

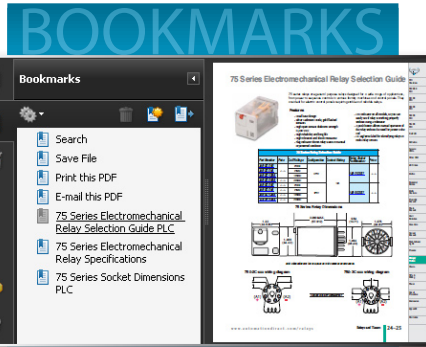
AUTOMATIONDIRECT.com

FLOWLINE®

We Do Your Level Best

Level Sensors

prosense®



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Liquid Level Sensors and Switches

FLOWLINE®

We Do Your Level Best

Flowline® Ultrasonic Level Sensors and Switches (Non-contact)

The Flowline EchoPod®, EchoSonic® II, Echotouch™, EchoSpan® and EchoSwitch® are innovative ultrasonic liquid level sensor families that replace float, conductance and pressure sensors that fail due to contact with dirty, sticky and scaling liquids in small, medium and large capacity tanks. These liquid level sensors can be used in either open or enclosed tanks (not suitable for pressurized tanks). PC software configured or pushbutton configured models are available.



Made in the USA

Software Configured Ultrasonic Liquid Level Sensors & Switches

Software Configuration: For software configured sensors, PC configuration is simple with FREE (download) WebCal™ level sensor software and the programming fob with USB adapter.

- EchoPod DS14 Series Ultrasonic Liquid Level Switch & Controller
- EchoPod DX10 and DL10 Series Ultrasonic Liquid Level Transmitters
- EchoPod DL Series Multi-Function Ultrasonic Liquid Level Sensors
- EchoSonic II LU Series Ultrasonic Liquid Level Transmitters

WebCal Ultrasonic Level Sensor Configuration Software and Fob USB Adapter

- Free WebCal Configuration Software (download only)
- WebCal Software CD also available for purchase
- LI99-1001 fob USB adapter



Pushbutton Configured Ultrasonic Liquid Level Sensors & Switches

Pushbutton Configuration: With no software or PC required, the Echotouch, EchoSpan, and EchoSwitch ultrasonic level sensors are easily configured using integral pushbuttons and LCD digital display. Configuration parameters are organized in a simple menu structure so that parameter values are easily accessed and set or changed as needed.

- Echotouch™ LU20 Ultrasonic Level Transmitter
- EchoSpan® LU Series Ultrasonic Level Transmitters
- EchoSwitch® LU Series Ultrasonic Level Sensors

PodView®

The PodView digital level indicator is a low-cost general purpose level indicator that displays engineering units for level or volume and is compatible with the EchoPod Series ultrasonic sensors.



FLOWLINE®

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Flowline Level Sensors (Contact)

- Ultrasonic Level Switches: are intrinsically safe and provide reliable liquid level detection of chemical, solvent, hydrocarbon and petroleum based liquids.
- Vibration Point Level Switch: provides reliable liquid level detection of dirty liquids such as those with light to medium coating, scaling or foaming characteristics.
- Capacitance Level Switch: provides reliable high or low liquid level detection of water based conductive liquids with light coating, crystallizing or scaling characteristics with a 1A relay output.
- Buoyancy Level Switch: provides reliable liquid level detection of relatively clean water and chemical solutions.

FLOWLINE®

We Do Your Level Best



Flowline Level Controllers

Switch-Pro™ general purpose level controllers are available in three discrete sensor input configurations for alarms, pump and valve control. The LC52 DataPoint™ general purpose controller for analog sensor inputs provides single tank level indication with 2 relays, up to three setpoints and an isolated analog repeater.

- Switch-Pro LC40 Remote Level Controller: one level sensor input and one non-latching 10A relay output for high level or low level alarm
- Switch-Pro LC41 Remote Level Controller: two level sensor inputs and one latching 10A relay output for automatic fill or empty control
- Switch-Pro LC42 Remote Level Controller: three level sensor inputs and one latching 10A relay output and one nonlatching 10A relay output
- DataPoint LC52 Remote Level Controller: one 4-20 mA input, two relay outputs, one 4-20 mA output

proSense®



ProSense® Submersible Level Sensors

The SLT1 series has a slim 1-inch diameter housing and a ported bullet nose cap for protection of the sensor diaphragm. The SLT2 series features a large 2.75 inch diameter PTFE flexible diaphragm surrounded by a 316 stainless steel non-fouling protective cage.

- SLT1 Series Transmitter with 1-inch Diameter Housing
- SLT2 Series Transmitter with 2.75-inch Diameter Diaphragm and Protective Cage
- Submersible Level Transmitter Vent Filter
- Submersible Level Transmitter Bellows
- Junction Boxes for Submersible Level Transmitters
- Submersible Level Transmitter Replacement Nose Caps

ProSense Float Level Switches

These switches are available in several different material constructions for compatibility with many types of liquids, a wide temperature range, and various system pressure requirements. Vertical and horizontal mounting styles with several mounting thread variations are available for ease of installation.

- Vertical Top-Mount
- Vertical Suspensible / Submersible
- Horizontal Side-Mount
- Float Level Switch Kits
- Float Level Tilt Switches



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

Ultrasonic Liquid Level Sensors

Quality level sensing solutions from Flowline and AutomationDirect!

- Innovative ultrasonic liquid level sensor families that replace float, conductance and pressure sensors
- Applied in chemical, water and wastewater applications, these general purpose non-contact sensors are available with single and multi-function capabilities including continuous level measurement, switching and control.
- For input to a PLC or other controller, measurement outputs include current, voltage and frequency
- Models with four relays can be configured for level alarms and/or stand-alone level control such as automatic fill or empty functions using the embedded level controller
- Software and pushbutton configurable models available



EchoPod® & EchoSonic® II Ultrasonic Liquid Level Sensors



Made in the USA

PC configuration is simple with FREE WebCal™ software.



PodView®
The PodView digital level indicator is a low-cost general purpose level indicator that displays engineering units for level or volume and is compatible with the EchoPod Series ultrasonic sensors.

FLOWLINE®

We Do Your Level Best



Echotouch™, EchoSpan® & EchoSwitch® Ultrasonic Liquid Level Sensors

Units are easily configured using built-in pushbuttons



Made in the USA





EchoPod® & EchoSonic® II Ultrasonic Liquid Level Sensors



The EchoPod and EchoSonic II are innovative ultrasonic liquid level sensor families that replace float, conductance and pressure sensors that fail due to contact with dirty, sticky and scaling media in small, medium and large capacity tanks. Applied in chemical, water and wastewater applications, these general purpose non-contact sensors are available with single and multi-function capabilities including continuous level measurement, switching and control.

For input to a PLC or other controller, measurement outputs include current, voltage and frequency. Models with four relays can be configured for level alarms and/or stand-alone level control such as automatic fill or empty functions using the embedded level controller. PC configuration is simple with WebCal™ software.

Made in the USA

EchoPod & EchoSonic II Ultrasonic Liquid Level Sensors General Specifications

Model	DL34-00	DL24-00	DL14-00	DS14-00	DX10-00	DL10-00	LU27-00	LU23-00	LU28-00	LU29-00
Price	\$539.00	\$446.00	\$353.00	\$330.00	\$279.00	\$306.00	\$497.00	\$590.00	\$683.00	\$776.00
Type	EchoPod					EchoSonic II				
Class	General Purpose (non-hazardous)									
Range	8 in to 18 ft (20 cm to 5.5m)	4 in to 9.8 ft (10 cm to 3m)	2 in to 4.1 ft (5 cm to 1.25m)			4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	8 in to 32.8 ft (20 cm to 10m)	
Output Types	4-20 mA and (4) SPST relays		(4) SPST relays		0-5V, 0-10V, 976-2000 Hz	4-20 mA				
Install	Vertical, top of tank									
Mounting	2 in MNPT		1 in MNPT			2 in MNPT				
Relays	(4) SPST				No Relay					
Configuration	WebCal Software (free download) and LI99-1001 Fob USB Adapter (purchased separately)									
Ambient Temperature	-31° to 140°F (-35° to 60°C)									
Process Temperature	20° to 140°F (-7° to 60°C)					-4° to 140°F (-20° to 60°C)				
Pressure	30 PSI (2 bar) max.									



WebCal



LI99-1001



LI40-1001

WebCal Software

WebCal PC software is a utility program that allows users to easily configure their EchoSonic II and EchoPod level transmitters, switches, and controllers. Download your free copy of WebCal at www.AutomationDirect.com, and connect your sensor through our Fob USB adapter (LI99-1001). Develop your configuration using pre-programmed function menus as the tank graphic and set point fields automatically change to match your configuration. Then, input your level set point values and click the Write to Unit button. Your configuration will be downloaded into the sensor and verified in less than a second. Last, click the Wiring Diagram button to open a wiring schematic of your configuration in PDF format. Print the document, disconnect the sensor and wire it per the schematic. As new software or firmware becomes available, they can be downloaded and updated through WebCal.

PodView®

The PodView digital level indicator is a low cost general purpose level indicator that displays engineering units for level or volume and shares power with an EchoPod ultrasonic sensor, including loop powered devices. The LI40 can be field mounted for local indication as well as be used to make simple setting changes to the sensor. The display can be easily attached to any EchoPod sensor that has been configured with WebCal 6.0 / firmware 50.0 or higher. PodView displays sensor output and can reconfigure sensor setpoints on the fly. PodView shares power with the sensor and does not require any additional outside power supply.

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

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Sensors: Pressure

Sensors: Temperature

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Pushbuttons and Lights

Stacklights

Signal Devices

Process

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Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

EchoPod DS14 Ultrasonic Liquid Level Switch & Controller



Overview

The EchoPod DS14 ultrasonic liquid level switch provides continuous level detection up to 4.1 ft (1.25m), with 4 programmable relays for level switch or level control functions, and is configured via 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, intermediate bulk tanks, sump and process tank level applications.

