

Data Sheet for Precision Potentiometer

Oil-filled singleturn wirewound Potentiometer

Series OF5001



The potentiometers OF5001 are filled with oil. The oil has a heat-dissipating function, cleans the resistance element of abrasion and protects it from moisture and aggressive substances.

- Optional center tap
- Optional without mech. stop
- Optional tandem version
- Optional rear shaft
- On request with higher lifespan >2 mio. rotations
- On request with centering collar

Electrical Data

| | |
|--|---|
| Effective electrical angle of rotation 1.) | 280° ±5° |
| Total resistance 1.) | 100 Ohm..50 kOhm |
| Resistance tolerance | ±5% |
| Independent linearity (best straight line) 1.) | ±0.5% |
| Theoretical resolution 1.) | Depends on resistance value (see table below) |
| Backlash (Hysteresis) 1.) | ≤ 0.5° |
| Rotational noise (ENR) 1.) (Method C) | 100 Ohm |
| Max. / recommended wiper current 1.) | 35 mA / 2 µA |
| Power rating @ 40°C (0W @ 60°C) | 5 W |
| Insulation Voltage 1.) | 1000 VAC. 1min |
| Insulation Resistance 1.) | 100 MOhm @ 1000 VDC |

Mechanical Data, Environmental Conditions, Miscellaneous

| | |
|--|---|
| Mechanical angle of rotation | 300° ±5° with stop (optional without stop 360°) |
| Lifetime (90% el. eff. angle half sine) 2.) | 0.2 Mio. rotations |
| Max. operational speed | 40 rev. / min. |
| Bearing | Sleeve bearing |
| Operational torque @ ambient temperature 1.) 2.) | 30 Nmm |
| End stop torque 1.) 2.) | 90 Ncm |
| Operating temperature range | -30 °C up to +60 °C |
| Storage temperature range | -30 °C up to +60 °C |
| Protection grade (IEC 60529) | IP65 |
| Vibration (IEC 68-2-6, Test Fc) | 15g 10Hz to 2000Hz x 12h |
| Shock (IEC 68-2-27, Test Ea) | 49g @ 11 ms x 18 |
| Housing diameter | 62 mm |
| Housing depth | 50 mm |
| Shaft diameter | 6 mm (optional 6.35 mm) |
| Shaft type | Solid shaft |

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Mechanical Data, Environmental Conditions, Miscellaneous

| | |
|--------------------------------------|---------------------|
| Max. radial load | ≤1 N |
| Max. axial load | ≤1 N |
| Connection type | Soldering lugs |
| Connection position | Axial |
| Sensor mounting | Bushing |
| Mass | 300 g |
| Fastening parts included in delivery | Nut, toothed washer |
| Fastening torque mounting nut | 150 Ncm |
| Material shaft | Stainless steel |
| Material housing | Metal |

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Please note: Max. permissible supply voltage <75 VDC respectively <50 VAC in addition the max. power rating must be observed

Number of wire turns / resolution

| | | | | | | | | | |
|----------------------|-----|-----|-----|-----|-----|-----|-----|------|------|
| Resistance value Ohm | 100 | 200 | 500 | 1k | 2k | 5k | 10k | 20k | 50k |
| Number of wire turns | 260 | 320 | 370 | 420 | 550 | 650 | 900 | 1000 | 1200 |

Resolution in degree E.g. R5k = $280^\circ / 650 = 0,430^\circ$ per winding resistive wire

