

NEO ECHOKING ULTRASONIC LEVEL TRANSMITTER



Flow
Pressure
Level
Temperature
measurement
monitoring
control



- Capable of monitoring tanks and bins up to 24.5 feet deep
- Compact and easily installed
- Automatic temperature compensation
- Non-contact sensor
- Compatible with viscous, sticky or chemically aggressive media
- Provides a 4–20 mA transmitter
- On-board display for easy calibration
- Loop powered and Intrinsically Safe versions available

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Model:
NEO

Features

- Capable of monitoring tanks and bins up to 24.5 feet deep
- Compact and easily installed
- Automatic temperature compensation
- Non-contact sensor
- Compatible with viscous, sticky or chemically aggressive media
- Provides a 4–20 mA transmitter operating in a three-wire mode
- On-board LED display for easy calibration
- SPDT relay which can be configured as a level alarm or for auto tank fill/empty
- All the above are STANDARD!

The KOBOLD EchoKing ultrasonic transmitter is a full featured level sensing system suitable for monitoring levels of liquids and some dry-bulk materials. The unit's sophisticated signal processing delivers an accuracy and dependability not possible with older technology.

The EchoKing's enhanced abilities are made possible by a powerful internal microprocessor. The system uses a form of artificial intelligence to learn about its surroundings. An on-going learning process is used to help the EchoKing distinguish between real echos, reflections and just plain old background noise. At the same time, the sensor constantly adapts to changes in the on-site conditions. In air environments, the NEO adjusts for temperature variations through use of an internal thermal sensor and compensating table.

A built-in relay may be used to control tank fill/empty operations, as an alarm for level detection, or for fault detection. Span, setpoint limits and all necessary information is stored digitally in the EchoKing's non-volatile memory – there are no sensitive analog potentiometers to adjust.

Despite its technical complexity, the system is easily programmable via an on-board touch-pad. All process parameters can be easily entered into the system at the installation site.



KOBOLD EchoKing® Level Transmitter

Specifications

| | |
|----------------------------------|--|
| Range: | 24.5 feet from sensor face |
| Dead Band: | 0.5 feet (6 inches) |
| Span: | 24 feet |
| Accuracy: | ±0.25% of F.S. |
| Repeatability: | ±0.125" |
| Fitting: | 2" NPT |
| Materials of Construction | |
| Probe: | PVDF |
| Enclosure: | PP (UL 94VO) |
| Max. Temp. Range: | -40 to 140°F |
| Pressure Rating: | 30 PSI @ 75°F |
| Beam Angle: | ±8° off vertical |
| Sensor Frequency: | 50 KHz |
| Supply Voltage: | 14 to 36 VDC |
| Current Draw: | 200 mA max. |
| Signal Output: | 4-20 mA DC (3-wire) into 350 ohms max. |
| Relay: | SPDT 12 amps @ 240 VAC/120 VDC |
| Protection: | NEMA 4X |

Ordering Information

| Output Type | Order Number |
|-------------|--------------|
| Sourcing | NEO-5003 |

Features

- Same adaptive features as the standard EchoKing®
- Capable of monitoring tanks and bins up to 18 feet deep
- Compact and easily installed
- Automatic temperature compensation
- Non-contact sensor
- Compatible with viscous, sticky or chemically aggressive media
- Provides a 4–20 mA transmitter operating in a loop-powered, two-wire mode
- On-board LCD display for easy calibration



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The 2-wire, loop powered version of the NEO features the same artificial intelligence circuitry as the 3-wire version. Echo error correction, short dead band at the sensor face, and adaptability to changing environment are implemented in both a non-hazardous and intrinsically safe version of state-of-the-art EchoKing® ultrasonic level transmitter.

The NEO-5001 provides a 4–20 mA output over a 0.5 to 18 foot measuring range. The current span is fully user adjustable within that 18 foot measuring range. To allow use in hazardous locations, an intrinsically safe (IS) version of this transmitter is available. With the IS version, all applications conforming to the requirements of Classes I, II, III, Division I and Groups A through G are suitable candidates for the easy, reliable level measurement afforded by the NEO EchoKing®, but only when used in conjunction with a suitable, approved Intrinsically-Safe barrier (sold separately).

KOBOLD NEO-5001 Level Transmitter

Specifications

- Range:** 18 feet from sensor face
- Dead Band:** 0.5 feet (6 inches)
- Span:** 17.5 feet
- Accuracy:** ±0.25% of span
- Repeatability:** ±0.125"
- Fitting:** 2" NPT
- Display**
 - Type:** 4 digit LCD
 - Units:** inch / cm
- Materials of Construction**
 - Probe:** PVDF
 - Enclosure:** PP (UL 94VO)
- Max. Temp. Range:** –40 to 140°F
- Compensation:** over entire range
- Pressure Rating:** 30 PSI @ 75°F
- Beam Angle:** ±8° off vertical
- Sensor Frequency:** 50 KHz
- Supply Voltage:** 14 to 36 VDC
- Signal Output:** 4–20 mA DC (2-wire) into 350 ohms max.

