

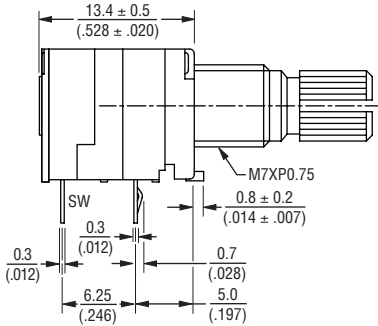
## Features

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

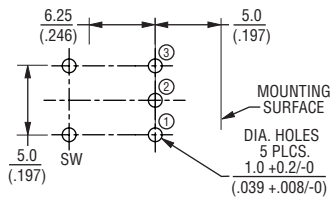
## PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

### Product Dimensions

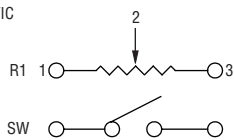
#### PTR901



#### RECOMMENDED PCB LAYOUT

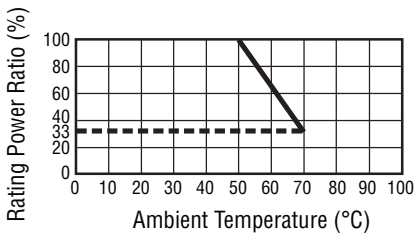


#### SCHEMATIC



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

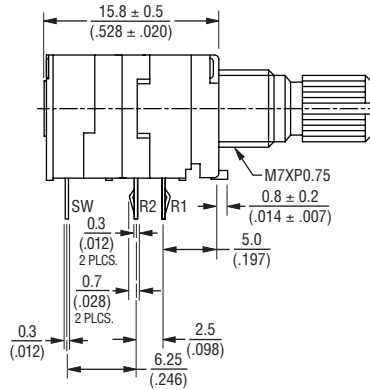
### Derating Curve



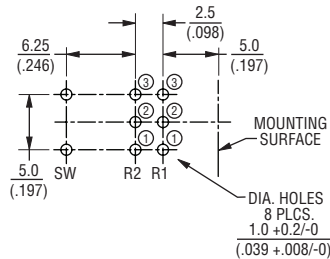
**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*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).

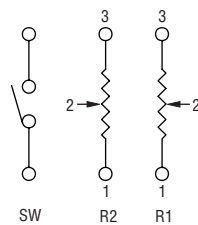
#### PTR902



#### 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             |



### 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 SELECTOR](#) [TECHNICAL LIBRARY](#) [INVENTORY](#) [SAMPLES](#) [CONTACT](#)

### Electrical Characteristics

Standard Resistance Range ..... 1 K ohms to 1 M ohms  
Total Resistance Tolerance ..... ±10 % or ±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) ..... ±3 dB

### Environmental Characteristics

Operating Temperature Range ..... -10 °C to +50 °C  
Storage Temperature Range ..... -20 °C to +70 °C  
Storage Humidity Range ..70 % RH max.  
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 ° ±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  
350 °C max. for 3 seconds  
Wave Soldering  
.....96.5 Sn/3.0 Ag/0.5 Cu solder  
with no-clean flux  
260 °C ±5 °C for 3 ±1 seconds  
Wash Process ..... Not recommended  
Mounting Hardware ..... One flat washer  
and one mounting nut supplied  
per potentiometer

## Applications

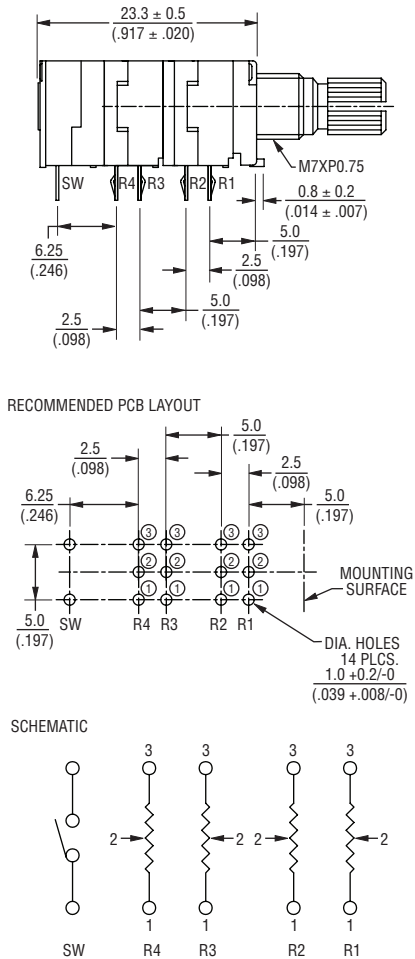
- Audio/TV sets
- Automotive sound systems
- Amplifiers/mixers/drum machines/synthesizers/DJ equipment
- Multimedia sound systems
- Portable electronics

