

Industrial Potentiometer

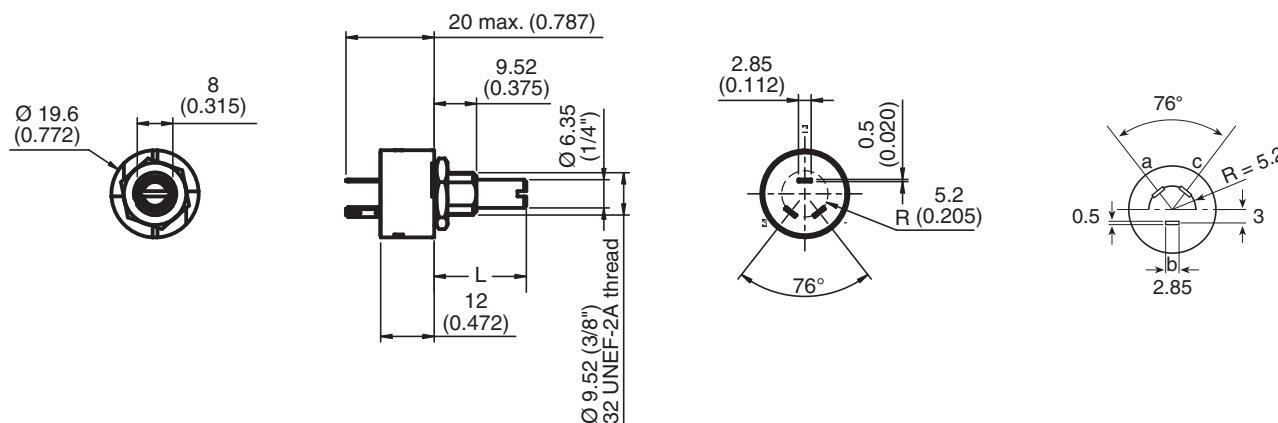


FEATURES

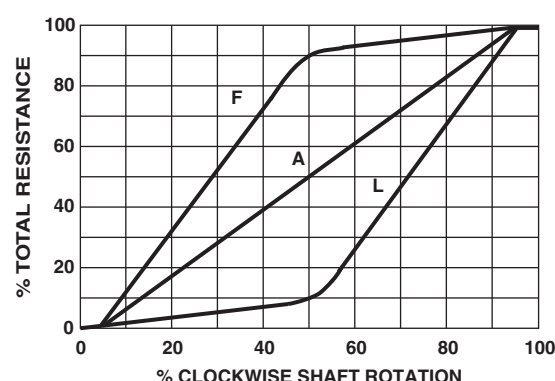
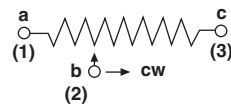
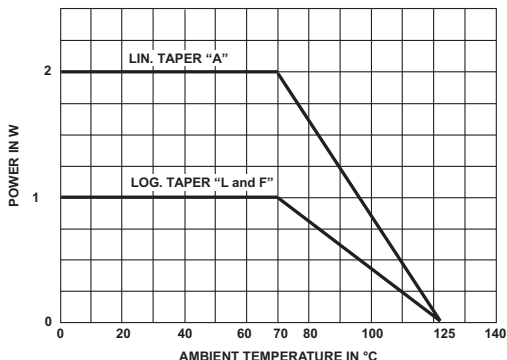
- High power rating 2 W at 70 °C
- Full sealing
- Low contact resistance variation (1 % typical)
- Robust nickel plated brass shaft
- Use of faston 2.86 connections
- Cermet element
- Center detent option
- Test according to CECC 41000 or IEC 60393-1
- Electrical performance in accordance with MIL-PRF-94 standards
- Compliant to RoHS Directive 2002/95/EC


RoHS
COMPLIANT

DIMENSIONS in millimeters (inches) ± 0.5 mm (± 0.02 ")

PRV4F


Length L	1/2"	7/8"	2"
Shaft code	gbs	gjs	grs

ELECTRICAL SPECIFICATIONS		
Resistive Element	Cermet	
Electrical Travel	$270^\circ \pm 10^\circ$	
Resistance Range	Linear Taper	$20\ \Omega$ to $10\ \text{M}\Omega$
	Logarithmic Taper	$100\ \Omega$ to $2.5\ \text{M}\Omega$
Standard Series	1 - 2 - 2.5 - 5	
Tolerance	Standard	$\pm 20\ \%$
	On Request	$\pm 10\ \%$
Taper		
Circuit Diagram		
Power Rating	Linear Logarithmic	 2 W at 70°C 1 W at 70°C
Temperature Coefficient (Typical)	300 ppm/ $^\circ\text{C}$	
Limiting Element Voltage (Linear Law)	500 V	
Contact Resistance Variation (Typical)	1 % R_n or $3\ \Omega$	
End Resistance	$4\ \Omega$	
Dielectric Strength (RMS)	1500 V	
Insulation Resistance ($500\ \text{V}_{\text{DC}}$)	$10^4\ \text{M}\Omega$	
Independednt Linearity (Typical)	5 %	

