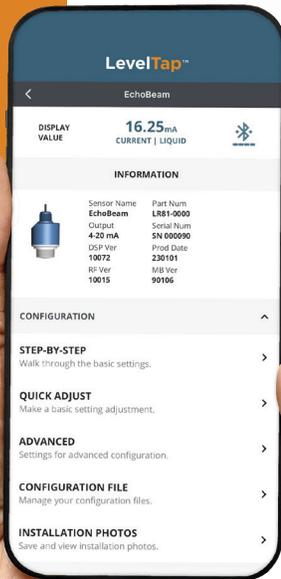


EchoBeam® is Reliable **Liquid** and **Solids** Level Measurement



80 GHz
RADAR

EchoBeam 80 GHz Radar Technology

EchoBeam is the most reliable and easy-to-use non-contact level sensor. Flowline's 80 GHz radar technology is unaffected by most media, process or environmental factors, and our intuitive LevelTap App makes configuration simple. Explore the advantages of EchoBeam reliable level measurement.



Performance Advantages

EchoBeam provides exceptional performance advantages including measurement reliability, accuracy, beam width and dead band.

Reliability

Level and flow measurement reliability is the core of EchoBeam, built from Flowline's 80 GHz radar technology and proven level expertise.

Accuracy

EchoBeam provides accurate and repeatable liquid and solids level or open channel flow measurement in one device.

Beam Width

With narrow beam angles, automatic or user defined filtering, EchoBeam only requires a small footprint in which to measure.

Dead Band

EchoBeam has a zero dead band which maximizes the available fill capacity or alarm set point height in small tanks or bins.

Environmental Advantages

EchoBeam delivers reliable measurement in challenging outdoor applications under varying temperatures, precipitation and wind.

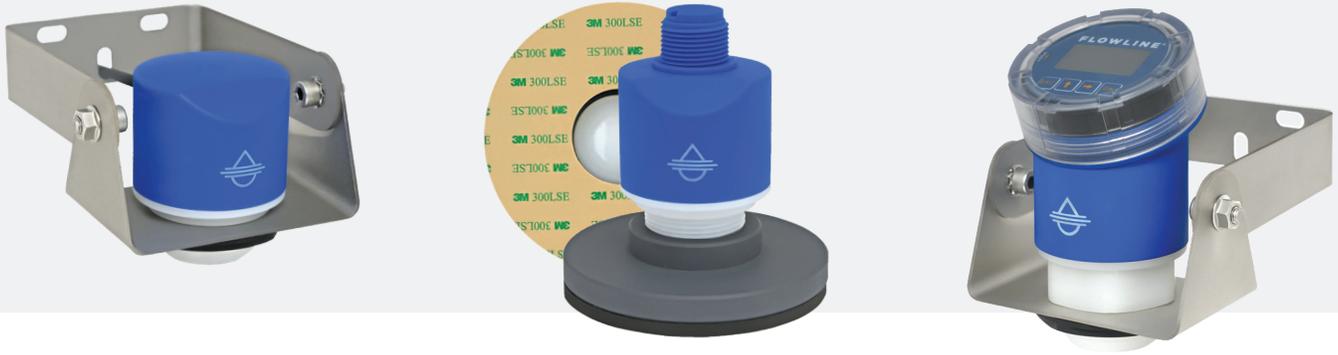


Temp, Vapor & Condensation

EchoBeam is unaffected by daily or seasonal changes in environmental temperature, which drive vapor and condensation cycles in tanks, and attenuate other non-contact sensors.

Precipitation & Wind

Installed outdoors and exposed to the elements, EchoBeam is unaffected by storm precipitation and wind that scatter signal returns and attenuate other non-contact sensors.



Process Advantages

EchoBeam measurement reliability and longevity is unaffected by difficult process variables such as agitation, surface foam, material buildup or corrosion.

Agitation

Unlike pressure and float sensors, EchoBeam is unaffected by mixer or pump agitation that abuse contact sensors and reduce their life.

Surface Foam

EchoBeam is unaffected by liquid surface variables such as foam, particulates or caking that attenuate other non-contact sensors.

Material Buildup

EchoBeam is unaffected by coating type liquid or dry dusty solids that build up and impede most other contact or non-contact sensors.

Corrosion-Resistance

Constructed entirely of PVDF or available with a PFA antenna, PBT-FR enclosure and windowed PC cap, EchoBeam is very corrosion-resistant.

