

**Industrial-Grade
 Potentiometers**

Series IP6000

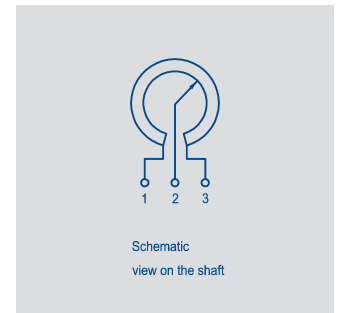
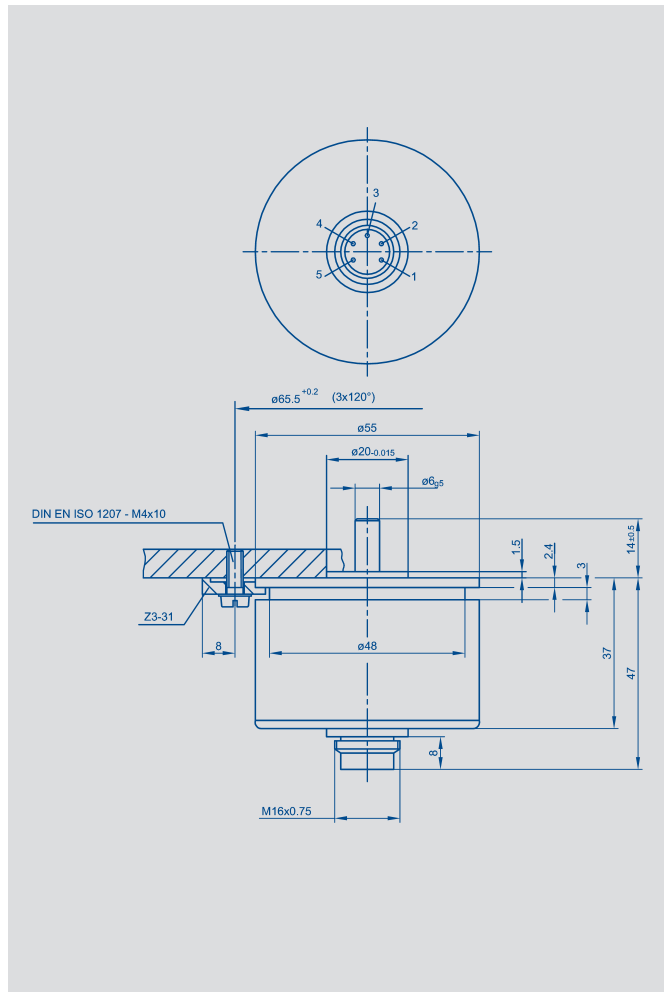


Special features

- excellent linearity - standard $\pm 0.075\%$, on request $\pm 0.025\%$
- long life - 100×10^6 movements typ.
- very good repeatability 0.007°
- mechanical continuous rotation
- protection class IP 65

This „industrial-grade“ potentiometer has been specially designed for the severe working conditions often encountered in industrial applications. The housing is waterprotected and of sturdy construction. The shaft passage is sealed by a means of a gland, and the connector comes up to the degree of protection IP 65 with the conformable plug. Because of its reliability, long life, good linearity, high resolution, high operational speed and corrosion resistance, this component opens applications hitherto closed to conventional potentiometers.

Special versions with different electrical travels and shaft dimensions are available.



| Description | |
|------------------------|--|
| Case | aluminium anodized, shaft passage sealed |
| Shaft | stainless steel |
| Bearings | stainless steel ball bearings |
| Resistance element | conductive plastic |
| Wiper assembly | precious metal multi-finger wiper |
| Electrical connections | 5-pin connector (see „Accessories“). |

| Mechanical Data | | |
|---|--|-------------------|
| Dimensions | see drawing | |
| Mounting | with 3 clamps Z 3-31 | |
| Mechanical travel | 360, continuous | ° |
| Permitted shaft loading (axial and radial) static or dynamic force | 45 | N |
| Starting torque | <1.5 | Ncm |
| Maximum operational speed | 2 000 | min ⁻¹ |
| Weight | 180 | g |
| Electrical Data | | |
| Actual electrical travel | 355 ±2 | ° |
| Nominal resistance | 5 | kΩ |
| Resistance tolerance | ±20 | % |
| Independent linearity | ±0.075 (<0.05 on request) | % |
| Repeatability | 0.002 (Δ 0.007°) | % |
| Effective temperature coefficient of the output-to-applied voltage ratio | typical 5 | ppm/K |
| Max. permissible applied voltage | 42 | V |
| Max. wiper current in case of malfunction | 10 | mA |
| Recommended operating wiper current | ≤ 1 | μA |
| 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 A _{max} = 0.75 a _{max} = 20 | Hz mm g |
| Shock | 50 11 | g ms |
| Life | 100 x 10 ⁶ | movem. |
| Protection class | IP 65 (DIN 400 50 / IEC 529) (with plug EEM 33-70) | |

Order designations

| Type | Art.no. | |
|-----------------------------|---------|--|
| IP6501 A502 | 010001 | |
| Additional models available | | |
| IP6501 G252 | 010004 | ±90° ±2°, indep. lin ± 0.3% R=2.5 kΩ ±20% |

Included in delivery

3 mounting clamps Z3-31

Recommended accessories

Fork coupling Z 104 G 6
(backlash free),
Fork coupling Z 105 G 6
(backlash-free),
Mating plug EEM 33-70
protection class IP 67,
Right-angled plug EEM 33-72
protection class IP 40,
Process-controlled indicators
MAP... with display,
Signal conditioner MUP... /
MUK ... for standardized out-
put 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 ($I_e \leq 1 \mu\text{A}$).

