



# 3/8" Square Panel Potentiometer Miniature - Cermet - Fully Sealed



P10 panel potentiometer combines the very good setting stability offered by Vishay Sfernice trimmers (due to their proprietary multifinger wiper), with a mechanical life of 10 000 cycles.

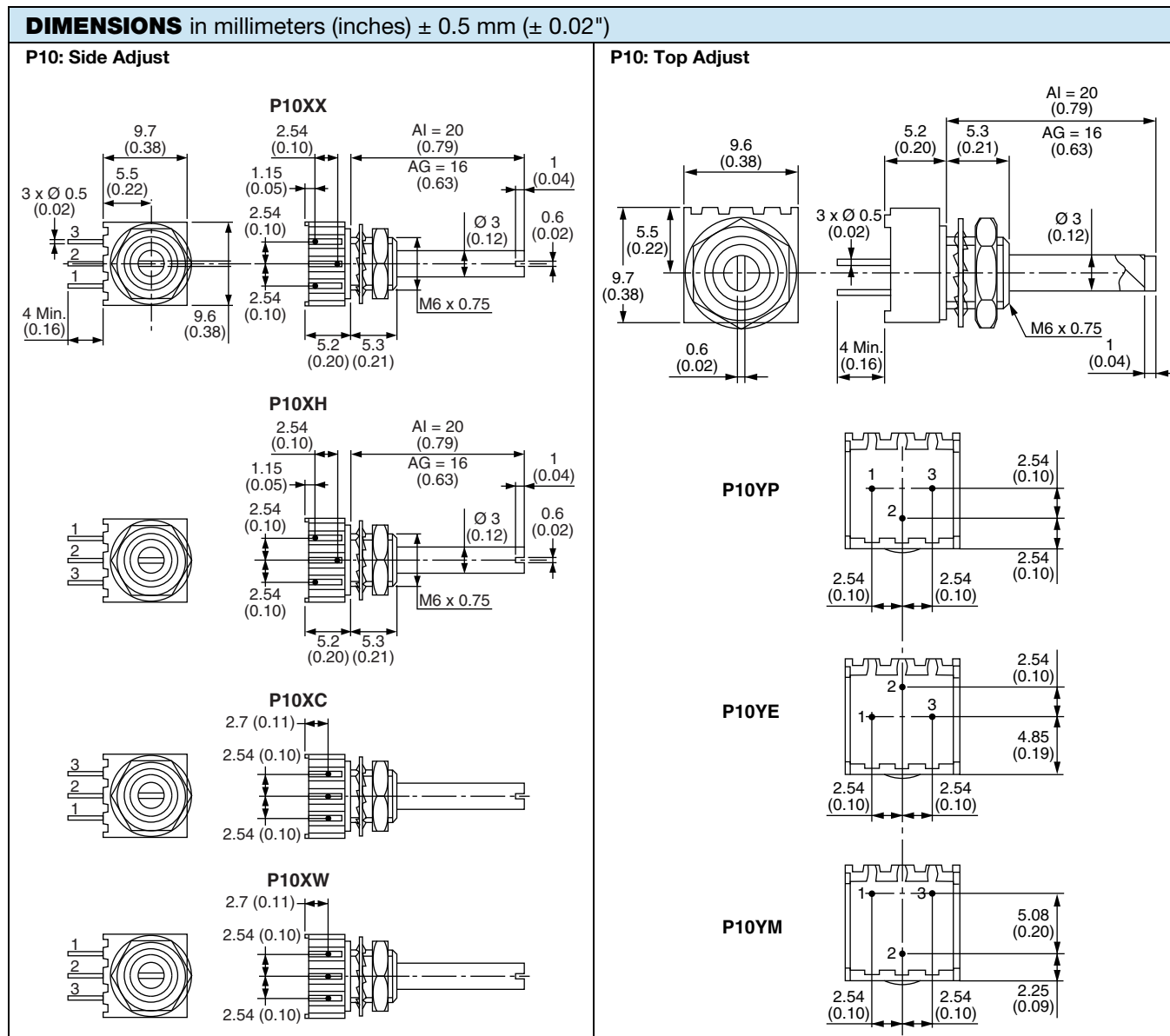
It is an ideal choice to set and control parameters such as temperature, time, volume levels, etc.

## FEATURES

- Industrial grade
- 0.5 W at 70 °C
- Cermet element
- Miniature compact
- Plastic housing and shaft
- Fully sealed
- 7 standard pin styles
- Test according to CECC 41000 or IEC 60393-1
- 10 000 cycles rotational life
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT



