Technical Support

Tel: 562.598.3015
8:00 am and 5:00 pm PST Mon-Fri

www.flowline.com/echopod and select "Support"

Please make sure you have the Part & Serial number available

Warranty

To register your product with Flowline, go to www.flowline.com. On-line warranty registration can be found under contact Flowline on the navigation bar along the side of the home page.

Flowline warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service for a period which is equal to the shorter of one year from the date of purchase of such products or two years from the date of manufacture of such products.

This warranty covers only those components of the products which are non-moving and not subject to normal wear. Moreover, products which are modified or altered, and electrical cables which are cut to length during installation are not covered by this warranty.

Flowline's obligation under this warranty is solely and exclusively limited to the repair or replacement, at Flowline's option, of the products (or components thereof) which FLOWLINE SHALL HAVE NO OBLIGATION FOR CONSEQUENTIAL DAMAGES TO PERSONAL OR REAL PROPERTY, OR FOR INJURY TO ANY PERSON.

This warranty does not apply to products which have been subject to electrical or chemical damage due to improper use, accident, negligence, abuse, or misuse. Abuse shall be assumed then indicated by electrical damage to relays, reed switches or other components. The warranty does not apply to products which are damaged during shipment back to Flowline's factory or designated service center or are returned without the original casing on the products. Moreover, this warranty becomes immediately null and void if anyone other than service personnel authorized by Flowline attempts to repair the defective products.

Products which are thought to be defective must be shipped prepaid and insured to Flowline's factory or designated service center (the identity and address of which will be provided upon request) within 30 days of the discovery of the defect. Such defective products must be accompanied by proof of the date of purchase.

Flowline further reserves the right to unilaterally waive this warranty and to dispose of any product returned to Flowline where:

a. There is evidence of a potentially hazardous material present with product
b. The product has remained unclaimed at Flowline for longer than 30 days after dutifully requesting disposition of the product.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. This warranty and the obligations and liabilities of Flowline under it are exclusive and instead of, and the original purchaser hereby waives all other remedies, warranties, guarantees or liabilities, express or implied. EXCLUDED FROM THIS WARRANTY IS THE IMPLIED WARRANTY OF FITNESS OF THE PRODUCTS FOR A PARTICULAR PURPOSE OR USE AND THE IMPLIED WARRANTY OF MERCHANT ABILITY OF THE PRODUCTS.

This warranty may not be extended, altered or varied except by a written instrument signed by a duly-authorized officer of Flowline, Inc.

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FLOWLINE



Model: DL24-XX

EchoPod®

Quick Start

QS204200 REV: A.1
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Made In USA

We Do Your Level Best

Thank you for purchasing Flowline's innovative multi-function level solution. EchoPod is a general purpose sensor that combines switch, controller and transmitter capabilities for tanks 98.4" (2.5 m) or less. Flowline thanks you for your business and will continue to do your level best.

Components

Depending on the model purchased, you may or may not have been shipped all the components shown below. You do however, need an USB Fob and Viton® gasket to configure, install and operate EchoPod.

DL24-00



EchoPod & Gasket

DL24-01



EchoPod, Gasket & USB Fob

LI99-1001



USB Fob

Part#204038



Viton® Gasket

Configuration

EchoPod is configured through WebCal, a PC software program. WebCal is a free download from Flowline's website. You must download and install Web-Cal prior to plugging in the USB® Fob. Please go to http://www.flowline.com/webcal and select download.

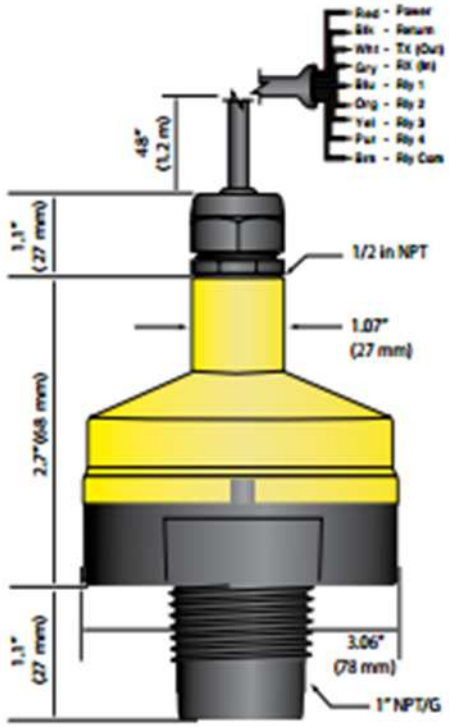
WebCal System Requirements

Windows® XP or 2000
10 mB hard drive space
256 mB RAM
1 USB® 2.0 port
Internet connection