User Advantages

EchoBeam is easy to use with Bluetooth to App configuration and maintenance-free operation that provides unparalleled user satisfaction.

Bluetooth Configuration

Wirelessly connected to our LevelTap App over Bluetooth, EchoBeam configuration and verification is fast, easy and secure without ladders, safety harnesses or back pain.

Maintenance-Free Operation

EchoBeam's non-contact level measurement, requires no ongoing maintenance or field calibration of any kind. Configure, install, verify and forget about it.



EchoBeam Models

EchoBeam is available in four models with three ranges, four outputs, three process mounts in two materials, two enclosures, four operating temperatures and an optional display.



LR80



LR81



LR83



LR85

Classification	General purpose	General purpose	General purpose	General purpose
Media	Liquid or solids	Liquid or solids	Liquid or solids	Solids or liquid
Liquid	Bulk storage, day tank, skid or machine, IBC or drum, process tank, waste sump, neutralization tank, open channel, lift station, clarifier, canal, reservoir	Bulk storage, day tank, skid or machine, IBC or drum, process tank, waste sump, neutralization tank, open channel, lift station, clarifier, canal, reservoir	Bulk storage, process tank, waste sump, neutralization tank, open channel, clarifier, canal, reservoir	Terminal bulk storage, extreme process tank, low dielectric
Solids	Small silo, bin, conveyor, transfer station, stockpile	Medium silo, bin, conveyor, transfer station, stockpile	Medium silo, bin, conveyor, transfer station, stockpile	Tall silo, stockpile, extreme dust, low dielectric
Process	Basic	Challenging	Challenging	Extreme
Range	32.8' (10m) in liquid or 16.4' (5m) in solids	98.4' (30m) in liquid or 49.2' (15m) in solids	98.4' (30m) in liquid or 49.2' (15m) in solids	393.7' (120m) in liquid or 196.8' (60m) in solids
Accuracy	±5mm	±2mm	±2mm	±2mm
Output	4-20 mA	4-20 mA w/HART, Modbus or SDI-12	4-20 mA w/HART or Modbus	4-20 mA w/HART or Modbus
Configuration	LevelTap App	LevelTap App	LevelTap App or push button display	LevelTap App or push button display
Termination	32.8' (10m) cable	32.8' (10m) cable	1/2" NPT (M20)	1/2" NPT (M20)
Cable orient.	Vertical	Vertical or horizontal	Horizontal	Horizontal
Mount	1 1/2" NPT (G)	1 1/2" NPT (G)	1 1/2" NPT (G)	3" NPT (M80x3) or 3" ANSI (DIN80) gimbal flange
Temperature	-40° F. (-40° C.) to 140° F. (60° C.)	-40° F. (-40° C.) to 176° F. (80° C.)	-40° F. (-40° C.) to 212° F. (100° C.)	-40° F. (-40° C.) to 248° F. (120° C.)
Max. pressure	43.5 PSI (3 bar)	43.5 PSI (3 bar)	43.5 PSI (3 bar)	43.5 PSI (3 bar)
Ant. material	PVDF	PVDF	PVDF	PFA



4-20 mA

Two-wire 4-20 mA is a basic analog process signal that's widely used to connect level sensors to programmable control devices in industrial, municipal and commercial applications.

HART

HART is a hybrid digital communication protocol that functions over two-wire 4-20 mA loops, and enables level sensors to be configured and polled by a master controller over the loop.

Modbus

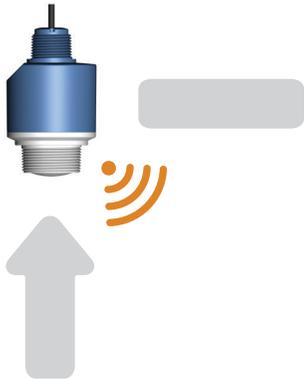
Four-wire RS485 Modbus is a digital communication protocol that enables level sensors to be configured and polled by a master controller over a wired or wireless digital network.

EchoBeam Selection

To select the right model for your application, go through the following logic, then scan the QR code to go to the product web page and confirm the details.

