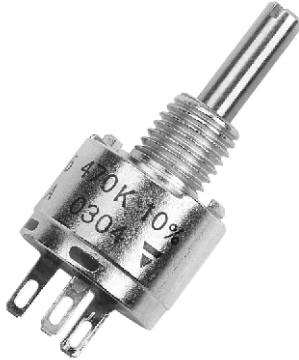


## Fully Sealed Potentiometers Cermet (PRV6) Conductive Plastic (PARV6)



### FEATURES

- PRV6 high power rating 1.5 Watt at 70 °C
- PARV6 0.75 Watt at 70 °C
- CECC 41300
- Military performances
- Low cost
- Fully sealed and panel sealed
- Compatible RV6 (MIL R 94)
- Mechanical life 50 000 cycles



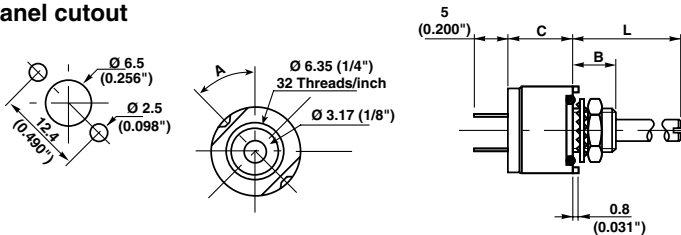
### DIMENSIONS in millimeters

PRV cermet PRV6

PARV conductive plastic PARV6

Shafts and bushings: 6 - 61 - 62

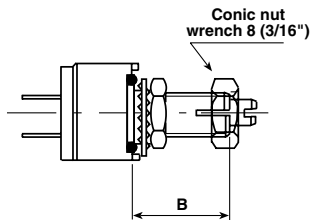
#### Panel cutout



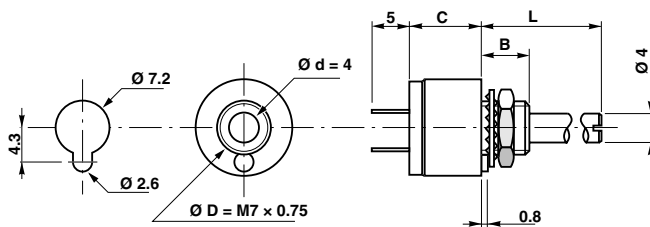
#### Locking shaft H option:

61H - 62H

61LCH - 62LCH



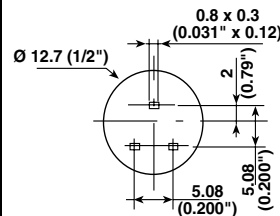
Shaft Dia 4 mm: 6Q - 61Q - 61QH



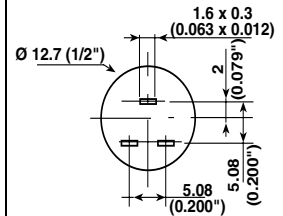
See ordering information for quotation

### Terminal options available on all types

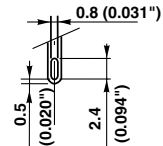
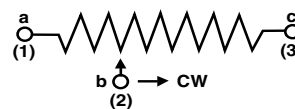
#### PCB pins W option



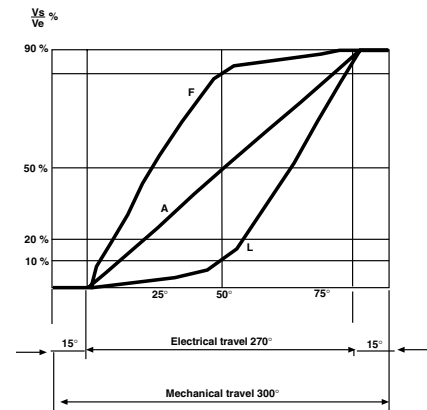
#### Solder lugs



### CIRCUIT DIAGRAM



### VARIATION LAWS



### TAPERS

Tapers A - L - F - are measured between the wiper (2) and the ccw terminal (1).

