

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



FEATURES

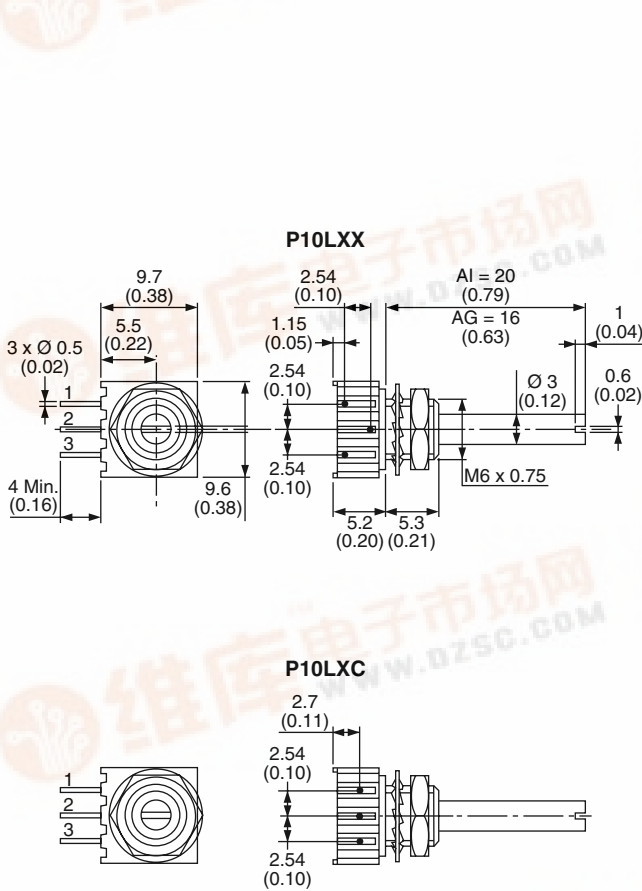
- 500 000 cycles
- Low temperature coefficient
 (± 150 ppm/ $^{\circ}$ C typical)
- Plastic housing and shaft
- Compact (3/8" square)
- Fully sealed



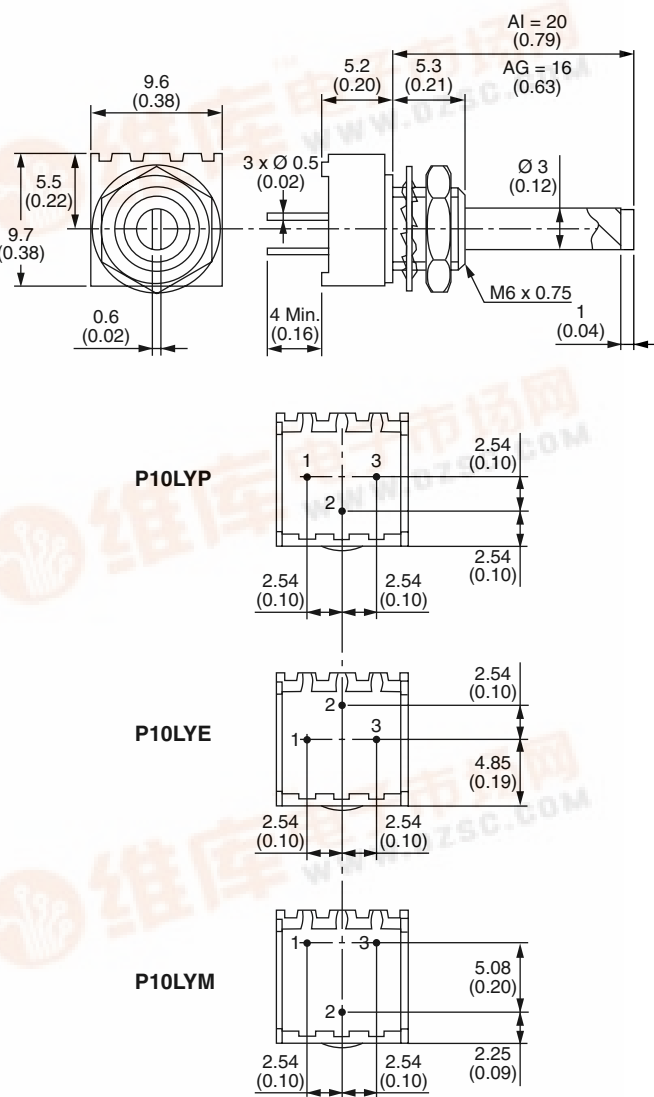
RoHS
 COMPLIANT

DIMENSIONS in millimeters (inches) (± 0.5 mm)

P10L: Side Adjust



P10L: Top Adjust



ELECTRICAL SPECIFICATIONS																		
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>CIRCUIT DIAGRAM</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
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(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 ⁶ 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 ⁻² 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"> • VISHAY trademark • Model • Ohmic Value code • Tolerance code • Manufacturing date code • Marking of terminals 3

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>	

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PERFORMANCES				
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Climatic Sequence	Phase A dry heat 100 °C Phase B damp heat Phase C cold - 40 °C Phase D damp heat 5 cycles	± 1 %	± 2 %	-
Long Term Damp Heat	56 days 40 °C 93 % HR	± 1 %	± 2 %	Insulation resistance > 10 ⁴ MΩ
Rotational Life	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 %
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	± 1 %	< ± 2 %	-
Shock	50 g at 11 ms 3 successive shocks in 3 directions	± 0.5 %	± 1 %	-
Vibration	10 - 55 Hz 0.75 mm or 10 g in 3 directions	± 0.5 %	< ± 1 %	-

SAP ORDERING INFORMATION (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											

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

Disclaimer

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