Long Life Potentiometer - 1 Million Cycles
Heavy Duty - Cermet
Fully Sealed

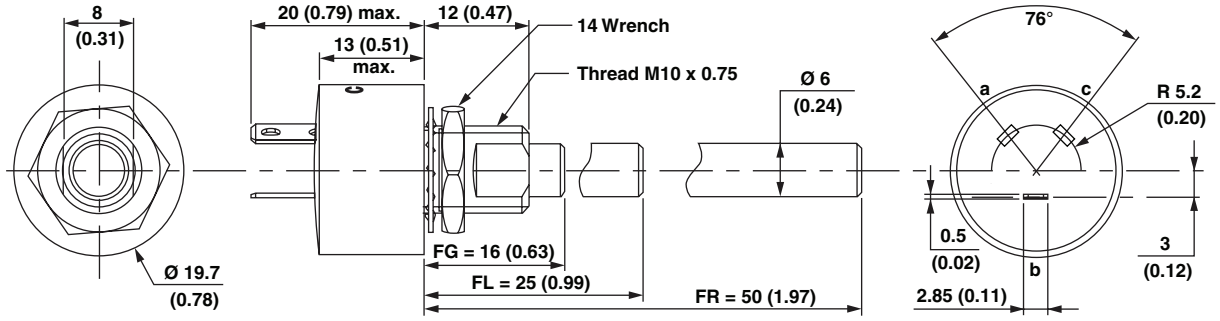
FEATURES

- 1 million cycles
- High power rating (2 W at 70 °C)
- Low temperature coefficient (± 150 ppm/°C typical)
- Custom designs on request

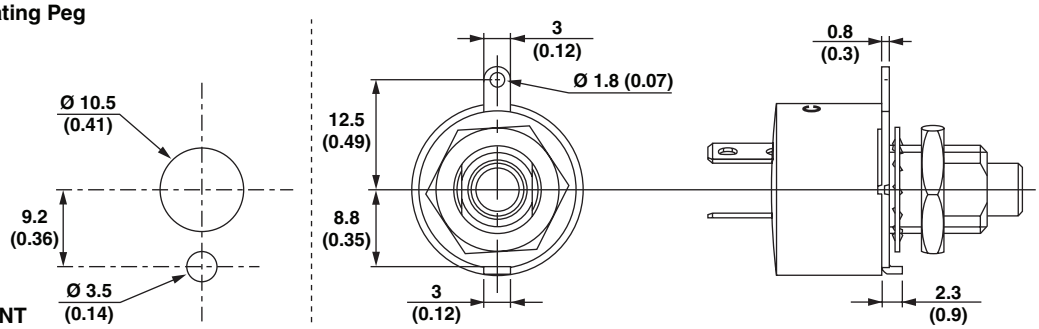
RoHS COMPLIANT

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

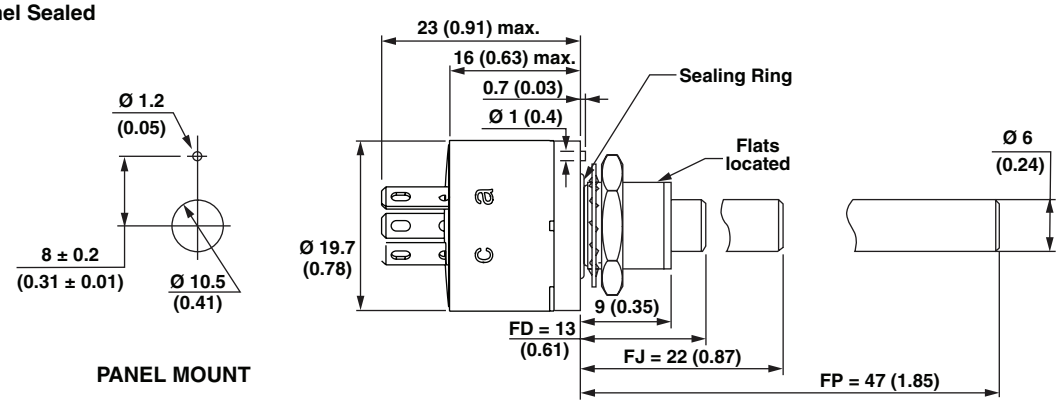
P30L

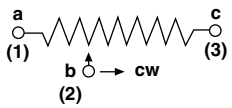
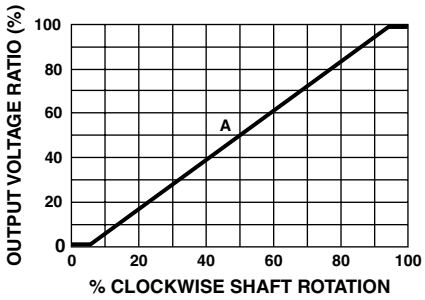
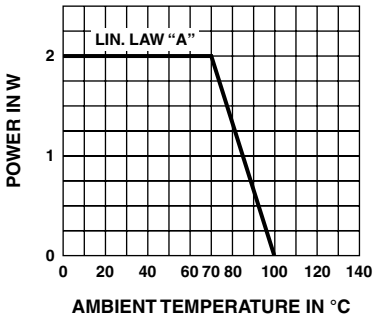


