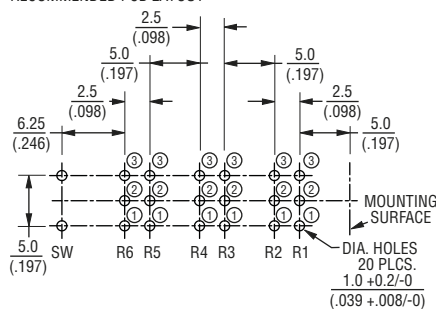


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

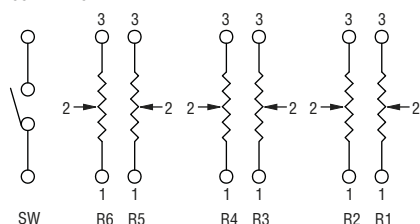
**PTR906**



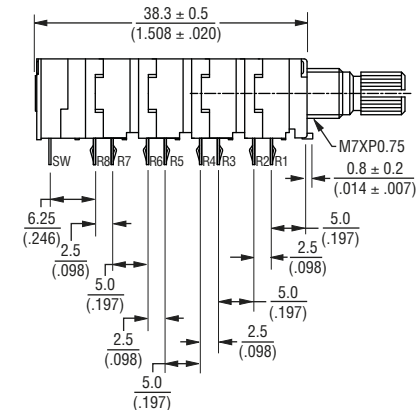
## RECOMMENDED PCB LAYOUT



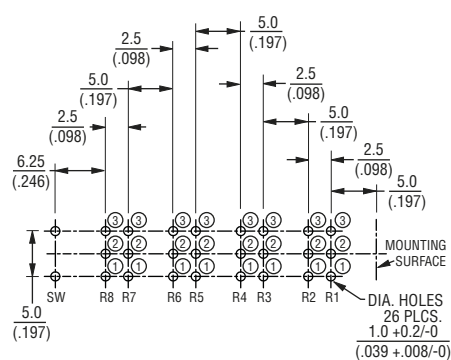
SCHEMATIC



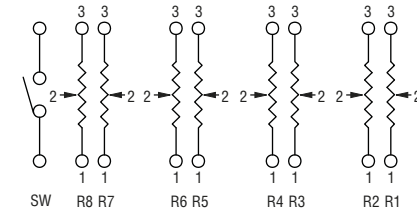
PTR908



## RECOMMENDED PCB LAYOUT



SCHEMATIC



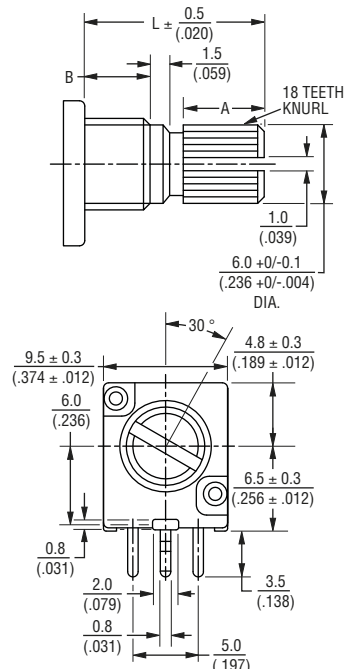
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# PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

**BOURNS®**

## Product Dimensions

### SHAFT STYLE "K"

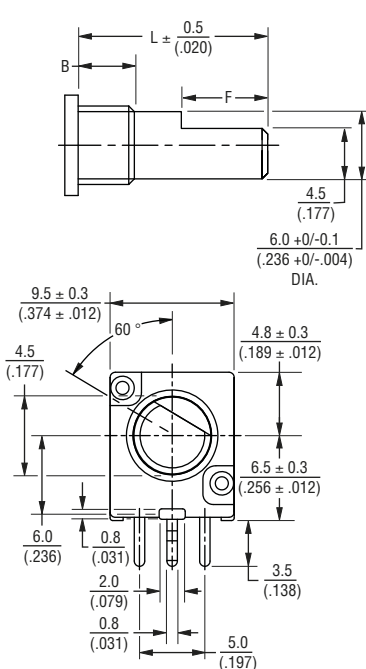


SHAFT SHOWN IN CCW POSITION

|   |              |              |              |
|---|--------------|--------------|--------------|
| 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

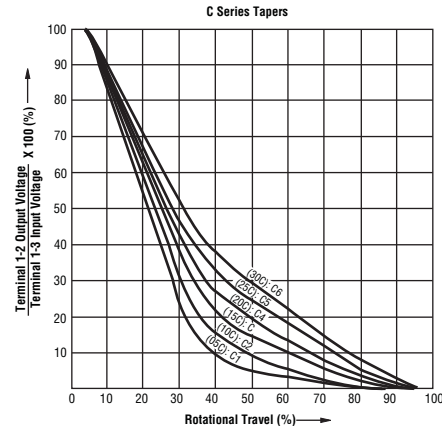
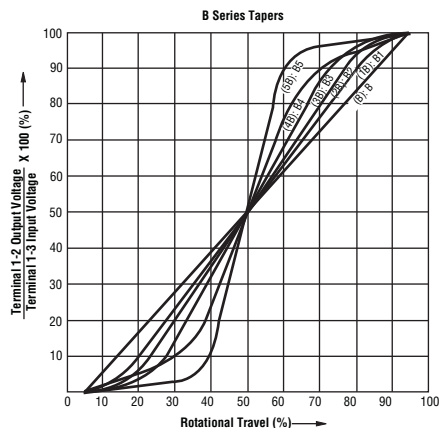
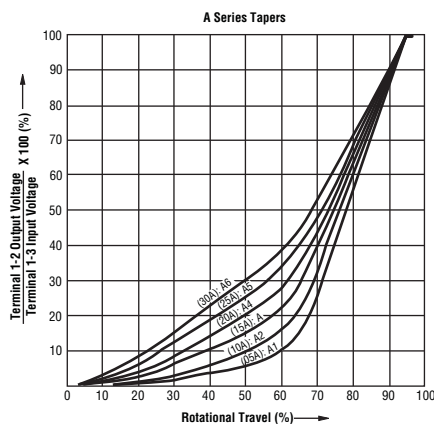
- K = Knurled Type Shaft (Metal) 18 Toothed Serration Type
- F = Flatted Metal Shaft

Resistance Taper (See Taper Charts)  
Taper Series followed by Curve Number

Resistance Code (See Table)

Other shaft styles available.

## Tapers



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| <a href="#"><u>PTR901-2015K-A103</u></a> | <a href="#"><u>PTR901-2015K-B103</u></a> | <a href="#"><u>PTR901-2015K-B104</u></a> | <a href="#"><u>PTR901-2020K-A103</u></a> | <a href="#"><u>PTR901-2020K-A204</u></a> |
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