NB3 Series

General Specifications Brochure

RIEKER® INCORPORATED

Compact Inclinometer Sensors: NB3 (0…7 Hz) & NB3S (0…60 Hz) provide High Accuracy for Small Measuring Ranges within ±10°

Description

The NB3 is a static accelerometer (utilized as an inclinometer) with a high degree of accuracy for measuring small tilt angles of any object with respect to gravity. The sensor's primary transformer consists of a capacitive spring-mass system with gas-dynamic damping.

Manufactured either with an Analog DC or a Pulse Width Modulated (PWM) output, the integrated sensor electronics require only minimal power and are in conjunction with the capacitive primary transformer characterized by high accuracy, linearity, and long-term stability.

Applications

Well suited for industrial use where the demands for compact inclinometers with good long-term stability (very low power consumption) and relatively small tilt angle measuring ranges (±10°) are preferred.

Typically used for automation and inspections applications as well as safety engineering, medical & communications equipment, and leveling systems.

Features

- *Small compact housing, less than 1" diameter*
- *0.3 or 0.01 Second Response Time*
- *Linear output characteristics*
- *Minimal zero offset drift*
- *Hysteresis free measuring signal*
- *High measurement accuracy*
- *Very low relative linearity errors*
- *High long-term stability*
- *Analog or PWM output signals*
- *Very low power consumption*
- *Hermetically sealed housing to IP65*
- *Low transverse sensitivity over full range*

MECHANICAL CHARACTERISTICS	
Housing	Nickel Plated Brass
Mounting	M3 Mounting Stud, M4 optional
Mounting Plane	Vertical Surface
Outline Dimensions	Ø 0.945" (Ø 24mm) X .434" (11mm) h
Electrical Connection	3 highly flexible, color-coded wires Ø 0.04" (Ø 1.0mm) x 7.0" (18cm)
	Optional: Shielded cable Ø 0.083" (Ø 2.1mm) x 1.65' (0.5m)
Weight	Approx. 0.89 ounces (25 grams) (not including cable)
Operating Temperature	-40°F to +185°F (-40° to +85°C), optional +257ºF (+125ºC)
Storage temperature	-49°F to +194°F (-45° to +90°C), optional +257ºF (+125ºC)

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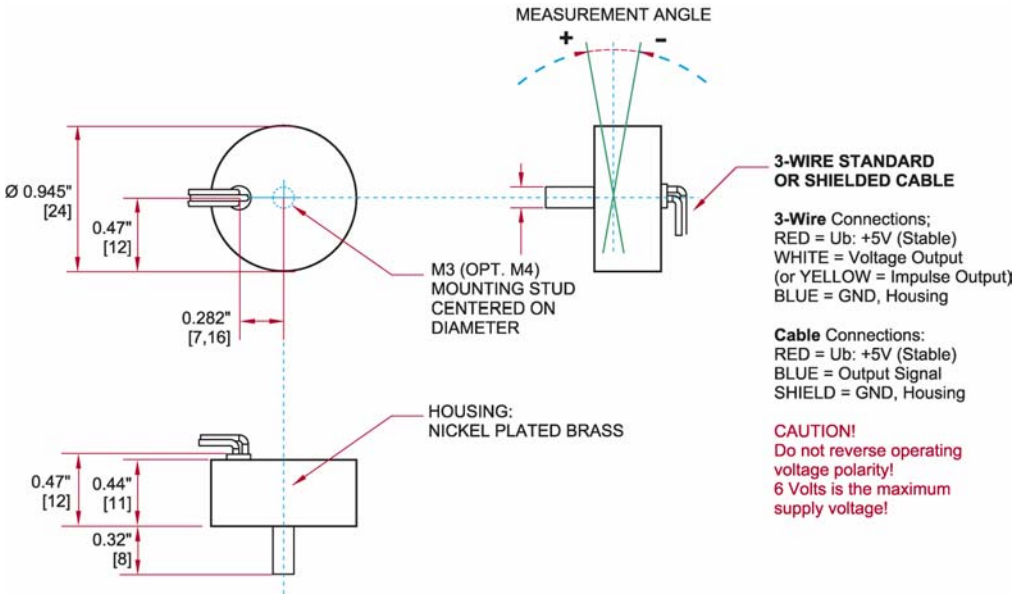
NB MODEL SPECIFICATIONS		
Measuring range		±10°
Resolution		< 0.001°
Max. Non-linearity		< 0.2% Full Range for ±10° model
		< 0.5% Expanded Range for ±20°
Transverse Sensitivity		Negligible
Response Tme	**NB3**	< 0.3 Sec., Frequency 0-7Hz
	NB3S	< 0.01 Sec., Frequency 0-60Hz
Power Supply U_b		5 Volt regulated
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. 15mV/°
Temperature drift of sensitivity		< +0.01% /°C
Temperature drift of zero		< ± 0.025mV /°C
Zero offset at Ub=5V		2.5 ±0.1 Volt - generally: 0.5Ub ±4%
Output Impedance		10kΩ
Digital pulse-width modulated output signal - linear to the degree of angle - available upon request.		

CABLE WIRING TABLE:			
3-WIRE (standard)		**SHIELDED CABLE** (optional)	
RED	+5VDC Stable	**RED**	+5VDC Stable
WHITE	Output Signal	**BLUE**	Output Signal
BLUE	GND (housing)	**SHIELD**	GND (housing)

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



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