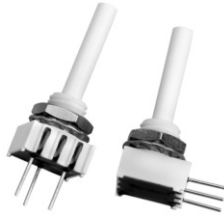


## Long Life Potentiometer - 500 000 Cycles Miniature - Cermet - Fully Sealed



### FEATURES

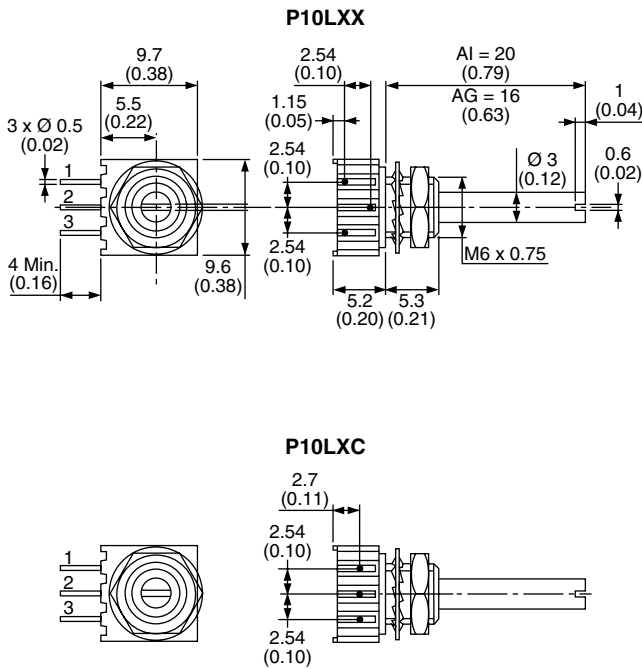
- 500 000 cycles
- Low temperature coefficient  
(± 150 ppm/°C typical)
- Plastic housing and shaft
- Compact (3/8" square)
- Fully sealed