LR81

Reliable measurement of challenging liquid or solids applications with increased accuracy, range and temperature, and 4-20 mA with HART, Modbus or SDI-12 signal output, and vertical or horizontal cable orientation

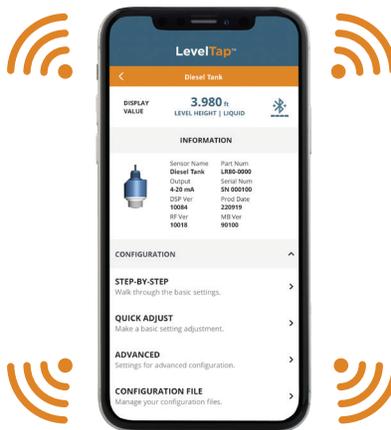


LR80

Reliable measurement of basic liquid or solids applications with 4-20 mA signal output and vertical cable orientation

START

LevelTap



LR83

Reliable measurement of challenging liquid or solids applications with increased temperature, push button display, 4-20 mA with HART or Modbus signal output, and conduit or liquid tight cable connector

LR85

Reliable measurement of extreme liquid or solids applications with increased range, temperature and corrosion resistance, gimbal flange or thread mount, and 4-20 mA with HART or Modbus signal output



FINISH

SDI-12

Three-wire SDI-12 is a digital communication protocol adopted by the environmental community for use in the remote level monitoring of water resources and tidal applications.

Display

The integral display provides level or flow indication with push button menu access to configure, view or adjust user settings in parallel with LevelTap, HART, Modbus or SDI-12 configuration.

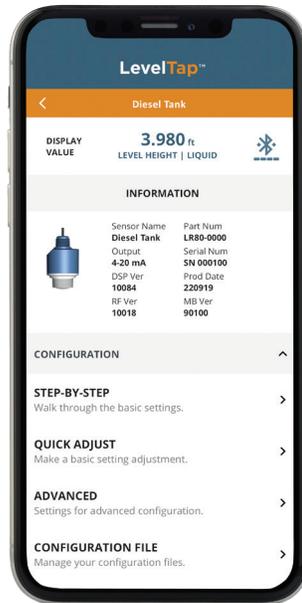


EchoBeam Configuration

With the LevelTap App, users can easily connect to EchoBeam via Bluetooth, view level or flow information, configure and adjust or set up advanced functions, all from the palm of your hand.

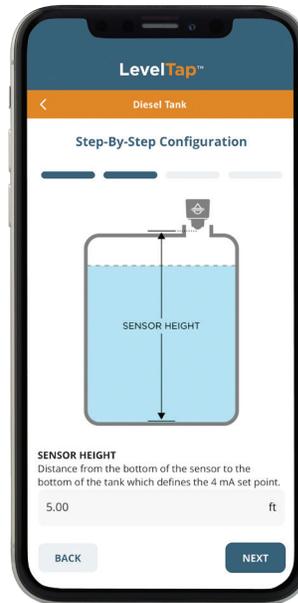
Information

The information screen displays the measured value, summarizes the model type and build, and provides access to the configuration menu for each sensor.



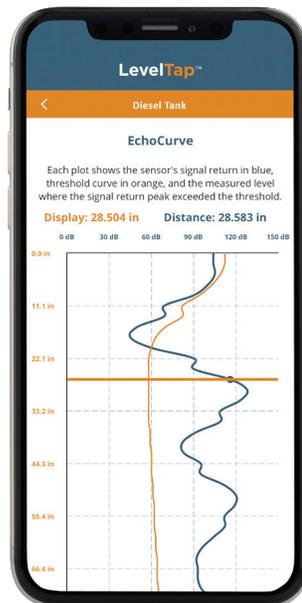
Configuration

Step-by-step configuration easily walks you through typical sensor setup with clear illustration, definition and pull down menu prompts for each step.



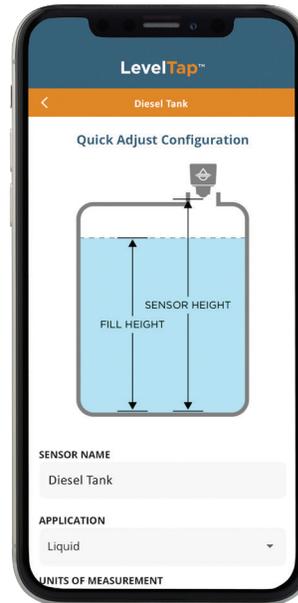
Advanced

Advanced functions include volumetric tank level or open channel flow configuration, and tools such as EchoCurve to address unique application scenarios.



Quick Adjust

Quick adjust allows authorized users to swiftly access, review and modify an existing sensor configuration from the ground or nearby cat-walk.



