NG Series

General Specifications Brochure

RIEKER® INCORPORATED

Electronic Inclinometers with Non-amplified, Non-Temperature Compensated Analog Voltage Output in ±10, ±30 and ±80° Ranges.

Description

The NG Series inclination sensors are liquid capacitive gravity based sensors with integrated sensor electronics. These sensors provide Analog DC output; the measuring principle assures a linear angle output equal to the measuring range of the sensor.

The sensor electronics require only minimal power - power consumption is very low (approx. 1mA) - and are in conjunction with the capacitive primary transformer, which is characterized by high accuracy, a high signal-to-noise ratio and long-term stability.

Applications

These inclinometers are suitable for applications requiring high measurement accuracy with low linearity deviations and high long-term stability for measurement of relatively large inclination angles.

Typical areas of application include construction, mining, automotive/vehicle tilt, surveying equipment, aircraft, transportation and conveyor systems.

Features

- *Linear output characteristics*
- *Minimal zero offset drift*
- *Hysteresis free output signal*
- *High measurement accuracy*
- *Very low relative linearity errors*
- *Integrated sensor electronics*
- *Long-term stability*
- *Low power consumption*
- *Analog mV output signal*
- *Hermetically sealed housing to IP65*
- *Zero offset mechanically adjustable through 360 within mounting ring*
- *No interference by ambient electromagnetic fields*
- *Shockproof to 10,000g: no moving mechanical parts*
- *Sensor electrically isolated from point of measurement using high quality PBT plastic housing - no ground connections*

MECHANICAL CHARACTERISTICS	
Housing	30% Glass Filled PBT Plastic
Mounting	Flat Vertical Surface with Supplied Mounting Ring
Outline Dimensions	Ø 1.92" (Ø 48.8mm) X 0.85" (21.6mm) h
	With Mounting Ring: Ø 2.64" (Ø 67mm) X .85" (21.6mm) h
Electrical Connection	Ø 0.182" (Ø 4.6mm) Shielded cable x 1.65' (0.5m)
Weight	Approx. 3.88 ounces (110 grams) (not including mounting ring)
Operating Temperature	-40°F to +185°F (-40° to +85°C)
Storage temperature	-49°F to +194°F (-45° to +90°C)

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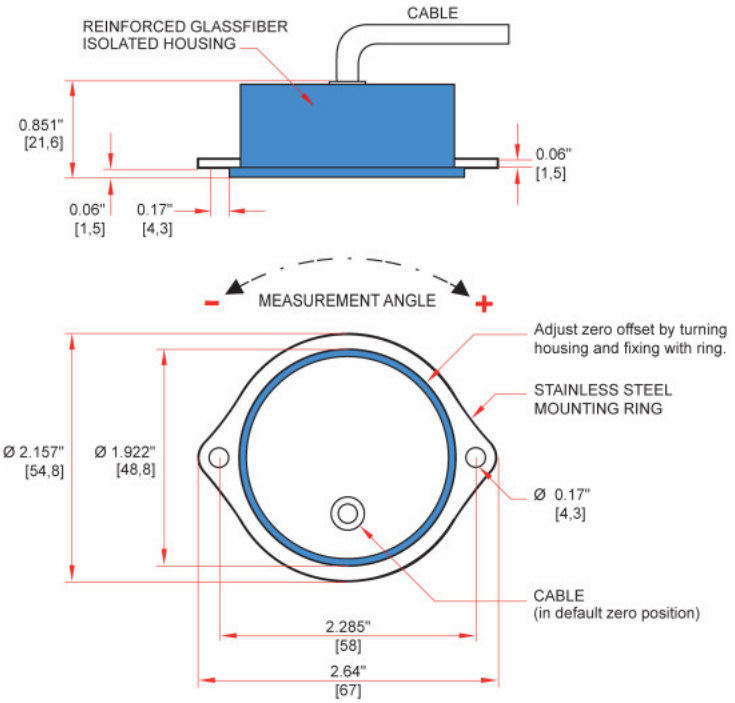
N Model Specifications	NG2	NG3	NG4
Measuring range	±10°	±30°	±80°
Resolution	< 0.001°	< 0.003°	0.01°
Max. Non-linearity	< 0.1% Full Measuring Range of Sensor		
Transverse Sensitivity	<1% at 45° tilt		
Response Tme	< 0.3 Sec. (<300mSec)		
Power Supply U_b	5 Volt regulated		
Min ... Max. Supply U_{bz}	3 ... 6 Volt		
Current consumption U_b=5Volt	Approx. 1mA		
Protection degree	IP65		
VALUES FOR ANALOG DC OUTPUT MODEL AT U_{BN}=5VOLT			
Sensitivity	Approx. 10mV/°	Approx. 7mV/°	Approx. 4.2mV/°
Temperature drift of sensitivity	< -0.12%/C		
Temperature drift of zero	< ±0.01mV/C		
Zero offset at Ub=5V	2.5 ±0.1 Volt - generally: 0.5Ub ± 4%		
Output Impedance	10kOhm		
Digital pulse-width modulated output signal - linear to the degree of angle - available upon request.			
SHIELDED CABLE WIRING TABLE:			
BROWN	+5VDC Stable		
ORANGE	Output Signal		
BLACK	GND (Inside Shield)		
Caution: Do not reverse operating voltage polarity! 6 volts is maximum supply voltage.			

Figure 1: Dimensions and Mounting Position (inches [mm])



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