

Eingang-Potentiometer
 PD 280
 ø 20.0 mm
 100.000 Zyklen
 Draht

Singleturn Potentiometers
 PD 280
 ø 20.0 mm
 100.000 cycles
 Wirewound



Mechanische Daten

Durchmesser
 Achsdurchmesser
 Lebensdauer
 Maximales Einstell Drehmoment

Elektrische Daten

Anschlusswiderstand R
 Widerstandstoleranz
 Linearität
 Maximaler Schleiferstrom im Störfall
 Belastung P
 Maximale Anschlussspannung
 Maximaler Übergangswiderstand
 Temperaturkoeffizient Widerstand
 Spannungsfestigkeit
 Isolationswiderstand

Umgebungsbedingungen

Lagertemperatur
 Betriebstemperatur
 Klimatische Prüfklasse
 Schutzart
 Vibrationen
 Schock

Material

Gehäuse
 Achse
 Anschlüsse

Optionen

- Achslänge bis 50 mm
- Achse mit Fläche (positioniert)
- Achsen gerändelt, gekerbt, verzahnt, usw.
- Flansch an Buchse
- Buchse mit Fläche
- Drehwinkel positioniert zu einer Fläche

Mechanical Data

Diameter
 Shaft diameter
 Life expectancy
 Maximum torque

Electrical Data

Nominal resistance R
 Resistance tolerance
 Linearity
 Max. wiper curr. in case of malfunc.
 Power rating P
 Maximum supply voltage
 Maximum contact resistance
 Temperature coefficient resistance
 Dielectric strength
 Insulating resistance

Environmental Conditions

Storage temperature
 Operating temperature
 Climatic rating
 Protection rating
 Vibration
 Shock

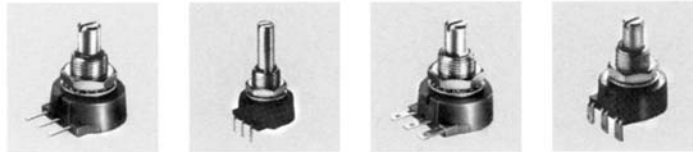
Material

Housing
 Shaft
 Connections

Options

- Shaft length up to 50 mm
- Flattened shaft
- Other shafts according to drawings (rimmed, screw driver slot, flat, etc.)
- Pilot diameter
- Flattened bushing
- Index point

20.0 mm
 6.0 mm
 100.000 Zyklen/cycles
 1.0 Ncm
 100 Ω ... 10K Ω
 ± 5 %
 ± 0.4 %
 100 mA
 1.5 W/ 70°C
 $U_{max} = \sqrt{PxR}$
 ENR 100 Ω
 40 ppm/°C
 1500 VAC/1 min
 10 G Ω bei/at 500 VDC
 -40°C... +125°C
 -25°C... +125°C
 25/125/56
 IP 50
 10 G (30 – 2000 Hz, 0.75 mm)
 50 G (Halbsinus, 7 ms)
 50 G (half sine pulse, 7 ms)
 Thermoplast
 Messing vernickelt/brass nickel plated
 Neusilber vergoldet/
 nickel silver gold plated



Typ	Model	PD 280-1A-MB	PD 280-1B-MB	PD 280-4A-MB	PD 280-4B-MB
Anschlussbilder	Connecting diagrams	1	2	1	2
Massbilder	Dimension drawings	A	B	C	B/C
Elektr. Drehwinkel	Electr. angle	312°	312°	312°	312°
Mech. Drehwinkel	Mech. angle	320°	320°	320°	320°

Typenbezeichnung/Abkürzungen

Marking/Remarks

Anschlussarten: 1A = Print seitlich

Connections: 1A = side PC pins

1B = Print achsial

1B = axial PC pins

1C = Print achsial

1C = 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

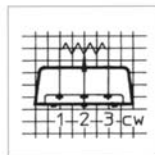
Shaft: B = ø 6 mm, slotted

Z = nach Zeichnung

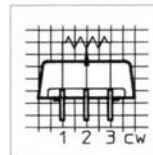
Z = according to drawing

Anschlussbilder

Connecting diagrams



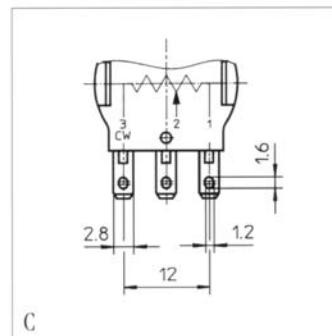
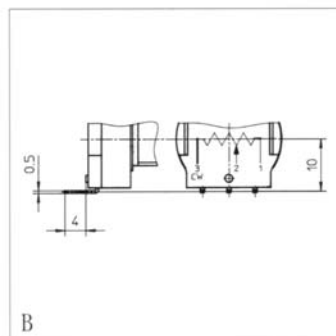
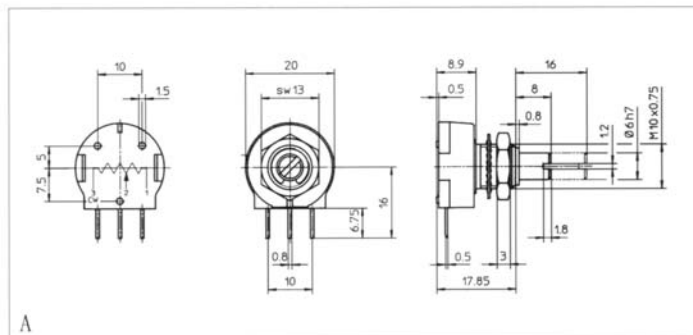
1 Raster: 2.5 mm
Ansicht: von unten
1 grid: 2.5 mm
bottom view



