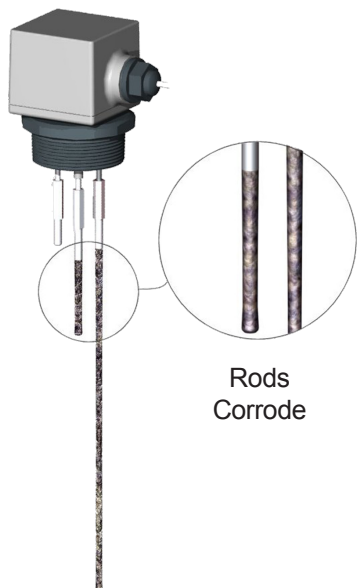
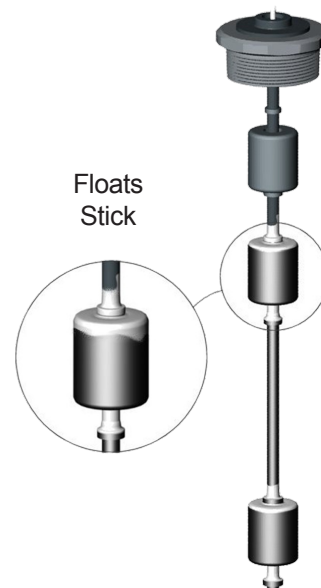


## Small Tank Problem



Float and conductance level switches often fail due to prolonged contact with corrosive, sticky or dirty liquids requiring expensive maintenance.



## Small Tank Solution

The reliable non-contact EchoPod replaces float and conductance level switches that fail due to prolonged contact with corrosive, sticky or dirty liquids in small tank chemical feed, skid or process applications. The compact sensor puts multi-point level switch, control and measurement functions in the palm of your hand.



## Applications

### High and Low Alarms

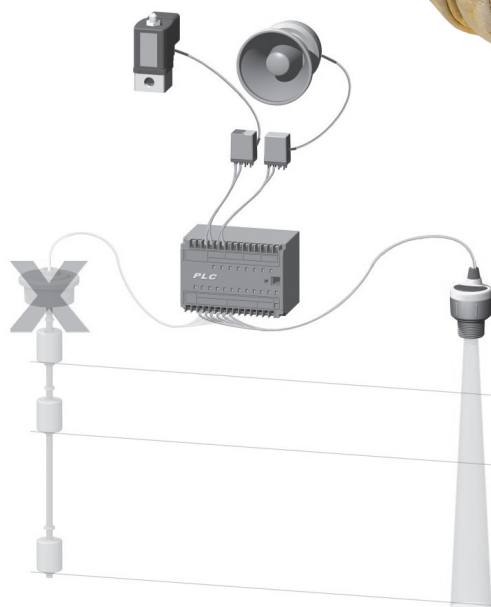
- High-level spill prevention
- Pump or heater protection
- Low-level inventory control

### Automatic Fill or Empty

- Pump lift stations
- Chemical day tanks
- Skid or process vessels

### Level Measurement

- Inventory control
- Process monitoring



## Markets

- Chemical feed
- Metal finishing
- HVAC
- Semi-conductor
- Water treatment
- Food & beverage
- Commercial laundry
- Paint & coatings
- Lubricants
- Car & truck wash







## EchoPod® Ultrasonic Level Sensors

EchoPod is an innovative level sensor family that replaces float, conductance and pressure sensors that fail due to contact with dirty, sticking and scaling media in small ( $\leq 49.2"$ ) to medium ( $\leq 216.5"$ ) capacity tanks. Applied in skid, machine, tool and process applications, the general purpose sensors are available with single and multi-function capabilities including measurement, switching and control.

Measurement outputs include current, voltage and frequency. Up to four relays can be configured on a single set point alarm or latched on two set points for automatic fill or empty functions using the embedded level controller. PC configuration is simple with our free WebCal software.