Features

- Continuous level detection up to 4.1 ft (1.25 m)
- Configuration is fast and easy via WebCal software and USB adapter
- Narrow 2 inch beam width and short 2 inch dead band optimized for small tanks
- Four programmable relays 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 outputs
- PVDF transducer and NEMA Type 6P polycarbonate enclosure for corrosive liquids, UV stable for outdoor use
- Automatic temperature compensation for accurate measurement
- Made in the USA

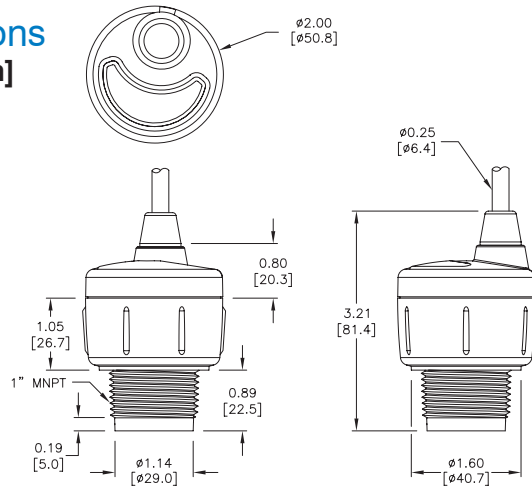
Agency Approvals

- cFMus



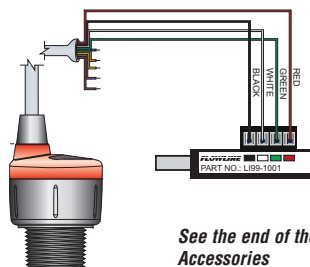
DS14-00 Technical Specifications	
Price	\$330.00
Range	2 in to 4.1 ft (5 cm to 1.25m)
Accuracy	0.125 in (3 mm)
Resolution	0.019 in (0.5 mm)
Sensing Dead Band*	2 in (5 cm)
Beam Width	2 in (5 cm)
Configuration	WebCal Free Software and LI99-1001 USB Fob Adapter
Memory	Non-volatile
Supply Voltage	12 to 24 VAC/VDC
Consumption	0.5W
Output Type	(4) SPST relays
Contact Voltage Ratings	120 VAC/DC @ 0.5A; 30 VAC/DC @ 1A
Contact Fail-Safe	Power loss: Hold last Echo loss: Open, close or hold last
Hysteresis	Selectable
Process Temperature	20° to 140°F (-7° to 60°C)
Temp. Compensation	Automatic
Ambient Temperature	-31° to 140°F (-35° to 60°C)
Pressure	30 PSI (2 bar) MAX
Enclosure Rating	NEMA Type 6P, IP67, encapsulated, corrosion resistant & submersible, UV stable
Enclosure Material	Polycarbonate
Strain Relief Material	Santoprene
Transducer Material	Polyvinylidene Fluoride
Cable Jacket Material	Polyurethane
Cable Type	9-conductor, shielded
Cable Length	48 in (1.2m)
Process Mount	1 in MNPT (See accessories for installation fittings)
Mount Gasket	Viton® (included, replacement part number 204038)
Weight (lbs)	0.5
Classification	General purpose
Compliance	CE, RoHS
Agency Approvals	cFMus

Dimensions inches [mm]

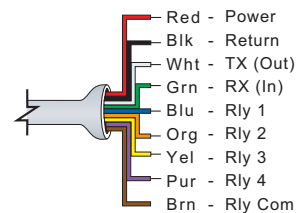


Configuration

The settings for the the DS14 are configured with free WebCal software (downloadable from AutomationDirect Web site), and an LI99-1001 Fob USB adapter (purchased separately).



Wiring



See the end of the Ultrasonic Level Sensor Section for further details and Accessories

* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

EchoPod DX10 Ultrasonic Liquid Level Transmitter



Overview

The EchoPod DX10 ultrasonic liquid level transmitter provides continuous level measurement up to 4.1 ft (1.25m), with a selectable 0-5 VDC, 0-10 VDC or 976-2000 Hz frequency signal output, and is configured via 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 broadly selected for small day tank, skid, intermediate bulk tanks, sump and process tank level applications.

Features

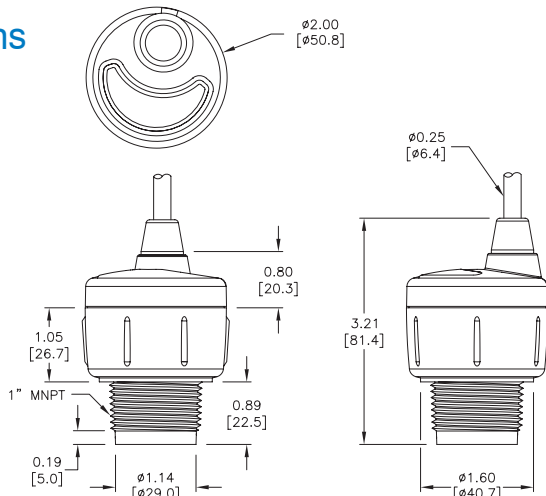
- Continuous non-contact level measurement output up to 4.1 ft (1.25 m)
- Selectable voltage (analog) or frequency (discrete) signal outputs
- Configuration is fast and easy via WebCal software and USB adapter
- Narrow 2 inch beam width and short 2 inch dead band optimized for small tanks
- PVDF transducer and NEMA Type 6P polycarbonate enclosure for corrosive liquids, UV stable for outdoor use
- Automatic temperature compensation for accurate measurement
- Made in the USA

Agency Approvals

- cFMus

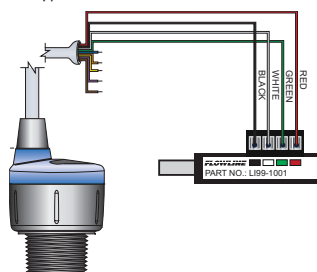
DX10-00 Technical Specifications	
Price	\$279.00
Range	2 in to 4.1 ft (5 cm to 1.25m)
Accuracy	0.125 in (3 mm)
Resolution	0.019 in (0.5 mm)
Sensing Dead Band*	2 in (5 cm)
Beam Width	2 in (5 cm)
Configuration	WebCal Free Software and LI99-1001 USB Fob Adapter
Memory	Non-volatile
Supply Voltage	12 to 24 VDC
Consumption	0.5W
Signal Output	0-5V, 0-10V, 976-2000 Hz
Minimum Load	800Ω at 12 VDC; 1600Ω at 24 VDC
Output Current	Sink current, 15 mA nominal
Signal Invert	5-0V, 10-0 V, 2000-976 Hz
Signal Fail-Safe	Full, empty or hold last
Process Temperature	20° to 140°F (-7° to 60°C)
Temp. Compensation	Automatic
Ambient Temperature	-31° to 140°F (-35° to 60°C)
Pressure	30 PSI (2 bar) MAX
Enclosure Rating	NEMA Type 6P, IP67, encapsulated, corrosion resistant & submersible, UV stable
Enclosure Material	Polycarbonate
Strain Relief Material	Santoprene
Transducer Material	Polyvinylidene Fluoride
Cable Jacket Material	Polyurethane
Cable Type	6-conductor, shielded
Cable Length	48 in (1.2m)
Process Mount	1 in MNPT (See accessories for installation fittings)
Mount Gasket	Viton® (included, replacement part number 204038)
Weight (lbs)	0.5
Classification	General purpose
Compliance	CE, RoHS
Agency Approvals	cFMus

Dimensions inches [mm]

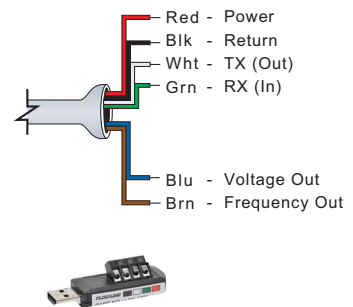


Configuration

The settings for the the DX10 are configured with free WebCal software (downloadable from AutomationDirect Web site) and an LI99-1001 Fob USB adapter (purchased separately).



Wiring



* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

When installing the 1 inch NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed. See the end of the Ultrasonic Level Sensor Section for further details and Accessories

EchoPod DL10 Ultrasonic Liquid Level Transmitter



Overview

The EchoPod DL10 ultrasonic liquid level transmitter provides continuous level measurement up to 4.1 ft (1.25m), with a 4-20mA signal output, and is configured via 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, intermediate bulk tanks, sump and process tank level applications.

Features

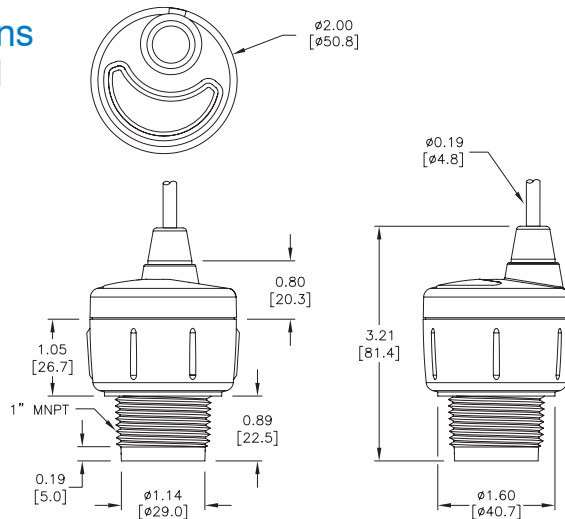
- Continuous non-contact level measurement output up to 4.1 ft (1.25m)
- 4-20 mA output for longer signal distances, up to 1000 ft. (300 m)
- Configuration is fast and easy via WebCal software and USB adapter
- Narrow 2 inch beam width and short 2 inch dead band optimized for small tanks
- PVDF transducer and NEMA Type 6P polycarbonate enclosure for corrosive liquids, UV stable for outdoor use
- Automatic temperature compensation for accurate measurement
- Made in the USA

Agency Approvals

- cFMus



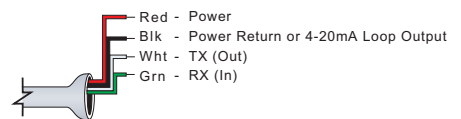
Dimensions inches [mm]



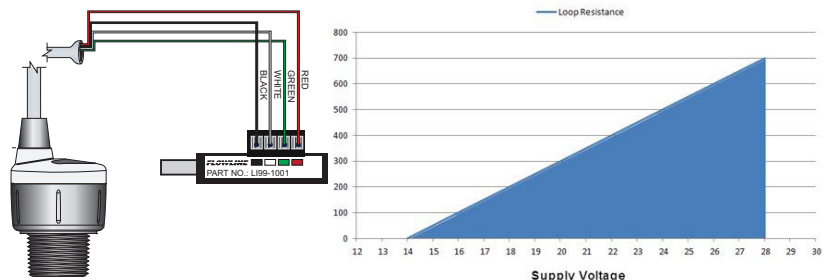
Configuration

The settings for the the DL10 are configured with free WebCal software (downloadable from AutomationDirect Web site) and an LI99-1001 Fob USB adapter (purchased separately).

Wiring



Maximum Loop Resistance in Ω



DL10-00 Technical Specifications	
Price	\$306.00
Range	2 in to 4.1 ft (5 cm to 1.25m)
Accuracy	0.125 in (3 mm)
Resolution	0.019 in (0.5 mm)
Sensing Dead Band*	2 in (5 cm)
Beam Width	2 in (5 cm)
Configuration	WebCal Free Software and LI99-1001 Fob USB Adapter
Memory	Non-volatile
Loop Supply Voltage	14-28 VDC ¹
Consumption	0.5W
Loop Resistance	500 Ω max at 24 VDC
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
Process Temperature	20° to 140°F (-7° to 60°C)
Temp. Compensation	Automatic
Ambient Temperature	-31° to 140°F (-35° to 60°C)
Pressure	30 PSI (2 bar) MAX
Enclosure Rating	NEMA Type 6P, IP67, encapsulated, corrosion resistant & submersible, UV stable
Enclosure Material	Polycarbonate
Strain Relief Material	Santoprene
Transducer Material	Polyvinylidene Fluoride
Cable Jacket Material	Polyurethane
Cable Type	4-conductor, shielded
Cable Length	48 in (1.2m)
Process Mount	1 in MNPT (See accessories for installation fittings)
Mount Gasket	Viton (included, replacement part number 204038)
Weight (lbs)	0.5
Classification	General purpose
Compliance	CE, RoHS
Agency Approvals	cFMus

* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

¹ If supply exceeds 28 VDC damage to the transmitter may occur.