**ELECTRICAL SPECIFICATIONS**

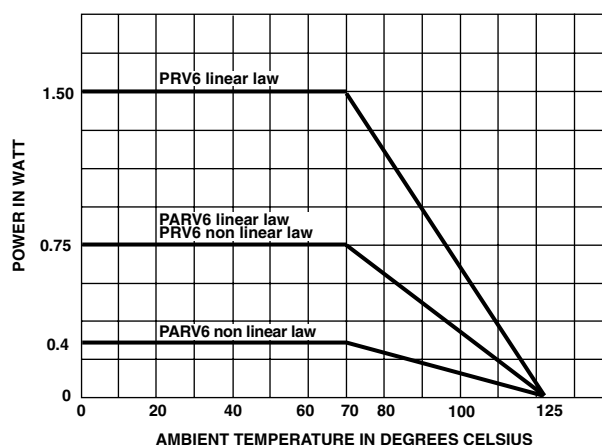
|                                 |                       | PRV6                             | PARV6                    |
|---------------------------------|-----------------------|----------------------------------|--------------------------|
| Resistive Element               |                       | cermet                           | conductive plastic       |
| Electrical Travel               |                       | 270° ± 15°                       | 270° ± 15°               |
| Resistance Range                | Linear Law (A)        | 20 Ω to 10 MΩ                    | 1 kΩ to 1 MΩ             |
|                                 | Non Linear Laws (F-L) | 470 Ω to 1 MΩ                    | 470 Ω to 500 kΩ (± 20 %) |
| Tolerance                       | Standard              | ± 20 % ± 10 %                    | ± 20 %                   |
|                                 | On Request            | ± 5 %                            | ± 10 % (1 kΩ to 100 kΩ)  |
| Power Rating at + 70 °C         | Linear                | 1.5 W                            | 0.75 W                   |
|                                 | Other Tapers          | 0.75 W                           | 0.4 W                    |
| Temperature Coefficient         |                       | ± 100 ppm/°C                     | ± 1000 ppm/°C            |
| Limiting Element Voltage        |                       | 350 V                            | 350 V                    |
| Contact Resist. Variation CRV   |                       | 2 % or 3 Ω                       |                          |
| End Resistance (Typical)        |                       | 1 Ω                              |                          |
| Dielectric Strength             |                       | 1750 VRMS (2000 VRMS on request) |                          |
| Insulation Resistance (500 VDC) |                       | 10 <sup>6</sup> MΩ               |                          |

**MECHANICAL SPECIFICATIONS**

|                       |                    |
|-----------------------|--------------------|
| Mechanical Travel     | 300° ± 5°          |
| Operating Torque      | 0.5 to 2 Ncm       |
|                       | or 0.7 to 3 oz.in. |
| End Stop Torque max   | 35 Ncm             |
|                       | or 3 lb.in.        |
| Tightening Torque max | 150 Ncm            |
|                       | or 13 lb.in.       |

**ENVIRONMENTAL SPECIFICATIONS**

|                   |                                                 |                     |
|-------------------|-------------------------------------------------|---------------------|
|                   | PRV6                                            | PARV6               |
| Temperature Range | - 55 °C to + 125 °C                             | - 40 °C to + 125 °C |
| Climatic Category | 55/125/56                                       | 40/125/56           |
| Sealing           | fully sealed container<br>IP67 and panel sealed |                     |

**POWER RATING CHART****PERFORMANCE**

| CECC 41 300 and/or MIL R 94 |                                                                                                    |                            |                       |                                      | TYPICAL VALUES AND DRIFTS  |                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------|----------------------------|-----------------------|--------------------------------------|----------------------------|--------------------------------------|
| TESTS                       | CONDITIONS                                                                                         | $\frac{\Delta RT}{RT}$ (%) | REQUIREMENTS          | $\frac{\Delta R_{1-2}}{R_{1-2}}$ (%) | $\frac{\Delta RT}{RT}$ (%) | $\frac{\Delta R_{1-2}}{R_{1-2}}$ (%) |
| Load Life                   | 1000 h at rated power<br>90°/30' - temperature 70 °C                                               | ± 10 %                     | CRV < 7 % Rn          |                                      | ± 1 %                      | CRV < 3 % Rn                         |
| Climatic Sequence           | Phase A dry heat 100 °C<br>Phase B damp heat<br>Phase C cold - 55 °C<br>Phase D damp heat 5 cycles | ± 10 %                     |                       | ± 10 %                               | ± 0.5 %                    | ± 1 %                                |
| Long Term Damp Heat         | 56 days                                                                                            | ± 10 %                     |                       | ± 10 %                               | ± 0.5 %                    | ± 1 %                                |
| Rapid Temperature Change    | 5 cycles - 55 °C at + 125 °C                                                                       | ± 3 %                      |                       |                                      | ± 0.5 %                    |                                      |
| Vibration                   | 10 g 55 to 2000 Hz<br>2 h each direction                                                           | ± 2 %                      | no CUT > 0.1 ms ± 5 % |                                      | ± 0.1 %                    | ± 0.2 %                              |
| Shock                       | 100 g 6 ms 20 shocks                                                                               | ± 2 %                      |                       | ± 5 %                                | ± 0.1 %                    | ± 0.2 %                              |
| Rotational Life             | 50 000 cycles                                                                                      | ± 10 %                     | CRV < 7 % Rn          |                                      | ± 3 %                      | CRV < 2 % Rn                         |

