

Industrial-Grade Potentiometers

Series IPS 6000

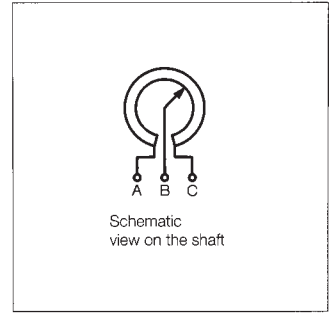
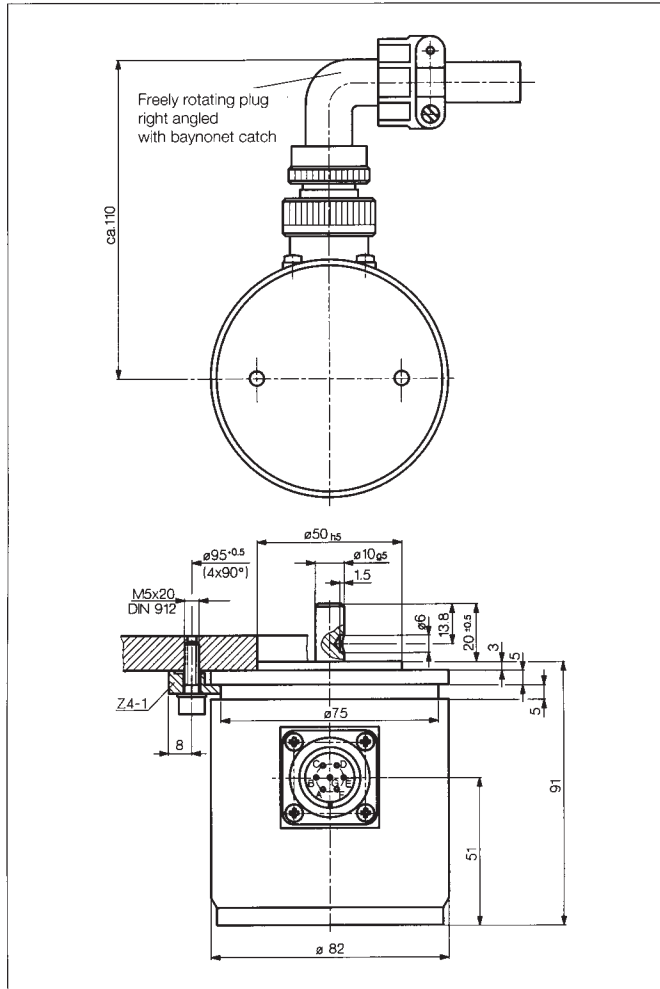


Special features

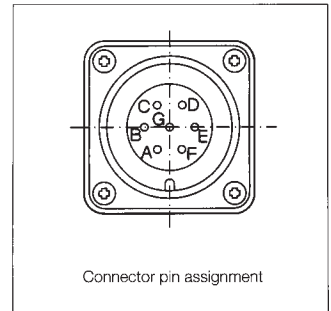
- excellent linearity standard $\pm 0.1\%$
- long life
100 x 10⁶ cycles typ.
- mechanical continuous rotation
- extremely robust industrial-grade construction
- protection class IP 65

Using this potentiometer a maximum angular rotation of 355° can be converted into a voltage proportional to the angle of rotation, through the medium of a conductive plastic potentiometer.

This special “heavy-duty” version of our industrial potentiometer series IP 6000 can be used successfully in the most demanding applications or environmental conditions. Simply yet robustly built, these units are suitable for use in all manner of industrial applications and machinery manufacturing. The cast housing is watertight; sealing is achieved through the use of a stepped bush whilst electrical connections are made via a plug and socket mounted on the side of the unit. Special versions with different electrical travels and shaft dimensions are available.



Schematic view on the shaft



Connector pin assignment

Description

Case	aluminium 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	7pin all-metal plug and socket, freely rotatable, 90° right-angled, protection class IP65, 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	min ⁻¹
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	typical 5	ppm/°C
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	rev.
Protection class	IP 65 (DIN 400 50 / IEC 529)	

Order designations		
Type	Art.no.	
IPS6501a502	001061	
Additional models available		
IPS6501g252	001066	± 90° ± 2° indep. lin. ± 0.3%, R= 2.5 kΩ ± 20%
IPS6501w302	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 tube

Recommended accessories

Spring loaded coupling,
Z 110 g (backlash-free),
Process-controlled indicators
MAP... with display,
Signal conditioner MUP... /
MUK ... for standardized
output signals

Important

All the values given in this data sheet for linearity, lifetime, micro-linearity, resistance to external disturbances 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 ($I_e \leq 1 \mu A$).