



**SENSORES E  
INSTRUMENTACION  
GUEMISA S.L.**

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**novotechnik**  
Siedle Group

**Industrial-Grade  
Potentiometers**

Series IPS6000



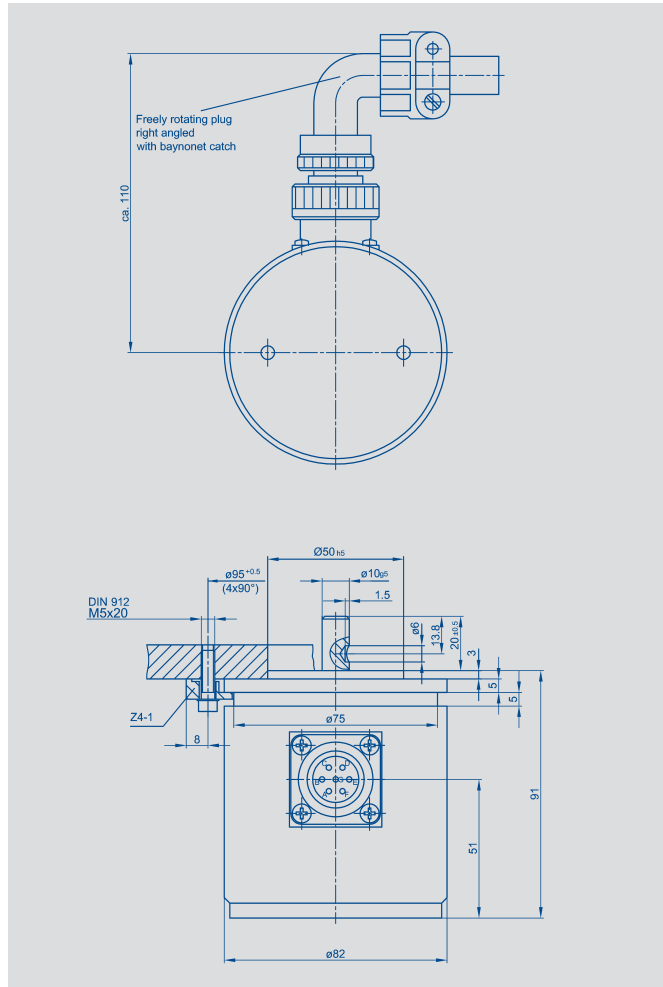
### Special features

- excellent linearity standard  $\pm 0.1\%$
- long life  
 $100 \times 10^6$  movements typ.
- mechanical continuous rotation
- extremely robust industrial-grade construction
- protection class IP 67

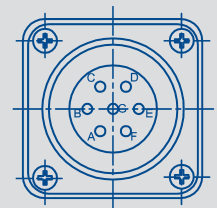
Using this potentiometer a maximum angular rotation of  $355^\circ$  can be converted into a voltage proportional to the angle of rotation, through the medium of a conductive plastic potentiometer.

This special „heavy-duty“ version of our industrial potentiometers 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	7 pin all-metal plug and socket, freely rotatable, $90^\circ$ right-angled, protection class IP67, 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 <sup>-1</sup>
Weight	approx. 1200	g

Electrical Data		
Actual electrical travel	355 ±2	°
Nominal resistance	5	kΩ
Resistance tolerance	±20	%
Independent linearity	±0.1 (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 <sub>max</sub> = 0.75 a <sub>max</sub> = 20	Hz mm g
Shock	50 11	g ms
Life	100 x 10 <sup>6</sup>	movem.
Protection class	IP 67 (DIN 400 50 / IEC 529)	

Order designations	
Type	Art.no.
IPS6501 A502	010061

Additional models available	
IPS6501 G252	010066 * 90° ± 2° indep. lin. ± 0.3%, R= 2.5 kΩ ± 20%

#### Included in delivery

4 mounting clamps Z4-1,  
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),  
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 opera-  
ting with the wiper voltage dri-  
ving on operational amplifier  
working as a voltage follower,  
where virtually no load is app-  
plied to the wiper ( $I_e \leq 1 \mu A$ ).