This year, Flowline is proud to introduce a new member to the EchoPod family. The DL34 ultrasonic level transmitter, switch and controller provides multi-function level solutions for larger capacity tanks. With continuous level measurement up to 18.0' and four programmable relays, it's our smallest and most powerful transmitter yet. Select the DL34 for bulk storage and day tank applications that require integral level measurement and control. Big transmitters now come in small packages.

### General Purpose Measurement, Switching & Control

| Measurement, Switching & Control   |  |  | Switching   | Measurement  |  |
|--|--|--|---|--|--|
|  |  |  |  |  |  |
| <b>DL34</b>  | <b>DL24</b>  | <b>DL14</b>  | <b>DS14</b>   | <b>DL10</b>  | <b>DX10</b>  |
| <b>Page 16</b>   | <b>Page 15</b>   | <b>Page 14</b>   | <b>Page 17</b>  | <b>Page 18</b>   | <b>Page 19</b>   |

|               | DL34            | DL24        | DL14          | DS14  | DL10             | DX10    |
|---------------|-----------------|-------------|---------------|-------|------------------|---------|
| Type          | Ultrasonic      |             |               |       |                  |         |
| Class         | GP              |             |               |       |                  |         |
| Range         | 216.5" (5.5m)   | 118.1" (3m) | 49.2" (1.25m) |       |                  |         |
| Output        | 4-20 mA         |             |               | - - - | 0-10V, 978-200Hz | 4-20 mA |
| Install       | Top Wall        |             |               |       |                  |         |
| Mounting      | 2" NPT / G      | 1" NPT / G  |               |       |                  |         |
| Relays        | (4) SPST        |             |               |       | No Relay         |         |
| Configuration | WebCal Software |             |               |       |                  |         |
| Temperature   | 140° F (60° C)  |             |               |       |                  |         |
| Pressure      | 30 PSI (2 bar)  |             |               |       |                  |         |
| Material      | PVDF            |             |               |       |                  |         |

## Application

The general purpose ultrasonic level transmitter provides continuous level measurement up to 49.2" (1.25m) with a 4-20 mA signal output, and is configured via our free Webcal software. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for small day tank, skid, IBC, sump and process tank level applications.

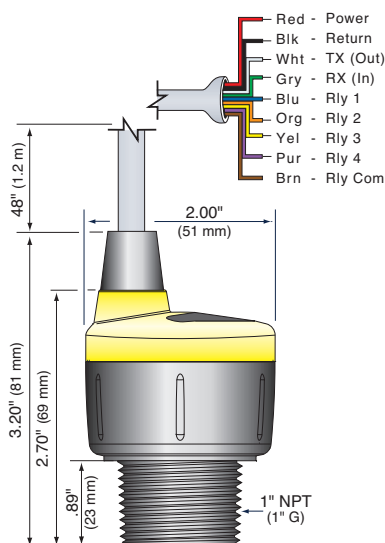
## Features

- ✓ Switch and control functions with continuous level measurement output up to 49.2" (1.25m)
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 2" beam width and short 2" dead band optimized for small tanks
- ✓ Four (4) programmable relays rated @ 1A / 60VA for switch, pump or valve control and fail-safety
  - 1 pump or valve with 3 alarms
  - 2 pumps (lead-lag) with 2 alarms
  - 2 pumps (duplexing) with 2 alarms
  - 4 independent switch point alarms
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement



DL14-00

## Dimensions



## Specifications

|                     |   |
|---------------------|---|
| Range:              | 49.2" (1.25m)   |
| Accuracy:           | 0.125" (3mm)  |
| Resolution:         | 0.019" (0.5mm)  |
| Dead band:          | 2" (5cm)  |
| Beam width:         | 2" (5cm)  |
| Configuration:      | WebCal® PC<br>Windows® USB 2.0                              |
| Memory:             | Non-volatile  |
| Supply voltage:     | 24 VDC (loop)   |
| Consumption:        | 0.5W  |
| Loop resist.:       | 400Ω max  |
| Signal output:      | 4-20 mA, two-wire   |
| Signal invert:      | 4-20 mA or 20-4 mA  |
| Signal fail-safe:   | 4 mA, 20 mA, 21 mA, 22 mA or hold last                      |
| Contact type:       | (4) SPST relays   |
| Contact rating:     | 60 VA, 1A maximum   |
| Contact fail-safe:  | Power loss: Hold last<br>Power on: Open, close or hold last |
| Hysteresis:         | Selectable  |
| Process temp.:      | F: 20° to 140°<br>C: -7° to 60°                             |
| Temp. comp.:        | Automatic   |
| Ambient temp.:      | F: -31° to 140°<br>C: -35° to 60°                           |
| Pressure:           | MWP = 30 PSI (2 bar)  |
| Enclosure rating:   | Type 6P, encapsulated, corrosion resistant & submersible    |
| Encl. material:     | Polycarbonate   |
| Strain relief mat.: | Santoprene  |
| Trans. material:    | PVDF  |
| Cable jacket mat.:  | Polyurethane  |
| Cable type:         | 9-conductor, shielded                                       |
| Cable length:       | 48" (1.2m)  |
| Process mount:      | 1" NPT (1" G)   |
| Mount gasket:       | Viton®  |
| Classification:     | General purpose   |
| Compliance:         | CE, RoHS  |
| Approvals:          | cFMus   |



## EchoPod

DL14-  

### Process mount (1)

- 0 NPT (US)  
1 G (Metric)

### Fob USB adapter (2)

- 0 Without Fob  
1 With Fob

### Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.



LI99-1001





# EchoPod® DL24 Multi-Function Ultrasonic Transmitter

Small Tank

## Application

The general purpose ultrasonic level transmitter provides continuous level measurement up to 9.8' (3m) with a 4-20 mA signal output, and is configured via our free Webcal software. The level sensor has 4 programmable relays with selectable hysteresis and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for day tank, skid, IBC, sump and process tank level applications.

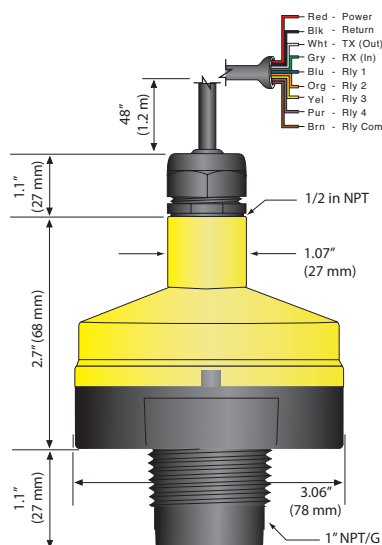
## Features

- ✓ Switch and control functions with continuous level measurement output up to 9.8' (3m)
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 2" beam width and short 4" dead band optimized for small tanks
- ✓ Four (4) programmable relays rated @ 1A / 60VA for switch, pump or valve control and fail-safety
  - 1 pump or valve with 3 alarms
  - 2 pumps (lead-lag) with 2 alarms
  - 2 pumps (duplexing) with 2 alarms
  - 4 independent switch point alarms
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement



DL24-00

## Dimensions



## Specifications

|                    |   |
|--------------------|---|
| Range:             | 9.8' (3m)   |
| Accuracy:          | ± 0.2% of range   |
| Resolution:        | 0.039" (1mm)  |
| Dead band:         | 4" (10cm)   |
| Beam width:        | 2" (5cm)  |
| Configuration:     | WebCal® PC<br>Windows® USB 2.0                                  |
| Memory:            | Non-volatile  |
| Supply voltage:    | 24 VDC (loop)   |
| Consumption:       | 0.5W  |
| Loop resist.:      | 400Ω max  |
| Signal output:     | 4-20 mA, two-wire   |
| Signal invert:     | 4-20 mA or 20-4 mA  |
| Signal fail-safe:  | 4 mA, 20 mA, 21 mA,<br>22 mA or hold last                       |
| Contact type:      | (4) SPST relays   |
| Contact rating:    | 60 VA, 1A maximum   |
| Contact fail-safe: | Power loss: Hold last<br>Echo loss: Open, close<br>or hold last |
| Hysteresis:        | Selectable  |
| Process temp.:     | F: 20° to 140°<br>C: -7° to 60°                                 |
| Temp. comp.:       | Automatic   |
| Ambient temp.:     | F: -31° to 140°<br>C: -35° to 60°                               |
| Pressure:          | MWP = 30 PSI (2 bar)  |
| Enclosure rating:  | Type 6P, encapsulated,<br>corrosion resistant &<br>submersible  |
| Encl. material:    | Polycarbonate   |
| Trans. material:   | PVDF  |
| Cable jacket mat:  | Polyurethane  |
| Cable type:        | 9-conductor, shielded   |
| Cable length:      | 48" (1.2m)  |
| Process mount:     | 1" NPT (1" G)   |
| Mount gasket:      | Viton®  |
| Classification:    | General purpose   |
| Compliance:        | CE, RoHS  |
| Approvals:         | cFMus   |



## EchoPod

DL24-□□

### Process mount (1)

- 0 NPT (US)  
1 G (Metric)

### Fob USB adapter (2)

- 0 Without Fob  
1 With Fob

### Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.



## Application

The general purpose ultrasonic level transmitter provides continuous level measurement up to 18.0' (5.5m) with a 4-20 mA signal output, and is configured via our free Webcal software. The level sensor has 4 programmable relays with selectable hysteresis and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for day tank, skid, IBC, sump and process tank level applications.

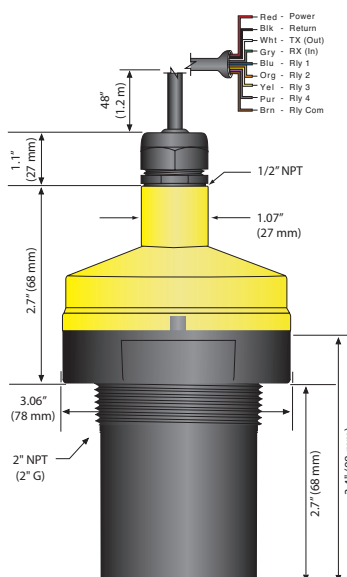
## Features

- ✓ Switch and control functions with continuous level measurement output up to 18.0' (5.5m)
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 3" beam width and short 8" dead band optimized for small tanks
- ✓ Four (4) programmable relays rated @ 1A / 60VA for switch, pump or valve control and fail-safety
  - 1 pump or valve with 3 alarms
  - 2 pumps (lead-lag) with 2 alarms
  - 2 pumps (duplexing) with 2 alarms
  - 4 independent switch point alarms
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement



DL34-00

## Dimensions



## Specifications

|                    |   |
|--------------------|---|
| Range:             | 18.0' (5.5m)  |
| Accuracy:          | ± 0.2% of range   |
| Resolution:        | 0.079" (2mm)  |
| Dead band:         | 8" (20cm)   |
| Beam width:        | 3" (7.6cm)  |
| Configuration:     | WebCal® PC<br>Windows® USB 2.0                                  |
| Memory:            | Non-volatile  |
| Supply voltage:    | 24 VDC (loop)   |
| Consumption:       | 0.5W  |
| Loop resist.:      | 400Ω max  |
| Signal output:     | 4-20 mA, two-wire   |
| Signal invert:     | 4-20 mA or 20-4 mA  |
| Signal fail-safe:  | 4 mA, 20 mA, 21 mA,<br>22 mA or hold last                       |
| Contact type:      | (4) SPST relays   |
| Contact rating:    | 60 VA, 1A maximum   |
| Contact fail-safe: | Power loss: Hold last<br>Echo loss: Open, close<br>or hold last |
| Hysteresis:        | Selectable  |
| Process temp.:     | F: 20° to 140°<br>C: -7° to 60°                                 |
| Temp. comp.:       | Automatic   |
| Ambient temp.:     | F: -31° to 140°<br>C: -35° to 60°                               |
| Pressure:          | MWP = 30 PSI (2 bar)  |
| Enclosure rating:  | Type 6P, encapsulated,<br>corrosion resistant &<br>submersible  |
| Encl. material:    | Polycarbonate   |
| Trans. material:   | PVDF  |
| Cable jacket mat:  | Polyurethane  |
| Cable type:        | 9-conductor, shielded   |
| Cable length:      | 48" (1.2m)  |
| Process mount:     | 1" NPT (1" G)   |
| Mount gasket:      | Viton®  |
| Classification:    | General purpose   |
| Compliance:        | CE, RoHS  |
| Approvals:         | cFmus   |