ELECTRICAL SPECIFICATIONS																																																																	
Resistive Element	Cermet																																																																
Electrical Travel	250° ± 15°																																																																
Standard Resistance Values	100 Ω to 2 MΩ																																																																
Tolerance	10 % - 5 % on request																																																																
Taper	Linear A																																																																
Power Rating	0.5 W at 70 °C 																																																																
Circuit Diagram																																																																	
Standard Resistance Element Data	<table border="1"> <thead> <tr> <th>Standard</th> <th>Max. Power</th> <th>Max. Working</th> <th>Max. Cur.</th> </tr> <tr> <th>W</th> <th>W</th> <th>V</th> <th>mA</th> </tr> </thead> <tbody> <tr><td>100</td><td>0.5</td><td>7</td><td>70</td></tr> <tr><td>200</td><td>0.5</td><td>10</td><td>50</td></tr> <tr><td>500</td><td>0.5</td><td>15.8</td><td>32</td></tr> <tr><td>1K</td><td>0.5</td><td>22.4</td><td>22</td></tr> <tr><td>2K</td><td>0.5</td><td>31.8</td><td>16</td></tr> <tr><td>5K</td><td>0.5</td><td>50.0</td><td>10</td></tr> <tr><td>10K</td><td>0.5</td><td>70.7</td><td>7</td></tr> <tr><td>20K</td><td>0.5</td><td>100</td><td>5</td></tr> <tr><td>50K</td><td>0.5</td><td>158</td><td>3.2</td></tr> <tr><td>100K</td><td>0.5</td><td>224</td><td>2.2</td></tr> <tr><td>200K</td><td>0.28</td><td>250</td><td>1.3</td></tr> <tr><td>500K</td><td>0.13</td><td>250</td><td>0.5</td></tr> <tr><td>1M</td><td>0.06</td><td>250</td><td>0.25</td></tr> <tr><td>2M</td><td>0.028</td><td>250</td><td>0.13</td></tr> </tbody> </table>	Standard	Max. Power	Max. Working	Max. Cur.	W	W	V	mA	100	0.5	7	70	200	0.5	10	50	500	0.5	15.8	32	1K	0.5	22.4	22	2K	0.5	31.8	16	5K	0.5	50.0	10	10K	0.5	70.7	7	20K	0.5	100	5	50K	0.5	158	3.2	100K	0.5	224	2.2	200K	0.28	250	1.3	500K	0.13	250	0.5	1M	0.06	250	0.25	2M	0.028	250	0.13
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Temperature Coefficient (Typical)	± 150 ppm/°C																																																																
Contact Resistance Variation (Typical)	1 % R <sub>n</sub> or 2 Ω																																																																
End Resistance (Typical)	1 Ω																																																																
Dielectric Strength (RMS)	1000 V																																																																
Insulation Resistance (300 V <sub>DC</sub> )	10 <sup>6</sup> MΩ																																																																



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	
Shafts	Standard shaft 20 mm length (R or AI code) and 16 mm length (D or AG code) is measured from the mounting face to the free end of the shaft. Vishay guarantee is lost if the customer modifies the shaft himself.	
Hardware	Nuts and washer are supplied separately (not mounted on the potentiometer) in a small bag placed in the packaging.	

ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	- 55 °C to 125 °C
Climatic Category	55/100/56
Sealing	Fully sealed - Container IP67

MARKING	
Vishay trademark	The ohmic value is indicated by a 3 figures code: The first two digits are significant figures, the third digit is the multiplier: Example: 101 = 100 Ω 102 = 1000 Ω 503 = 50 000 Ω
Model	
Ohmic value code	
Tolerance code	
Manufacturing date code	The manufacturing date is indicated by a figures code. The first two digits are the year, the last two digits are the week.
Marking of terminals 3	

PERFORMANCES				
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	± 1 %	± 2 %	Contact resistance variation: 1 %
Climatic Sequence	Phase A dry heat 100 °C Phase B damp heat Phase C cold - 55 °C Phase D damp heat 5 cycles	± 1 %	± 2 %	-
Damp Heat, Steady State	56 days 40 °C 93 % HR	± 1 %	± 2 %	Dielectric strength: 1000 V <sub>RMS</sub> Insulation resistance: > 10 <sup>4</sup> MΩ
Change of Temperature	5 cycles - 55 °C at 100 °C	± 1 %	-	$\Delta V_{1-2}/V_{1-3} \leq \pm 2 \%$
Mechanical Endurance	10 000 cycles	± 3 %	-	Contact resistance variation: $\leq 2 \%$ R <sub>n</sub>
Shock	50 g's at 11 ms 3 successive shocks in 3 directions	± 0.5 %	± 1 %	-
Vibration	10 Hz to 55 Hz 0.75 mm or 10 g's during 6 h	± 0.5 %	-	$\Delta V_{1-2}/V_{1-3} \leq \pm 1 \%$



ORDERING INFORMATION - Part Number														
P	1	0	X	X	A	G	1	0	3	K	B	3	0	
MODEL		STYLE			SHAFT		RESISTANCE CODE		TOLERANCE CODE		PACKAGING CODE		SPECIAL NUMBER	
P10		XC XH XW XX YE YM YP			AG = Ø 3 mm to 16 mm (old code D) AI = Ø 3 mm to 20 mm (old code R)		From 100 Ω to 2 MΩ 103 = 10 kΩ		K = 10 %  On request: J = 5 %		B30 = BOX 100 pieces		(If applicable)  Given by Vishay for custom design	

PART NUMBER DESCRIPTION (for information only)							
P10	XX	AG	10K	10 %		BO100	e3
MODEL	STYLE	SHAFT	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD (Pb)-FREE



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