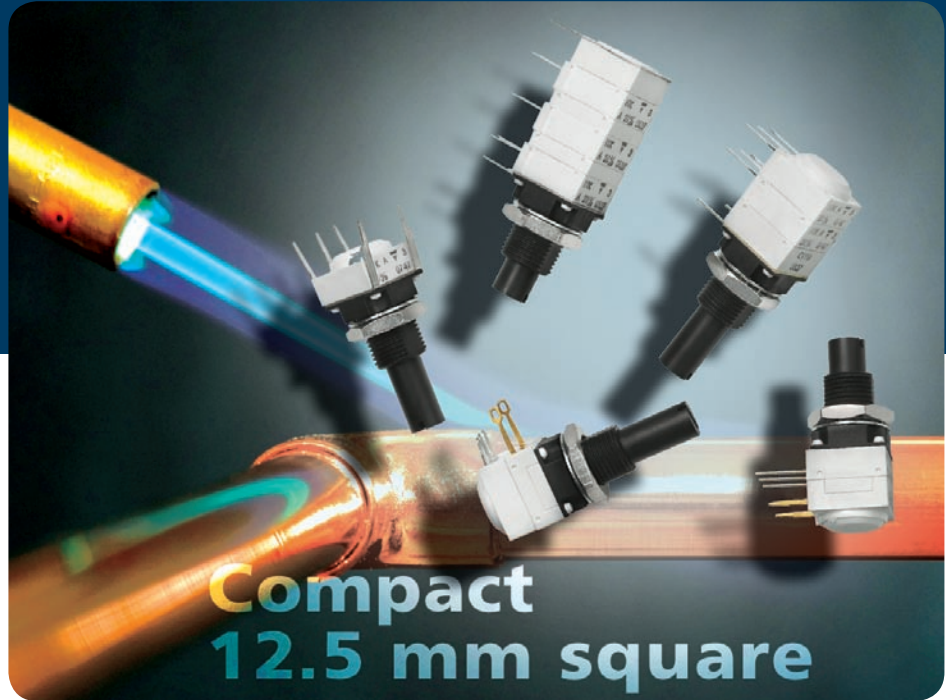




# POTENTIOMETER

P11P, P11D



## High Dielectric Strength 12.5 mm Modular Panel Potentiometer

### KEY BENEFITS

- Versatile: up to 7 modules
- Heavy-duty and off-road controls
- High dielectric strength: up to 5k V<sub>RMS</sub>
- Insulated shaft and bushing: insulation resistance of 10<sup>6</sup> MΩ minimum
- Compact: 12.5 mm square
- Panel sealed: IP67

### APPLICATIONS

- Control panels
- Welding machine controls
- Air conditioning units
- Tooling machines
- Medical systems
- X-ray equipment



# 12.5 mm Modular Panel Potentiometers High Dielectric Strength



### FEATURES

- High dielectric strength potentiometer up to 5000 V<sub>rms</sub>
- 12.5 mm square single turn panel control
- Plastic shaft and bushing
- Two shaft lengths and 29 terminal styles
- P11P: Cermet element
- P11D: Conductive plastic element
- Multiple assemblies - up to seven modules
- Test according to CECC 41 000
- Shaft and panel sealed version
- Up to twenty-one indent positions
- Rotary switch options
- Custom designs

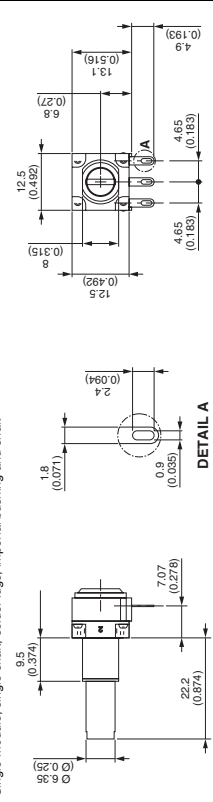


RoHS COMPLIANT

| VERSATILE | MODULAR | COMPACT | ROBUST |
|-----------|---------|---------|--------|
|-----------|---------|---------|--------|

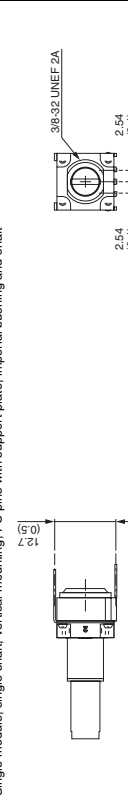
### CONFIGURATION EXAMPLE - Dimensions in mm (Inches) Tolerance ± 0.5 mm (± 0.02")