LevelTap™ Download

Download your free LevelTap App at the Apple Store, Google Play, register and go to Demo Sensors. There you can view and interact with configuration examples prior to purchase.

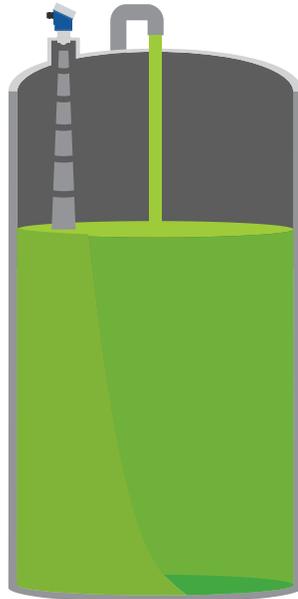


EchoBeam Applications

EchoBeam level and flow applications are extensive, and include a wide range of tanks, sumps, reservoirs, lakes, canals, rivers, silos, bins, stockpiles, weirs and flumes.

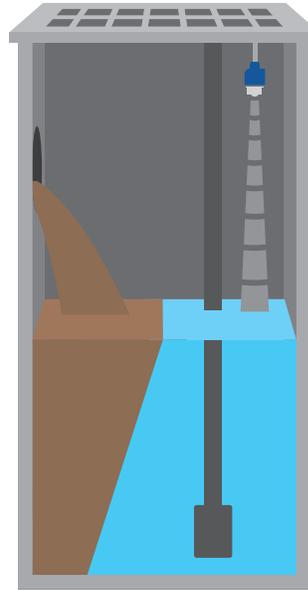
Tanks

EchoBeam measures tanks of all shapes, sizes and materials from bulk storage to process vessels to wastewater treatment, and everything in between.



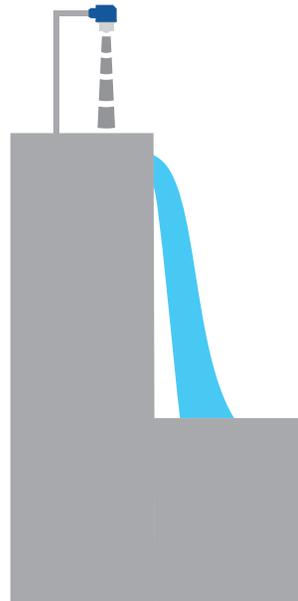
Sumps

EchoBeam measures below grade sumps or reservoirs, such as sewer or storm lift stations, industrial or commercial sumps and lakes, canals or rivers.



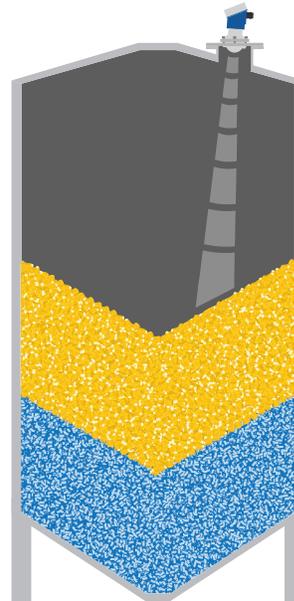
Channels

EchoBeam measures open channel flow volumes in standard weir or flume structures in municipal, industrial and agricultural flow applications.



Silos

EchoBeam measures pellet, grain, powder and aggregate solids in silos, bins or stockpiles of all types, from tall dusty cement silos to small process bins.



Install Solutions

Flowline offers unique installation solutions such as adhesive fittings for non-invasive measurement on flat tank tops, stainless or capped PTFE adapters in thread to thread or tri-clamp, and stainless brackets for side wall or above tank mounting.



We Do Your Level Best™

Flowline designs, manufactures and markets the best level measurement and control instruments for your chemical, water, wastewater, oil and dry solid applications. We enable industrial manufacturers, chemical distributors, municipalities, and energy or food suppliers to safely and efficiently manage their contained liquid and solid assets. Our quality level solutions measure tank and silo inventories, automate containment processes, ensure workplace safety and protect the environment. Our customers are specifying engineers, system integrators, original equipment manufacturers, facility operators, instrumentation engineers and maintenance decision makers. We understand your requirements, have a breadth of solutions and readily share our level expertise. Flowline products are manufactured under our ISO 9001 and ATEX quality management system, and sold and supported worldwide by our technical stocking distribution partners.



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