2 Raster: 2.5 mm
Ansicht: von unten
2 grid: 2.5 mm
bottom view

Massbilder

Dimension drawings



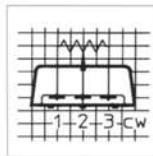
Eingang-Potentiometer
 PD 280
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 Sondertypen

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 PD 280
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 Wirewound
 Special types

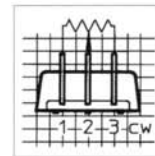


Typ	Model	PD 284-4A-MZ	PD 284-4A-MZ	PD 284-1C-MZ
Anschlussbilder	Connecting diagrams	3	3	5
Massbilder	Dimension drawings	C	D	E
Elektr. Drehwinkel	Electr. angle	275°	275°	275°
Mech. Drehwinkel	Mech. angle	280°	280°	360° durchdrehbar cont. rotation

Anschlussbilder
 Connecting diagrams

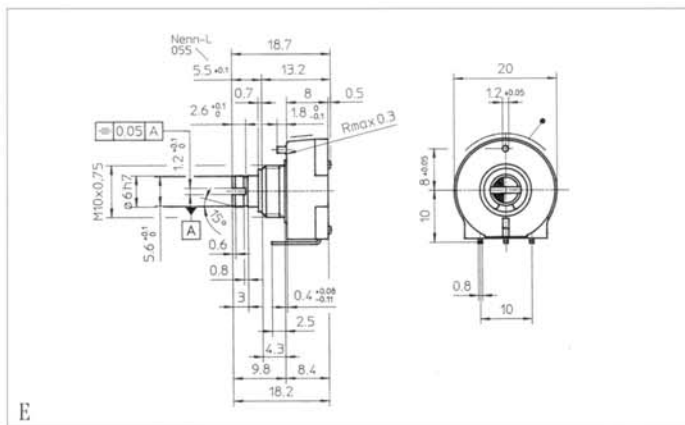
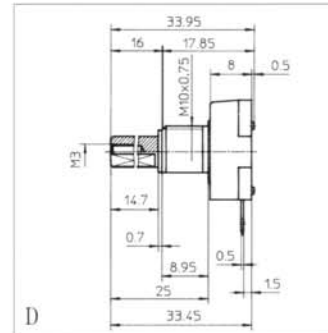
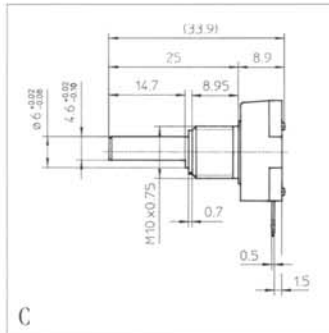


3 Raster: 1.5 mm
 Ansicht: von unten
 3 grid: 1.5 mm
 bottom view



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

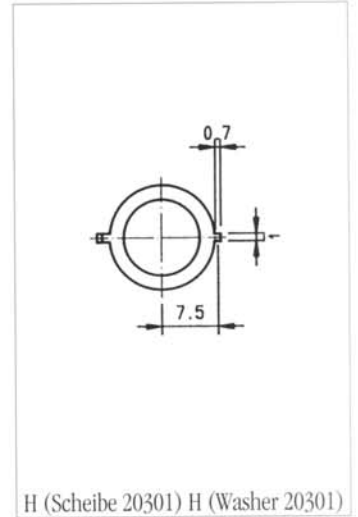
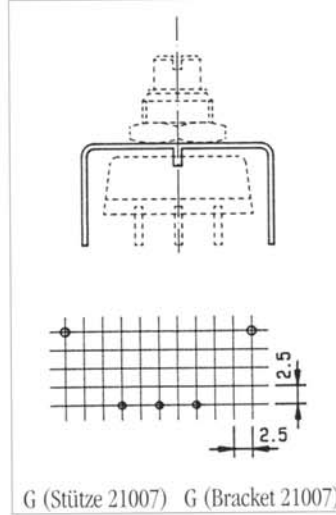
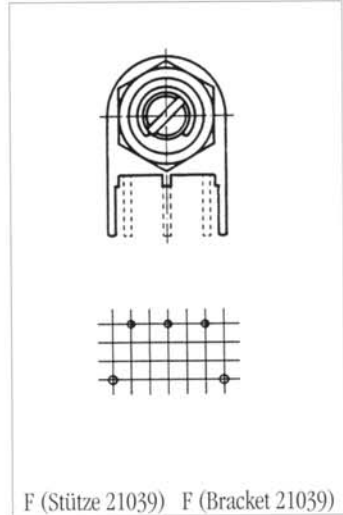
Massbilder
 Dimension drawings



