

Rotary Sensor Multi-Turn Geared Potentiometer

Series GP



Special features

- angular range -3 turns (~1,080°), 5 turns (~1,800°), or 10 turns ~ 3,600°)
- very good linearity 0.1 %
- excellent repeatability 0.002 %
- very long life typically 100 million movements
- sealed to IP40

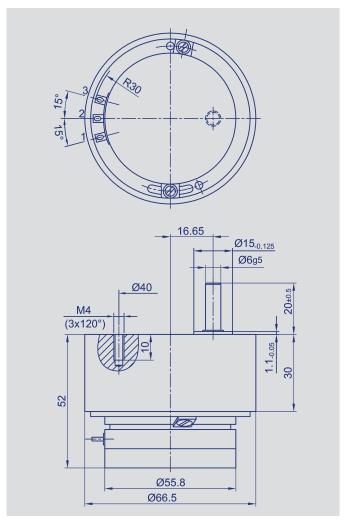
The GP series multiple-turn geared potentiometer offer an analog voltage output signal that is proportional to the angle, over the specified number of turns.

The potentiometer section is based on Novotechnik's high precision P6500 series, while the mechanism is comprised of precision gears is mounted with two ball bearings.

The sensor is constructed to have minimum backlash.

The GP series is mounted with three M4 threaded holes.





Description				
Case	aluminium, anodized			
Gearing case	aluminium, anodized			
Gearing	low backlash			
Shaft	stainless steel			
Resistance element	conductive plastic			
Wiper assembly	precious metal multi-finger wiper			
Electrical connections	gold-plated brass			



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Type designations	GP-3-P-6501-A502	GP-5-P-6501-A502	GP-10-P-6501-A502	
Mechanical Data				
Dimensions	see drawing			
Mechanical travel	360, continuos			۰
Permitted shaft loading (axial and radial) static or dynamic force	45			N
Starting torque	< 1			Ncm
Maximum operational speed	3000			RPM
Weight	approx. 320			g
Reduction ratio	3.11:1	5.19:1	10.77:1	
Electrical Data				
Actual electrical travel	1095 + 15	1830 + 20	3800 + 45	۰
Nominal resistance	5			kΩ
Resistance tolerance	±20			%
ndependent linearity	±0.1			%
Repeatability	typ. 0.002			%
Max. permissible applied voltage	42			V
Max. wiper current in case of malfunction	10			mA
Recommended operating wiper current	≤1			μА
Effective temperature coefficient of the output-to-applied voltage ratio	typ. 5			ppm/K
Insulation resistance (500 VDC)	≥ 10			ΜΩ
Dielectric strength (500 VAC, 50 Hz)	≤ 100			μА
Environmental Data				
Temperature range	-40+100			°C
Vibration	52000 Amax = 0.75 amax = 20			Hz mm g
Shock	50 11			g ms
Life	100 x 10 ⁶			movements
Protection class	IP40 (DIN 400 50 / IEC 5	29)		

Order designations

Туре	P/N	Ratio
GP-3-P-6501-A502	009111	Reduction 3:1
GP-5-P-6501-A502	009112	Reduction 5:1
GP-10-P6501-A502	009113	Reduction 10:1

Recommended accessories

Fork coupling Z-104-G6 (backlash free),
Fork coupling Z-105-G6 (backlash-free),
MAP process control indicators with display
MUP/MUK signal conditioners for standardized voltage and current ouput 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 $<= 1 \mu A$)