

Single-Turn Wirewound Potentiometers

PD210 Series



Special features

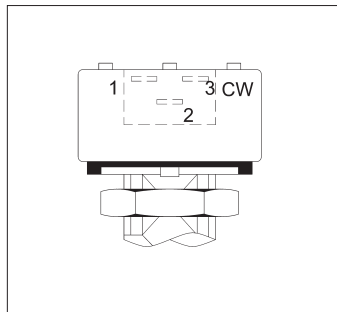
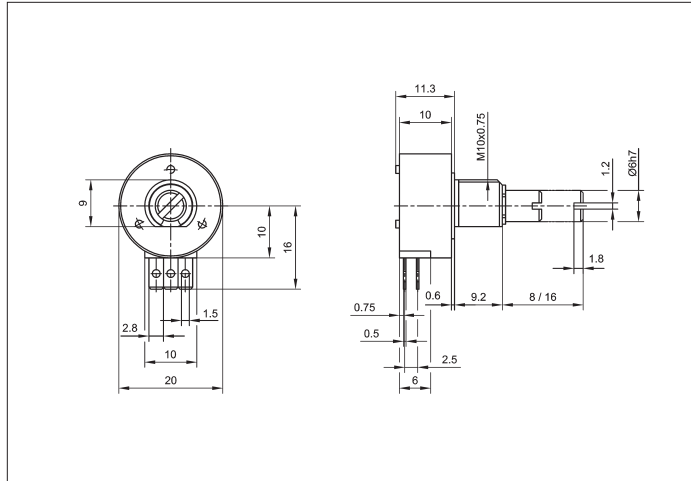
- very small dimensions
- 200×10^3 movements
- excellent linearity $\pm 0.4\%$
- very robust
- highest protection class

Sealed potentiometer with a wire-wound resistance element for control electronics and measuring applications.

Recommended for applications in harsh environments requiring a sealed potentiometer, the PD210 Series combines extraordinarily-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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Mechanical Data		
Dimensions	see drawing	
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	Hz
	A _{max} = 0.75	mm
	a _{max} = 10	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 shaft in mm		
PD210 1K0 4B080 MB	71605	1	8		
PD210 2K0 4B080 MB	71606	2	8		
PD210 5K0 4B080 MB	71607	5	8		
PD210 10K0 4B080 MB	71608	10	8		
PD210 20K0 4B080 MB	71609	20	8		
PD210 1K0 4B160 MB	71617	1	16		
PD210 2K0 4B160 MB	71618	2	16		
PD210 5K0 4B160 MB	71619	5	16		
PD210 10K0 4B160 MB	71620	10	16		
PD210 20K0 4B160 MB	71621	20	16		

Order designations / Abbreviations

4B: connecting 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).