

Singleturn Potentiometers Wirewound

Series PD210



Special features

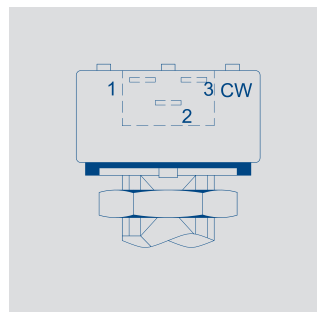
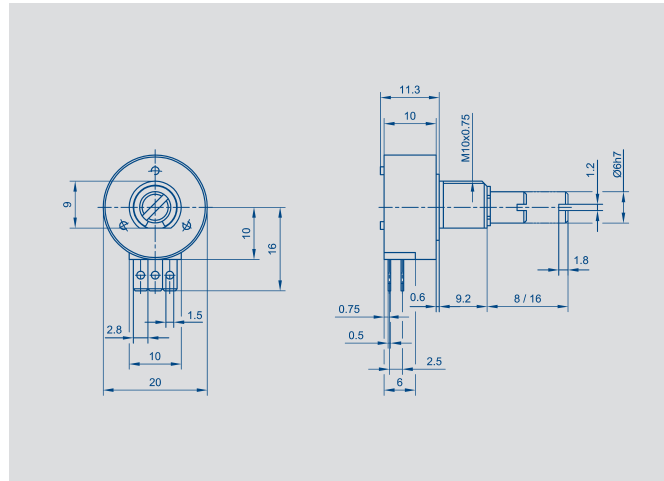
- very small dimensions
- 200×10^3 movements
- excellent linearity $\pm 0.4\%$
- very robust
- highest protection class

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

Due to its robust engineering the potentiometer can be used under particularly detrimental environmental conditions. In view of the extraordinarily high media resistance, this potentiometer can be recommended for all applications in aggressive environment.

The careful selection of the materials and high quality of the components used ensure a constant and high level of quality throughout the entire service life of the angle sensor.

Special designs with other angular ranges, shaft dimensions, connections and higher torque 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

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	min ⁻¹
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	typical 5	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 IEC68T2-27)	50 7	g ms
Protection class (DIN 40050)	IP67	

Order designations					
Type		Art.no.	R in kΩ	Length shaft in mm	
PD210	1K0	4B080 MB	048009	1	8
PD210	2K0	4B080 MB	048011	2	8
PD210	5K0	4B080 MB	048013	5	8
PD210	10K0	4B080 MB	048015	10	8
PD210	20K0	4B080 MB	048017	20	8
PD210	1K0	4B160 MB	048010	1	16
PD210	2K0	4B160 MB	048012	2	16
PD210	5K0	4B160 MB	048014	5	16
PD210	10K0	4B160 MB	048016	10	16
PD210	20K0	4B160 MB	048018	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 Z104 G6, Art.no. 005690;
Fork coupling Z105 G6 (backlash free), Art.no. 005691;
Process-controlled indicators MAP... with display,
Signal conditioner MUP... for standardized output signals

Important

All the values given in this data sheet for linearity, lifetime and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper ($I_e \leq 10 \mu A$).

Subject to changes