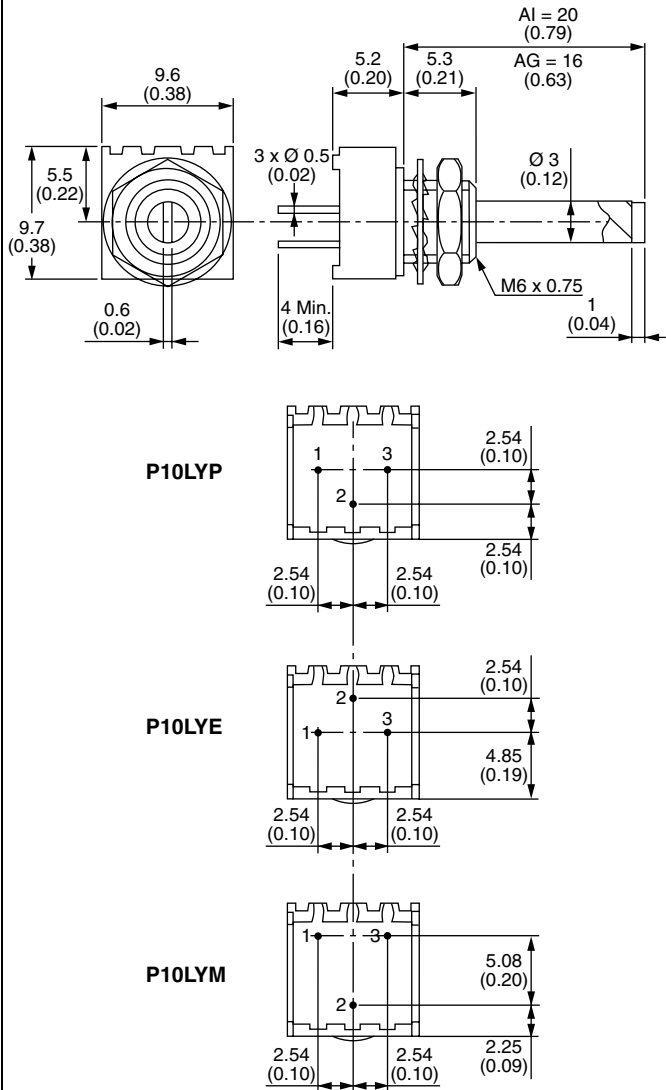
RoHS  
COMPLIANT

### DIMENSIONS in millimeters (inches) (± 0.5 mm)

#### P10L: Side Adjust



#### P10L: Top Adjust



<b>ELECTRICAL SPECIFICATIONS</b>																		
Resistive Element	CERMET																	
Electrical Travel	250° ± 15°																	
Standard Resistance Values	1 kΩ - 5 kΩ - 10 kΩ - 50 kΩ																	
Tolerance	20 % - 10 % on request																	
Variation Law	Linear A																	
	<p><b>CIRCUIT DIAGRAM</b></p>																	
Power Rating	0.1 W at 70 °C																	
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> </thead> <tbody> <tr> <td>(kΩ)</td> <td>(W)</td> <td>(V)</td> </tr> <tr> <td>1</td> <td>0.1</td> <td>10</td> </tr> <tr> <td>5</td> <td>0.1</td> <td>22.3</td> </tr> <tr> <td>10</td> <td>0.1</td> <td>31.6</td> </tr> <tr> <td>50</td> <td>0.1</td> <td>70.7</td> </tr> </tbody> </table>	Resistance Value	Max. Power at 70 °C	Max. Working Voltage	(kΩ)	(W)	(V)	1	0.1	10	5	0.1	22.3	10	0.1	31.6	50	0.1
Resistance Value	Max. Power at 70 °C	Max. Working Voltage																
(kΩ)	(W)	(V)																
1	0.1	10																
5	0.1	22.3																
10	0.1	31.6																
50	0.1	70.7																
Temperature Coefficient (Typical)	± 150 ppm/°C																	
Limiting Element Voltage	75 V																	
Contact Resistance Variation	1 % Rn or 2 Ω																	
End Resistance (Typical)	1 Ω																	
Dielectric Strength (RMS)	1000 V																	
Insulation Resistance (300 VDC)	10 <sup>6</sup> MΩ																	
Independent Linearity (Typical)	± 5 %																	



MECHANICAL SPECIFICATIONS		
Mechanical Travel	290° ± 5	
Operating Torque (Typical)	2 Ncm max.	2.83 oz.-inch max.
End Stop Torque	7 Ncm max.	9.9 oz.-inch max.
Tightening Torque of Mounting Nut	25 Ncm max.	2.2 lb-inch max.
Unit Weight	1 g	3.5 10 <sup>-2</sup> oz.
Terminals	e3: pure Sn	

ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	- 40 °C to 100 °C
Climatic Category	40/100/56
Sealing	Fully sealed - Container IP67

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</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	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	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	± 1 %	± 2 %	-
<b>Long Term Damp Heat</b>	56 days 40 °C 93 % HR	± 1 %	± 2 %	Insulation resistance > 10 <sup>4</sup> MΩ
<b>Rotational Life</b>	500 000 cycles at rated power Turn angle: ± 50° 33 cycles per min Temperature: 20 °C	± 20 %	-	Contact resistance variation max. 35 % Independent linearity ± 20 %
<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	± 1 %	< ± 2 %	-
<b>Shock</b>	50 g at 11 ms 3 successive shocks in 3 directions	± 0.5 %	± 1 %	-
<b>Vibration</b>	10 - 55 Hz 0.75 mm or 10 g in 3 directions	± 0.5 %	< ± 1 %	-

<b>SAP ORDERING INFORMATION</b> (Part Number 18 digits)																	
P	1	0	L	X	X	A	G	1	0	2	M	B	4				
MODEL	STYLE			SHAFT		RESISTANCE CODE			TOLERANCE CODE		PACKAGING CODE		SPECIAL NUMBER				
P10L	XC XX YE YM YP			AG = Ø 3 - 16 mm AI = Ø 3 - 20 mm		102 = 1 kΩ 502 = 5 kΩ 103 = 10 kΩ 503 = 50 kΩ			M = 20 %  On request K = 10 %		B4 = Box 100 pieces		(if applicable)  Given by VISHAY for custom design				

<b>PART NUMBER DESCRIPTION</b> (for information only)							
P10L	XX	AG	1K	20 %		BO100	e3
MODEL	STYLE	SHAFT	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD (Pb)-FREE



## Disclaimer

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

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