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

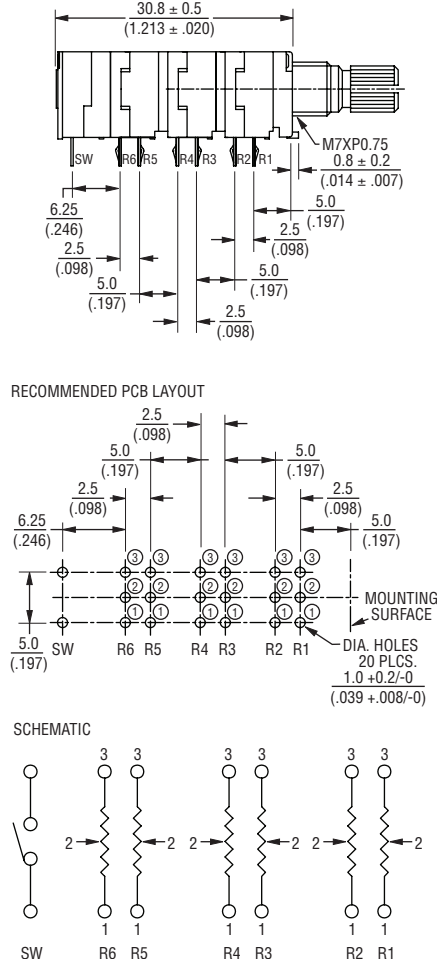
**BOURNS®**

### Product Dimensions

#### PTR904

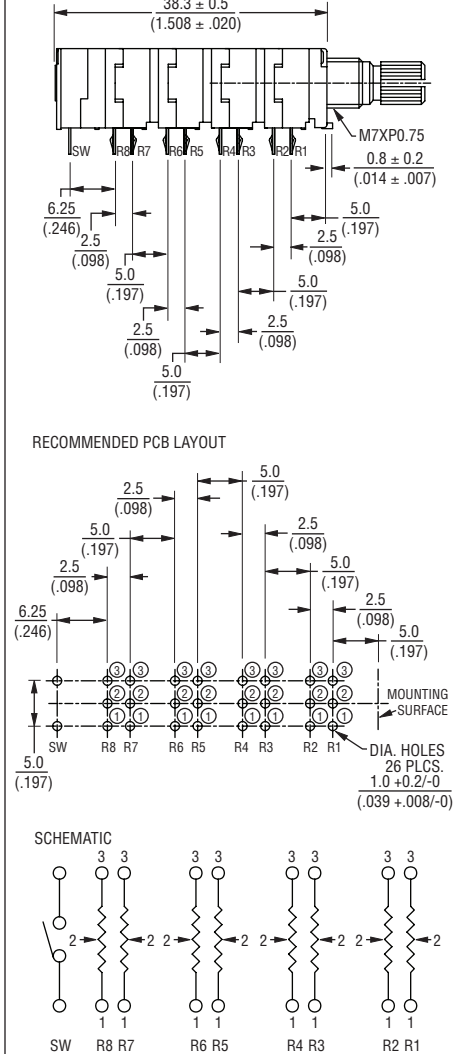


#### PTR906



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

#### PTR908



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Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