Specifications

Range:	98.4" (2.5 m)
Accuracy:	+/- 0.2 % range
Resolution:	0.019" (0.5 mm)
Beam width:	2" (5 cm)
Dead band:	4" (10 cm)
Supply voltage:	24 VDC (loop)
Loop resistance:	400Ω max
Consumption:	0.5W
Signal output:	4-20 mA, two-wire (when loop powered)
Contact type:	(4) SPST relays 1A
Loop fail-safety:	4 mA, 20 mA, 21 mA, 22 mA or hold last
Relay fail-safety:	Power loss: Hold last Echo loss: Open, close or hold last
Hysteresis:	Selectable
Configuration:	WebCal® PC Windows® USB 2.0
Temp. comp.:	Automatic over range
Process Temp.:	F: -20° to 140° C: -7° to 60°
Pressure:	MWP = 30 PSI
Enclosure:	Type 6P encapsulated, corrosion resistant & submersible
Encl. material:	PC
Strain relief mat.:	Santoprene
Trans. material:	PVDF
Cable length:	48" (1.2 m)
Cable jacket mat.:	Polyurethane
Process mount:	1" NPT (1" G)
Mount. gasket:	Viton®
Classification:	General purpose
Approvals:	CE
Compliance:	RoHS

Dimensions



Safety

1. Installation should be done by properly trained staff
2. Supply voltage should never exceed a maximum of 24 VDC
3. Always use stepper relays between the sensor and external loads
4. Make sure the sensor is chemically compatible with your application
5. Design a fail-safe system that accommodates the possibility of sensor and/or power failure
6. *This sensor should not be used in classified hazardous environments*

Wiring EchoPod

After you have finished positioning and mounting EchoPod, follow WebCal's wiring diagram to wire EchoPod. Always use an external relay in-between EchoPod and any components. Flowline recommends using a licensed electrician to wire EchoPod and your application's components.

Once EchoPod is mounted and wired, observe your application and double check your relay set points.

Mounting Guide

1. Do not mount at an angle
2. Liquid should never enter the 4" dead band
3. Mount at least 2" from the side wall
4. Do not mount where obstacles will intrude the 2" beam width
5. Do not mount in a vacuum
6. Never screw directly into tank, always use a *non-metallic* fitting
7. Always use a tank adapter with the minimal height possible

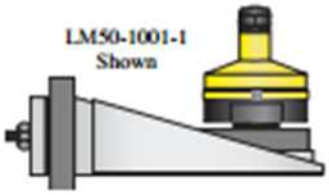
Tank Adapter: Select a tank adapter with minimum height to ensure that EchoPod's transducer will not be substantially elevated inside the fitting. Flowline recommends using a Spears 2" x 1", thread by thread, reducer bushing (LM52-1001)



Riser Specifications	
Inner Dia.	Max. Height
2" (5 cm)	4" (10 cm)
3" (7.6 cm)	6" (15 cm)
4" (10 cm)	8" (20 cm)
6" (15 cm)	12" (30 cm)

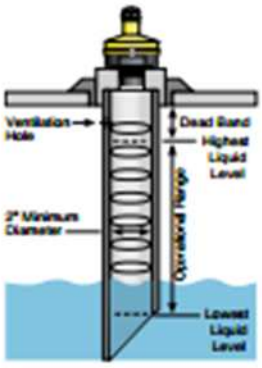
Riser: To ensure that you don't exceed the maximum riser height, based on inner diameter, refer to the riser specification guide.

Flange: Select a flange with a thread that is above the plane of the flange. If your installation requires the use of a blind flange, tap a 2" thread and use a thread by thread reducer bushing (see tank adapter).



Side Mount Bracket: Use Flowline's LM50-1001-1 side mount bracket. The LM50-1001-1 includes a 2" x 1" reducer bushing.

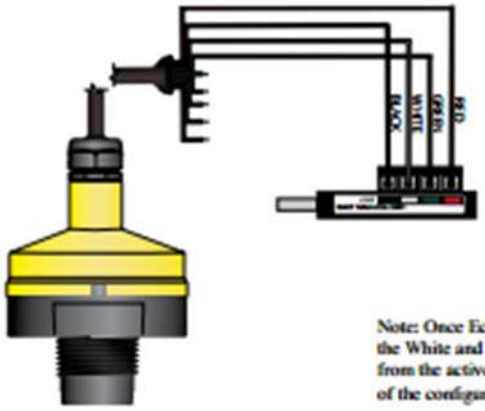
Stand Pipe: Use a stand pipe when surface foam or turbulence are present. Use a 2" diameter pipe or larger with a length that runs the distance of the span. Cut a 45° notch at the bottom and a 1/4" hole within 2" from bottom of the transducer face.



