

Eingang-Potentiometer
 PL 240
 ø 20.0 mm
 500.000 Zyklen
 Leitplastik

Singleturn Potentiometers
 PL 240
 ø 20.0 mm
 500.000 cycles
 Conductive plastic



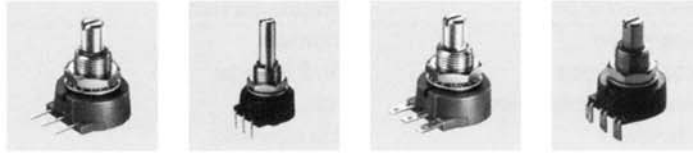
Mechanische Daten	Mechanical Data	
Durchmesser	Diameter	20.0 mm
Maximales Einstellmoment	Maximum torque	1.0 Ncm
Lebensdauer	Life expectancy	500.000 Zyklen/cycles
Elektrische Daten	Electrical Data	
Anschlusswiderstand R	Nominal resistance R	1/5/10 K Ω
Widerstandstoleranz	Resistance tolerance	$\pm 20\%$
Linearität	Linearity	$\pm 2\%$
Empf. Betriebsstrom im Schleiferkreis	Recommended wiper current	<0.1 μ A
Maximaler Schleiferstrom im Störfall	Max. wiper curr. in case of malfunction	10 mA
Belastung P	Power rating P	0.5 W/ 40°C
Maximale Anschlussspannung	Maximum supply voltage	$U_{\max} = \sqrt{P \times R}$
Maximaler Übergangswiderstand	Maximum contact resistance	ENR 20 K Ω
Temperaturkoeffizient Spannungsteiler	Temperature coefficient voltage divider	30 ppm/°C
Spannungsfestigkeit	Dielectric strength	1500 VAC/1 min
Isolationswiderstand	Insulating resistance	10 G Ω bei/at 500 VDC
Umgebungsbedingungen	Environmental Conditions	
Lagertemperatur	Storage temperature	-25°C... +125°C
Betriebstemperatur	Operating temperature	-25°C... +125°C
Klimatische Prüfklasse	Climatic rating	25/125/56
Schutzart	Protection rating	IP 50
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	Thermoplast
Achse	Shaft	Rostfreier Stahl/Stainless steel
Anschlüsse	Connections	Messing verzinnt/ brass solder plated

Optionen

- Buchse mit Fläche
- Achslängen bis 50 mm
- Andere elektrische Drehwinkel zwischen 20° und 270°

Options

- Flattened bushing
- Shaft length up to 50 mm
- Other electrical angle from 20° to 270°



Typ	Model	PL 240-1A-MB	PL 240-1B-MB	PL 240-4A-MB	PL 240-4B-MB
Anschlussbilder	Connecting diagrams	1	2	3	4
Massbilder	Dimension drawings	A	B	C	B/C
Elektr. Drehwinkel	Electr. angle	270°	270°	270°	270°
Mech. Drehwinkel	Mech. angle	300°	300°	300°	300°

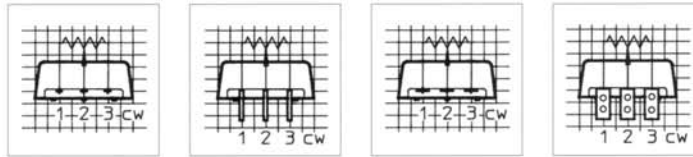
Typenbezeichnung/Abkürzungen

Marking/Remarks

Anschlussarten:	1A = Print seitlich
Connections:	1A = side PC pins
	1B = Print achsial
	1B = axial PC pins
	4A = Steckzunge seitlich
	4A = side solder lugs
	4B = Steckzunge achsial
	4B = axial solder lugs
Gewindebuchse	M = Metrisches Gewinde
Bushing:	M = metric thread
Achse:	B = ø 6 mm, mit Schlitz
Shaft:	B = ø 6 mm, slotted

Anschlussbilder

Connecting diagrams



1 Raster: 2.5 mm
Ansicht: von vorne
1 grid: 2.5 mm
front view

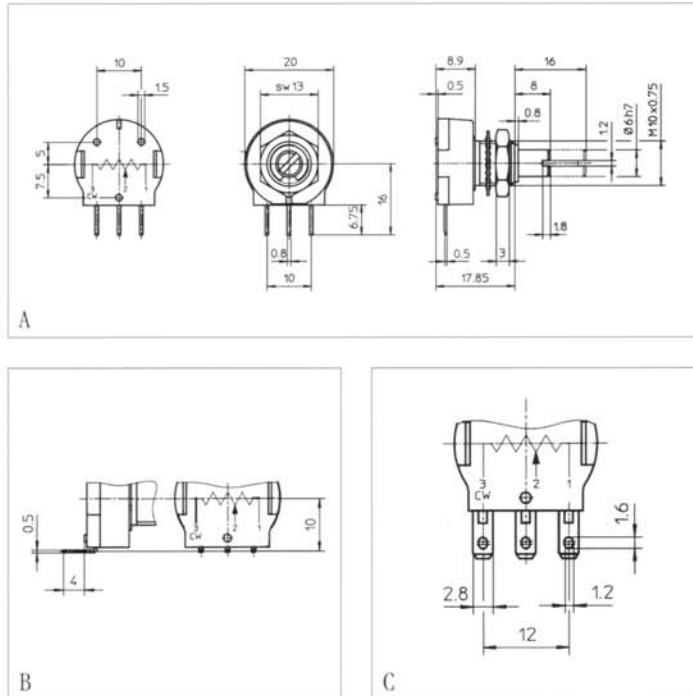
2 Raster: 2.5 mm
Ansicht: von vorne
2 grid: 2.5 mm
front view