When installing the 1 inch NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed. See the end of the Ultrasonic Level Sensor Section for further details and Accessories

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EchoPod DL Series Multi-Function Ultrasonic Liquid Level Sensors

Overview

The EchoPod DL series multi-function ultrasonic liquid level sensors provide continuous level measurement up to 4.1 ft (1.25m), 9.8 ft (3m), or 18 ft (5.5m), with a 4-20mA signal output and 4 programmable relays for level switch or level control functions, and are configured via 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, intermediate bulk tanks, sump and process tank level applications.



Part No. DL14-00



Part No. DL24-00



Part No. DL34-00

Features

- Switch and control functions with continuous level measurement analog output up to 4.1 ft (1.25m), 9.8 ft (3m) or 18 ft (5.5m)
- Configuration is fast and easy via WebCal software and USB adapter
- Narrow beam width and short dead band optimized for small tanks
- 4-20 mA signal output and four programmable relays rated at 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 outputs
- PVDF transducer and NEMA Type 6P polycarbonate enclosure for corrosive liquids, UV stable for outdoor use
- Automatic temperature compensation for accurate measurement
- Made in the USA

Agency Approvals

- cFMus



DLx4 Series Technical Specifications

Model	DL14-00	DL24-00	DL34-00
Price	\$353.00	\$446.00	\$539.00
Range	2 in to 4.1 ft (5 cm to 1.25m)	4 in to 9.8 ft (10 cm to 3m)	8 in to 18.0 ft (20 cm to 5.5m)
Accuracy	0.125 in (3 mm)	± 0.2% of range	
Resolution	0.019 in (0.5 mm)	0.039 in (1 mm)	0.079 in (2 mm)
Sensing Dead Band*	2 in (5.1 cm)	4 in (10.2 cm)	8 in (20.3 cm)
Beam Width	2 in (5.1 cm)	2 in (5.1 cm)	3 in (7.6 cm)
Configuration	WebCal Free Software and LI99-1001 Fob USB Adapter		
Memory	Non-volatile		
Loop Supply Voltage	14 - 28 VDC [†]		
Consumption	0.5W		
Loop Resistance	500Ω max @ 24 VDC		
Signal Output	4-20 mA, two-wire		
Signal Invert	4-20 mA or 20-4 mA		
Loop Fail-Safe	4 mA, 20 mA, 21 mA, 22 mA or hold last		
Contact Type	(4) SPST relays		
Contact Ratings	0.5A @ 120 VAC/DC; 1A @ 30 VAC/DC		
Contact Fail-Safe	Power loss: Hold last; Echo loss: Open, close or hold last		
Hysteresis	Selectable		
Process Temperature	20° to 140°F (-7° to 60°C)		
Temp. Compensation	Automatic		
Ambient Temperature	-31° to 140°F (-35° to 60°C)		
Pressure	30 PSI (2 bar) MAX		
Enclosure Rating	NEMA Type 6P, IP67, encapsulated, corrosion resistant & submersible, UV stable		
Enclosure Material	Polycarbonate		
Strain Relief Material	Santoprene		
Transducer Material	Polyvinylidene Fluoride		
Cable Jacket Material	Polyurethane		
Cable Type	9-conductor, shielded		
Cable Length	48 in (1.2m)		
Process Mount	1 in MNPT (See accessories for installation fittings)		2 in MNPT (See accessories for installation fittings)
Mount Gasket	Viton (included, replacement part number 204038)	Viton (included, replacement part number 200128)	Viton (included, replacement part number 200129)
Weight (lbs)	0.5	0.9	1.8
Classification	General purpose		
Compliance	CE, RoHS		
Agency Approvals	cFMus		

* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

[†] If supply exceeds 28 VDC damage to the transmitter may occur.

FLOWLINE® PodView® Digital Level Indicator

We Do Your Level Best

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

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Stacklights

Signal Devices

Process

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Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

Overview

The PodView digital level indicator is a low cost general purpose indicator that displays engineering units for level or volume when combined with an EchoPod ultrasonic sensor that has been configured with WebCal 6.0 / firmware 50.0 or higher. The LI40 can be field mounted for local indication as well as be used to make simple setting changes to the sensor. PodView displays sensor output and can reconfigure sensor set points on the fly without needing to connect to a PC. PodView shares power with the EchoPod sensor and does not require any additional separate power supply.

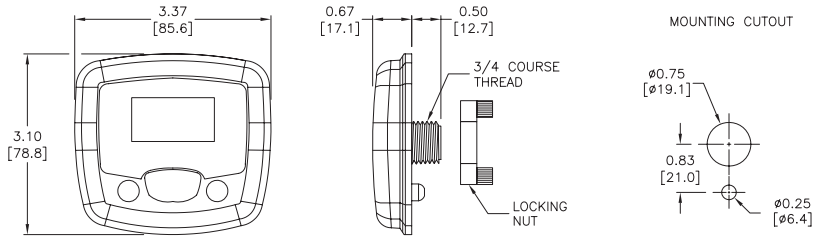
Features

- Operates with all EchoPod level sensors compatible with WebCal 6.0 software / firmware 50.0 or higher
- No separate power supply required
- Use PodView to make simple adjustments to EchoPods sensor settings
- Provides level indication up to 15 feet from sensor
- Corrosion resistant NEMA 4 / IP65 enclosure
- No configuration required for the display. Simply wire the display directly to a programmed compatible EchoPod sensor
- Display can be transferred from sensor to sensor without any configuration changes to the display
- Make quick setpoint changes without the need to connect sensor back to a PC
- Made in the USA

Agency Approvals

- CE

Dimensions inches [mm]

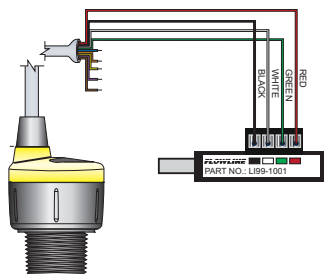


LI40-1001 Technical Specifications	
Price	\$195.00
Display Type	LCD, 6-digit with 4 relay indicators
Display (Engineering Units)	Level or Volume
Character Height	0.374 in (9.5 mm)
Linearization	per sensor configuration
User Interface	Three button
Input	EchoPod sensor family
Memory	Non-volatile
Supply Voltage	12-28 VDC power shared with sensor (EchoPod not to exceed 28 VDC)
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Cable Type	4-conductor, 22 AWG (0.33 mm ²)
Cable Length	4 ft (1.2m)*
Cable Jack Material	Polyurethane
Enclosure Rating	NEMA 4 (IP65) faceplate
Enclosure Material	Polycarbonate
Enclosure Mount	Panel
Button Material	Silicon rubber
Classification	General purpose
Weight (lbs)	0.6
Compliance	CE, RoHS

* Maximum distance between EchoPod sensor and PodView display is 15 ft (4.5m)

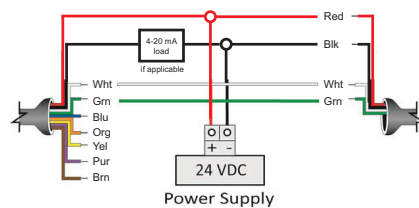
Configuration

The settings for the the EchoPod series are configured with free WebCal software (downloadable from AutomationDirect Web site) and an LI99-1001 Fob USB adapter (purchased separately). To be compatible with PodView the EchoPod sensor must be configured with WebCal 6.0 / firmware 50.0 or higher.



See the WebCal software catalog page in this section for further details

Wiring



Note: Maximum distance between EchoPod sensor and PodView display is 15 ft. (4.5m)



EchoSonic II LU Series Ultrasonic Liquid Level Transmitters



Overview

The EchoSonic II LU Series ultrasonic liquid level transmitters provide continuous level measurement up to 9.8 ft (3m), 18 ft (5.5m), 26.2 ft (8m) or 32.8 ft (10m), with a 4-20mA signal output, and are configured via WebCal software. This non-contact liquid level sensor is ideally suited for corrosive, ultrapure, sticky or dirty liquids, and is broadly selected for bulk storage, dry tank, lift station and process tank level applications.



Part No. LU27



Part No. LU23/28/29

Features

- Continuous level measurement up to 9.8 ft (3m), 18 ft (5.5m), 26.2 ft (8m) or 32.8 ft (10m)
- DSP auto adaptive filters enable plug and play operation optimizing signal output filtering and obstacle recognition
- Configuration is fast and easy via WebCal software and USB adapter
- Narrow 2 inch or 3 inch beam width for applications with limited measurement space
- Short 4 inch or 8 inch dead band maximizes the measurable filling capacity of the tank
- PVDF transducer and NEMA Type 6P polycarbonate enclosure for corrosive liquids, UV stable for outdoor use
- Automatic temperature compensation for accurate measurement
- Made in the USA

Agency Approvals

- cFMus



LU20 Series Technical Specifications

Model	LU27-00	LU23-00	LU28-00	LU29-00
Price	\$497.00	\$590.00	\$683.00	\$776.00
Range	4 in to 9.8 ft (10 cm to 3m)	8 in to 18.0 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	8 in to 32.8 ft (20 cm to 10m)
Accuracy	± 0.2% of range			
Resolution	0.019 in (0.5 mm)	0.039 in (1 mm)	0.079 in (2 mm)	
Sensing Dead Band*	4 in (10.2 cm)	8 in (20.3 cm)		
Beam Width	2 in (5.1 cm)	3 in (7.6 cm)		
Configuration	WebCal Free Software and LI99-1001 Fob USB Adapter			
Memory	Non-volatile			
Loop Supply Voltage	14 - 28 VDC ¹			
Consumption	0.5W			
Loop Resist	500Ω @ 24 VDC			
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			
Process Temperature	-4° to 140°F (-20° to 60°C)			
Temp. Compensation	Automatic			
Ambient Temperature	-31° to 140°F (-35° to 60°C)			
Pressure	MWP = 30 PSI (2 bar)			
Enclosure Rating	NEMA Type 6P, IP67, encapsulated, corrosion resistant & submersible, UV stable			
Enclosure Material	Polycarbonate			
Transducer Material	Polyvinylidene Fluoride			
Cable Jacket Material	Polyurethane			
Cable Type	4-conductor, shielded			
Cable Length	10 ft (3m)			
Process Mount	1 in MNPT (See accessories for installation fittings)	2 in MNPT (See accessories for installation fittings)		
Mount Gasket	Viton (included, replacement part number 200128)	Viton (included, replacement part number 200129)		
Weight (lbs)	1.4	1.8	1.8	1.8
Classification	General purpose			
Compliance	CE, RoHS			
Agency Approvals	cFMus			

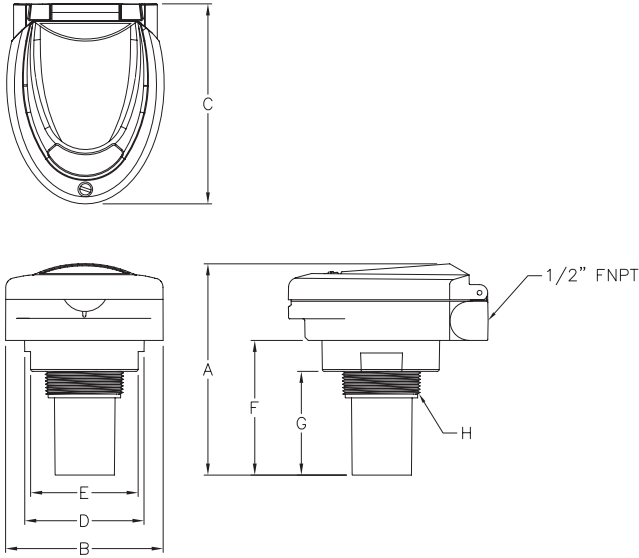
* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

¹ If supply exceeds 28 VDC damage to the transmitter may occur.