LI99-1001

## EchoPod

**DL34-**      

- Process mount (1)**
- 0 NPT (US)
  - 1 G (Metric)
- Fob USB adapter (2)**
- 0 Without Fob
  - 1 With Fob



## Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.

# EchoPod® DS14 Ultrasonic Level Switch & Controller

Small Tank

## Application

The general purpose ultrasonic level switch provides continuous level detection up to 49.2" (1.25m) with 4 programmable relays for level switch or level control functions, and is configured via our free WebCal software. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is broadly selected for small day tank, skid, IBC, sump and process tank level applications.

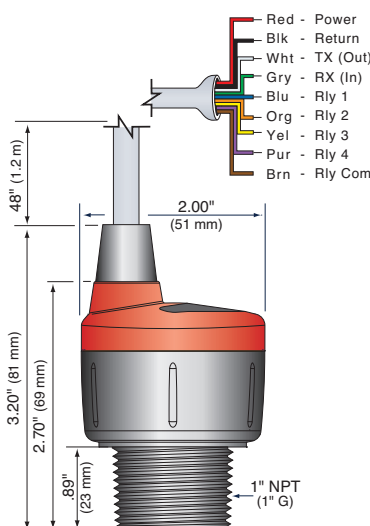
## Features

- ✓ Switch and control functions with continuous level measurement output up to 49.2" (1.25m)
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 2" beam width and short 2" dead band optimized for small tanks
- ✓ Four (4) programmable relays rated @ 1A / 60VA for switch, pump or valve control and fail-safety
  - 1 pump or valve with 3 alarms
  - 2 pumps (lead-lag) with 2 alarms
  - 2 pumps (duplexing) with 2 alarms
  - 4 independent switch point alarms
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement



DS14-00

## Dimensions



## Specifications

|                    |   |
|--------------------|---|
| Range:             | 49.2" (1.25m)   |
| Accuracy:          | 0.125" (3mm)  |
| Resolution:        | 0.019" (0.5mm)  |
| Dead band:         | 2" (5cm)  |
| Beam width:        | 2" (5cm)  |
| Configuration:     | WebCal® PC<br>Windows® USB 2.0                              |
| Memory:            | Non-volatile  |
| Supply voltage:    | 12-24 VAC / VDC   |
| Consumption:       | 0.5W  |
| Contact type:      | (4) SPST relays   |
| Contact rating:    | 60 VA, 1A maximum   |
| Contact fail-safe: | Power loss: Hold last<br>Power on: Open, close or hold last |
| Hysteresis:        | Selectable  |
| Process temp.:     | F: 20° to 140°<br>C: -7° to 60°                             |
| Temp. comp.:       | Automatic   |
| Ambient temp.:     | F: -31° to 140°<br>C: -35° to 60°                           |
| Pressure:          | MWP = 30 PSI (2 bar)  |
| Enclosure rating:  | Type 6P, encapsulated, corrosion resistant & submersible    |
| Encl. material:    | Polycarbonate   |
| Strain relief mat: | Santoprene  |
| Trans. material:   | PVDF  |
| Cable jacket mat:  | Polyurethane  |
| Cable type:        | 9-conductor, shielded                                       |
| Cable length:      | 48" (1.2m)  |
| Process mount:     | 1" NPT (1" G)   |
| Mount gasket:      | Viton®  |
| Classification:    | General purpose   |
| Compliance:        | CE, RoHS  |
| Approvals:         | cFMus   |



