

Industrial-Grade Potentiometers

Series IP6000

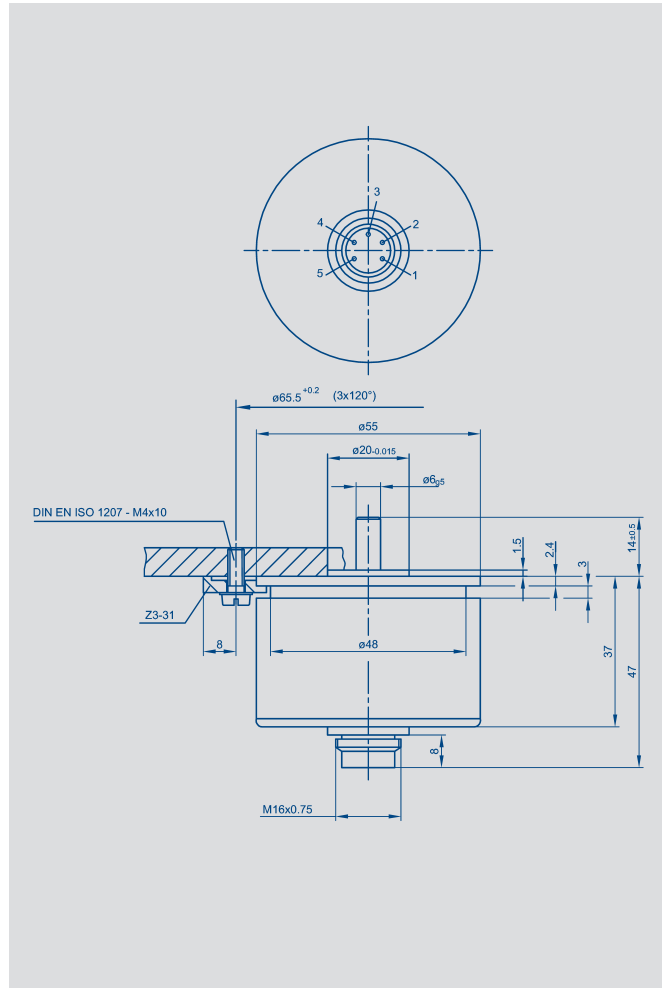


Special features

- 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.



Schematic view on the shaft

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 (<0.075 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	001001	
Additional models available		
IP6501 G252	001004	±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 ($I_e \leq 1 \mu A$).