EchoSonic II LU Series Ultrasonic Liquid Level Transmitters

Dimensions inches [mm]

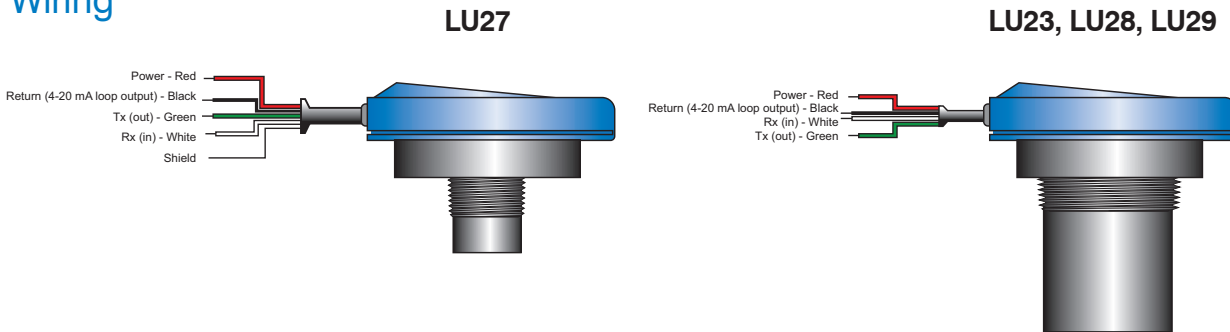
LU20 Series



Dimensions	A	B	C	D	E	F	G	H
LU27	2.71 [68.9]	4.00 [101.7]	4.10 [104.1]	3.10 [78.8]	2.75 [69.7]	1.70 [43.1]	1.10 [28.0]	1" MNPT
LU23, 28, & 29	4.31 [109.6]	4.00 [101.7]	4.10 [104.1]	3.10 [78.8]	2.75 [69.7]	3.30 [83.8]	2.70 [68.7]	2" MNPT

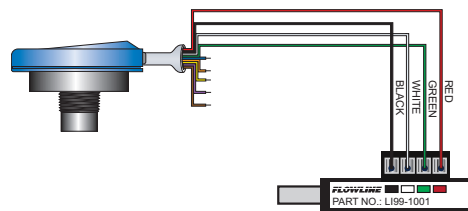
When installing the 1" NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

Wiring

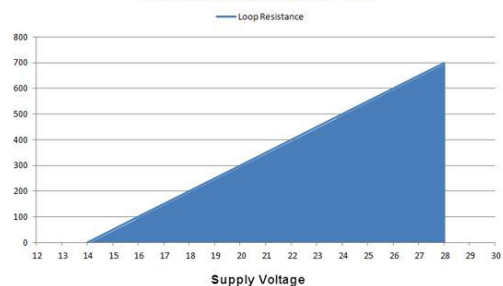


Configuration

The settings for the the LU series are configured with free WebCal software (downloadable from AutomationDirect Web site) and an LI99-1001 Fob USB adapter (purchased separately).



Maximum Loop Resistance in Ω



See the end of the Ultrasonic Level Sensor Section for further details and Accessories

- Company Information
- Drives
- Soft Starters
- Motors
- Power Transmission
- Motor: Servos and Steppers
- Motor Controls
- Sensors: Proximity
- Sensors: Photoelectric
- Sensors: Encoders
- Sensors: Limit Switches
- Sensors: Current
- Sensors: Pressure
- Sensors: Temperature
- Sensors: Level
- Sensors: Flow
- Pushbuttons and Lights
- Stacklights
- Signal Devices
- Process
- Relays and Timers
- Pneumatics: Air Prep
- Pneumatics: Directional Control Valves
- Pneumatics: Cylinders
- Pneumatics: Tubing
- Pneumatics: Air Fittings
- Appendix Book 2
- Terms and Conditions



WebCal Ultrasonic Level Sensor Software and USB Fob Adapter

Overview

WebCal PC software is a utility program that allows users to easily configure their EchoSonic II and EchoPod level transmitters, switches, and controllers. Download your free copy of WebCal at www.AutomationDirect.com, and connect your sensor through the Fob USB adapter (LI99-1001). Develop your configuration using pre-programmed function menus as the tank graphic and set point fields automatically change to match your configuration. Then, input your level set point values and click the Write to Unit button. Your configuration will be downloaded into the sensor and verified in less than a second. Last, click the Wiring Diagram button to open a wiring schematic of your configuration in PDF format. Print the document, disconnect the sensor and wire it per the schematic. It's that simple.



Configuration files can be named, saved, emailed, printed, opened and used again under revision control. The advanced feature page enables you to change the measurement signal, output filtering and invert relay states from N.O. to N.C. As new software or firmware becomes available, they can be downloaded and updated through WebCal.

System Requirements

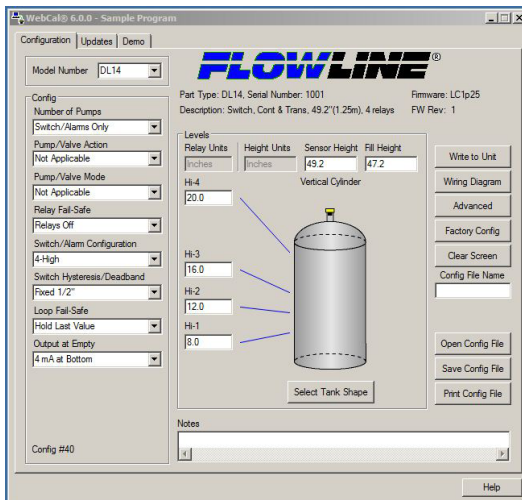
- Windows®XP, Vista, 7, 8 (WebCal 6.0 only)
- 32 or 64 bit system
- 1 USB® 2.0 Port
- 10 Mb hard disk space
- 256 Mb RAM

Features

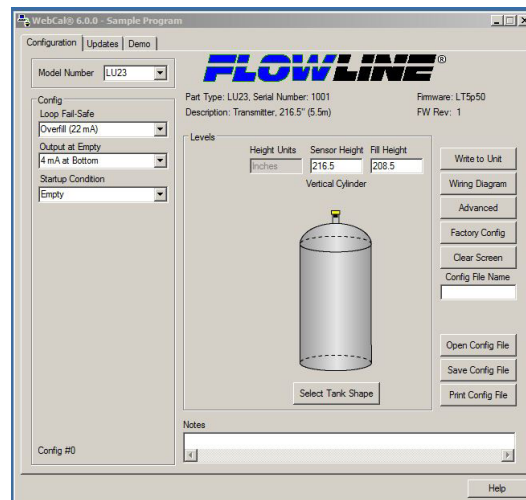
- 169 configurations with pull-down menu selections
- Graphical interface lets you visualize your configuration
- Applicable level set point fields appear automatically
- Installs and tests configuration in less than a second
- Available PDF wiring diagram for each configuration
- Technical help menu with FAQs, tips and glossary
- Rapidly program sensors to the same configuration
- Save configuration files for future use or reference
- Print wiring diagrams and configuration text files
- Email configuration files to other remote users
- Made in the USA

WebCal Ultrasonic Level Sensor Software and USB Adapter					
Part No.	Item Photo	Description	Quantity	Weight (lbs)	Price
LI99-1001		Flowline Fob USB adapter, required for use with WebCal software to configure Flowline EchoPod and EchoSonic II ultrasonic level sensors.	1	0.1	\$42.00
WEBCAL		Configuration software CD for Flowline EchoPod and EchoSonic II ultrasonic level sensors (also available as a free download from the AutomationDirect Web site). Requires an LI99-1001 Fob USB adapter (purchased separately).	1	0.1	\$9.00

EchoPod Configuration



EchoSonic II Configuration





Echotouch™, EchoSpan® & EchoSwitch® Ultrasonic Liquid Level Sensors



Overview

The Echotouch, EchoSpan and EchoSwitch are innovative ultrasonic liquid level sensor families that replace float, conductance and pressure sensors that fail due to contact with dirty, sticky and scaling media in small, medium and large capacity tanks. Applied in chemical, water and wastewater applications, these general purpose non-contact sensors are available with single and multi-function capabilities including continuous level measurement, switching and control.

For input to a PLC or other controller, measurement outputs include current, voltage and frequency. Models with three relays can be configured for level alarms and/or stand-alone level control such as automatic fill or empty functions using the embedded level controller. Units are easily configured using built-in pushbuttons.

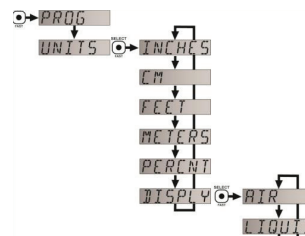
Made in the USA

Echotouch, EchoSpan & EchoSwitch Ultrasonic Liquid Level Sensors General Specifications								
Model	LU20-5001-IS	LU80-5101	LU81-5101	LU83-5101	LU84-5101	LU77-5004	LU74-5004	LU78-5004
Price	\$883.00	\$646.00	\$739.00	\$832.00	\$925.00	\$739.00	\$785.00	\$832.00
Type	Echotouch	EchoSpan				EchoSwitch		
Class	Intrinsically safe	General Purpose (non-hazardous)						
Range	6 in to 18 ft (15 cm to 5.5m)	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	12 in to 32.8 ft (30 cm to 10m)	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)
Output Types	4-20 mA, two-wire					(1) SPDT relay, (2) SPST relays 4-20 mA, two-wire		
Install	Vertical, top of tank							
Mounting	2 in MNPT	1 in MNPT	2 in MNPT			1 in MNPT	2 in MNPT	
Relays	No relay					(1) SPDT relay, (2) SPST relays		
Configuration	Pushbutton / LCD							
Ambient Temperature	-4° to 140°F (-20° to 60°C)		-40° to 160°F (-40° to 71°C)					
Process Temperature	-40° to 140°F (-40° to 60°C)		-4° to 140°F (-20° to 60°C)					
Pressure	30 PSI (2 bar) @ 25°C, derated @ 1.667 psi (0.113 bar) per °C above 25°C (77°F)		30 PSI (2 bar) MAX					

Pushbutton Configuration

With no software or PC required, the Echotouch, EchoSpan, and EchoSwitch ultrasonic level sensors are easily configured using integral pushbuttons and LCD digital display. Configuration parameters are organized in a simple menu structure so that parameter values are easily accessed and set or changed as needed. Parameters are stored in non-volatile memory so the setting values are not lost when the sensor is powered down, allowing configuration before installation in the field.