P30L: LPRP - Locating Peg



PE30LME: Panel Sealed



ELECTRICAL SPECIFICATIONS	
Resistive Element	Cermet
Electrical Travel	270° ± 10 °
Standard Resistance Values	1 kΩ - 5 kΩ - 10 kΩ - 50 kΩ
Tolerance	20 %
Varation Law	Linear A **CIRCUIT DIAGRAM**  
Power Rating	2 W at 70 °C 
Standard Resistance Element Data	See table below
Temperature Coefficient (Typical)	± 150 ppm/°C
Limiting Element Voltage	300 V
Contact Resistance Variation	3 % Rn
End Resistance (Typical)	1 Ω
Dielectric Strength (RMS)	2500 V
Insulation Resistance (300 VDC)	10^5 MΩ
Independent Linearity (Typical)	± 5 %

Resistance Value	Max. Power at 70 °C	Max. Working Voltage
(kΩ)	(W)	(V)
1	2	44.7
5	2	100
10	2	141
50	1.8	300

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MECHANICAL SPECIFICATIONS		
Mechanical Travel	300° ± 5	
Operating Torque (Typical)	3 Ncm max.	4.25 oz.-inch max.
End Stop Torque	70 Ncm max.	99 oz.-inch max.
Tightening Torque of Mounting Nut	250 Ncm max.	22.13 lb-inch max.
Unit Weight	23 to 32 g max.	0.8 to 1.13 oz.
Terminals	e3: pure Sn	

ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	- 40 °C to 100 °C
Climatic Category	40/100/56
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.
Panel Sealing	The panel sealing device consists of a ring located in a groove on the potentiometer face. Sealing is obtained by tightening the ring against the panel when mounting the potentiometer.
Locating Peg	Location is obtained by fitting a special washer on the mounting face of the potentiometer.

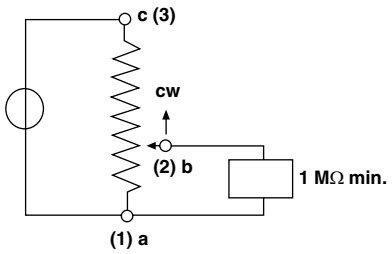
MARKING

- VISHAY trademark
- Model
- Ohmic Value code
- Tolerance code
- Manufacturing date code
- Marking of terminals 3, and a, b, c

APPLICATION NOTE

The potentiometer shall be used in voltage divider with an impedance load at least 100 times higher than the total potentiometer nominal resistance value.

Advised load impedance:
1 MΩ min. for resistance range of 1kΩ to 50 kΩ



PERFORMANCES

TESTS	CONDITIONS	ΔRT/RT (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Climatic Sequence	Phase A dry heat 100 °C Phase B damp heat Phase C cold - 40 °C Phase D damp heat 5 cycles	± 0.5 %	± 1 %	-
Long Term Damp Heat	56 days 40 °C 93 % HR	± 0.5 %	± 1 %	Insulation resistance > 100 MΩ
Rotational Life	1 000 000 cycles at rated power Turn angle: ± 60° 33 cycles per minute Temperature: 20 °C	± 20 %	-	Contact resistance variation max. 35 % Independent linearity ± 10 % (Typical)
Load Life	1000 h at rated power 90'/30' Ambient temperature 70 °C	± 20 %	± 20 %	Contact resistance variation max. 30%
Rapid Temperature Change	5 cycles - 40 °C at 100 °C	± 0.5 %	-	-
Shock	50 g at 11 ms 3 successive shocks in 3 directions	± 0.1 %	± 0.2 %	-
Vibration	10 - 55 Hz 0.75 mm or 10 g during 6 h	± 0.1 %	± 0.2 %	-

SAP ORDERING INFORMATION (Part Number 18 digits)

P	3	0	L	L	0	F	D	R	1	0	3	M	A				

MODEL	BUSHING	OPTION	SHAFT			RESISTANCE CODE / TOLERANCE CODE / TAPER			SPECIAL NUMBER
			Diameter	Length	End Shaft Shape	Ohmic Value	Tolerance	Variation Law	(if applicable)
	L = M10 x 0.75 M = Panel sealed M10 x 0.75	0 = None E = With Locating Peg (for M bushing only) L = LPRP	F = Ø 6 mm AP = Custom shaft	For L Bushing G = 16 mm L = 25 mm R = 50 mm For M Bushing D = 13 mm J = 22 mm P = 47 mm	R = Round On request S = Slotted D = Custom end shaft F = Flatted	102 = 1 kΩ 502 = 5 kΩ 103 = 10 kΩ 503 = 50 kΩ	M = 20 % On request K = 10 %	A = linear	Given by VISHAY for custom design

PART NUMBER DESCRIPTION (for information only)

P30L	L	0	FDR	10K	20 %	A		BO10			e3
MODEL	BUSHING	OPTION	SHAFT	VALUE	TOLERANCE	TAPER	SPECIAL	PACKAGING	SPECIAL	SPECIAL	LEAD (Pb)-FREE

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All product specifications and data are subject to change without notice.

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