## STANDARD RESISTANCE ELEMENT DATA

| STANDARD RESISTANCE VALUES                                                                                | PRV6 LINEAR LAW                                                        |                                                                                                                      |                                                                                                                        | PRV6 NON-LINEAR LAWS      |                                                               |                                                                  | TCR<br>-55 °C<br>+125 °C |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------|------------------------------------------------------------------|--------------------------|
|                                                                                                           | MAX. POWER<br>AT 70 °C                                                 | MAX. WORKING<br>VOLTAGE                                                                                              | MAX. WIPER<br>CUR.                                                                                                     | MAX. POWER<br>AT 70 °C    | MAX. WORKING<br>VOLTAGE                                       | MAX. WIPER<br>CUR.                                               |                          |
| Ω                                                                                                         | W                                                                      | V                                                                                                                    | mA                                                                                                                     | W                         | V                                                             | mA                                                               | ppm/°C                   |
| 20<br>50                                                                                                  | 1.5                                                                    | 5.48<br>8.66                                                                                                         | 274<br>173                                                                                                             |                           |                                                               |                                                                  | 0<br>+ 200               |
| 100<br>200<br>500<br>1K<br>2K<br>5K<br>10K<br>20K<br>50K<br>100K<br>200K<br>500K<br>1M<br>2M<br>5M<br>10M | ↓<br><br>1.5<br>1.22<br>0.61<br>0.25<br>0.12<br>0.06<br>0.025<br>0.012 | 12.2<br>17.3<br>27.4<br>38.7<br>54.8<br>86.6<br>122.5<br>173<br>274<br>350<br>350<br>350<br>350<br>350<br>350<br>350 | 122<br>87<br>55<br>38.7<br>27.4<br>17.3<br>12.2<br>8.26<br>5.65<br>3.5<br>1.75<br>0.7<br>0.35<br>0.17<br>0.07<br>0.035 | 0.75<br>↓<br>0.75<br>0.25 | 27.3<br>38.2<br>61.2<br>87<br>122<br>194<br>273<br>350<br>350 | 27.4<br>19.3<br>12.2<br>8.7<br>6.1<br>3.9<br>2.74<br>1.75<br>0.7 | PRV6<br>± 100            |

## PACKAGING

Carton box of 50, code: BO50

## PANEL SEALING

Except for dia. 4 mm shaft, an O-ring is supplied with the potentiometer. This O-ring should be placed into the groove of the body and ensures the panel sealing.  
For dia. 4 mm shaft please see note "P" in ordering information.

## SHAFTS

Shaft lengths are measured from the mounting face to the free end of the shaft. Special shafts are available if the customer supplies a drawing. The shaft slot is aligned to the wiper within ± 10°.

## HARDWARE

Nuts, washer and O-ring are **separately supplied** (not mounted on the potentiometer), in a small bag placed in the packaging.

## LOCATING PEG

Except for dia. 4 mm shaft, the potentiometers are delivered with 2 opposite locating pegs orientated at 45°. These 2 pegs can be easily broken-off by the customer. On request, the orientation of the pegs can be at 30° instead of 45°. Order Designation: PRV6 L (see ordering information)

## MARKING

VISHAY trademark, series, style, ohmic value (in Ω, kΩ or MΩ), tolerance in %, taper code, manufacturing date (4 digits: 2 for year, 2 for week), terminal 1.

