

Eingang-Potentiometer  
 PL 130  
 ø 13.0 mm  
 5.000.000 Zyklen  
 Leitplastik

Singleturn Potentiometers  
 PL 130  
 ø 13.0 mm  
 5.000.000 cycles  
 Conductive plastic



Mechanische Daten	Mechanical Data	
Durchmesser	Diameter	13.0 mm
Maximales Anlaufdrehmoment	Max. Torque	0.5 Ncm
Lebensdauer	Life expectancy	5.000.000 Zyklen/cycles
Elektrische Daten	Electrical Data	
Anschlusswiderstand R	Nominal resistance R	1/5/10KΩ
Widerstandstoleranz	Resistance tolerance	± 15 %
Linearität	Linearity	± 2.5 %
Empf. Betriebsstrom im Schleiferkreis	Recommended wiper current	<1 µA
Maximaler Schleiferstrom im Störfall	Max. wiper curr. in case of malfunction	5 mA
Belastung P	Power rating P	0.25 W/ 40°C
Maximale Anschlussspannung	Maximum supply voltage	$U_{max} = \sqrt{PxR}$
Maximaler Übergangswiderstand	Maximum contact resistance	ENR 20 KΩ
Temperaturkoeffizient Widerstand	Temperature coefficient of resistance	400 ppm/°C
Temperaturkoeffizient Spannungsteiler	Temperature coefficient voltage divider	30 ppm/°C
Spannungsfestigkeit	Dielectric strength	750 VAC/1 min
Isolationswiderstand	Insulating resistance	10 G Ω bei/at 500 VDC
Umgebungsbedingungen	Environmental Conditions	
Lagertemperatur	Storage temperature	-55°C... +105°C
Betriebstemperatur	Operating temperature	-25°C... +85°C
Klimatische Prüfklasse	Climatic rating	25/085/56
Schutzart	Protection rating	IP 65
Vibrationen	Vibration	10 G (30 – 2000 Hz, 0.75 mm)
Schock	Shock	50 G (Halbsinus, 7 ms) 50 G (half sine pulse, 7 ms)
Material	Material	
Gehäuse	Housing	Messing vernickelt/brass nickel plated
Achse	Shaft	Rostfreier Stahl/stainless steel
Anschlüsse	Connections	Messing verzinkt/brass solder plated

#### Optionen

- Spezialachse
- Elektrische Drehwinkel zwischen 20° und 300°
- Andere mechanische Drehwinkel zwischen 45° und 316°

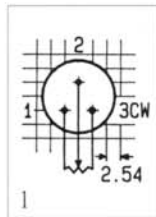
#### Options

- Customer specific shafts
- Electrical angle from 20° to 300°
- Other mechanical angle from 45° to 316°

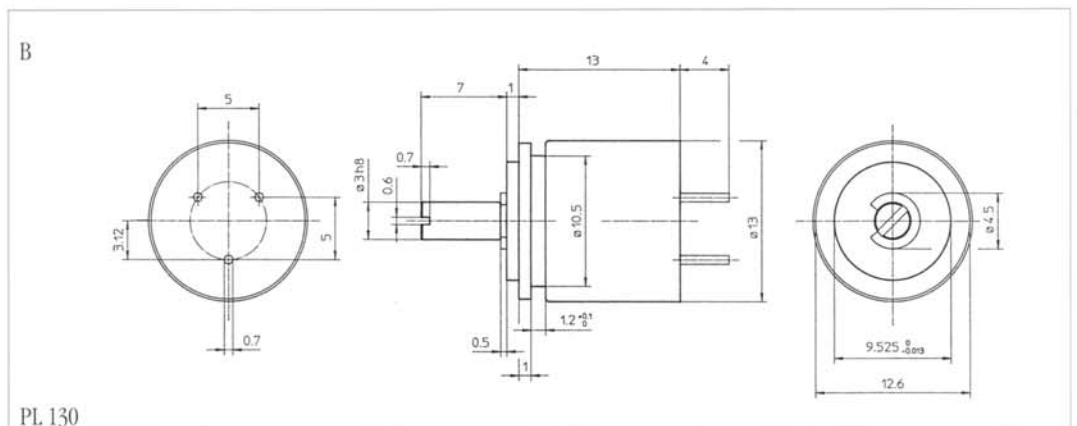
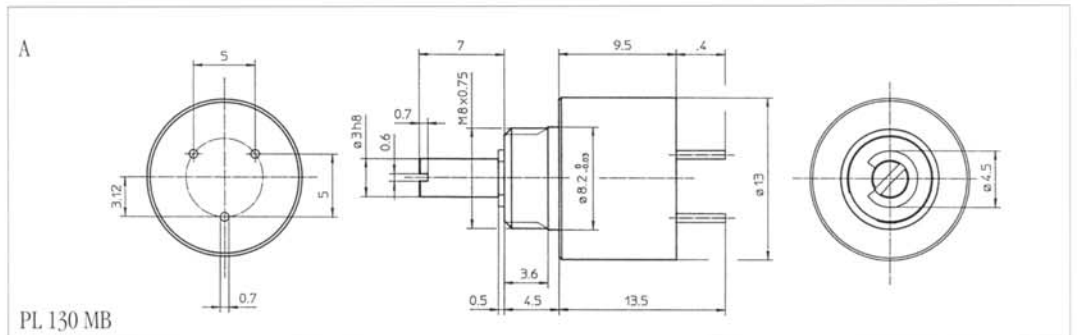


