

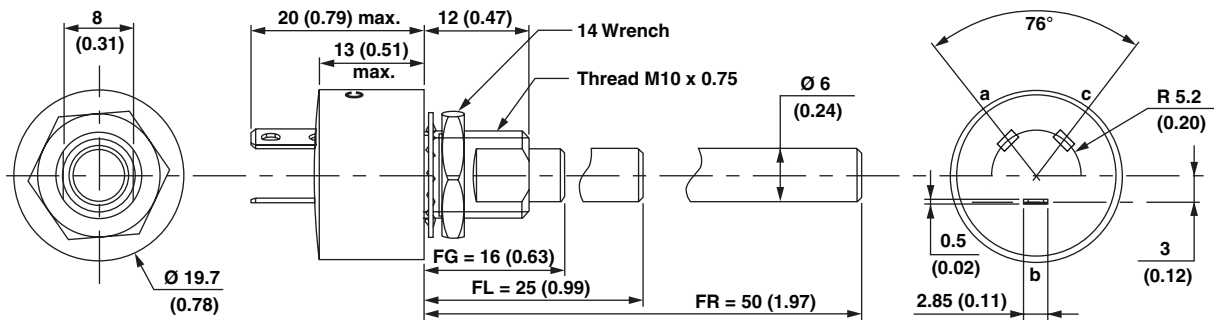
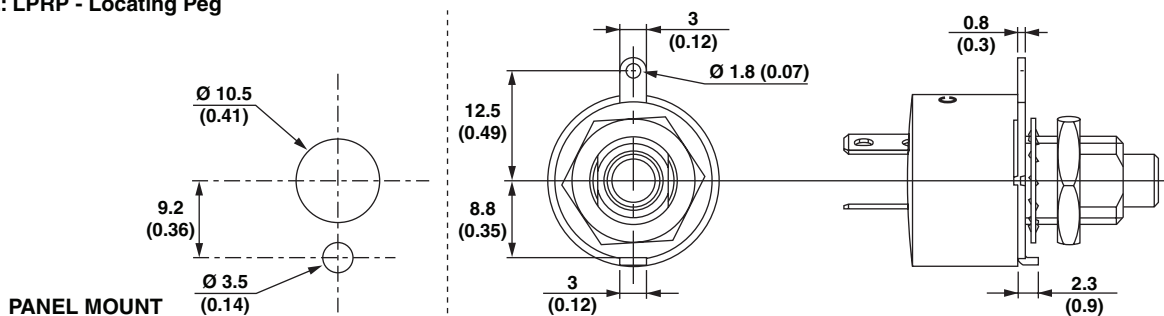
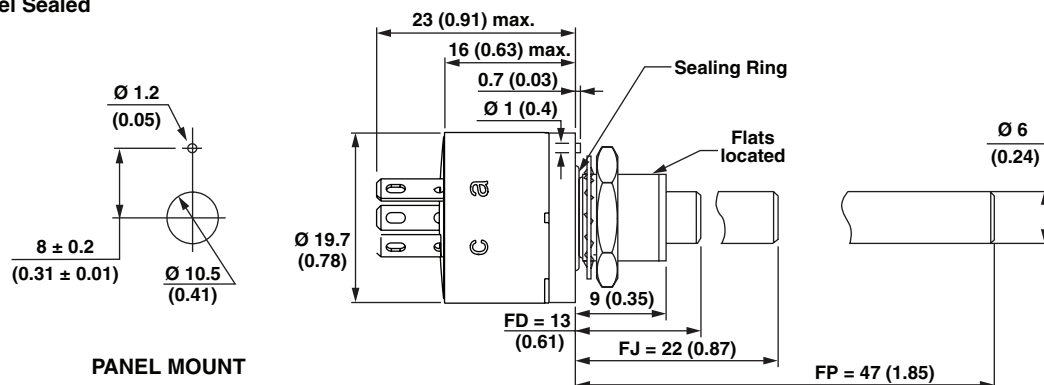
## Long Life Potentiometer - 1 Million Cycles Heavy Duty - Cermet Fully Sealed


**FEATURES**

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


**RoHS**  
COMPLIANT

**DIMENSIONS** in millimeters (inches)  $\pm 0.5$  ( $\pm 0.02$ )

**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 %																		
Variation Law	Linear A																		
	<p><b>CIRCUIT DIAGRAM</b></p>																		
Power Rating	<p>2 W at 70 °C</p>																		
Standard Resistance Element Data	<table border="1"> <thead> <tr> <th>Resistance Value</th> <th>Max. Power at 70 °C</th> <th>Max. Working Voltage</th> </tr> <tr> <th>(kΩ)</th> <th>(W)</th> <th>(V)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> <td>44.7</td> </tr> <tr> <td>5</td> <td>2</td> <td>100</td> </tr> <tr> <td>10</td> <td>2</td> <td>141</td> </tr> <tr> <td>50</td> <td>1.8</td> <td>300</td> </tr> </tbody> </table>	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
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																	
Temperature Coefficient (Typical)	± 150 ppm/°C																		
Limiting Element Voltage	300 V																		
Contact Resistance Variation	3 % R <sub>n</sub>																		
End Resistance (Typical)	1 Ω																		
Dielectric Strength (RMS)	2500 V																		
Insulation Resistance (300 VDC)	10 <sup>5</sup> MΩ																		
Independent Linearity (Typical)	± 5 %																		



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

Vishay Sfernice

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	
<ul style="list-style-type: none"> <li>• VISHAY trademark</li> <li>• Model</li> <li>• Ohmic Value code</li> <li>• Tolerance code</li> <li>• Manufacturing date code</li> <li>• Marking of terminals 3, and a, b, c</li> </ul>	

APPLICATION NOTE	
<p>The potentiometer shall be used in voltage divider with an impedance load at least 100 times higher than the total potentiometer nominal resistance value.</p> <p>Advised load impedance: 1 MΩ min. for resistance range of 1kΩ to 50 kΩ</p>	

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

<b>SAP ORDERING INFORMATION</b> (Part Number 18 digits)																	
P	3	0	L	L	0	F	D	R	1	0	3	M	A				
<b>MODEL</b>	<b>BUSHING</b>	<b>OPTION</b>	<b>SHAFT</b>			<b>RESISTANCE CODE / TOLERANCE CODE / TAPER</b>			<b>SPECIAL NUMBER</b>								
	L = M10 x 0.75 M = Panel sealed M10 x 0.75	0 = None E = With Locating Peg (for M bushing only) L = LPRP	Diameter	Length	End Shaft Shape	Ohmic Value	Tolerance	Variation Law	(if applicable) Given by VISHAY for custom design								
			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									

<b>PART NUMBER DESCRIPTION</b> (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



## Disclaimer

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