Example - EchoSpan Display and Menu



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



Echotouch™ LU20 Ultrasonic Level Transmitter



Part No. LU20-5001-IS

Overview

The Echotouch LU20 ultrasonic level transmitter is CSA approved for intrinsically safe applications. The two-wire ultrasonic transmitter provides non-contact measurement up to 18 ft (5.5m) and is ideally suited for corrosive, slurry or waste liquids. The transmitter is typically selected for atmospheric bulk storage, day tank and waste sump applications located within a classified hazardous area. Media examples include diesel fuel and hydrochloric acid. The transmitter is calibrated in less than a minute using the LCD display, 4-button interface and intuitive calibration menu. All user setpoints are held in non-volatile memory. In the event of acoustic signal loss, the transmitter will hold the current output at the user designated safe state.

Features

- LCD digital display indicates level in inches or centimeters
- Polypropylene enclosure rated NEMA 4X / IP65 with rugged Kynar transducer
- Simple pushbutton calibration for all user setpoints
- Adjustable dead band and range filters eliminate false echo returns

Agency Approvals

- CSA: Class I, Groups A, B, C & D; Class II, Groups E, F and G; Class III; T3C

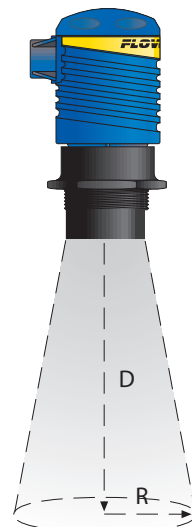


LU20-5001-IS Technical Specifications	
Price	\$883.00
Range	6 in to 18 ft (15 cm to 5.5m)
Accuracy	± 0.25% of span in air
Resolution	0.125 in (3 mm)
Sensing Dead Band*	6 in (15 cm)
Beam Width	8° conical
Configuration	Pushbutton / LCD
Display Type	LCD, 4-digit
Display Units	Inch or cm
Memory	Non-volatile
Loop Supply Voltage	12 - 32 VDC
Loop Resistance	600Ω max @ 24 VDC, 900Ω max @ 32 VDC
Signal Output	4-20 mA, two-wire
Signal Invert	4-20 mA or 20-4 mA
Loop Fail-Safe	4 mA, 22 mA or hold last
Calibration	digital, pushbutton, LCD
Process Temperature	-4° to 140°F (-20° to 60°C)
Ambient Temperature	-4° to 140°F (-20° to 60°C)
Pressure	30 psi @ 77°F, derated @ 1.667 psi per 1.8°F above 77°F (2 bar @ 25°C, derated @ 0.113 bar per 1°C above 25°C)
Enclosure Rating	NEMA 4X (IP65)
Installed Height	5.1 in (13 cm) above tank process mount
Enclosure Material	Polypropylene, UL94V0
Transducer Material	Polyvinylidene Fluoride, Kynar
Process Mount	2 in MNPT (See accessories for installation fittings)
Terminal Block	26-12 AWG (tighten torque, 0.4 Nm), removable
Conduit Entrance	Single, 1/2 in FNPT
Weight (lbs)	2.2
Classification	Intrinsically safe (Haz-Loc)
Agency Approvals	CSA: Class I, Groups A, B, C & D; Class II, Groups E, F and G; Class III; T3C, CE, RoHS
I.S. Parameters	CSA Vmax < 32.0 V; Imax < 130 mA; Ca = 0 µF; La = 0 µH
Certificates	CSA: LR79326-10
Compliance	CE: EN 50082-2 immunity, EN 55011 emission (Recommended I.S. barrier MTL7706+)

Beam Cone Data

The "Beam Cone" is the amount in which the ultrasonic wave increases in diameter (Radius²) as the wave travels away from the sensor. This is important to note during installation to prevent objects in the tank from providing false echoes.

Depth (feet)	Radius (inches)	Radius (cm)
1	1.2	3.1
3	2.9	7.3
5	4.6	11.6
7	6.2	15.9
9	7.9	20.1
11	9.6	24.4
13	11.3	28.7
15	13.0	32.9
17	14.6	37.2
19	16.3	41.3



* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

FLOWLINE[®] Echotouch[™] LU20 Ultrasonic Level Transmitter

We Do Your Level Best

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

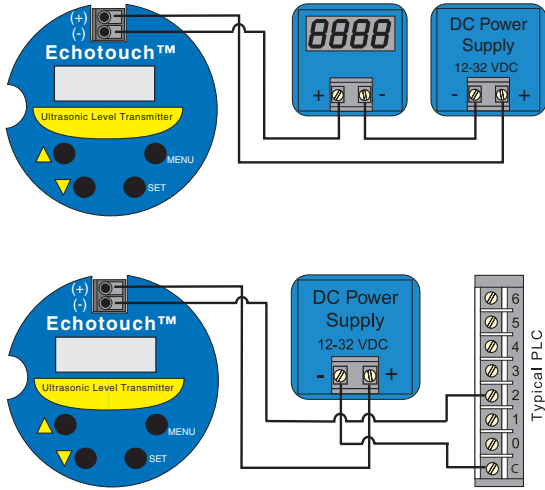
Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

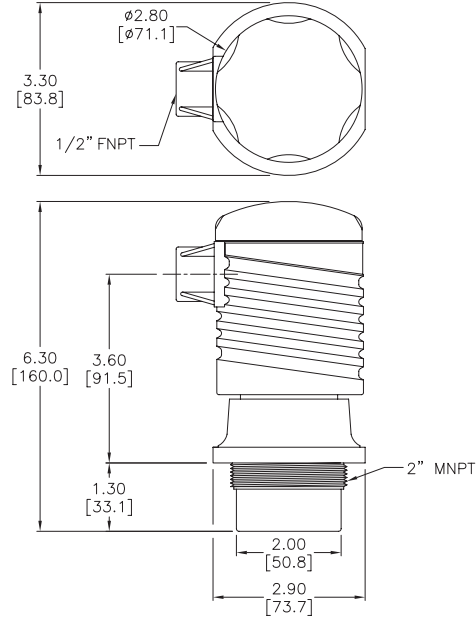
Terms and Conditions

Wiring

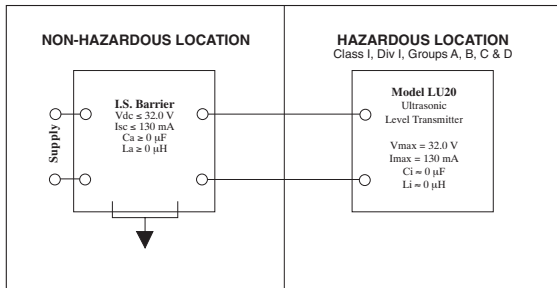


Dimensions

inches [mm]



Control Drawing



Control drawing for the LU20-5001-IS ultrasonic level transmitter approved under the entity concept as an I.S. apparatus

Control Drawing: LU20CD
Rev. 7-24-97

CSA Label

CSA LR79326-10

NRTL/C
Intrinsically Safe/
Securite Intrinseque

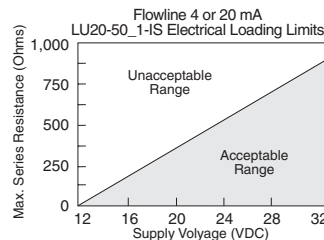
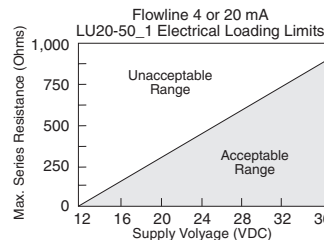
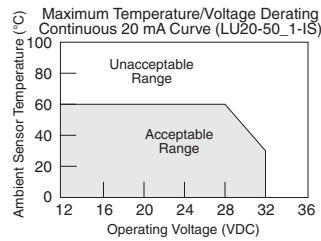
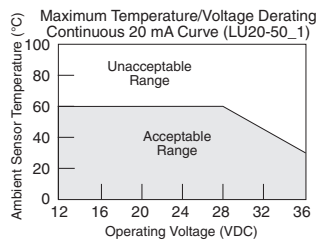
Exia

For use in
Hazardous Locations:
Class I, Groups A, B, C & D
Class II, Groups E, F & G
Class III
Temperature Code: T3C

Intrinsically Safe when used with an approved I.S. barrier. Entity Parameters
 $V_{max} = 32.0 \text{ VDC}$
 $I_{max} = 130 \text{ mA}$
 $C_i = 0 \text{ } \mu\text{F}$
 $L_i = 0 \text{ } \mu\text{H}$

Warning: Suitable for Class I, Groups A, B, C & D; Class II, Groups E, F & G; Class III, T3C; when used with an approved I.S. barrier. Substitution of components may impair intrinsic safety LU20-50X1-IS requirements for Intrinsically Safe operation

Temperature and Resistance Derating Charts





EchoSpan® LU Series Ultrasonic Level Transmitters

Overview

The EchoSpan LU series ultrasonic level transmitters provide continuous level measurement up to 32.8 ft (10m) with a 4-20 mA signal output, and is configured via its integral pushbutton display module. This non-contact liquid level sensor is ideally suited for corrosive, ultrapure, sticky or dirty liquids, and is broadly selected for bulk storage, day tank, lift station and process tank level applications.

Features

- 4 measurement ranges from 9.8 ft (3m) to 32.8 ft (10m)
- Configuration is simple via integral pushbutton display module
- LCD display indicates level in inches, centimeters and percentages
- Narrow 2 inch or 3 inch beam width for applications with limited measurement space
- Fail-safe intelligence and diagnostic feedback for simple troubleshooting
- PVDF transducer and NEMA 4X / IP65 polycarbonate enclosure for corrosive liquids
- Automatic temperature compensation for accurate measurement
- Made in the USA

Part No. LU80-5101 Part No. LU81-/83/84-5101

LU80 Series Technical Specifications				
Model	LU80-5101	LU81-5101	LU83-5101	LU84-5101
Price	\$646.00	\$739.00	\$832.00	\$925.00
Range	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	12 in to 32.8 ft (30 cm to 10m)
Accuracy	± 0.2% of range			
Resolution	0.019 in (0.5 mm)	0.039 in (1 mm)		0.078 in (2 mm)
Sensing Dead Band*	4 in (10 cm)	8 in (20 cm)		12 in (30 cm)
Beam Width	2 in (5.1 cm)	3 in (7.6 cm)		
Configuration	Pushbutton / LCD			
Memory	Non-volatile			
Display Type	LCD, 6-digit			
Display Units	Inch, cm and percent			
Supply Voltage	12 - 28 VDC**			
Loop Resistance	500Ω @ 24 VDC			
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			
Terminal Block	26-12 AWG (tighten torque, 0.5 Nm)			
Process Temperature	-4° to 140°F (-20° to 60°C)			
Temp. Compensation	Automatic			
Ambient Temperature	-40° to 160°F (-40° to 71°C)			
Pressure	30 PSI (2 bar) MAX			
Enclosure Rating	NEMA Type 4X (IP65)			
Enclosure Material	Polycarbonate			
Enclosure Hardware	Brass & stainless steel			
Enclosure Vent	Water tight membrane			
Conduit Entrance	Dual, 1/2 in FNPT			
Transducer Material	Polyvinylidene Fluoride			
Process Mount	1 in MNPT (See accessories for installation fittings)	2 in MNPT (See accessories for installation fittings)		
Mount Gasket	Viton (included, replacement part number 200128)	Viton (included, replacement part number 200129)		
Weight (lbs)	1.5	1.9		
Classification	General purpose			
Compliance	CE, RoHS			

