

# Knob Potentiometer



The P16 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.

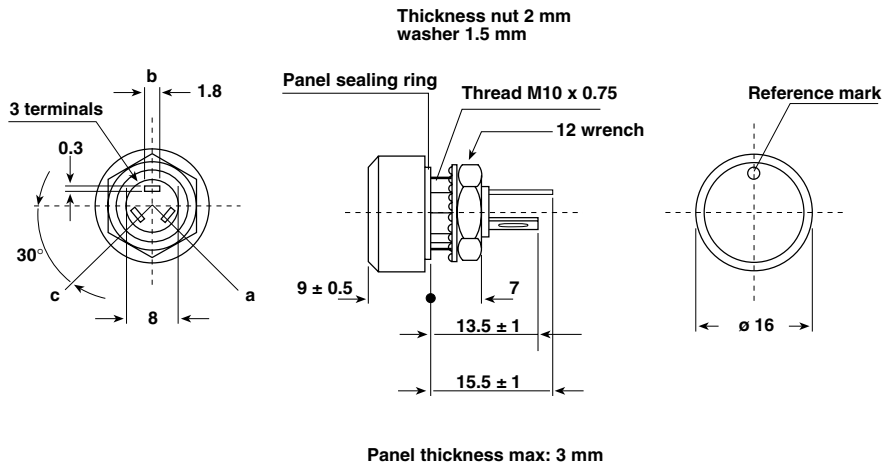
## FEATURES

- 1 Watt at 40 °C
- Test according to CECC 41300
- **P16** - version for professional and industrial applications
- **PA16** - version for professional audio applications
- Compact (integrated)
- Minimum clearance required
- Safety in use due to good insulation:  $> 10^4 \text{ M}\Omega$  500 V<sub>DC</sub>
- High dielectric strength: 2500 V<sub>RMS</sub>
- Fully sealed and panel sealed
- Metallic or plastic knob options
- Cermet or conductive plastic

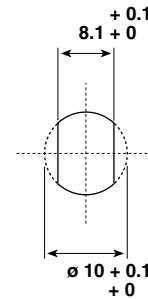


## DIMENSIONS in millimeters

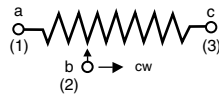
### P16 - PA16



### PANEL CUTOUT



## CIRCUIT DIAGRAM





ELECTRICAL SPECIFICATIONS			
		P16	PA16
Resistive Element		cermet	conductive plastic
Electrical Travel		270° ± 10°	270° ± 10°
Resistance Range	Linear Law	22 Ω to 10 MΩ	1 kΩ to 1 MΩ
	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	± 20 %	± 20 %
	On Request	± 10 %	± 10 % (1 kΩ to 100 kΩ)
Power Rating	Linear	1 W at + 40 °C	0.5 W at + 40 °C
	Logarithmic	0.5 W at + 40 °C	0.25 W at + 40 °C
Temperature Coefficient		See Standard Resistance Element Data	± 1000 ppm/°C
Dielectric Strength (RMS)		2500 V	2500 V
Limiting Element Voltage (Linear Law)		350 V	350 V
Insulation Resistance (500 VDC)		≥ 10 <sup>4</sup> MΩ	≥ 10 <sup>4</sup> MΩ
Contact Resistance Variation		3 % Rn or 3 Ω	2 % Rn or 3 Ω
End Resistance (Typical)		1 Ω	1 Ω
Insulation Resistance (500 VDC)		10 <sup>6</sup> MΩ	10 <sup>6</sup> MΩ

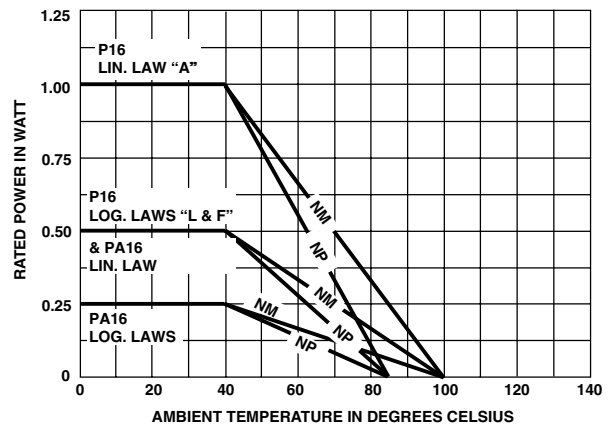
**MECHANICAL SPECIFICATIONS**

Mechanical Travel	300° ± 5°
Operating Torque (Ncm)	2 typical
End Stop Torque (max. Ncm)	25
Max Tightening Torque of Mounting Nut (max. Ncm)	250
Unit Weight	4.5 g typical

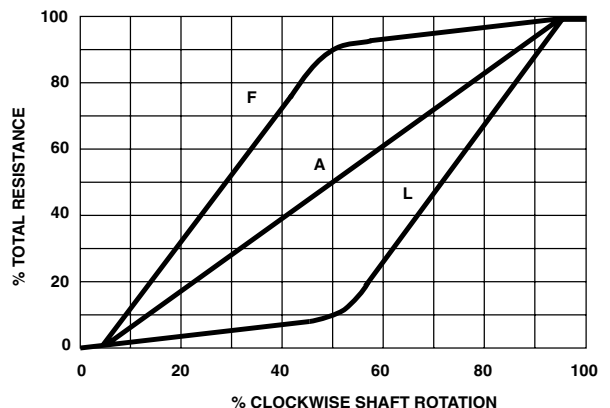
**ENVIRONMENTAL SPECIFICATIONS**

	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	

**POWER RATING CHART**



**RESISTANCE LAWS**







PERFORMANCE			
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\frac{\Delta R_T}{R_T}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-3}}$ (%)
Load Life	1000 hours at Pn 90°/30° cycle at + 40°C	± 5 % Insulation resistance: > 10 <sup>4</sup> MΩ Contact res. variatio: < 2 % Rn	
Long Term Damp Heat	56 days 40 °C 93 % HR	± 2 % Insulation resistance: > 10 <sup>4</sup> MΩ	± 1 %
Shock	50 g at 11 ms 3 successive shocks in 3 axes	± 0.2 %	± 0.5 %
Vibration	10 - 55 Hz 0.75 mm or 10 g during 6 hours	± 0.2 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ ≤ ± 0.5 %
Rotational Life	50 000 cycles	± 5 % Contact res. variation: < 2 % Rn	

ORDERING INFORMATION					
PA, PA16	NP	22 kΩ	20 %	A	BO20
SERIES	CONTROL KNOB DESIGNATION	OHMIC VALUE	TOLERANCE	LAW	PACKAGING
	<b>NM</b> : metallic black color <b>NP</b> : plastic black color <b>WM</b> : metallic white color <b>WP</b> : plastic white color <b>BP</b> : plastic blue color			<b>A</b> : linear <b>L</b> : clockwise logarithmic <b>F</b> : inverse clockwise logarithmic	

SAP PART NUMBERING GUIDELINES																		
P	1	6	N	P	2	2	3	M	A	B	1	5						
MODEL		STYLE		OHMIC VALUE			TOL	LAW	PACKAGING CODE			SPECIAL (IF APPLICABLE)						
See the end of this data book for conversion tables																		



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