

Industrial-Grade Potentiometers

IPS6000 Series



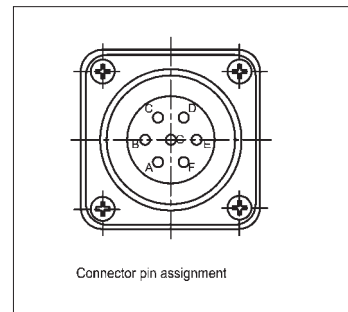
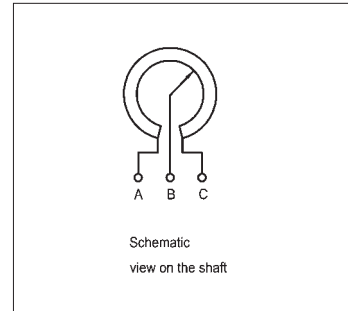
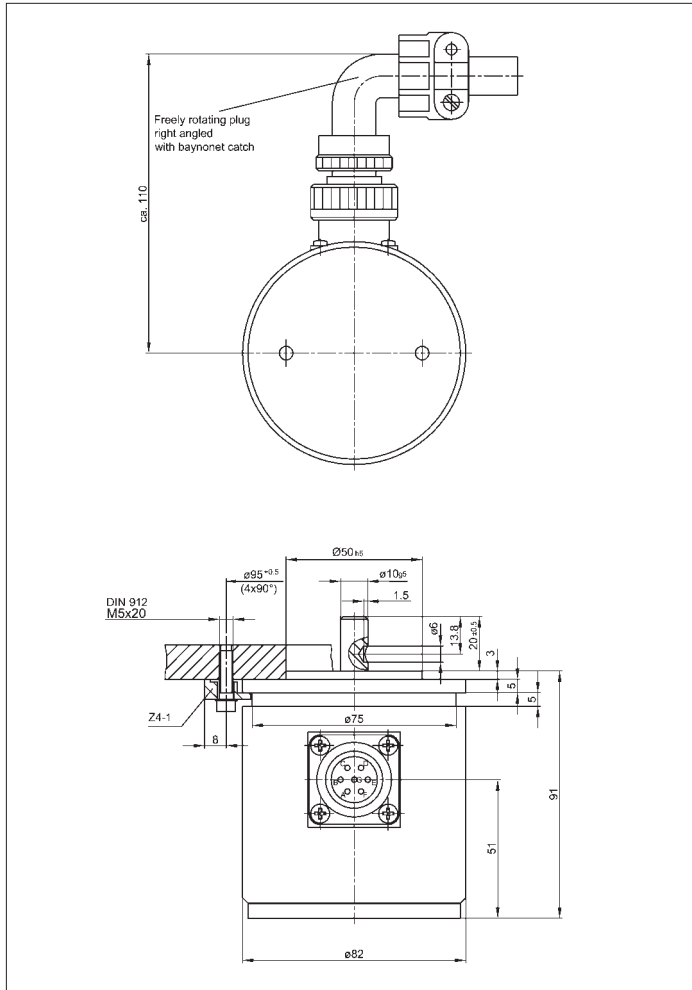
Special features

- excellent linearity standard $\pm 0.1\%$
- long life – 100×10^6 movements typical
- mechanical continuous rotation
- extremely robust industrial-grade construction
- protection class IP 65

The IPS6000 is a heavy-duty industrial potentiometer that can convert maximum angular rotation of 355° into a voltage proportional to the angle of rotation. The IPS6000 features a water-tight cast aluminum housing and sealed to the IP 65 protection class.

Because the IPS6000 combines simplicity of design with high reliability, it can be successfully used in the most demanding industrial applications and environmental conditions.

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



Description

Case	aluminum varnished, entry sealed using special stepped bush
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Mounting	any optional position
Electrical connections	7-pin all-metal plug and socket, freely rotatable, 90° right-angled, protection class IP 65, bayonet catch

Mechanical Data		
Dimensions	see drawing	
Mounting	with 4 clamps Z 4-1	
Mechanical travel	360, continuous	°
Permitted shaft loading (axial and radial) static or dynamic force	300	N
Starting torque	< 10	Ncm
Maximum operational speed	2,000	RPM
Weight	approx. 1200	g

Electrical Data		
Actual electrical travel	355 ±2	°
Nominal resistance	5	kΩ
Resistance tolerance	±10	%
Independent linearity	±0.1 (0.05 on request)	%
Repeatability	0.002 (± 0.007°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	5 (typical)	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 million	movem.
Protection class	IP 65 (DIN 400 50 / IEC 529)	

Order designations		
Type	Art. no.	
IPS6501 A502	001061	

Additional models available		
IPS6501 G252	001066	⊥ 90° ± 2° indep. lin. ± 0.3%, R= 2.5 kΩ ± 20%
IPS6501 W302	001067	⊥ 60° ± 2° indep. lin. ± 0.5%, R= 3.0 kΩ + 30/- 10%

Included in delivery

4 mounting clamps Z 4-1,
1 corner plug Cannon
No. CA 08 COM-E-16S-1S-B,
1 anti-kink sleeve

Recommended accessories

Spring loaded coupling,
Z 110 G10 (backlash-free),
MAP process-control indicators
and display. MUP or MUK signal
conditioner for standardized
output signals.

Important

All values given for this series –
including linearity, lifetime, micro-
linearity, resistance to external
disturbances and temperature
coefficient in voltage dividing
mode – are quoted for the device
operating with the wiper voltage
driving an operational amplifier
working as a voltage follower
where virtually no load is applied
to the wiper ($I_e \leq 1 \mu A$).