

Single-Turn Wirewound Potentiometers

PD280 Series



Special features

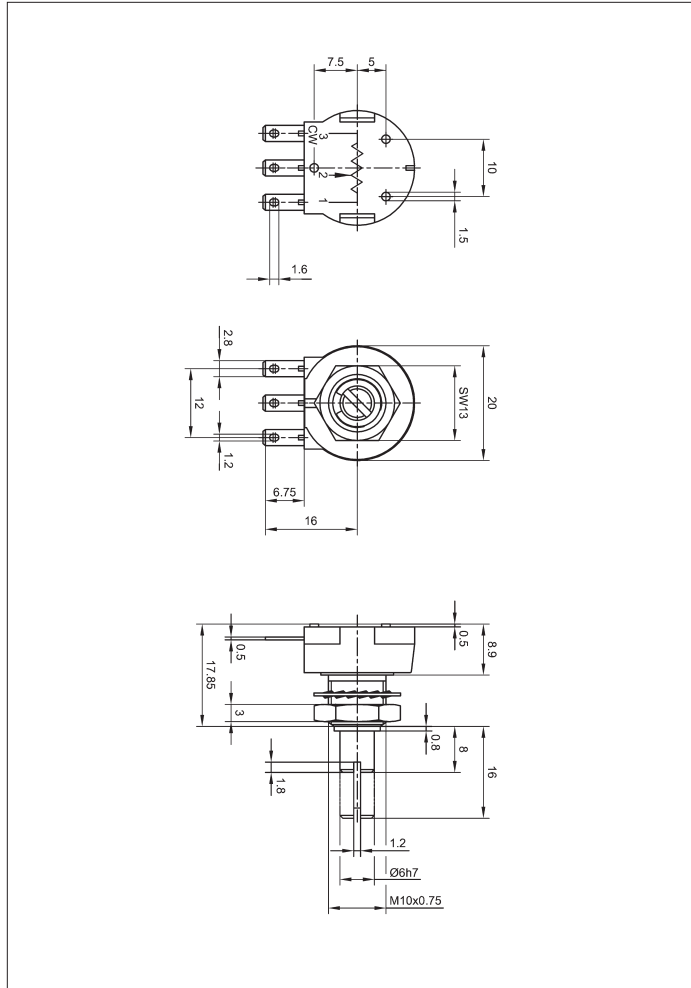
- very small dimensions
- 200 x 10³ movements
- excellent linearity ±0.6%
- very robust

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

Recommended for applications in harsh environments requiring a sealed potentiometer, the PD280 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 shaft dimensions and connections 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	≤ 1	Ncm
Permitted max. torque for mech. stops	100	Ncm
Maximum operational speed	120	RPM
Weight	14	g

Electrical Data			
Actual electrical travel	312 ±3	°	
Available resistance values	1	5	10
Resistance tolerance	±5		
Repeatability	0.24 (=0.75°)	0.13 (=0.4°)	0.11 (=0.35°)
Effective temperature coefficient of the output-to-applied voltage ratio	40 (typical)	ppm/K	
Independent linearity	±0.6		
Max. permissible applied voltage	36		
Recommended operating wiper current	≤ 10	µA	
Max. wiper current in case of malfunction	100		
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10,000		
Dielectric strength (AC, 50 Hz, 1 min, 1 bar)	1,500	V	

Environmental Data		
Temperature range	-25...+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 50	

Order designations					
Type	Art. no.	R in kΩ	Length of shaft mm		
PD280 1K0 4A080 MB	78009	1	8		
PD280 5K0 4A080 MB	78014	5	8		
PD280 10K0 4A080 MB	77729	10	8		
PD280 1K0 4A160 MB	78025	1	16		
PD280 5K0 4A160 MB	78030	5	16		
PD280 10K0 4A160 MB	78031	10	16		

Order designations / Abbreviations

4A: connecting pin, radial
 MB: bushing M10 x 0.75, axis Ø 6 mm

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).