Single module, single shaft, solder lugs, imperial bushing and shaft

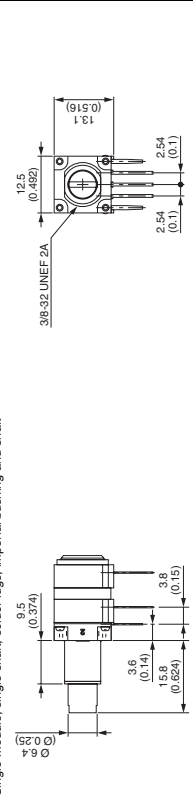


### DETAIL A

Single module, single shaft, vertical mounting, PC pins with support plate, imperial bushing and shaft



Single module, single shaft, solder lugs, imperial bushing and shaft



### GENERAL SPECIFICATIONS

| ELECTRICAL (INITIAL)              | P11D  | P11P   |
|-----------------------------------|---|--|
| Resistive Element                 | Conductive plastic  | Cermet   |
| Electrical Travel                 | 270° ± 10°  | 270° ± 10°   |
| Resistance Range (1)              | linear law<br>1 kΩ to 1 MΩ<br>non linear law<br>470 Ω to 500 kΩ       | 20 Ω to 10 MΩ<br>100 Ω to 2.2 MΩ                         |
| Tolerance                         | ± 20 %<br>standard<br>on request                                      | ± 20 %<br>± 5 % or ± 10 %                                |
| Power Rating at 70 °C             | linear law<br>0.5 W at + 70 °C<br>non linear law<br>0.25 W at + 70 °C | 1 W at + 70 °C<br>0.5 W at + 70 °C                       |
| Temperature Coefficient (Typical) | 0.25 W at + 70 °C per module<br>± 500 ppm                             | 0.5 W at + 70 °C per module<br>± 150 ppm                 |
| Limiting Element Voltage          | 350 V   | 350 V  |
| End Resistance (Typical)          | 2 Ω   | 2 Ω  |
| Contact Resistance Variation      | 1 %   | 2 % or 3 Ω   |
| Independent Linearity (Typical)   | linear law<br>± 5 %   | ± 5 %  |
| Insulation Resistance             | 10 <sup>6</sup> MΩ min.   | 10 <sup>6</sup> MΩ min.                                  |
| Dielectric Strength               | 3000 V <sub>rms</sub> min.<br>5000 V <sub>rms</sub> min.              | 3000 V <sub>rms</sub> min.<br>5000 V <sub>rms</sub> min. |
| Mechanical Rotation Life          | 50 000 cycles   | 50 000 cycles  |

Note:  
(1) Consult Vishay Sfernice for other ohmic values

### MECHANICAL (INITIAL)

|                             |  |
|-----------------------------|--|
| Mechanical Travel           | 300° ± 5°  |
| Operating Torque (Typical): | single and dual assemblies<br>0.2 to 1 Ncm max. (0.3 to 1.4 oz.-inch max.)<br>three to seven modules (per module)<br>0.2 to 0.3 Ncm max. (0.3 to 0.45 oz.-inch max.) |
| End Stop Torque             | 80 Ncm max. (6.8 lb-inch max.)   |
| Tightening Torque           | 150 Ncm max. (13 lb-inch max.)   |
| Weight:                     | 3.5 g<br>1.5 g to 2 g (0.25 oz. to 0.32 oz.)   |

### ENVIRONMENTAL

|                             |                           |                           |
|-----------------------------|---------------------------|---------------------------|
| Operating Temperature Range | P11D<br>-40 °C to +100 °C | P11P<br>-40 °C to +100 °C |
| Climatic Category           | 40/100/21                 | 40/100/56                 |
| Sealing                     | IP64                      | IP64                      |
| Storage Temperature         | -40 °C to +100 °C         | -40 °C to +100 °C         |

### MARKING

- **Potentiometer Module**  
Vishay part number, ohmic value (Ω, kΩ, MΩ), two stars identify P11D, tolerance in %, variation law, manufacturing date (four digits), "3" for the lead 3
- **Switch Module**  
Version, manufacturing date (four digits), "C" for common lead
- **Indent Module**  
Version, manufacturing date (four digits)

### PACKAGING

- Box

Revision 30-Oct-08

**DISCLAIMER** All product specifications and data are subject to change without notice. Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or omissions contained herein or in any other disclosure relating to any product. Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed herein, which apply to these products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications. Product names and markings noted herein may be trademarks of their respective owners.

For technical questions, contact [sfer@vishay.com](mailto:sfer@vishay.com)