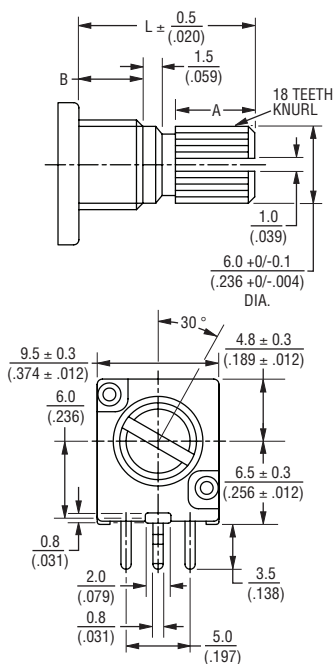
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# PTR90 Series – 9 mm Multi-Ganged Potentiometer w/Rotary Switch



## Product Dimensions

### SHAFT STYLE "K"

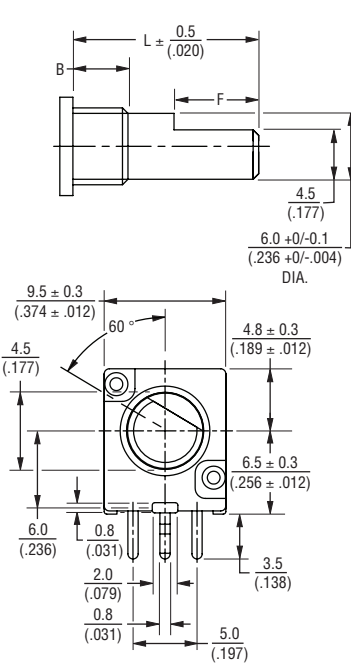


SHAFT SHOWN IN CCW POSITION

|   |              |              |              |
|---|--------------|--------------|--------------|
| 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) |

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

## How To Order

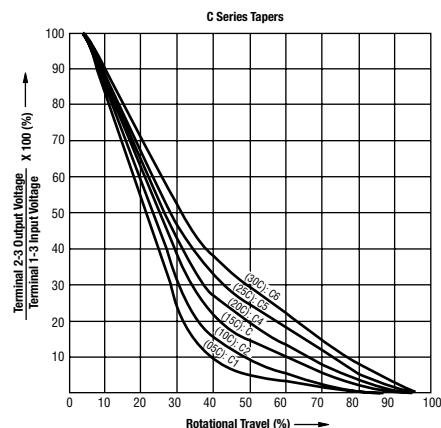
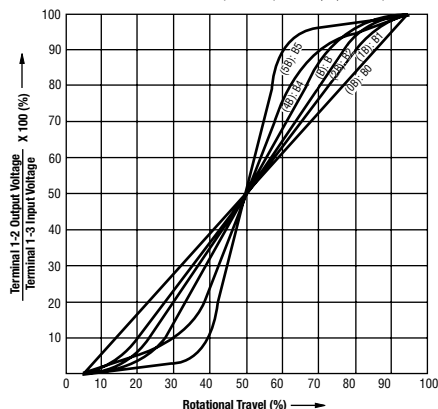
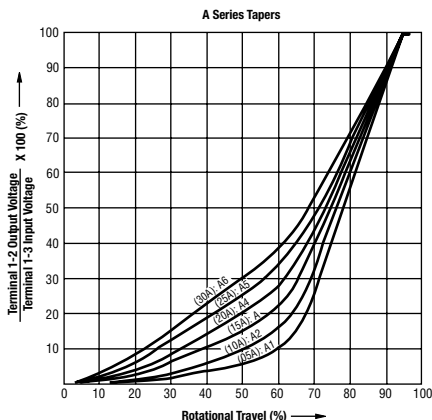
PTR90 1 - 2 0 20 K - B 203

- 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 ±10 % Total Resistance Tolerance
  - 2 = PC Pins vertical/down facing and ±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)
  - F = Flatted Metal Shaft
- Resistance Taper (See Taper Charts)
- Taper Series followed by Curve Number
- Resistance Code (See Table)
- Other shaft styles available.

## Tapers

### B Series Tapers

PTR901 Standard: Linear taper "B" represents (0B):B0 in taper chart.  
PTR902 & Above Sections: Linear taper "B" represents (3B):B3 in taper chart.



REV. 04/24

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