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| Order code | | | | | | | | | |
|--|---|----|-------------|---------------|--|---------------------------|-----|-------|--------|
| Description | Selection: standard=black/bold , possible <i>options=grey/italic</i> | | | | | | | | |
| Series | OF5001 | | | | | | | | |
| Angle of rotation mecha.: Without stop | | - | | | | | | | |
| <i>Option with stop @300°</i> | | OS | | | | | | | |
| Resistance value / Option Tandem: | | | | <i>Tandem</i> | | | | | |
| <i>Option 100 Ohm</i> | | | <i>R100</i> | <i>/100</i> | | | | | |
| <i>Option 200 Ohm</i> | | | <i>R200</i> | <i>/200</i> | | | | | |
| <i>Option 500 Ohm</i> | | | <i>R500</i> | <i>/500</i> | | | | | |
| 1 kOhm | | | R1k | /1k | | | | | |
| <i>Option 2 kOhm</i> | | | <i>R2k</i> | <i>/2k</i> | | | | | |
| 5 kOhm | | | R5k | /5K | | | | | |
| 10 kOhm | | | R10k | /10K | | | | | |
| <i>Option 20 kOhm</i> | | | <i>R20k</i> | <i>/20K</i> | | | | | |
| <i>Option 50 kOhm</i> | | | <i>R50k</i> | <i>/50k</i> | | | | | |
| <i>Option rear shaft: Standard Ø6.00 x 25 mm Shaft length in mm Shaft diameter in mm (≤6 mm)</i> | | | | | | RA RAxx,xx RADMx,xx | | | |
| Resistance tolerance: ±5% | | | | | | | W5% | | |
| Independent linearity: ±0.5% | | | | | | | | L0,5% | |
| <i>Option center tap:</i> | | | | | | | | CT | |
| Front shaft: Standard Ø6.00 x 25 mm | | | | | | | | | - |
| <i>Option Ø6.35 mm</i> | | | | | | | | | DM6,35 |
| <i>Option shaft length in mm</i> | | | | | | | | | Ax,xx |
| <i>Option shaft diameter in mm (≤6.35 mm)</i> | | | | | | | | | DMx,xx |
| <i>Option screwdriver slot:</i> | | | | | | | | | B |

For higher quantities or on-going demand, additional options are available as described below on request

For Example: Life span > 2 mio. rotations and centering collar 5/8" (type 4575C), multi ganged potentiometers, special electrical and mechanical angles of rotation, and special resistance and linearity tolerances. Furthermore we can mount gear wheels or attach cable assemblies with or without connectors and much more.

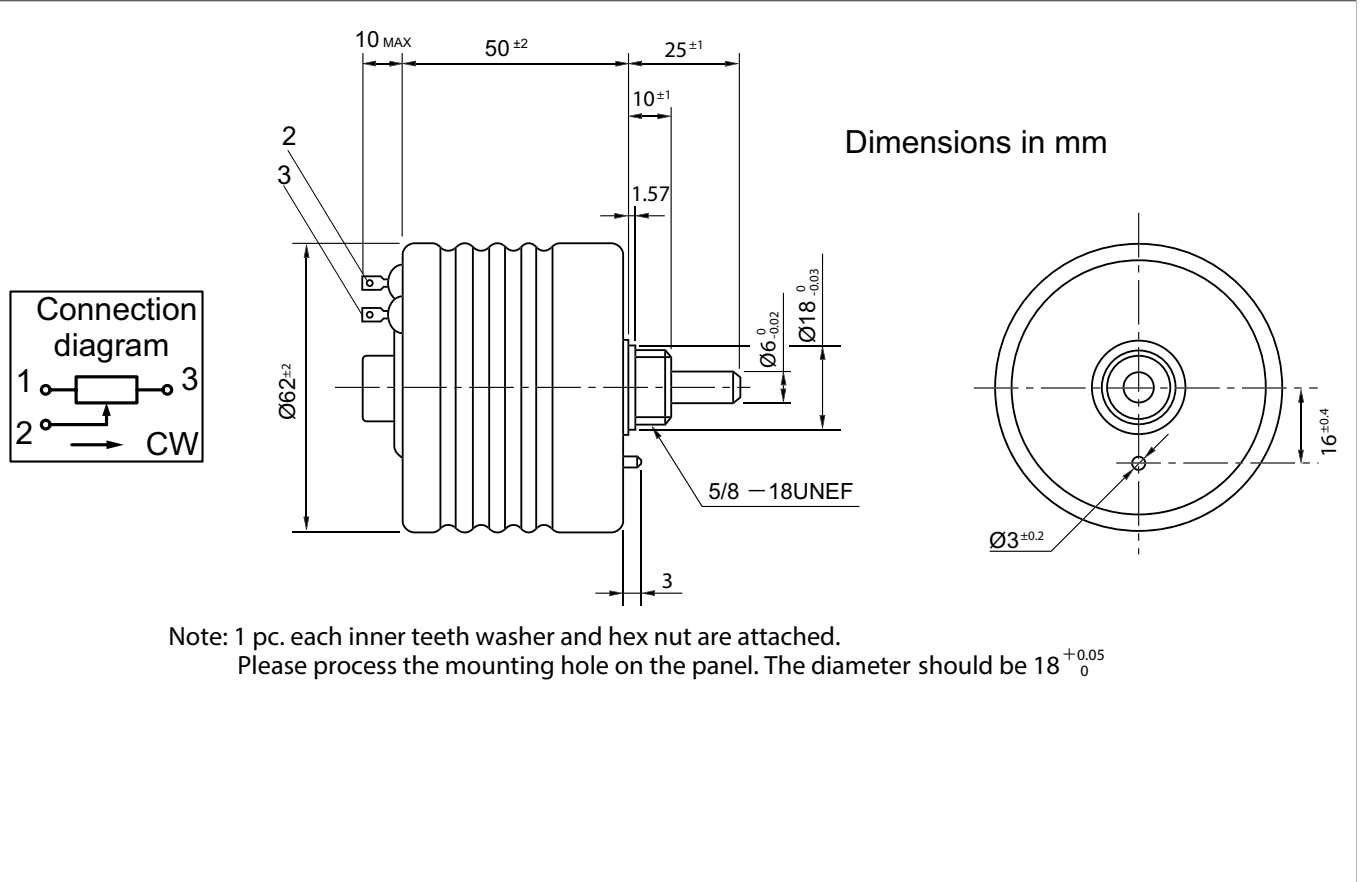
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Drawing