Intrinsic Safety Rating (NEO-5001IS Only)

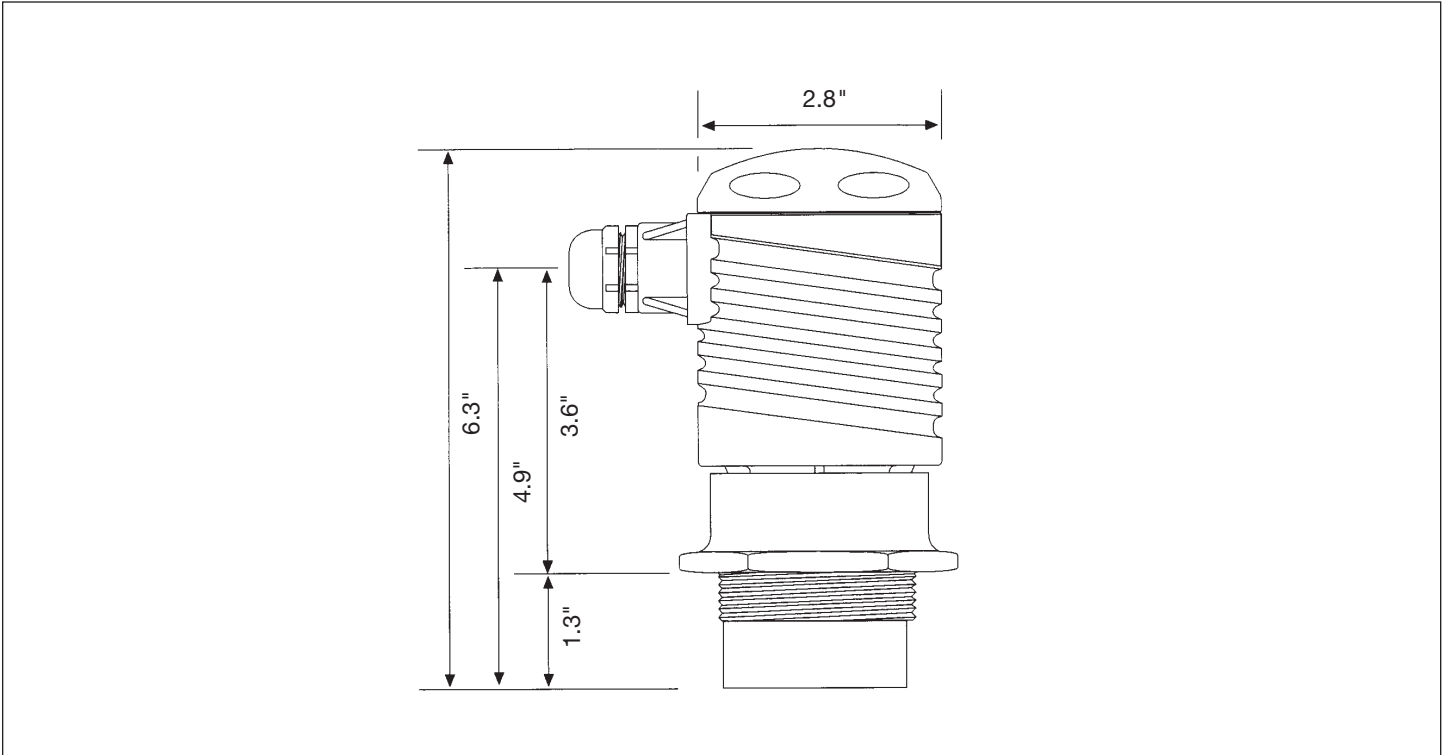
- CSA/NRTL/C:** Class I, Div 1 Groups A,B,C,D
Class II, Div 1 Groups E,F & G
Class III, Temp Code: T3C
- Vmax:** 32.0 VDC
- I_{max}:** 130 mA
- Ci:** = 0 microFarads
- Li:** = 0 microHenries
- Protection:** NEMA 4X case

Ordering Information

| Output Type | Order Number |
|--------------------|--------------|
| Standard | NEO-5001 |
| Intrinsically Safe | NEO-5001IS |

NEO Dimensions

Standard 2" NPT Fittings



NEO Beam Divergence

| Range (feet) | Radius (inches) | Range (feet) | Radius (inches) |
|--------------|-----------------|--------------|-----------------|
| 1 | 2.6 | 13 | 21.5 |
| 2 | 4.2 | 14 | 23.1 |
| 3 | 5.7 | 15 | 24.7 |
| 4 | 7.3 | 16 | 26.3 |
| 5 | 8.9 | 17 | 27.8 |
| 6 | 10.5 | 18 | 29.4 |
| 7 | 12.1 | 19 | 31.0 |
| 8 | 13.6 | 20 | 32.6 |
| 9 | 15.2 | 21 | 34.2 |
| 10 | 16.8 | 22 | 35.7 |
| 11 | 18.4 | 23 | 37.3 |
| 12 | 20.0 | 24 | 38.8 |
| | | 25 | 40.5 |