Typ	Model	PL 130 MB	PL 130
Anschlussbild	Connecting diagram	1	1
Massbilder	Dimension drawings	A	B
Elektr. Drehwinkel	Electr. angle	300°	300°
Mech. Drehwinkel	Mech. angle	316°	316°

Anschlussbild  
Connecting diagram



Massbilder  
Dimension drawings



Zubehör  
Accessories

Art. Nr.	Typ	Bezeichnung	Bemerkung
Art. No.	Model	Marking	Remarks
23491	Mutter	M8 x 0.75	serienmässig
23491	Nut	M8 x 0.75	standard item
23509	Scheibe	Fächerscheibe	serienmässig
23509	Washer	Fan washer	standard item
23510	PL 130	Befestigungsklammer	
23510	PL 130	Fixing clamp	

# Single-Turn Conductive Plastic Potentiometers

## PL130 Series



### Special features

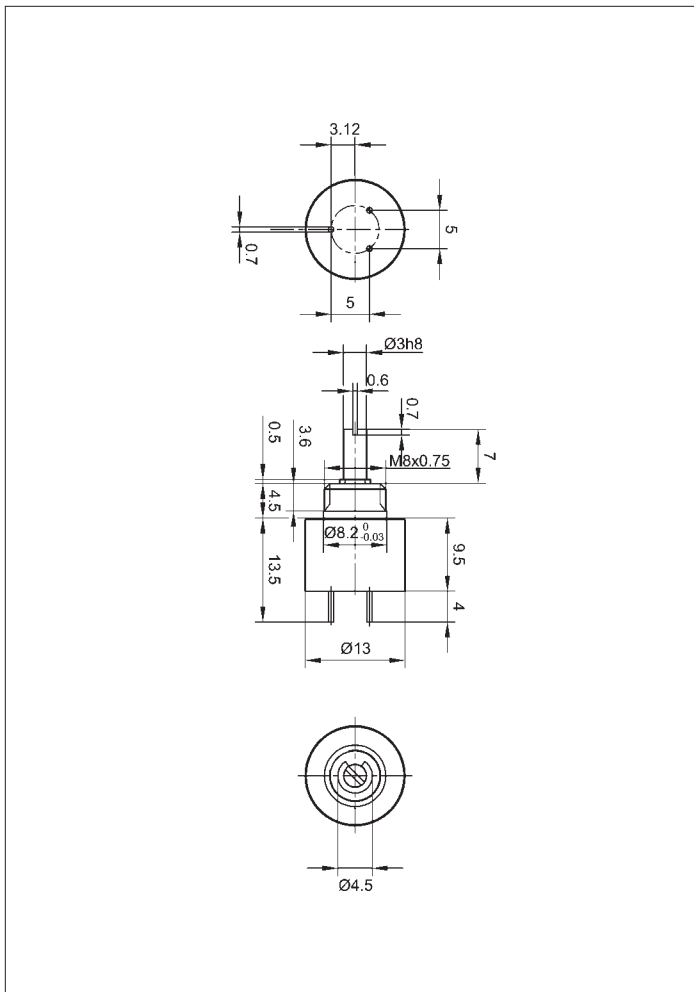
- very small dimensions
- individual variability
- $10 \times 10^6$  movements
- excellent linearity
- very high resolution – better than  $0.1^\circ$

Small dimensions characterize this potentiometer.

With a housing diameter of only 13 mm, the PL130 series provides high precision in an extremely small package for use in servo systems and measuring applications.

Careful selection of materials and high-quality components ensure a consistent measurement throughout the entire service life of the sensor.

Special designs with other angular ranges and shaft dimensions are available on request.



### Description

Size	housing diameter 13 mm
Housing	brass, nickel plated
Shaft	stainless steel
Bearings	sleeve bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	solder pins, tin plated

Type designations	PL130 MB	
<b>Mechanical Data</b>		
Dimensions	see drawing	
Mounting	nut M8 x 0.75 and serrated washer	
Mechanical travel	316	°
Permitted shaft loading (axial and radial) static or dynamic force	1	N
Torque	≤ 0.5	Ncm
Maximum operational speed	120	RPM
Weight	8	g
<b>Electrical Data</b>		
Actual electrical travel	300 ±3	°
Available resistance values	1; 5	kΩ
Resistance tolerance	±15	%
Repeatability	0.07 (=0.2°)	%
Effective temperature coefficient of the output-to-applied voltage	5 (typical)	ppm/K
Independent linearity	±2.5	%
Max. permissible applied voltage	12	V
Recommended operating wiper current	≤ 1	μA
Max. wiper current in case of malfunction	5	mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10,000	MΩ
Dielectric strength (AC, 50 Hz, 1 min, 1 bar)	750	V
<b>Environmental Data</b>		
Temperature range	-25...+85	°C
Vibration	30...2000	Hz
	A <sub>max</sub> = 0.75 a <sub>max</sub> = 10	mm g
Life	10 x 10 <sup>6</sup>	movements
Shock (DIN IEC 68 T2-27)	50	g
	7	ms
Protection class (DIN 40050)	IP 65	

#### Order designations /

#### Abbreviations

3G: connecting solder pin axial  
MB: bushing M8 x 0.75  
axis Ø 3 mm with slot

#### Included in delivery

1 nut M8 x 0.75  
1 serrated washer Ø 8.15 mm

#### 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 ( $I_e \leq 1 \mu A$ ).

Order designations				
Type			Art. no.	R in kΩ
PL130	1K0	3G070 MB	045000	1
PL130	5K0	3G070 MB	045001	5