

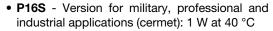


Knob Potentiometer with Switch



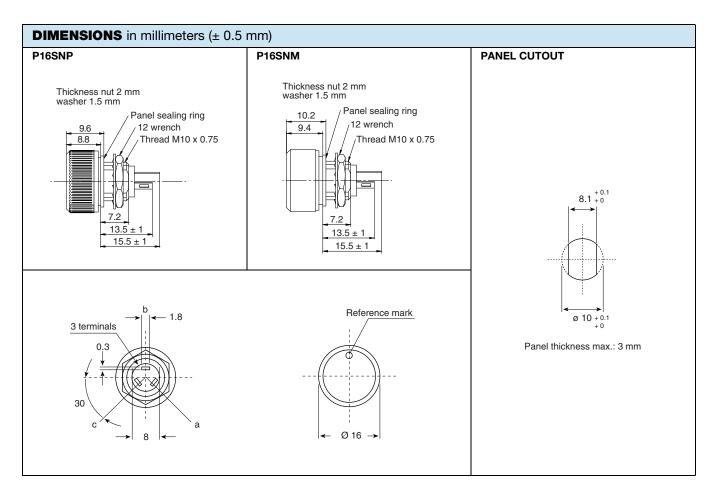
The P16S is a revolutionary concept in panel mounted potentiometers. This unique design consists of a knob driving and incorporating a cermet potentiometer. Only the mounting hardware and terminals are situated on the back side of the panel reducing to a minimum the required clearance.

FEATURES





- PA16S Version for professional audio applications (conductive plastic): 0.5 W at 40 °C
- Compact (integrated)
- Detent and electric cut off at beginning of travel
- Fully sealed and panel sealed
- Metallic or plastic knob options
- · Custom knob on request
- Test according to CECC 41000 or IEC 60393-1
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>





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ELECTRICAL SPECIFICATIONS							
	P16S	PA16S					
Resistive Element	Cermet	Conductive plastic					
Electrical Travel	220° ± 10°	220° ± 10°					
Power Rating Chart	1.25 P16S LIN. TAPER "A" 1.00 P16S LOG. TAPER "L & F" PA16S LOG. TAPER 0.25 PA16S LOG. TAPER 0 0 20 40 60 AMBIENT TEM						
Circuit Diagram	$ \begin{array}{c} \stackrel{a}{\circ} \longrightarrow \longrightarrow \stackrel{c}{\circ} \\ \stackrel{(1)}{\circ} \longrightarrow \stackrel{c}{\circ} \\ \stackrel{(2)}{\circ} \longrightarrow \stackrel{c}{\circ} \\ \end{array} $						
Taper	Switch on-off 80 80 1 F 80 1 A 40 0 10 20 40 % CLOCKWISE	60 80 100 KNOB ROTATION					
Resistance Range	22 Ω to 10 M Ω	1 k Ω to 1 M Ω					
Logarithmic Laws	100 Ω to 2.2 MΩ	470 Ω to 500 kΩ					
Standard Series e3	1 - 2.2 - 4.7 and on request 1 - 2 - 5	1 - 2.2 - 4.7					
Tolerance Standard On Request	± 20 % ± 10 %	\pm 20 % \pm 10 % (1 kΩ to 100 kΩ)					
Power Rating Linear Logarithmic	1 W at + 40 °C 0.5 W at + 40 °C	0.5 W at + 40 °C 0.25 W at + 40 °C					
Temperature Coefficient (Typical)	± 150 ppm	± 500 ppm					
Dielectric Strength (RMS)	2500 V	2500 V					
Limiting Element Voltage (Linear Law)	350 V	350 V					
Contact Resistance Variation	3 % Rn or 3 Ω	2 % Rn or 3 Ω					
End Resistance (Typical)	1 Ω	1 Ω					
Insulation Resistance (500 V _{DC})	$10^6\mathrm{M}\Omega$	$10^6\mathrm{M}\Omega$					



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MECHANICAL SPECIFICATIONS					
Mechanical Travel	300° ± 5°				
Operating Torque	2 Ncm typical				
End Stop Torque	25 Ncm maximum				
Tightening Torque of Mounting Nut	250 Ncm maximum				
Unit Weight	4.5 g typical				

ENVIRONMENTAL SPECIFICATIONS						
	METALLIC KNOB	PLASTIC KNOB				
Temperature Range	- 40 °C to + 125 °C	- 40 °C to + 85 °C				
Climatic Category	40/100/56 40/85/56					
Sealing	Sealed container and panel sealed					
Protection Grades	IP67					

SWITCH ELECTRICAL AND MECHANICAL SPECIFICATIONS						
ON/OFF Switch	Actuation in counter clockwise position (between terminal a and terminal b)					
Switching Current	P16S 100 mA max.					
Switching Current	PA16S 1 mA max.					
Switch Actuation Torque	4 Ncm min.					
Switch Actuation Travel	30° ± 5°					
Dielectric Strength Terminal to Terminal (RMS)	1000 V					
Insulation Resistance between Contacts	10 ⁶ MΩ					
Switch Mechanical Endurance	10 000 cycles					
1 Cycle	ON-OFF-ON					

MARKING

- Ohmic value code, tolerance, code and taper
- Manufacturing date code

PACKAGING

Carton box of 20 pieces

CONTROL KNOB

Black metallic knob (NM).