## ORDERING INFORMATION

|                                                                                |                |                 |                    |                                                                                                                                       |                                                                          |                                 |              |                                                                                                                                                                                                                                                                  |                                                                                                            |      |
|--------------------------------------------------------------------------------|----------------|-----------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------|
| PRV cermet<br>PARV conductive plastic<br><b>SERIES</b>                         | <b>BUSHING</b> |                 | <b>SHAFT DIA d</b> | <b>TERMINALS</b>                                                                                                                      | <b>Code H</b><br>not available for 6-6Q versions<br><b>LOCKING SHAFT</b> | <b>From mounting face</b>       |              | 22 Ω to 10 MΩ<br>linear law - cermet<br>470 Ω to 1 MΩ<br>non-linear laws<br>cermet<br>1 kΩ to 1 MΩ<br>linear law -<br>conductive plastic<br>470 Ω to 500 kΩ<br>non linear laws<br>conductive plastic<br>470 Ω to 100 kΩ<br>non linear laws<br>conductive plastic |                                                                                                            |      |
| Standard C = 9.5<br>no code<br>Option C = 12.1<br>code S<br><b>BODY LENGTH</b> | <b>DIA D</b>   | <b>LENGTH B</b> |                    | A: standard 45°<br>no code<br>A: option 30°<br>code L<br>not available for 6Q and 61Q versions<br>See drawing<br><b>LOCATING PEGS</b> |                                                                          | <b>CODE</b>                     | <b>DIA d</b> |                                                                                                                                                                                                                                                                  | <b>LENGTH L</b>                                                                                            |      |
|                                                                                | 6              | 6.35            | 6.35               | 3 or 3.17                                                                                                                             |                                                                          | 6                               | *CK          |                                                                                                                                                                                                                                                                  | 3.17                                                                                                       | 9.5  |
|                                                                                | 61             | 6.35            | 9.5                | 3 or 3.17                                                                                                                             |                                                                          | 61                              | CM           |                                                                                                                                                                                                                                                                  | 3.17                                                                                                       | 12.5 |
|                                                                                | 62             | 6.35            | 12.5               | 3 or 3.17                                                                                                                             |                                                                          | 62                              | CD           | 3.17                                                                                                                                                                                                                                                             | 16                                                                                                         |      |
|                                                                                | 6Q             | 7               | 6.5                | 4                                                                                                                                     |                                                                          | 62H                             | CR           | 3.17                                                                                                                                                                                                                                                             | 22                                                                                                         |      |
|                                                                                | 61Q            | 7               | 9.5                | 4                                                                                                                                     |                                                                          | 61H                             | *K           | 3                                                                                                                                                                                                                                                                | 9.5                                                                                                        |      |
|                                                                                | 6QP            | 7               | 6.5                | 4                                                                                                                                     |                                                                          | 62H                             | M            | 3                                                                                                                                                                                                                                                                | 12.5                                                                                                       |      |
|                                                                                | 61QP           | 7               | 9.5                | 4                                                                                                                                     |                                                                          |                                 | R            | 3                                                                                                                                                                                                                                                                | 22                                                                                                         |      |
| Shaft dia 3.17 and 3 are standard panel sealed                                 |                |                 |                    |                                                                                                                                       |                                                                          | 6Q                              | E            | 4                                                                                                                                                                                                                                                                | 9.5                                                                                                        |      |
| Shaft dia 4: please note "P" for panel sealed option                           |                |                 |                    |                                                                                                                                       |                                                                          | 61Q                             | F            | 4                                                                                                                                                                                                                                                                | 12.5                                                                                                       |      |
| <b>SHAFTS and BUSHINGS</b>                                                     |                |                 |                    |                                                                                                                                       |                                                                          | 61QH                            | G            | 4                                                                                                                                                                                                                                                                | 22                                                                                                         |      |
|                                                                                |                |                 |                    |                                                                                                                                       |                                                                          | * not available with 62H option |              |                                                                                                                                                                                                                                                                  | <b>OHMIC VALUE</b><br><br>20 % standard<br>10 % optional<br>5 % optional (cermet only)<br><b>TOLERANCE</b> |      |
|                                                                                |                |                 |                    |                                                                                                                                       |                                                                          | <b>STANDARD SHAFT LENGTH</b>    |              |                                                                                                                                                                                                                                                                  |                                                                                                            |      |
| PRV                                                                            | S              | 61              | W                  | L                                                                                                                                     | H                                                                        | CM                              | 10 kΩ        | 20 %                                                                                                                                                                                                                                                             | A                                                                                                          | BO50 |

## SAP PART NUMBERING GUIDELINES

|       |   |   |   |         |   |     |       |   |       |           |   |   |                                |   |   |   |   |
|-------|---|---|---|---------|---|-----|-------|---|-------|-----------|---|---|--------------------------------|---|---|---|---|
| P     | R | V | 6 | B       | B | L   | B     | B | X     | B         | 2 | 5 | 1                              | 0 | 3 | M | A |
| MODEL |   |   |   | STYLE   |   | PEG | SHAFT |   | LEADS | PACKAGING |   |   | OHMIC VALUE/TOL/LAW OR SPECIAL |   |   |   |   |
|       |   |   |   | BUSHING |   |     |       |   |       |           |   |   |                                |   |   |   |   |

See the end of this data book for conversion tables



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