

**Single-Turn
Wirewound
Potentiometers**

PD200 Series



Special features

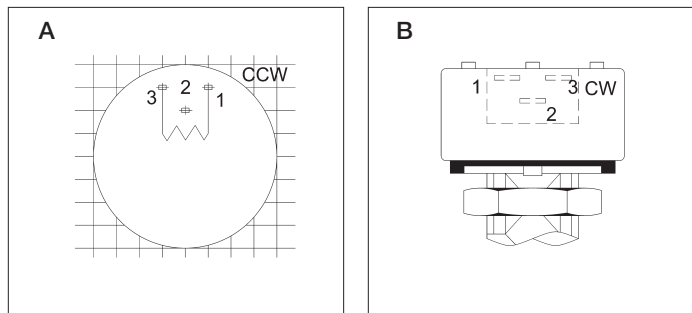
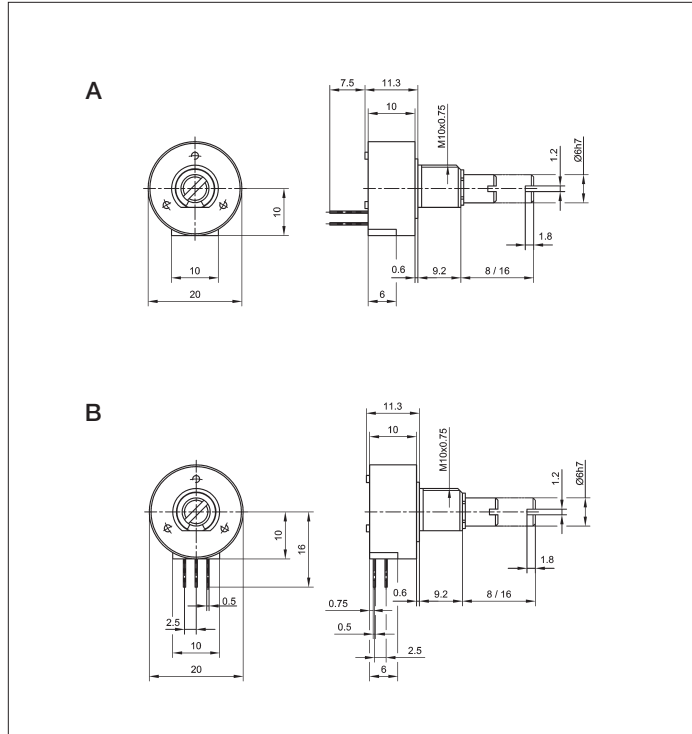
- very small dimensions
- 200 x 10³ movements
- excellent linearity ±0.4%
- very robust
- highest protection class

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

Recommended for applications in harsh environments requiring a sealed potentiometer, the PD200 Series combines extraordinary-high media resistance and robust engineering.

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

Special designs with other angular ranges, shaft dimensions, connections and higher torque are available on request.



Description	
Size	housing diameter 20 mm
Housing	high-quality, temperature-consistent plastic
Shaft	brass, nickel plated
Bearings	sleeve bearings
Resistance element	wirewound
Wiper assembly	precious metal
Electrical connections	gold plated

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Type designations	PD200...1A-MB	PD200...1B-MB				
Mechanical Data						
Dimensions	see drawing A		see drawing B			
Mounting	nut M10 x 0.75, serrated washer 3/8"					
Mechanical travel	320	°				
Permitted shaft loading (axial and radial) static or dynamic force	1	N				
Torque	≤ 0.6	Ncm				
Permitted max. torque for mech. stops	100	Ncm				
Maximum operational speed	120	RPM				
Weight	16	g				
Electrical Data						
Actual electrical travel	318 ±3	°				
Available resistance values	1	2	5	10	20	kΩ
Resistance tolerance	±5					%
Repeatability	0.32 (=1°)	0.25 (=0.8°)	0.19 (=0.6°)	0.15 (=0.5°)	0.11 (=0.35°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	40 (typical)					ppm/K
Independent linearity	±0.4					%
Max. permissible applied voltage	42					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)	1,500					V
Environmental Data						
Temperature range	-55...+125					°C
Vibration	30...2000 A _{max} = 0.75 a _{max} = 10					Hz mm g
Life	200 x 10 ³					movements
Shock (DIN IEC 68 T2-27)	50					g
	7					ms
Protection class (DIN 40050)	IP 67					

Order designations / Abbreviations

1A: connecting solder pin axial
 1B: connection solder pin radial
 MB: bushing M10 x 0.75, axis Ø 6 mm with slot

Included in delivery

1 nut M10 x 0.75
 1 serrated washer 3/8"

Recommended accessories

Fork coupling Z 104 G6, Art. no. 005690;
 Fork coupling Z 105 G6 (backlash-free), Art. no. 005691, 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 (I_e ≤ 1 μA).

Order designations					
Type	Art. no.	R in kΩ	Length of shaft mm		
PD200I 1K0 1A160 MB	71470	1	16		
PD200I 2K0 1A160 MB	71471	2	16		
PD200I 5K0 1A160 MB	71472	5	16		
PD200I 10K0 1A160 MB	71474	10	16		
PD200I 20K0 1A160 MB	71475	20	16		
PD200I 1K0 1B160 MB	71521	1	16		
PD200I 2K0 1B160 MB	71522	2	16		
PD200I 5K0 1B160 MB	71523	5	16		
PD200I 10K0 1B160 MB	71524	10	16		
PD200I 20K0 1B160 MB	71525	20	16		

Subject to changes

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