USB® Fob Interface

EchoPod communicates with WebCal through a USB interface called a Fob. Before plugging your Fob into your computer's USB port, be sure that you have installed WebCal on your computer.

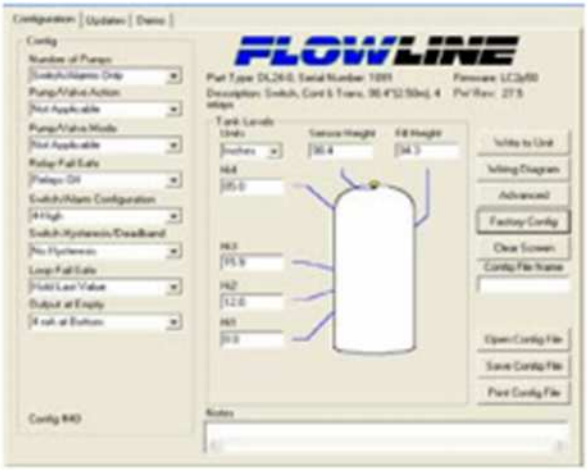
Connect the red, green, white and black wires from EchoPod into the correct terminals on the Fob. Tighten the screws on the terminals and plug your Fob into the USB port of your computer.



Note: Once EchoPod has been configured, the White and Green wires must be isolated from the active power to prevent a shorting of the configuration circuit.

WebCal

With EchoPod connected to your computer, open the WebCal software. Follow steps 1-3 (pg. 4-5) to configure EchoPod. Click "Help" in the lower right hand corner and open the help menu of WebCal. If you need additional assistance using WebCal, please contact a Flowline Applications Engineer.



WebCal Step 1: Configuration

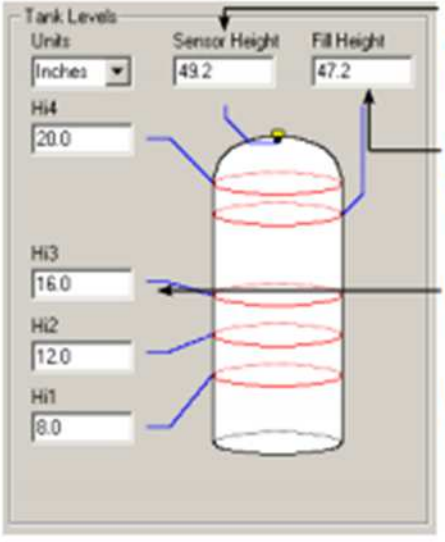


This section of WebCal is where you select the application's configuration settings. Start from the top and work to the bottom, choosing the selections that are applicable to your configuration. "Not Applicable" will automatically show when a selection doesn't apply to your configuration settings, and you may move on. All configuration settings must be selected or have "Not Applicable" before you can continue to step 2.

Right click on any menu that you may have questions on to open the help menu.

WebCal Step 2: Tank Values

This section of WebCal is where you enter application values. All values must be filled in before moving to step 3.



Sensor Height: Distance from the bottom of the tank to the bottom of the transducer.

Fill Height: Distance from the bottom of the tank to the maximum liquid height.

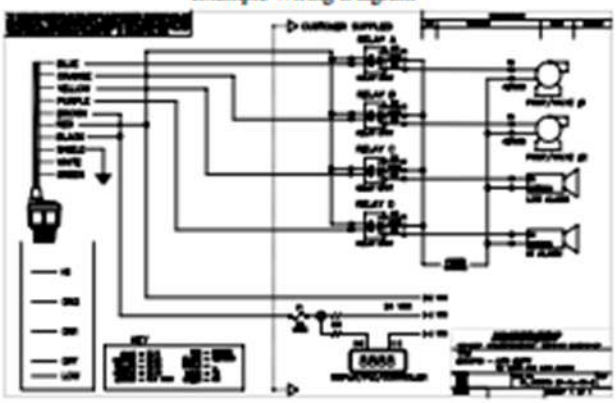
Relay Set Points: Distance from the bottom of the tank to set-points.

Right click on any value you may have questions on to open the help menu.

WebCal Step 3: Write to Unit

After you have entered configurations and tank values, click "Write to Unit" and send the configuration to EchoPod. Now use WebCal's file management features to save your configuration by clicking "Save Config. File," and print your wiring diagram by clicking "Wiring Diagram."

Example Wiring Diagram



Position and Mount

Positioning and mounting EchoPod is critical to the sensor performing correctly. EchoPod should always be mounted perpendicular to the liquid in the tank, clear of any obstructions in the beam width. Not doing so will result in poor performance. Refer to Flowline's mounting guide on pg. 6 for further instruction, or www.flowline.com/echopod and select "Support."