LI99-1001

## EchoPod

DS14-□□

### Process mount (1)

- 0 NPT (US)  
1 G (Metric)

### Fob USB adapter (2)

- 0 Without Fob  
1 With Fob



## Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.



# EchoPod® DL10 Ultrasonic Level Transmitter

## Application

The general purpose ultrasonic level transmitter provides continuous level measurement up to 49.2" (1.25m) with a 4-20 mA signal output, and is configured via our free WebCal software. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is broadly selected for small day tank, skid, IBC, sump and process tank level applications.

## Features

- ✓ Continuous non-contact level measurement up to 49.2" (1.25m)
- ✓ 4-20 mA output for longer signal distances up to 1000' (300m)
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 2" beam width and short 2" dead band optimized for small tanks
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement

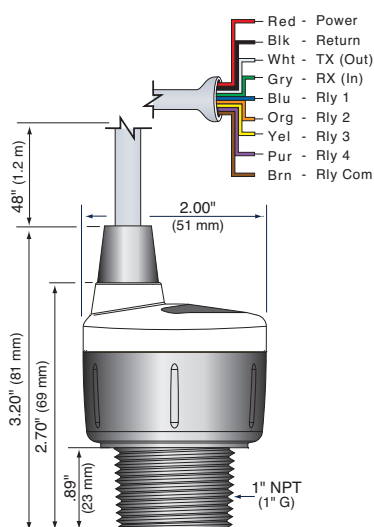


LI99-1001



DL10-00

## Dimensions



## Specifications

|                     |  |
|---------------------|--|
| Range:              | 49.2" (1.25m)  |
| Accuracy:           | 0.125" (3mm)   |
| Resolution:         | 0.019" (0.5mm)   |
| Dead band:          | 2" (5cm)   |
| Beam width:         | 2" (5cm)   |
| Configuration:      | WebCal® PC<br>Windows® USB 2.0                                 |
| Memory:             | Non-volatile   |
| Supply voltage:     | 24 VDC (loop)  |
| Consumption:        | 0.5W   |
| Loop resist.:       | 400Ω max   |
| Signal output:      | 4-20 mA, two-wire  |
| Signal invert:      | 4-20 mA or 20-4 mA   |
| Signal fail-safe:   | 4 mA, 20 mA, 21 mA,<br>22 mA or hold last                      |
| Process temp.:      | F: 20° to 140°<br>C: -7° to 60°                                |
| Temp. comp.:        | Automatic  |
| Ambient temp.:      | F: -31° to 140°<br>C: -35° to 60°                              |
| Pressure:           | MWP = 30 PSI (2 bar)   |
| Enclosure rating:   | Type 6P, encapsulated,<br>corrosion resistant &<br>submersible |
| Encl. material:     | Polycarbonate  |
| Strain relief mat.: | Santoprene   |
| Trans. material:    | PVDF   |
| Cable jacket mat.:  | Polyurethane   |
| Cable type:         | 4-conductor, shielded  |
| Cable length:       | 48" (1.2m)   |
| Process mount:      | 1" NPT (1" G)  |
| Mount gasket:       | Viton®   |
| Classification:     | General purpose  |
| Compliance:         | CE, RoHS   |
| Approvals:          | cFMus  |



## EchoPod

DL10- [ ] [ ]

### Process mount (1)

- 0 NPT (US)
- 1 G (Metric)

### Fob USB adapter (2)

- 0 Without Fob
- 1 With Fob



## Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.