On Request: Special machining on shaft

Slot



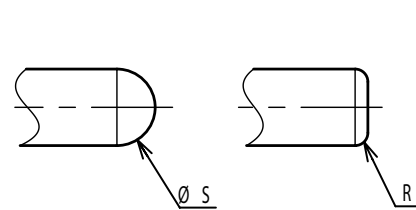
Groove



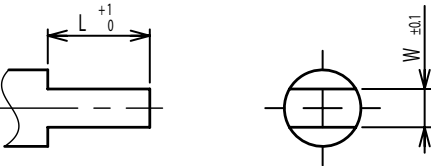
Flat



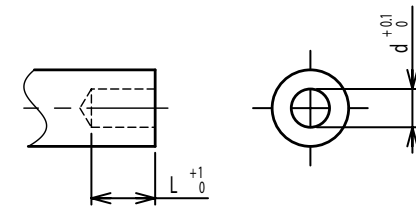
Round top



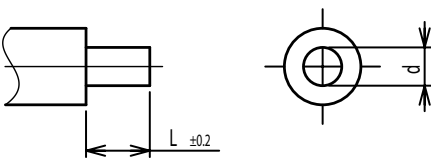
Double side flat



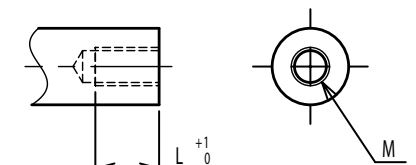
Counterbore hole



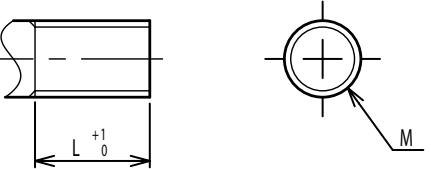
Step



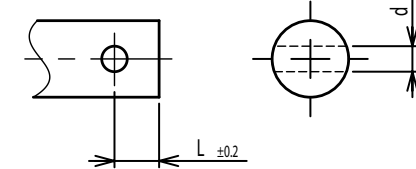
Counterbore screw hole



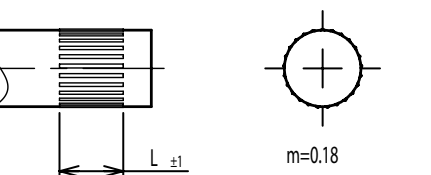
Screw Thread



Pin hole



Knurled(Parallel)



Screw thread inside hole