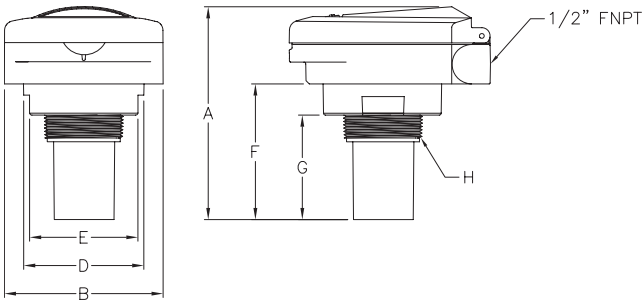
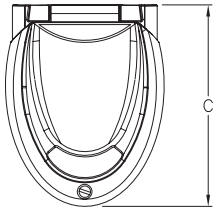
* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

** If supply exceeds 28 VDC damage to the transmitter may occur.

EchoSpan[®] LU Series Ultrasonic Level Transmitters

Dimensions inches [mm]

LU80 Series



Dimensions	A	B	C	D	E	F	G	H
LU80	3.90 [99.1]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	1.90 [48.3]	1.25 [31.8]	1 in MNPT
LU81, 83 & 84	5.50 [139.6]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	3.40 [86.4]	2.70 [68.6]	2 in MNPT

When installing the 1 inch NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

Configuration

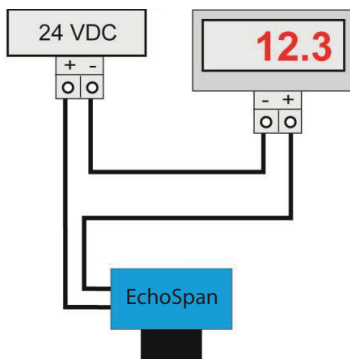
The transmitter is configured using the three buttons (UP, DOWN and SELECT) and the transmitter's LCD on the transmitters face.

More information about configuring the LU series sensors can be found at www.AutomationDirect.com

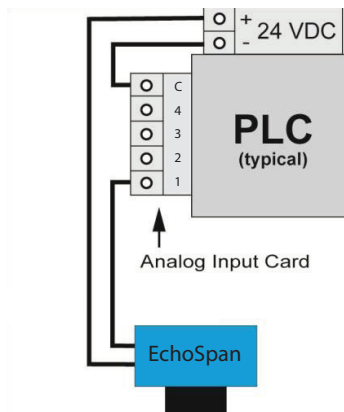


Wiring

Typical Loop Powered Display



Typical Generic PLC



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



EchoSwitch® LU Series Ultrasonic Level Sensors



Overview

The EchoSwitch LU series of ultrasonic level sensors are configured via the integral pushbutton display module, provides continuous level detection up to 26.2 ft (8m) with 3 programmable relays for level switch or level control functions and a 4-20 mA output. Each relay can be configured on a single setpoint (high level alarm or low level alarm) or latched on two setpoints for automatic fill or empty in simplex (one pump or valve), duplex (two pumps) or triplex (three pumps) level control modes with selectable time delay and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. These non-contact level sensors are ideally suited for corrosive, sticky or dirty liquids, and are broadly selected for pump lift station, sump and day tank level applications.

Features

- 3 level detection ranges: 9.8 ft (3m), 18.0 ft (5.5m) and 26.2 ft (8m)
- Configuration is simple via integral pushbutton display module
- Three programmable relays for switch, pump control and fail-safety
 - 1 pump or valve with 2 alarms
 - 2 pumps (lead-lag) with 1 alarm
 - 2 pumps (duplexing) with 1 alarm
 - 3 independent outputs
- 4-20 mA output can be used to provide local or remote level detection
- LCD display indicates level height in engineering units and relay status
- Narrow 2 inch or 3 inch beam width for applications with limited measurement space
- Short 4 inch or 8 inch dead band maximizes the measureable filling capacity of the tank
- PVDF transducer and NEMA 4X / IP65 polycarbonate enclosure for corrosive liquids
- Automatic temperature compensation
- Made in the USA



Part No. LU77-5004



Part No. LU74-5004



Part No. LU78-5004

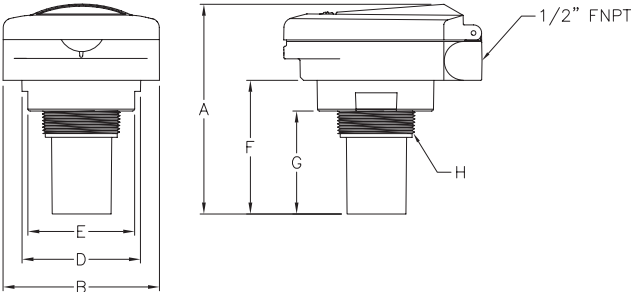
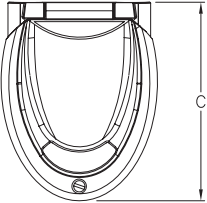
LU70 Series Technical Specifications			
Model	LU77-5004	LU74-5004	LU78-5004
Price	\$739.00	\$785.00	\$832.00
Range	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)
Repeatability	0.25 in (6.35 mm)		
Loop Output	4-20 mA isolated, sinking 12 to 28 VDC**		
Loop Resistance	500Ω max @ 24 VDC		
Sensing Dead Band*	4 in (10 cm)	8 in (20 cm)	
Beam Width	2 in (5.1 cm)	3 in (7.6 cm)	
Configuration	Pushbutton / LCD		
Memory	Non-volatile		
Display Type	Level and relay status, 6 character		
Display Units	Inch, cm, percent, feet or meter		
LCD Indication	Level and relay status		
Supply Voltage	95 to 250 VAC (separate 12-28 VDC power supply required for 4-20 mA loop output)		
Power	20W @ 120 VAC		
Contact Type	Relay 1, SPDT relay; Relay 2 & 3, SPST, N.O., all commons connected together		
Contact Rating	2A @ 30 VDC max / 2A @ VAC max		
Terminal Block	22-14 AWG (tighten torque, 0.5 Nm)		
Contact Fail-Safe	Programmable / selectable		
Process Temperature	-4° to 140°F (-20° to 60°C)		
Temp. Compensation	Automatic		
Ambient Temperature	-40° to 160°F (-40° to 71°C)		
Pressure	30 PSI (2 bar) MAX		
Enclosure Rating	NEMA Type 4X (IP65)		
Enclosure Material	Polycarbonate		
Transducer Material	Polyvinylidene Fluoride		
Enclosure Hardware	Brass & stainless steel		
Enclosure Vent	Water tight membrane		
Conduit Entrance	Dual, 1/2" FNPT		
Process Mount	1 in MNPT (See accessories for installation fittings)	2 in MNPT (See accessories for installation fittings)	
Mount Gasket	Viton (included, replacement part number 200128)	Viton (included, replacement part number 200129)	
Weight (lbs)	1.5	2.0	
Classification	General purpose		
Compliance	CE, RoHS		

* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

EchoSwitch[®] LU Series Ultrasonic Level Sensors

Dimensions inches [mm]

LU70 Series



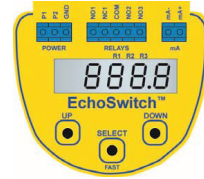
Dimensions	A	B	C	D	E	F	G	H
LU74 & LU78	5.50 [139.6]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	3.50 [89.0]	2.70 [89.0]	2" MNPT
LU77	3.90 [99.1]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	1.90 [48.3]	1.25 [31.8]	1" MNPT

When installing the 1" NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

Configuration

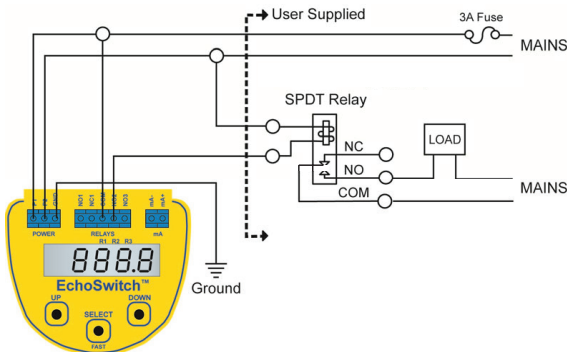
The transmitter is configured using the three buttons (UP, DOWN and SELECT) and the transmitter's LCD on the transmitters face.

More information about configuring the LU series sensors can be found at www.AutomationDirect.com



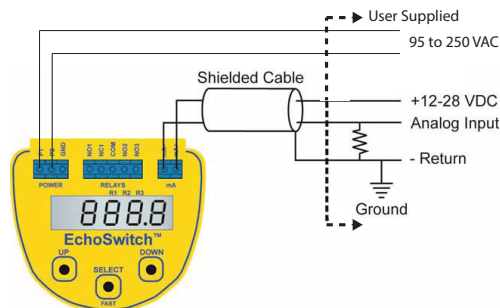
Wiring

Relay Application



Note: Isolate power to instrument from power to load (pumps, etc.) as much as possible by running power to the sensor directly from main power source. All relay commons are internally connected.

Loop Application



Note: Separate 12-28 VDC power supply is required for loop output.



Ultrasonic Liquid Level Sensor Accessories

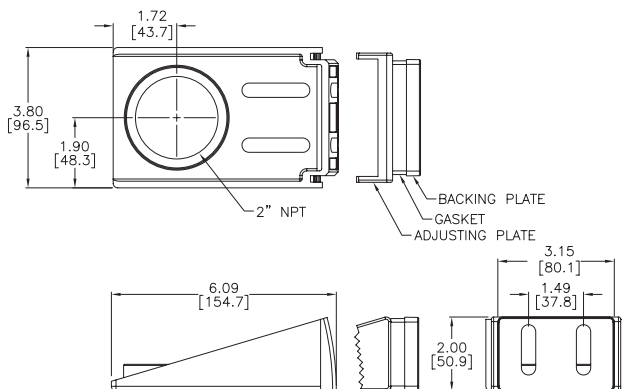
Ultrasonic Liquid Level Sensor Accessories					
Part No.	Item Photo	Description	Quantity	Weight	Price
LI40-1001		Flowline PodView general purpose digital indicator, displays tank level or volume and sensor relay status, 6-digit LCD display with four relay status indicators, 3-button user interface, polycarbonate panel mount enclosure with NEMA 4 (IP65) faceplate, 6-foot (1.8-meter) 22AWG 4-conductor cable, compatible with any Flowline EchoPod series ultrasonic level sensor with firmware V50 or later	1	0.6	\$181.00
LM50-1001		Flowline side mount bracket, 2 inch NPT female threads, polypropylene (PP), for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.4	\$32.00
LM50-1001-1		Flowline side mount bracket, 2 inch NPT female threads, polypropylene (PP), and 2 inch NPT male x 1 inch NPT female reducer bushing (PVC), for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.6	\$41.00
LM52-1400		Flowline reducer bushing, 2 inch NPT male x 1 inch NPT female threads, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.2	\$13.00
LM52-2400		Flowline reducer bushing, 3 inch NPT male x 2 inch NPT female threads, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.6	\$29.00
LM52-1890		Flowline low-profile bulkhead fitting, 1 inch NPT female x slip socket, with mounting nut, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77 and LU80 series ultrasonic level sensors	1	0.5	\$41.00
LM52-2890		Flowline low-profile bulkhead fitting, 2 inch NPT female x slip socket, with mounting nut, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	1.2	\$69.00
LM52-1850		Flowline mounting flange, 1 inch NPT female threads, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.5	\$41.00
LM52-2850		Flowline mounting flange, 2 inch NPT female threads, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	1.0	\$60.00
204038		Replacement mounting gasket, for use with Flowline DL14, DL10, DX10, and DS14 series ultrasonic level sensors	1	0.1	\$5.00
200128		Replacement mounting gasket, for use with Flowline DL24, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.1	\$9.00
200129		Replacement mounting gasket, for use with Flowline DL34, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.1	\$13.00

