

LL1000 Series

LL1000 “Mini Probe” Ultrasonic Level Sensor



LL1000 Ultrasonic “Mini Probe”

The "Mini Probe" is an addition to the full range of ultrasonic level sensors already offered. Its design is compact, extending just over 2" in height above the tank or drum surface, and it has an operating range of 4' to 6' (0.10 m to 1.8m).

As with all of our standard Ultrasonic models, the LL1000 has a PVC housing that allows for an operating temperature range of -40°C to 60°C (-40°F to 140°F). This range can be increased to as high as 125°C (257°F) with an optional CPVC or Kynar housing.

The LL1000's microprocessor-based circuits provide a temperature-compensated signal for improved accuracy and the ability to filter false echoes produced by peripheral obstructions. On-board push buttons allow for calibration without the need for software and computers. Optional RS485 communications are available for computer interfacing and for networking up to 148 sensors.

For applications requiring a sanitary interface to the sensor, an optional 316L stainless steel transducer face with tri-clover clamp is also available.

Features

- Pulse ultrasonic technology
- Non-contact measurement
- Programmable
- Push-button calibration
- Elimination of unwanted echoes
- Microprocessor-based reliability
- Temperature compensated
- Field or bench calibration
- Self-cleaning sensor face
- Non-volatile memory (batteries not required)
- Automatic adjustment of power and sensitivity to any environment
- Low profile

Applications

- Food and beverage
- Water and wastewater
- Chemicals and oils
- Various liquids, slurries and solids

Specifications

Electrical:

Power Options – DC: 12 to 30 VDC, 0.07 Amps max. @ 24 VDC
R load = $(V_s - 6)/24$ mA

Output – 4-20 mA, 6.1 uA resolution

Relay: DPST, 5 Amps @ 230 VAC

Optional RS485 communications port (comes with free software)

Note: If a converter is required, we recommend B & B Electronics Model 485SD9TB

Operational:

Accuracy – $\pm 0.25\%$ of max. target range (in air)

Beam Angle – 10-12 degrees at -3 dB

Loss of Echo Hold – 30 seconds, 22 mA output

Temperature Compensation – Onboard the sensor

Calibration – Push-button or optional programmable

Diagnostics (Echo Profile) – Via optional programmable port

High-Level Alarm – 5 Amp relay has hysteresis and delay of 5% of the tank height;
changes at full tank calibration height

Range – 0.33' to 6' (0.10m to 1.8m)

Resolution – 0.04" (0.98mm)

Operating Frequency – 148 kHz

Environmental:

Operating Temperature Range – -40°C to 60°C (-40°F to 140°F)

Pressure – 1 BAR to 10 BAR

Installation Category – Class 11

Approval – [CE](#)

Mechanical:

Cable – 24 AWG, 3 pair, 60" long (1.5m)

Relay option requires 18 AWG, 3 conductor

Enclosure – PVC-94V0

Ingress Protection – [NEMA 4X](#) (IP65)

Optional Features:

LL1000.X01 Standard model

LL1000.X02 with communications port

LL1000.X11 with relay

LL1000.X12 with communications port and relay

For higher operating temperatures, request factory quote for a CPVC or Kynar housing.

All specifications are subject to change without notice.