Black plastic knob (NP).

For white and blue color see ordering information.

Other dimensions, shapes, colors of control knobs are manufactured on request - please consult Vishay.

Other reference marks (shapes, colors) and legends can be printed on plastic knob on request - please consult Vishay.

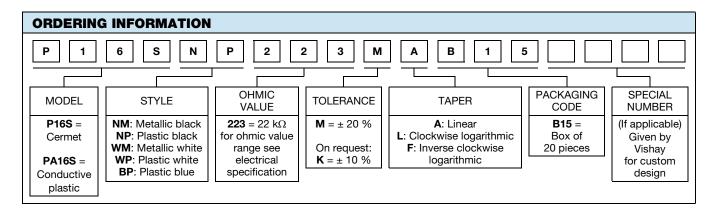
STANDARD RESISTANCE ELEMENT DATA												
	P16S CERMET						PA16S CONDUCTIVE PLASTIC					
STANDARD	LINEAR TAPER LOGA		GARITHMIC TAPER		l	LINEAR TAPER			LOGARITHMIC TAPER			
	MAX. POWER AT 40 °C	MAX. VOLTAGE	MAX. CUR. THROUGH WIPER	MAX. POWER AT 40 °C	MAX. VOLTAGE	MAX. CUR. THROUGH WIPER	MAX. POWER AT 40 °C	MAX. VOLTAGE	MAX. CUR. THROUGH WIPER	MAX. POWER AT 40 °C	MAX. VOLTAGE	MAX. CUR. THROUGH WIPER
Ω	W	٧	mA									
22	1	4.69	213									
47	1	6.85	146									
100	1	10	100	0.5	7.1	71						
220	1	14.8	67.4	0.5	10.5	48						
470	1	21.7	46.1	0.5	15.3	32.6				0.25	10.8	23.1
1K	1	31.6	31.6	0.5	22.4	22.4	0.5	22.4	22.4	0.25	15.8	16
2.2K	1	46.9	21.3	0.5	33.2	15.1	0.5	33.2	15.1	0.25	23.5	11
4.7K	1	68.5	14.6	0.5	48.5	10.3	0.5	48.5	10.3	0.25	34.3	7
10K	1	100	10	0.5	70.7	7.07	0.5	70.7	7.07	0.25	50	5
22K	1	148	6.74	0.5	105	4.77	0.5	105	4.77	0.25	74	3.4
47K	1	217	4.61	0.5	153	3.26	0.5	153	3.26	0.25	108	2.3
100K	1	316	3.16	0.5	224	2.24	0.5	224	2.24	0.25	158	1.6
220K	0.56	350	1.59	0.5	332	1.51	0.5	332	1.51	0.25	235	1.1
470K	0.26	350	0.75	0.26	350	0.74	0.26	350	0.74	0.25	343	0.7
1M	0.12	350	0.35	0.12	350	0.35	0.12	350	0.35			
2.2M	0.05	350	0.16	0.056	350	0.16						
4.7M	0.02	350	0.07									
10M	0.01	350	0.012									

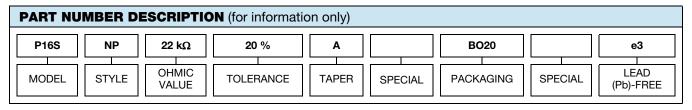
Revision: 20-Aug-13 3 Document Number: 51063



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PERFORMANCE							
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS					
12313		$\Delta R_{T}/R_{T}$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER			
Electrical Endurance	1000 h at rated power 90'/30' cycle at + 40 °C	± 5 %	-	Insulation resistance: > $10^4 \text{M}\Omega$ Contact res. variation: < 2% Rn			
Damp Heat, Steady State	56 days 40 °C, 93 % HR	± 2 %	± 1 %	Insulation resistance: $> 10^4 \text{ M}\Omega$			
Mechanical Endurance	50 000 cycles	± 5 %	-	Contact res. variation: < 2 % Rn			
Shock	50 g's at 11 ms 3 successive shocks in 3 dimensions	± 0.2 %	± 0.5 %	-			
Vibration	10 Hz to 55 Hz 0.75 mm or 10 <i>g</i> 's during 6 h	± 0.2 %	-	$\Delta V_{1-2}/\Delta V_{1-3} \le \pm \ 0.5 \%$			







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Revision: 02-Oct-12 Document Number: 91000

AMEYA360 Components Supply Platform

Authorized Distribution Brand:

























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