# EchoPod® DX10 Ultrasonic Level Sensor

Small Tank

## Application

The general purpose ultrasonic level transmitter provides continuous level measurement up to 49.2" (1.25m) with a selectable 0-5 VDC, 0-10 VDC or 976-2000 Hz frequency signal output, and is configured via our free WebCal software. Select the voltage output for interface with analog input cards. Select the frequency output for interface with discrete input cards. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for small day tank, skid, IBC, sump and process tank level applications.

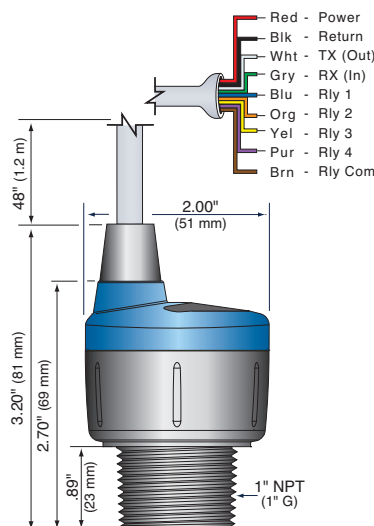
## Features

- ✓ Continuous non-contact level measurement up to 49.2" (1.25m)
- ✓ Selectable voltage (analog) or frequency (discrete) signal outputs
- ✓ Configuration is fast and easy via WebCal software and USB adapter
- ✓ Narrow 2" beam width and short 2" dead band optimized for small tanks
- ✓ PVDF transducer and 6P polycarbonate enclosure for corrosive liquids
- ✓ Automatic temperature compensation for accurate measurement



DX10-00

## Dimensions



## Specifications

|                    |  |
|--------------------|--|
| Range:             | 49.2" (1.25m)  |
| Accuracy:          | 0.125" (3mm)   |
| Resolution:        | 0.019" (0.5mm)   |
| Dead band:         | 2" (5cm)   |
| Beam width:        | 2" (5cm)   |
| Configuration:     | WebCal® PC<br>Windows® USB 2.0                                 |
| Memory:            | Non-volatile   |
| Supply voltage:    | 12-28 VDC  |
| Consumption:       | 0.5W   |
| Signal output:     | 0-5 V, 0-10 V, 976-2000 Hz                                     |
| Frequency:         | Sink current, 15 mA nominal                                    |
| Signal invert:     | 5-0 V, 10-0 V, 2000-976 Hz                                     |
| Signal fail-safe:  | Full, empty or hold last                                       |
| Process temp.:     | F: 20° to 140°<br>C: -7° to 60°                                |
| Temp. comp.:       | Automatic  |
| Ambient temp.:     | F: -31° to 140°<br>C: -35° to 60°                              |
| Pressure:          | MWP = 30 PSI (2 bar)   |
| Enclosure rating:  | Type 6P, encapsulated,<br>corrosion resistant &<br>submersible |
| Encl. material:    | Polycarbonate  |
| Strain relief mat: | Santoprene   |
| Trans. material:   | PVDF   |
| Cable jacket mat:  | Polyurethane   |
| Cable type:        | 6-conductor, shielded  |
| Cable length:      | 48" (1.2m)   |
| Process mount:     | 1" NPT (1" G)  |
| Mount gasket:      | Viton®   |
| Classification:    | General purpose  |
| Compliance:        | CE, RoHS   |
| Approvals:         | cFMS   |



## EchoPod

DX10- [ ] [ ]

### Process mount (1)

- 0 NPT (US)
- 1 G (Metric)

### Fob USB adapter (2)

- 0 Without Fob
- 1 With Fob



## Ordering Notes

- 1) Install the level sensor using Flowline installation fittings or equivalents.
- 2) The level sensor is configured via our WebCal software and one LI99-1001 Fob USB adapter. The level sensor is offered with and without a Fob. Fobs are universal and can be used to configure any WebCal compatible product. WebCal is a free download from our website.