3 Raster: 1.5 mm
Ansicht: von unten
3 grid: 1.5 mm
bottom view

4 Raster: 1.5 mm
Ansicht: von unten
4 grid: 1.5 mm
bottom view

Massbilder

Dimension drawings



Zubehör/Optionen
Accessories/Options

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Single-Turn Conductive Plastic Potentiometers

PL240 Series



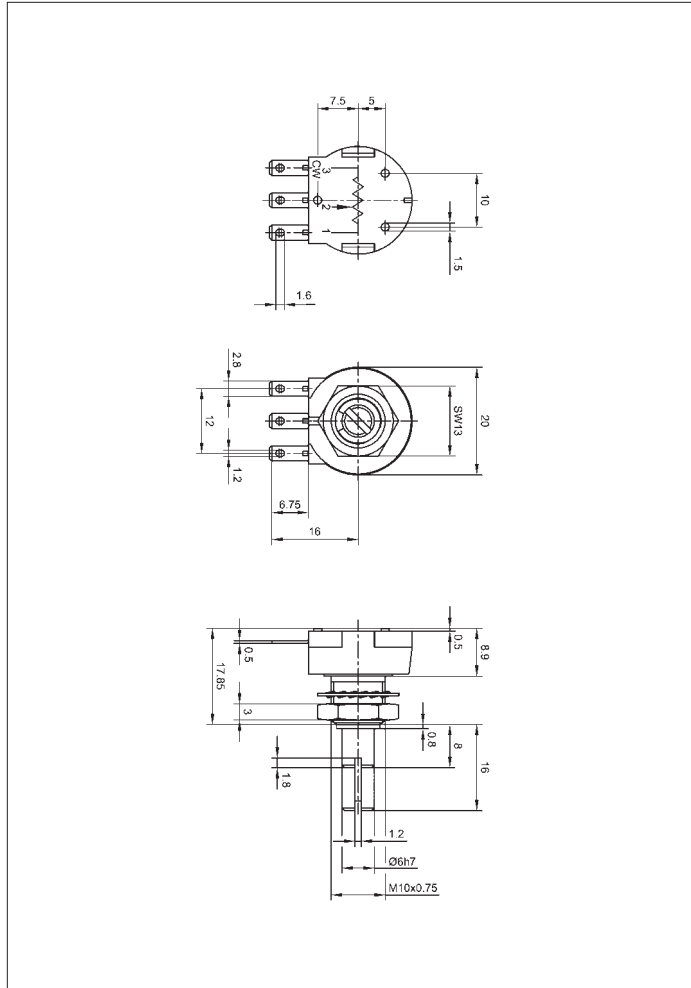
Special features

- very small dimensions
- 1×10^6 movements
- linearity $\pm 2\%$
- excellent resolution – better than 0.1°

Low-cost potentiometer with a conductive plastic resistance element for control electronics and measuring applications.

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 angular ranges, and shaft dimensions 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	conductive plastic
Wiper assembly	precious metal
Electrical connections	tin plated

Mechanical Data		
Dimensions	see drawing	
Mounting	nut M10 x 0.75 and serrated washer 3/8"	
Mechanical travel	300	°
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	270 ±3	°
Available resistance values	1; 5; 10	Ω
Resistance tolerance	±20	%
Repeatability	0.04 (=0.1°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	5 (typical)	ppm/K
Independent linearity	±2	%
Max. permissible applied voltage	18	V
Recommended operating wiper current	≤ 1	μA
Max. wiper current in case of malfunction	10	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 A _{max} = 0.75 a _{max} = 10	Hz mm g
Life	1 x 10 ⁶	movements
Shock (DIN IEC 68 T2-27)	50 7	g ms
Protection class (DIN 40050)	IP 50	

Order designations /

Abbreviations

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

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 ($I_e \leq 1 \mu\text{A}$).

Order designations

Type	Art. no.	R in kΩ	Length of shaft in mm
PL240 1K0 4A160 MB	045002	1	16
PL240 5K0 4A160 MB	045003	5	16
PL240 10K0 4A160 MB	045004	10	16