Baureihe PL 240,
 PL 260/262,
 PD 280, PL 290
 Zubehör

Series PL 240,
 PL 260/262,
 PD 280, PL 290
 Accessories

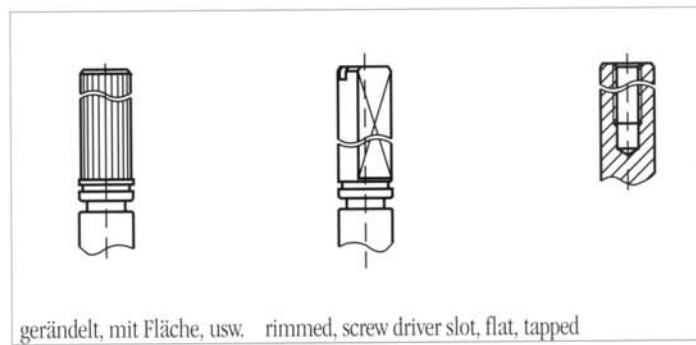
Zubehör/Massbilder
 Accessories/Dimension drawings



Zubehör
 Accessories

Art. Nr.	Typ	Bezeichnung	Bemerkung
Art. No.	Model	Marking	Remarks
20019	Mutter	M10 x 0.75	serienmässig
20019	Nut	M10 x 0.75	standard item
20020	Scheibe	Fächerscheibe 3/8	serienmässig
20020	Washer	Fan washer 3/8	standard item
21007	Stütze	Montage vertikal	s. Zeichnung G
21007	Bracket	vertical mounting	Drawing G
21039	Stütze	Montage horizontal	s. Zeichnung F
21039	Bracket	horizontal mounting	Drawing F
20301	Scheibe	Nocken	s. Zeichnung H
20301	Washer	with cam	Drawing H

Optionen Achsen
 Options shaft



Single-Turn Wirewound Potentiometers

PD280 Series



Special features

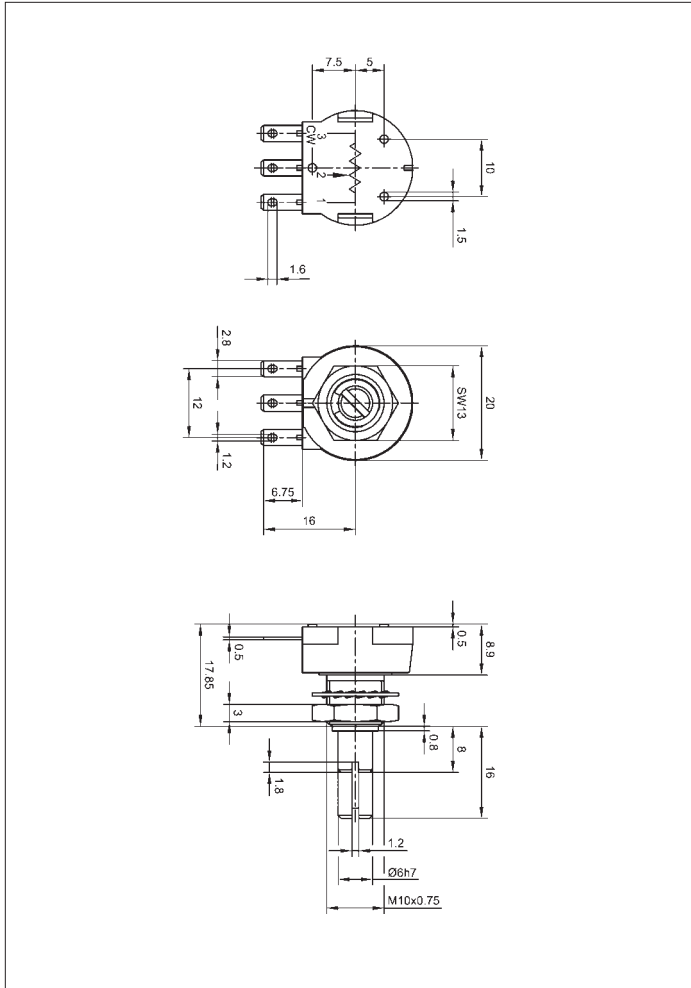
- very small dimensions
- 200×10^3 movements
- excellent linearity $\pm 0.6\%$
- very robust

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

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	5 (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 _{max} = 0.75		mm
	a _{max} = 10		g
Life	200 x 10 ³		movements
Shock (DIN IEC 68 T2-27)	50		g
	7		ms
Protection class (DIN 40050)	IP 50		

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

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