

# Singleturn Potentiometers Wirewound

Series PD280



### Special features

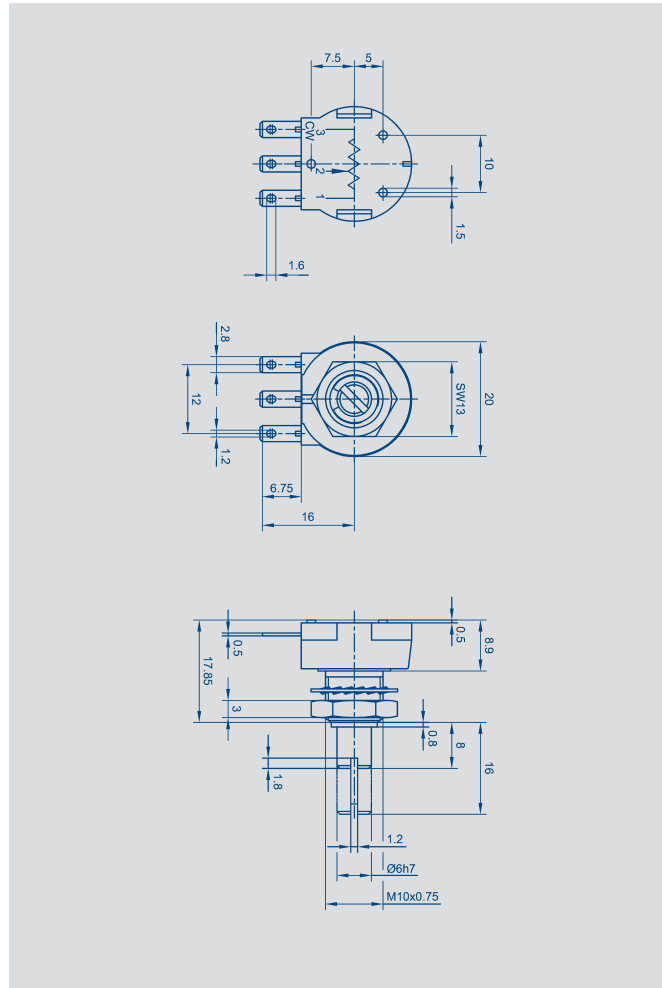
- very small dimensions
- $200 \times 10^3$  movements
- excellent linearity  $\pm 0.6\%$
- very robust

Precise 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.

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 shaft dimensions and connections 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	≤ 1	Ncm	
Permitted max. torque for mech. stops	100	Ncm	
Maximum operational speed	120	min <sup>-1</sup>	
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	typical 5	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 IEC68T2-27)	50	g	
	7	ms	
Protection class (DIN 40050)	IP50		

### 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 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 ( $I_e \leq 10 \mu A$ )

### Order designations

Type	Art.no.	R in kΩ	Length of shaft mm
PD280 1K0 4A080 MB	048019	1	8
PD280 5K0 4A080 MB	048021	5	8
PD280 10K0 4A080 MB	048023	10	8
PD280 1K0 4A160 MB	048020	1	16
PD280 5K0 4A160 MB	048022	5	16
PD280 10K0 4A160 MB	048024	10	16