When installing the 1" NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

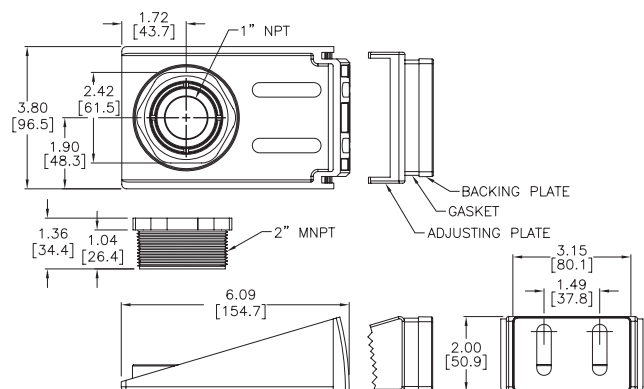
Dimensions

inches [mm]

LM50-1001



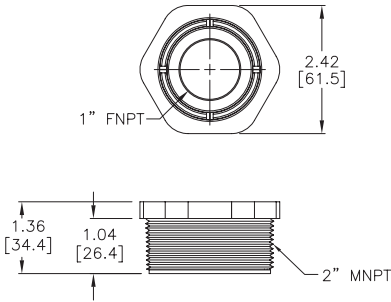
LM50-1001-1



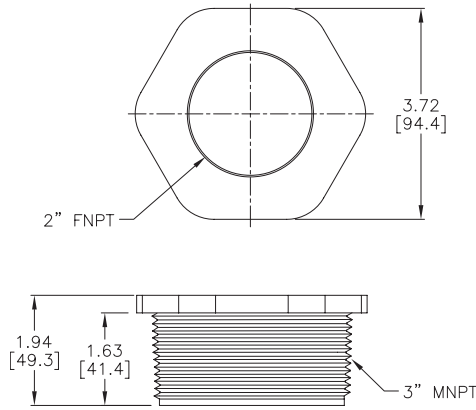
Ultrasonic Liquid Level Sensor Accessories

Dimensions inches [mm]

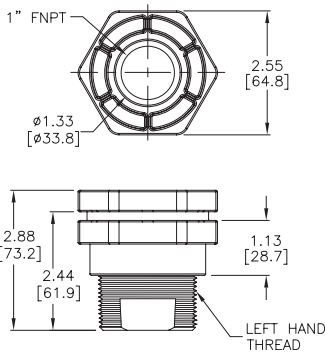
LM52-1400



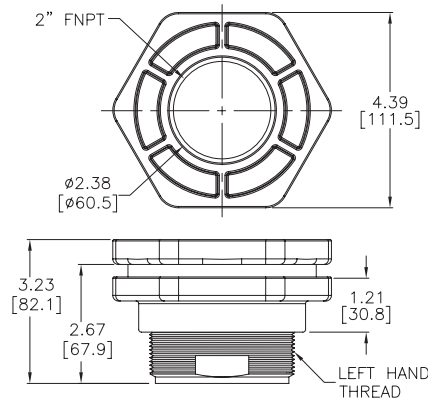
LM52-2400



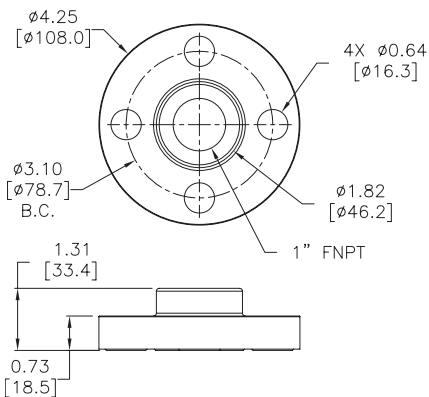
LM52-1890



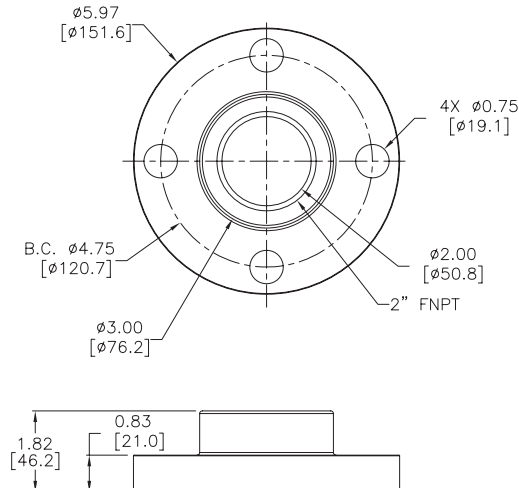
LM52-2890



LM52-1850



LM52-2850



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



Switch-Tek™ LU10 Ultrasonic Level Switches

Overview

CSA approved for hazardous environments, the intrinsically safe ultrasonic point level switch provides reliable liquid level detection of chemical, solvent, hydrocarbon and petroleum based liquids with a 1A relay output. The submersible polypropylene (PP) liquid level sensor is universally mounted through the tank wall or inside the tank as a high level alarm or low level alarm.

Features

- CSA approved intrinsically safe for use in hazardous environments
- Submersible polypropylene (PP) sensor and cable
- 60VA relay selectable NO or NC via power supply wiring polarity
- Compatible with Switch-Pak installation fittings
- Able to mount through the side wall or top wall of tank
- Made in the USA



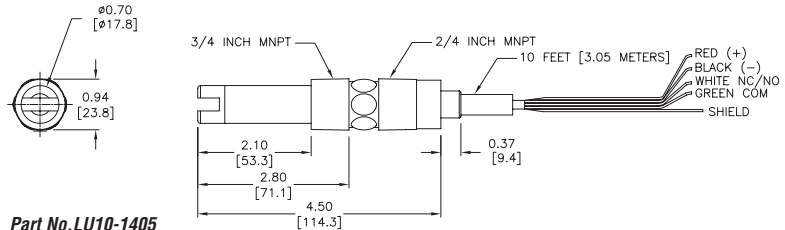
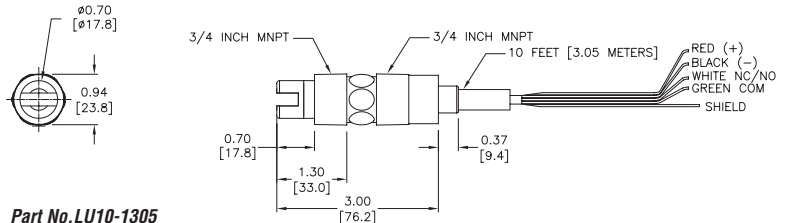
Part No. LU10-1305

Part No. LU10-1405

Switch-Tek™ LU10 Technical Specifications		
Model	LU10-1305	LU10-1405
Price	\$265.00	\$274.00
Weight (lb)	0.7	0.7
Insertion Length	0.7 in [17.8 mm]	2.1 in [53.3 mm]
Orientation	Universal	
Accuracy	±1mm [0.04 in] in water	
Repeatability	±0.5 mm [0.02 in] in water	
Supply Voltage	12-36 VDC	
Consumption	25mA maximum	
Contact Type	(1) SPST relay	
Contact Rating	General purpose: 60VA @ 1A (125VAC max) Intrinsically safe: 32VDC @ 0.5 A	
Contact Output	Selectable NO / NC	
Process Temp.	-40°F to 176°F [-40°C to 80°C]	
Pressure	150psi [10bar] @ 25°C, derated @ 1.667 psi [0.113 bar] per °C above 25°C	
Sensor Rating	NEMA 6 (IP68)	
Sensor Material	PP (polypropylene)	
Cable Jacket Material	PP (polypropylene)	
Cable Type	4-conductor, #22AWG, shielded	
Cable Length	10ft (3m)	
Process Mount	3/4" NPT	
Classification	Intrinsically safe (Haz-Loc)	
Agency Approvals*	CSA: Class 1, Groups A, B, C, & D; Class II Groups E, F & G; Class III EEx: Class 1, Division 1, Groups A, B, C, & D; EEx ib IIC T6	
Intrinsically Safe (I.S.) Parameters	CSA: Vmax = 32V, Imax = 300mA, Pmax = 1.3 W; Ci = 0µF, Li = 0µH EEx: Ui = 32V; li = 300mA; Pi = 1.3 W; Ci = 0µF; Li = 0µH	
Certificates*	CSA: LR 79326; EEx: LCIE 01.E6048 X	
Compliance*	CE (EN61326, EN61010-1)	



Dimensions inches [mm]



See our website www.AutomationDirect.com for complete Engineering drawings.

Compatible Products

Switch-Pro™ Remote Level Controllers



LCXX

Switch-Pro™ Junction Box and Strobe



LC06-1001



LC06-1001 with LC09-1004 and LM90-1001

Switch-Pak™ Installation Fittings



LM45-1001-12



LM45-7001-0000

See the Switch-Pro® LCXX and Accessories pages at the end of the section for further details and pricing.

