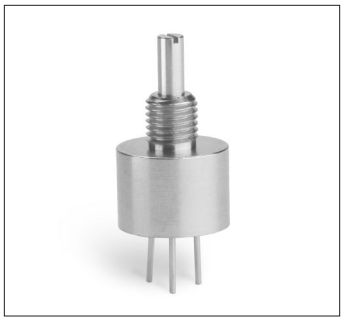
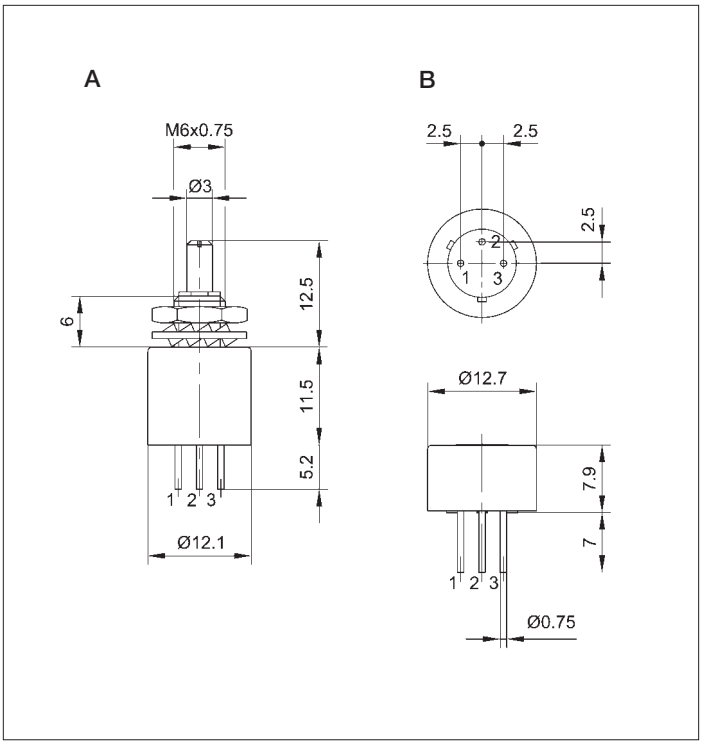
Single-Turn Wirewound Potentiometers

PD121/127 Series





Special features

- very small dimensions
- 4 x 10^3 movements
- linearity ±1%
- very robust
- highest protection class

Precise potentiometer with a wirewound resistance element for control electronics and measuring applications.

Recommended for applications in harsh environments, the PD121/127 Series combines extraordinary-high media resistance and robust engineering.

Careful selection of materials and high-quality components ensure constant and accurate angle measurement throughout the entire service life of the sensor.

Special designs with other shaft dimensions are available on request.

Description	
Size	housing diameter 12.7 mm
Housing	brass, nickel plated
Shaft	brass, nickel plated
Bearings	sleeve bearings
Resistance element	wirewound
Wiper assembly	precious metal
Electrical connections	gold plated

Type designations	PD121...3G-MB	PD127-3F	
Mechanical Data			
Dimensions	see drawing A	see drawing B	
Mounting	nut M6 x 0.75 and serrated washer		
Mechanical travel	316	318	°
Permitted shaft loading (axial and radial) static or dynamic force	1		N
Torque	≤ 1		Ncm
Permitted max. torque for mech. stops	40	30	Ncm
Maximum operational speed	120		RPM
Weight	7		g
Electrical Data			
Actual electrical travel	310 ±3		°
Available resistance values	1; 5; 10		kΩ
Resistance tolerance	±10		%
Repeatability	see order designations		
Effective temperature coefficient of the output-to-applied voltage ratio	5 (typical)		ppm/K
Independent linearity	±1		%
Max. permissible applied voltage	30		V
Recommended operating wiper current	≤ 10		µA
Max. wiper current in case of malfunction	100		mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10,000		MΩ
Dielectric strength (AC, 50 Hz, 1 min, 1 bar)	900		V
Environmental Data			
Temperature range	-55...+150		°C
Vibration	30...2000 A_{max} = 0.75 a_{max} = 10		Hz mm g
Life	4 x 10^3		movements
Shock (DIN IEC 68 T2-27)	50 7		g ms
Protection class (DIN 40050)	IP 67		

Order designations

Type	Art. no.	R in kΩ	Repeatability in %
PD121 1K0 3G065 MB	049000	1	0.37 (= 1.2°)
PD121 5K0 3G065 MB	049001	5	0.23 (= 0.7°)
PD121 10K0 3G065 MB	049002	10	0.18 (= 0.6°)
PD127 1K0 3F	049003	1	0.37 (= 1.2°)
PD127 5K0 3F	049004	5	0.23 (= 0.7°)
PD127 10K0 3F	049005	10	0.18 (= 0.6°)

Order designations / Abbreviations

3F: connecting solder pin axial
3G: connecting solder pin axial, Layout off-set
MB: bushing M6 x 0.75, axis Ø 3 mm with slot

Included in delivery

1 nut M6 x 0.75
1 serrated washer M6

Recommended accessories

MAP process-control indicators and display. MUP signal conditioner for standardized output signals.

Important

All values given for this series – including linearity, lifetime, micro-linearity, resistance to external disturbances and temperature coefficient in voltage dividing mode – are quoted for the device operating with the wiper voltage driving an operational amplifier working as a voltage follower where virtually no load is applied to the wiper (Ie ≤ 1 µA).