

Compact Inclinometer Sensors: NB2 (0...7 Hz) & NB2S (0...60 Hz) provide High Accuracy for Small Measuring Ranges within $\pm 4^\circ$



Description

The NB2 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 a special gas damping for fast dynamic response.

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 ($\pm 4^\circ$) 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*

Attention! These sensors are not suited for applications subject to high mechanical shocks! Handle with care.

MECHANICAL CHARACTERISTICS	
Housing	Nickel Plated Brass
Mounting	M3 Mounting Stud, M4 optional
Mounting Plane	Vertical Surface
Outline Dimensions	$\varnothing 0.945"$ ($\varnothing 24\text{mm}$) X $.434"$ (11mm) h
Electrical Connection	3 highly flexible, color-coded wires $\varnothing 0.04"$ ($\varnothing 1.0\text{mm}$) x 7.0" (18cm)
	Optional: Shielded cable $\varnothing 0.083"$ ($\varnothing 2.1\text{mm}$) 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 +257°F (+125°C)
Storage temperature	-49°F to +194°F (-45° to +90°C), optional +257°F (+125°C)

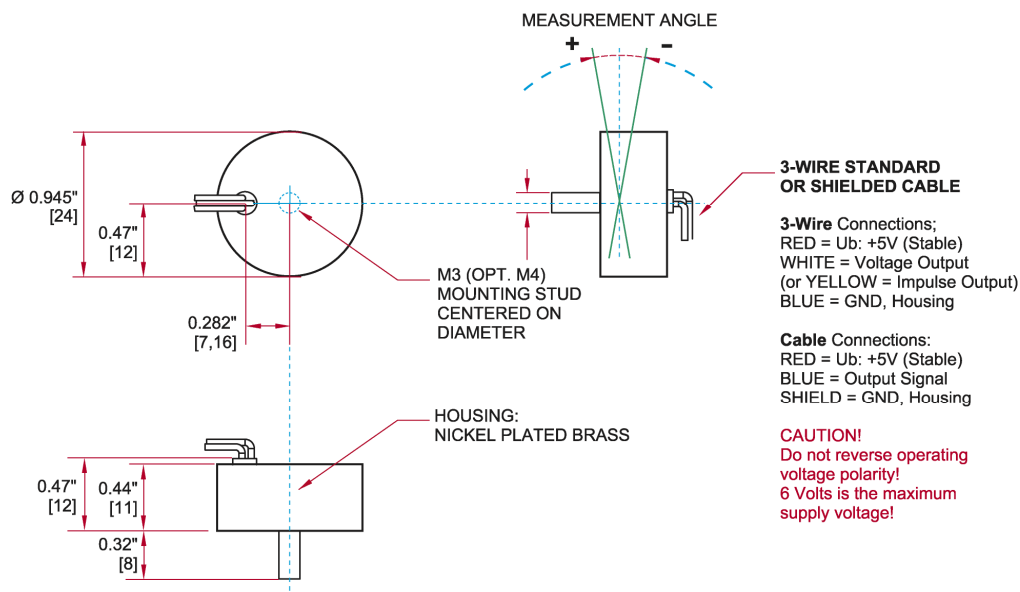
NB MODEL SPECIFICATIONS	
Measuring range	±4°
Resolution	< 0.001°
Max. Non-linearity	< 0.2% from linear range
	< 0.5% Expanded Range for 8°
Transverse Sensitivity	Negligible
Response Tme	NB3 < 0.3 Sec., Frequency 0-7Hz
	NB3S < 0.01 Sec., Frequency 0-60Hz
Power Supply U _b	5 Volt regulated
Min ... Max. 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 U _b =5V	2.5 ±0.1 Volt - generally: 0.5U _b ±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])



34 MOUNT PLEASANT ROAD • ASTON • PA • 19014 • USA

610-500-2000

fax: 610-500-2002

support@riekerinc.com

www.riekerinc.com