

Rotary Sensor
Potentiometer

Series P4500

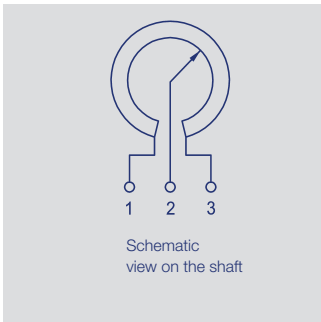
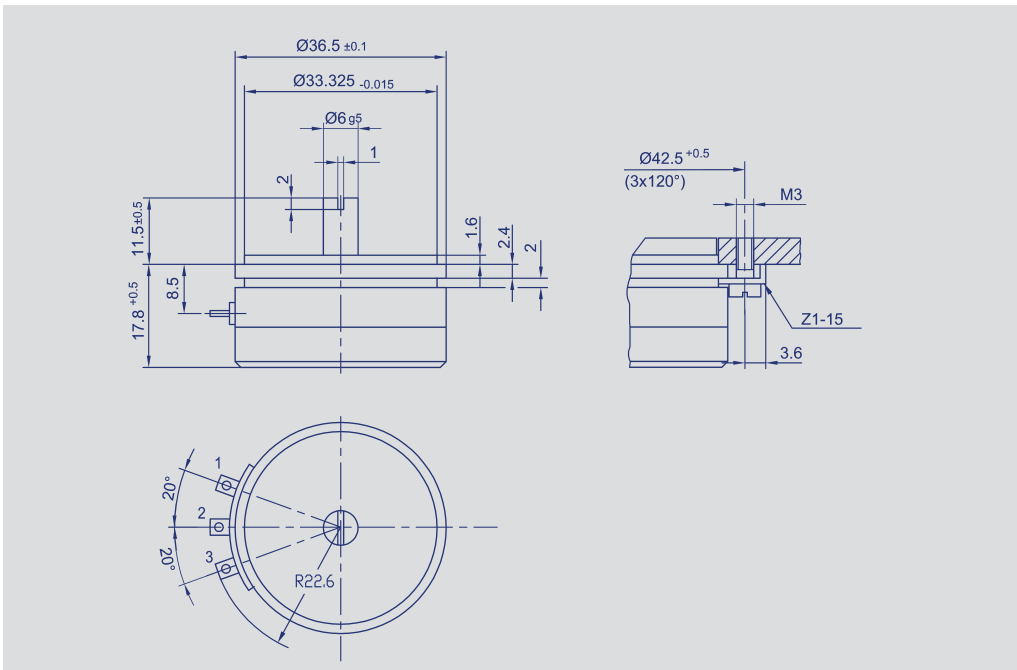


Special features

- excellent precision - linearity $\pm 0.075\%$, repeatability $\pm 0.02\%$
- very high resolution - better than 0.008°
- exceptionally long life - to 100 million movements
- operating speed to 10,000 RPM
- continuous rotation allowed
- sealed to IP40
- industry standard size, provides excellent performance at reasonable cost

The P4500 is a precision potentiometer for measuring, control, and instrumentation applications. It offers a servo size 13 metal case, ball-bearings, a conductive resistance element and elastomer-damped wipers.

Special versions with different angular ranges and shaft dimensions are available.



| Description | |
|------------------------|--|
| Size | servo size 13 |
| Case | two-part; flange anodized aluminium; cover high-grade, temperature-resistant plastic |
| Shaft | stainless steel |
| Bearings | stainless steel ball bearings |
| Resistance element | conductive plastic |
| Wiper assembly | precious metal multi-finger wipers |
| Electrical connections | gold-plated brass terminals |

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| Mechanical Data | | |
|---|------------------------------|-----------|
| Dimensions | see drawing | |
| Mounting with | with 3 clamps Z1-15 | |
| Mechanical travel | 360, continuous | ° |
| Permitted shaft loading (axial and radial) static or dynamic force | 45 | N |
| Torque | ≤ 0.1 | Ncm |
| Maximum operational speed | 10,000 | RPM |
| Weight | 45 | g |
| Electrical Data | | |
| Actual electrical travel | 345 ±2 | ° |
| Available resistance values | 1; 2; 5 | kΩ |
| Resistance tolerance | ±20 | % |
| Repeatability | 0.002 (Δ 0.007°) | % |
| Effective temperature coefficient of the output-to-applied voltage ratio | typical 5 | ppm/K |
| Independent linearity | ±0.075 | % |
| Max. permissible applied voltage | 42 | 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 | MΩ |
| Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC) | ≤ 100 | μA |
| Environmental Data | | |
| Temperature range | -40...+100 | °C |
| Vibration | 5...2000 | Hz |
| | Amax = 0.75 | mm |
| | amax = 20 | g |
| Shock | 50 | g |
| | 10 | ms |
| Life | 100 x 10 ⁶ | movements |
| Protection class | IP 40 (DIN 400 50 / IEC 529) | |

Order designations

| Type | P/N | R in kΩ |
|-------------|--------|---------|
| P-4501-A102 | 006201 | 1 |
| P-4501-A202 | 006202 | 2 |
| P-4501-A502 | 006203 | 5 |

Type designations for non-standard models will be specified upon receipt of order.

Included in delivery

3 mounting clamps Z1-15.

Recommended accessories

Fork coupling Z-104-G06,
P/N 005690;
Fork coupling Z-105-G06,
P/N 005691;
MAP - Process-control
indicator, with display,
MUP / MUK - signal
conditioners.

Important

All values given for linearity,
lifetime and temperature
coefficient are derived with no
electrical load on the wiper
(I ≤ 1μA).