

Geared Potentiometers Wirewound

Series PD2310



Special features

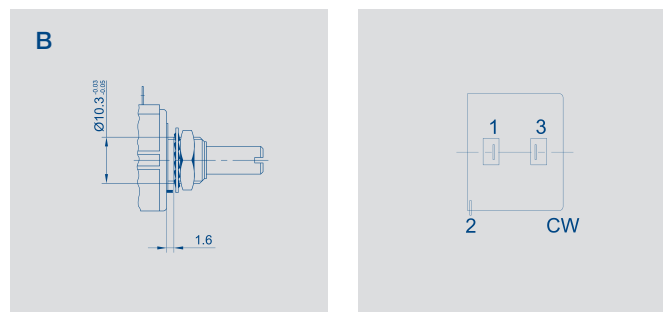
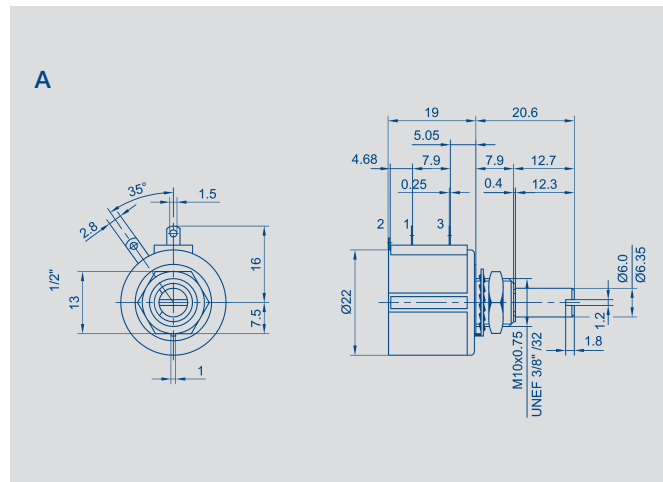
- very small dimensions
- 1×10^6 movements
- excellent linearity $\pm 0.15\%$
- very robust

Sealed 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 reductions and shaft dimensions on request.



| Description | |
|------------------------|------------------------|
| Size | housing diameter 22 mm |
| Housing | Thermoplast |
| Shaft | brass, nickel plated |
| Bearings | sleeve bearings |
| Resistance element | wirewound |
| Wiper assembly | precious metal |
| Electrical connections | gold plated |

| Type designations | PD2310...5A-MB | PD2310...5A-UK | PD2310...5A-FK |
|--|---|--------------------------------|-------------------|
| Mechanical Data | | | |
| Dimensions | see drawing A | see drawing A | see drawing A/B |
| Mounting | nut M10 x 0.75, serrated washer | nut 3/8" UNEF, serrated washer | |
| Mechanical travel | 3600 | | ° |
| Permitted shaft loading (axial and radial) static or dynamic force | 3 | | N |
| Torque | ≤ 0.7 | | Ncm |
| Permitted max. torque for mech. stops | 50 | | Ncm |
| Maximum operational speed | 120 | | min ⁻¹ |
| Weight | 22 | | g |
| Electrical Data | | | |
| Actual electrical travel | 3600 | | ° |
| Available resistance values | 1; 5; 10 | | kΩ |
| Resistance tolerance | ± 5 | | % |
| Repeatability | see order designations | | |
| Effective temperature coefficient of the output-to-applied voltage ratio | typical 5 | | ppm/K |
| Independent linearity | ± 0.15 | | % |
| Max. permissible applied voltage | 42 | | V |
| Recommended operating wiper current | ≤ 10 | | μA |
| Max. wiper current in case of malfunction | 50 | | mA |
| Insulation resistance (500 VDC, 1 bar, 2 s) | ≥ 10 000 | | MΩ |
| Dielectric strength (AC, 50 Hz, 1 min, 1 bar) | 1 000 | | V |
| Environmental Data | | | |
| Temperature range | -55...+125 | | °C |
| Vibration | 30...2000 A _{max} = 0.75 a _{max} = 10 | | Hz mm g |
| Life | 1 x 10 ⁸ | | movements |
| Shock (DIN IEC68T2-27) | 50 7 | | g ms |
| Protection class (DIN 40050) | IP50 | | |

Order designations

| Type | Art.no. | R in kΩ | Repeatability |
|----------------------|---------|---------|-------------------|
| PD2310 1K0 5A127 MB | 048026 | 1 | 0.031 % (= 1.1°) |
| PD2310 5K0 5A127 MB | 048029 | 5 | 0.021 % (= 0.76°) |
| PD2310 10K0 5A127 MB | 048032 | 10 | 0.020 % (= 0.72°) |
| PD2310 1K0 5A127 UK | 048027 | 1 | 0.031 % (= 1.1°) |
| PD2310 5K0 5A127 UK | 048030 | 5 | 0.021 % (= 0.76°) |
| PD2310 10K0 5A127 UK | 048033 | 10 | 0.020 % (= 0.72°) |
| PD2310 1K0 5A127 FK | 048025 | 1 | 0.031 % (= 1.1°) |
| PD2310 5K0 5A127 FK | 048028 | 5 | 0.021 % (= 0.76°) |
| PD2310 10K0 5A127 FK | 048031 | 10 | 0.020 % (= 0.72°) |

Order designations / Abbreviations

5A: connecting side pin
 MB: bushing
 M10 x 0.75, axis Ø 6 mm, with slot
 UK: imperial thread UNEF 3/8", axis Ø 6.35 mm, with slot
 FK: imperial thread 3/8" with pilot diameter, axis Ø 6.35 mm with slot

Included in delivery

1 nut M10 x 0.75
 or 3/8" UNEF
 1 serrated washer 3/8"

Recommended accessories

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

Subject to changes