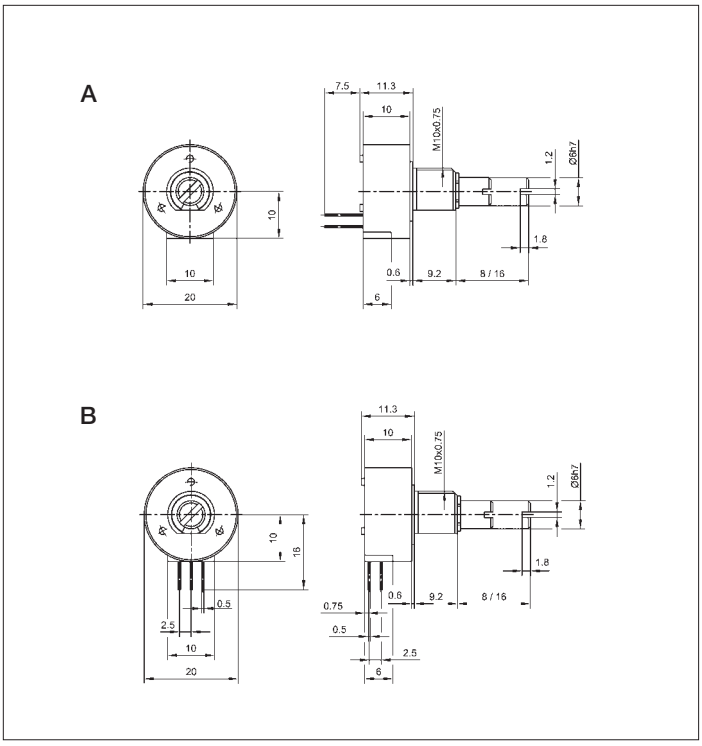
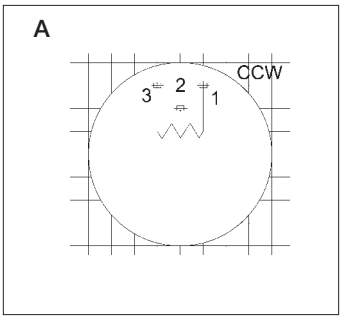
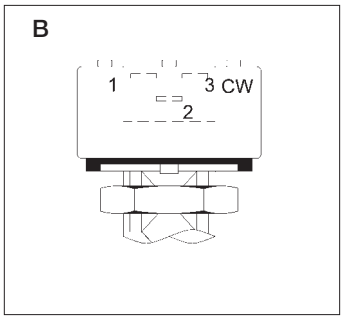
Single-Turn Wirewound Potentiometers

PD200 Series







Special features

- very small dimensions
- 200 x 10^3 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

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	5 (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

Type			Art. no.	R in kΩ	Length of shaft mm
PD200I	1K0	1A160 MB	048000	1	16
PD200I	2K0	1A160 MB	048002	2	16
PD200I	5K0	1A160 MB	048004	5	16
PD200I	10K0	1A160 MB	048005	10	16
PD200I	20K0	1A160 MB	048007	20	16
PD200I	1K0	1B160 MB	048001	1	16
PD200I	2K0	1B160 MB	048003	2	16
PD200I	5K0	1B160 MB	048047	5	16
PD200I	10K0	1B160 MB	048006	10	16
PD200I	20K0	1B160 MB	048008	20	16

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 (back-lash-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 (Ie ≤ 1 µA).