



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



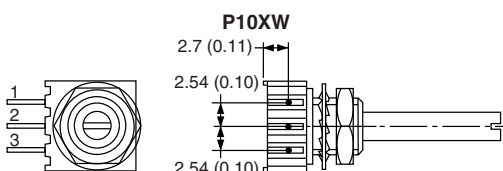
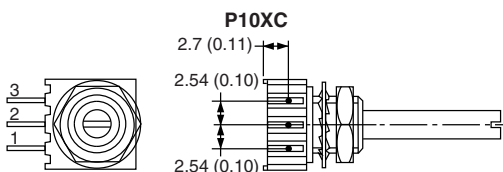
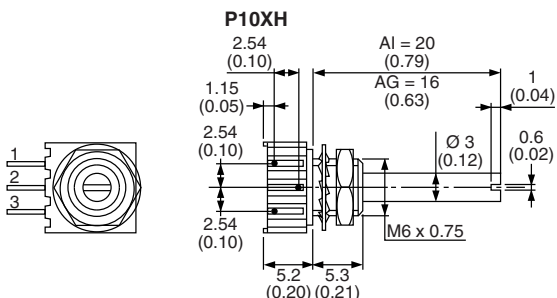
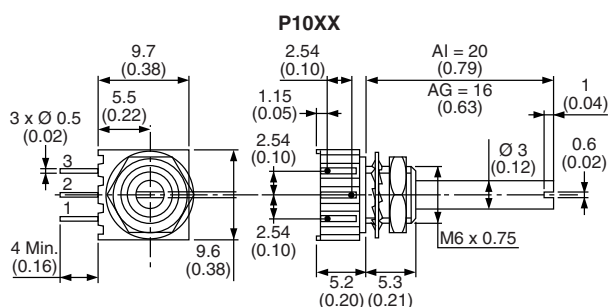
RoHS
COMPLIANT

QUICK REFERENCE DATA

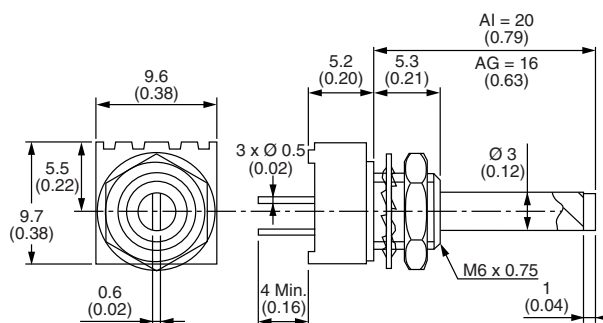
Multiple module	No
Switch module	n/a
Detent module	n/a
Special electrical laws	No, only A: linear
Sealing level	IP 67
Lifespan	10K cycles

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

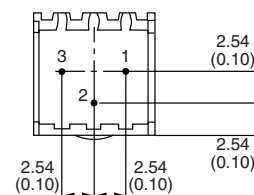
P10: Side Adjust



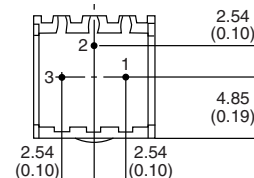
P10: Top Adjust



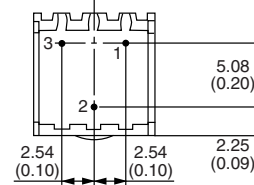
P10YP



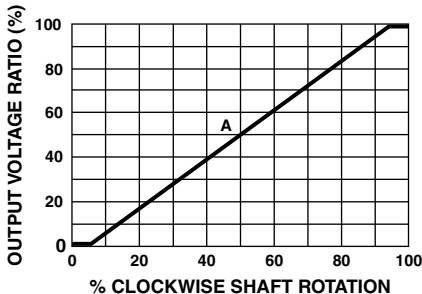
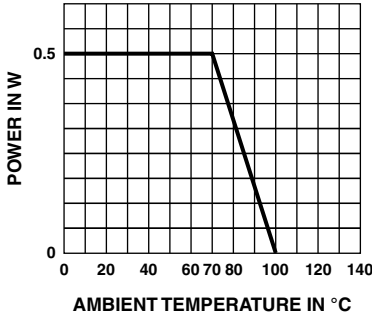
P10YE



P10YM



**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	A circuit diagram of a trimmer potentiometer. It consists of a zigzag line representing the resistive track. Terminal 'a' is at the left end, labeled '(1)'. Terminal 'c' is at the right end, labeled '(3)'. Terminal 'b' is at the wiper, labeled '(2)', with an arrow pointing to it from the label 'b' and the text 'cw' indicating clockwise rotation.																																																																
Standard resistance element data	<table><tr><th>Standard</th><th>Max. Power</th><th>Max. Working</th><th>Max. Cur.</th></tr><tr><td>W</td><td>W</td><td>V</td><td>mA</td></tr><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></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
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																																																														
Temperature coefficient (typical)	± 150 ppm/°C																																																																
Contact resistance variation (typical)	1 % R _n or 2 Ω																																																																
End resistance (typical)	1 Ω																																																																
Dielectric strength (RMS)	1000 V																																																																
Insulation resistance (300 V _{DC})	10 ⁶ 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 ⁻² oz.
Terminals	3: 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	

PERFORMANCE

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 _{RMS} Insulation resistance: > 10 ⁴ 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: ≤ 2 % R _n
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 %	-	$\Delta V_{1-2}/V_{1-3} \leq \pm 1 \%$

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability

**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

RELATED DOCUMENTS**APPLICATION NOTES**

Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.