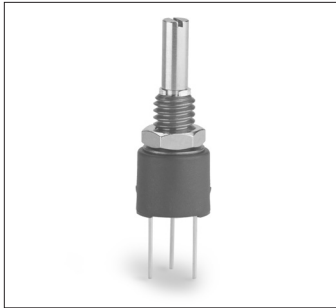


## Single-Turn Potentiometers Cermet

### PC90 Series



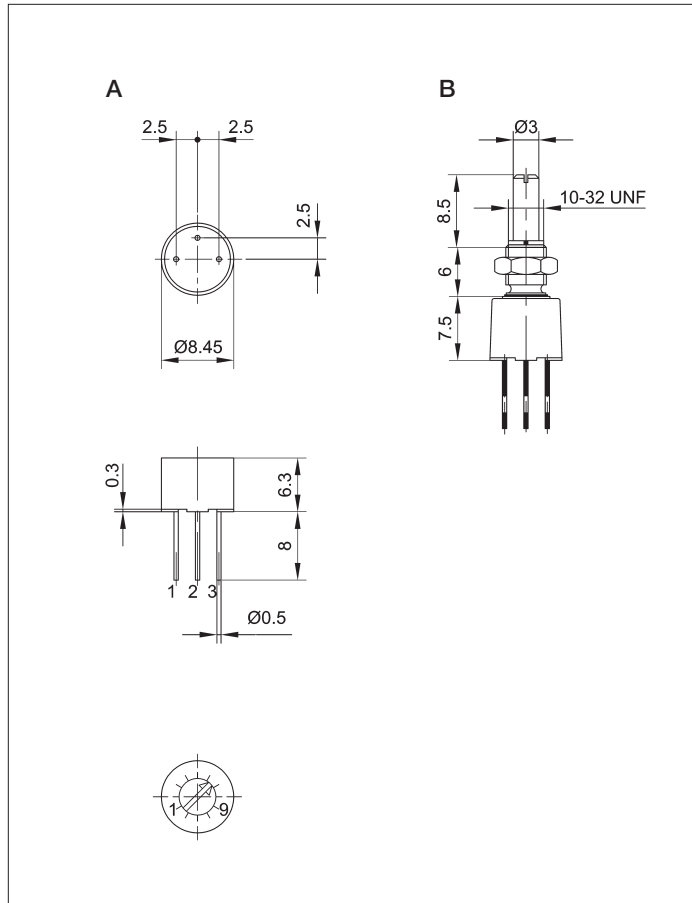
#### Special features

- very small dimensions
- $4 \times 10^3$  movements
- linearity  $\pm 3\%$
- high resolution – better than  $0.5^\circ$
- protection class IP 67

Small dimensions characterize this potentiometer.

Recommended for applications in harsh environments requiring a sealed potentiometer, the PC90 Series combines extraordinary-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.



#### Description

Size	housing diameter 8.45 mm
Housing	Thermoplast
Shaft	brass, nickel plated
Bearings	sleeve bearings
Resistance element	Metalloxyd ceramics (Cermet)
Wiper assembly	precious metal
Electrical connections	solder pins, gold plated

Type designations	PC90...3A	PC90...3A-UB
<b>Mechanical Data</b>		
Dimensions	see drawing A	see drawing B
Mounting	nut 10-32 UNF and serrated washer M5	
Mechanical travel	305	°
Permitted shaft loading (axial and radial) static or dynamic force	1	N
Torque	≤ 0.5	Ncm
Maximum operational speed	120	RPM
Weight	2	g
<b>Electrical Data</b>		
Actual electrical travel	300 ±3	°
Available resistance values	1; 5; 10; 50; 100; 500; 1000	kΩ
Resistance tolerance	±10	%
Repeatability	0.133	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5	ppm/K
Independent linearity	±3	%
Max. permissible applied voltage	25	V
Recommended operating wiper current	≤ 1	μA
Max. wiper current in case of malfunction	25	mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10,000	MΩ
Dielectric strength (AC, 50 Hz, 1 min, 1 bar)	900	V
<b>Environmental Data</b>		
Temperature range	-55...+125	°
Vibration	30...2000 A <sub>max</sub> = 0.75 a <sub>max</sub> = 10	Hz mm g
Life	4 x 10 <sup>3</sup>	movements
Shock (DIN IEC 68 T2-27)	50 7	g ms
Protection class (DIN 40050)	IP 67	

**Order designations**

Type	Art. no.	Type	Art. no.	R in kΩ
PC90 1K0 3A	047000	PC90 1K0 3A 085 UB	047001	1
PC90 5K0 3A	047004	PC90 5K0 3A 085 UB	047005	5
PC90 10K0 3A	047006	PC90 10K0 3A 085 UB	047007	10
PC90 50K0 3A	047008	PC90 50K0 3A 085 UB	047009	50
PC90 100K0 3A	047010	PC90 100K0 3A 085 UB	047011	100
PC90 500K0 3A	047107	PC90 500K0 3A 085 UB	047012	500
PC90 1M0 3A	047002	PC90 1M0 3A 085 UB	047003	1000

**Order designations / Abbreviations**

3A: connecting solder pin axial  
 UB: bushing imperial thread, axis  
 Ø 3 mm with slot

**Included in delivery**

1 nut 10-32 UNF  
 1 serrated washer M5

**Recommended accessories**

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).