

## Single-Turn Wirewound Potentiometers

PD280 Series



### Special features

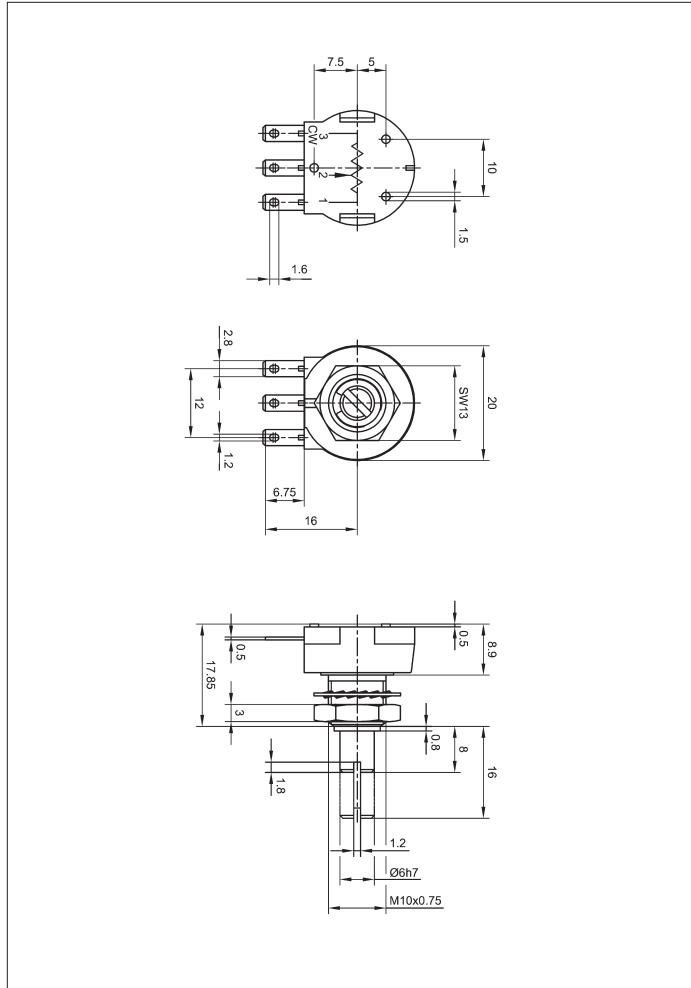
- very small dimensions
- 200 x 10<sup>3</sup> movements
- excellent linearity ±0.6%
- very robust

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	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	-25...+125	°C
Vibration	30...2000	Hz
	A <sub>max</sub> = 0.75	mm
	a <sub>max</sub> = 10	g
Life	200 x 10 <sup>3</sup>	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<sub>e</sub> ≤ 1 µA).