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR TAPER			LOG. TAPER		
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT WIPER	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT WIPER
Ω	W	V	mA	W	V	mA
20	2	6.32	316			
25	2	7.07	283			
50	2	10.0	200			
100	2	14.1	141	1	10.0	100
200	2	20.0	100.0	1	14.1	70.7
250	2	22.4	89.4	1	15.8	53.2
500	2	31.6	53.2	1	22.4	44.7
1K	2	44.7	44.7	1	31.5	31.6
2K	2	53.2	31.6	1	44.7	22.4
2.5K	2	70.7	28.3	1	50.0	20.0
5K	2	100	20.00	1	70.7	14.1
10K	2	141	14.14	1	100	10.0
20K	2	200	10.00	1	141	7.07
25K	2	224	6.04	1	158	6.32
50K	2	315	6.32	1	224	4.47
100K	2	447	4.47	1	315	3.16
200K	1	500	2.50	1	447	2.24
250K	1	500	2.00	1	499	2.00
500K	0.50	500	1.00	0.50	500	1.00
1M	0.25	500	0.50	0.25	500	0.50
2M	0.13	500	0.25	0.13	500	0.25
2.5M	0.10	500	0.20	0.10	500	0.20
5M	0.05	500				
10M	0.03	500				

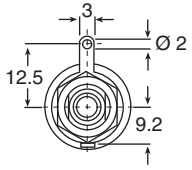
MECHANICAL SPECIFICATIONS

Mechanical Travel	300° ± 5°
Operating Torque (Typical)	3 Ncm max. (4.3 oz.-inch max.)
End Stop Torque	70 Ncm max. (6 lb-inch max.)
Tightening Torque of Mounting Nut	200 Ncm max. (17.3 lb-inch max.)
Unit Weight	23 g to 32 g max. (0.82 oz. to 1.14 oz.)

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to 125 °C
Climatic Category	55/125/10
Sealing	Fully sealed - Container IP67

OPTIONS

Special Feature Command Shaft	Length is measured from the mounting surface to the free end of the shaft. The screwdriver slot is aligned with the wiper within ± 10°. Special shafts are available, in accordance to drawings supplied by customers. We recommend that customers should not machine tool shafts, in order to avoid damage. Bending or torsion of terminals should also be avoided.
PRV4 LPRP - With Locating Peg	

MARKING

- Vishay trademark
- Part number (including ohmic value code, tolerance code, and taper)
- Manufacturing date
- Marking of terminals 1, 2, 3

PERFORMANCE

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Electrical Endurance	1000 h at rated power 90°/30° - ambient temp. 70 °C	± 3 %	± 5 %	Contact res. variation: < 5 %
Moisture Resistance	MIL-STD-202 method 105 10 cycles of 24 h constituted with damp heat - cold - vibrations	± 2 %	± 3 %	Dielectric strength: 100 V _{RMS} Insulation resistance: > 10 ⁴ MΩ
Damp Heat, Steady State	10 days 40 °C, 93 % HR	± 2 %	± 3 %	Dielectric strength: 100 V _{RMS} Insulation resistance: > 10 ⁴ MΩ
Change of Temperature	5 cycles - 55 °C at + 125 °C	± 1 %	-	$\Delta V_{1-2}/V_{1-3} < \pm 2 \%$
Mechanical Endurance	25 000 cycles	± 5 %	-	-
Shock	MIL-STD-202 method 213/1 100 g's at 6 ms 3 successive shocks in 3 directions	± 1 %	-	$\Delta V_{1-2}/V_{1-3} < \pm 1 \%$
Vibration	MIL-STD-202 method 204/D 20 g's at 12 h	± 1 %	-	$\Delta V_{1-2}/V_{1-3} < \pm 1 \%$

ORDERING INFORMATION (Part Number)

P	R	V	4	F	L	G	J	S	1	0	2	M	L				
MODEL	BUSHING	OPTION	SHAFT	SHAFT END	OHMIC VALUE	TOLERANCE	TAPER	SPECIAL									
PRV4	F = Ø 3/8"	L = LPRP 0 = No option	GB GJ GR AP	S = Slotted R = Round F = Flatted D = Custom	Linear from 20 Ω to 10 MΩ Logarithmic from 100 Ω to 2.5. MΩ 102 = 1 kΩ	M = 20 % On request: K = 10 %	A = Linear L = Clockwise logarithmic F = Inverse clockwise logarithmic	CV1M = Detent option or special code given by Vishay									

PART NUMBER DESCRIPTION (for information only)

PRV4	F	L	GJ	S	1K	20 %	L		BO50			e3
MODEL	BUSHING	OPTION	SHAFT	SHAFT END	VALUE	TOLERANCE	TAPER	DETENT OPTION	PACKAGING	AP N°	SPECIAL	LEAD (Pb)-FREE



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