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Switch-Tek™ LU10 Ultrasonic Level Switches

Intrinsically Safe (Haz-Loc) Wiring Information

Models LU10:

The LU10 level switch has been approved for use in Class I, Groups A, B, C & D; UNDER CERTIFICATE NUMBER LR 79326-4. The Entity parameter for the LU10 are:

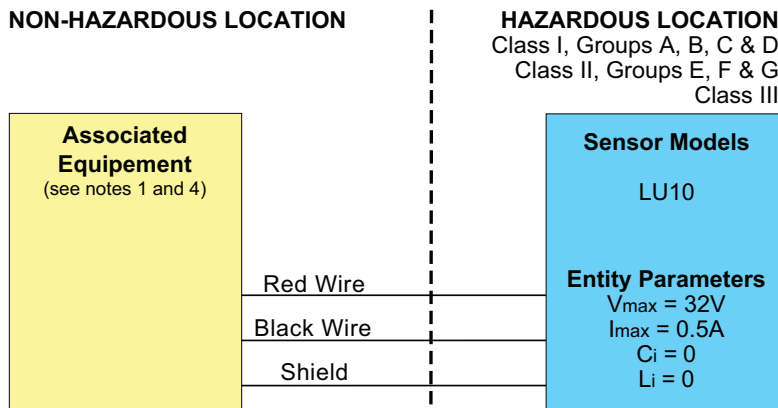
$$V_{max} = 32 \text{ VDC}$$

$$I_{max} = 0.5 \text{ A}$$

$$C_i = 0 \mu\text{F}$$

$$L_i = 0 \text{ mH}$$

Intrinsically Safe Control Drawing:



Notes:

1. CSA certified associated equipment with entity parameters.
2. $V_{max} \geq V_{oc}$, $I_{max} \geq I_{sc}$, $C_i + C_{cable} \leq C_a.$, $L_i + L_{cable} \leq L_a.$
3. Installation should be in accordance with CEC Part I, or NFPA 70.
4. Associated equipment must be installed per manufacturers instructions

**Sensor Drawing: LSD1
Rev. B 10-01-02**

- Company Information
- Drives
- Soft Starters
- Motors
- Power Transmission
- Motion: Servos and Steppers
- Motor Controls
- Sensors: Proximity
- Sensors: Photoelectric
- Sensors: Encoders
- Sensors: Limit Switches
- Sensors: Current
- Sensors: Pressure
- Sensors: Temperature
- Sensors: Level
- Sensors: Flow
- Pushbuttons and Lights
- Stacklights
- Signal Devices
- Process
- Relays and Timers
- Pneumatics: Air Prep
- Pneumatics: Directional Control Valves
- Pneumatics: Cylinders
- Pneumatics: Tubing
- Pneumatics: Air Fittings
- Appendix Book 2
- Terms and Conditions



Switch-Tek™ LU10 Ultrasonic Level Switches

Intrinsically Safe (Haz-Loc) Wiring Information

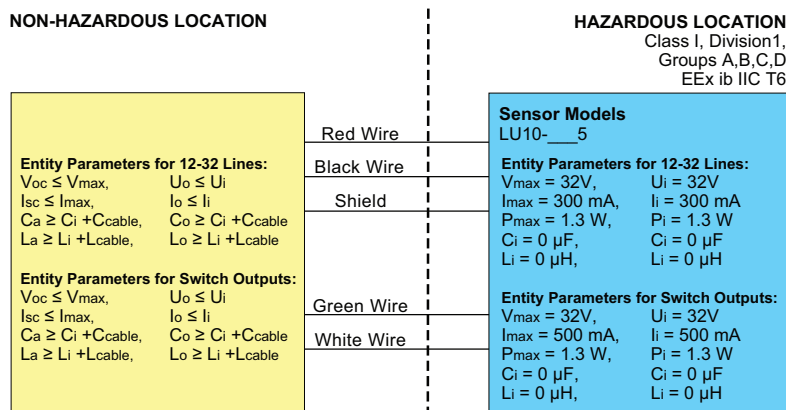
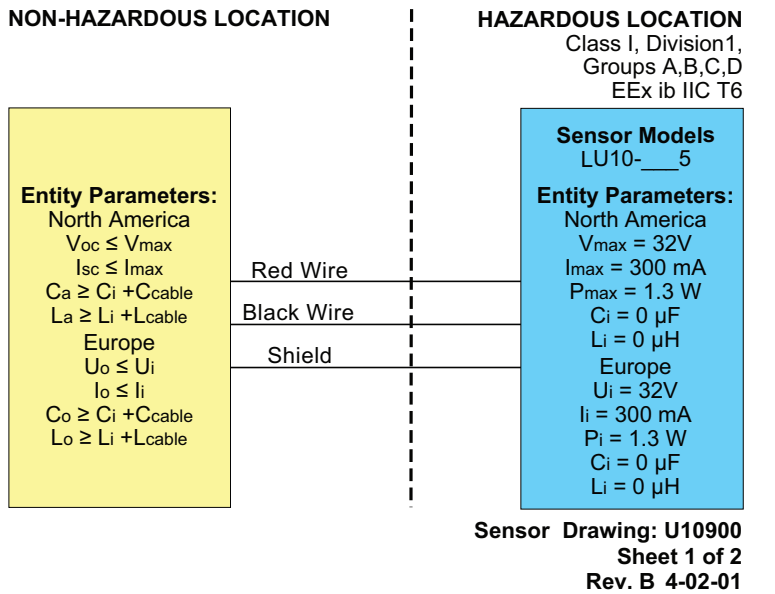
Models LU10:

The LU10 level switch has been approved for use in Class I, Division 1, Groups A, B, C & D; EEx ib IIC T6; UNDER CERTIFICATE NUMBER LCIE 01.E6048X.

The Entity parameter for the LU10 are:

North America	Europe
$V_{max} = 32 \text{ VDC}$	$U_i = 32 \text{ VDC}$
$I_{max} = 0.5 \text{ A}$	$I_i = 0.5 \text{ A}$
$P_{max} = 1.3 \text{ W}$	$P_i = 1.3 \text{ W}$
$C_i = 0 \mu\text{F}$	$C_i = 0 \mu\text{F}$
$L_i = 0 \mu\text{H}$	$L_i = 0 \mu\text{H}$

Intrinsically Safe Control Drawing:



Notes: PARAMETERS DEPEND ON OUTPUT TYPE

1. Installation should be in accordance with CEC Part 1, or NFPA 70.
2. Associated Equipment shall be CSA certified with entity parameters connected in accordance with manufacturers instructions.

Sensor Drawing: U10900
Sheet 2 of 2
Rev. B 4-02-01



Switch-Tek™ LZ12 Vibration Fork Level Switch



Part No. LZ12-1405

Overview

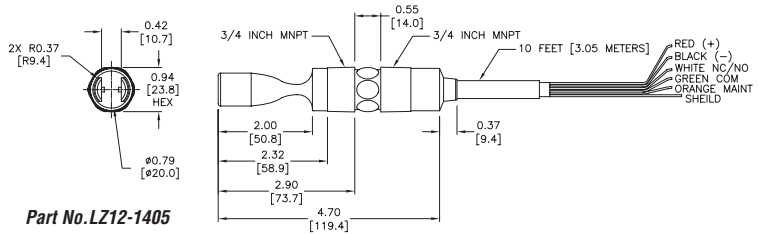
The general purpose vibration point level switch provides reliable liquid level detection of dirty liquids such as those with light to medium coating, scaling or foaming characteristics with a 1A relay output. Media examples include wastewater, diluted caustic soda and light weight oil. For optimum performance, the liquid level switch automatically adjusts for coating build up and, if necessary, outputs a proactive maintenance alarm to request cleaning. The submersible Ryton® liquid level sensor is universally mounted through the tank wall or inside the tank as a high level or low level alarm.

Features

- Automatic coating adjustment optimizes sensor performance
- Submersible Ryton® sensor with polypropylene (PP) cable for corrosive liquids
- Coating alarm proactively alerts user when cleaning is required
- 60VA relay selectable NO or NC via power supply wiring polarity
- Compatible with Switch-Pak installation fittings
- Ideal for coating/scaling liquids
- Mounts through side wall or top wall of tank
- Made in the USA

Switch-Tek LZ12 Technical Specifications	
Model	LZ12-1405
Price	\$283.00
Weight (lb)	0.7
Insertion Length	2.3 in [57mm]
Orientation	Universal
Accuracy	±1mm [0.04 in] in water
Repeatability	±0.5 mm [0.02 in] in water
Supply Voltage	12-30 VDC
Consumption	25mA maximum
Contact Type	(1) SPST relay
Contact Rating	60VA, 1A maximum (125VAC max)
Contact Output	Selectable NO / NC
Maint. Alarm	NPN transistor, 10mA maximum
Process Temp.	-40°F to 176°F [-40°C to 80°C]
Pressure	150psi [10bar] @ 25°C, derated @ 1.667 psi [0.113 bar] per °C above 25°C
Sensor Rating	NEMA 6 (IP68)
Sensor Material	Ryton® (glass filled)
Cable Grommet Material	Viton®
Cable Jacket Material	PP (polypropylene)
Cable Type	5-conductor, #24AWG, shielded
Cable Length	10ft (3m)
Process Mount	3/4" NPT
Classification	General purpose
Compliance*	CE (EN61326, EN61010-1)

Dimensions inches [mm]



Part No. LZ12-1405



See our website www.AutomationDirect.com for complete Engineering drawings.

Compatible Products

Switch-Pro™ Remote Level Controllers



LCXX

Switch-Pro™ Junction Box and Strobe



LC06-1001



LC06-1001 with LC09-1004 and LM90-1001

Switch-Pak™ Installation Fittings



LM45-1001-12



LM45-7001-0000

See the Switch-Pro® LCXX and Accessories pages at the end of the section for further details and pricing.

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



Switch-Tek™ LP15 Capacitance Level Switch



Part No. LP15-1405

Overview

The general purpose guard capacitance point level switch provides reliable high or low liquid level detection of water based conductive liquids with light coating, crystalizing or scaling characteristics with a 1A relay output. Media examples include copper sulfate and brine. The RF guard circuit eliminates the coating signal path between the active and reference electrodes. The submersible polypropylene (PP) liquid level sensor is universally mounted through non-metallic tank walls or inside the tank as a high level or low level alarm.

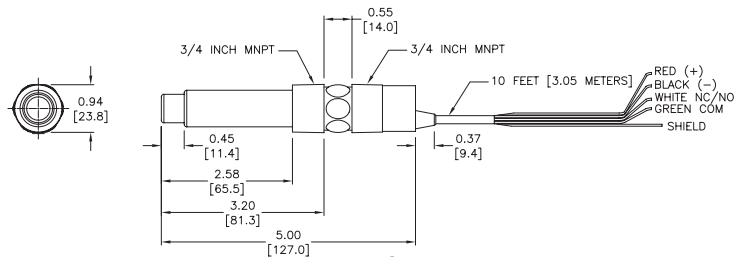
Features

- Guard circuit optimized performance in coating type media
- Submersible polypropylene (PP) sensor body and cable for corrosive liquids
- 60VA relay selectable NO or NC via power supply wiring polarity
- Compatible with Switch-Pak installation fittings
- Ideal for side wall or top mount
- Ideal for coating liquids
- Great for waste water applications
- Made in the USA



Switch-Tek LP15 Technical Specifications	
Model	LP15-1405
Price	\$246.00
Weight (lb)	0.7
Insertion Length	2.6 in [67mm]
Orientation	Universal
Accuracy	±1mm [0.04 in] in water
Repeatability	±0.5 mm [0.02 in] in water
Dielectric Range	>20 constants
Conductive range	>100µS
Supply Voltage	12-36 VDC
Consumption	25mA maximum
Contact Type	(1) SPST relay
Contact Rating	60VA, 1A maximum (125VAC max)
Contact Output	Selectable NO / NC
Maint. Alarm	NPN transistor, 10mA maximum
Process Temp.	-40°F to 176°F [-40°C to 80°C]
Pressure	150psi [10bar] @ 25°C, derated @ 1.667 psi [0.113 bar] per °C above 25°C
Sensor Rating	NEMA 6 (IP68)
Sensor Material	PP (polypropylene)
Cable Jacket Material	PP (polypropylene)
Cable Type	4-conductor, #22AWG, shielded
Cable Length	10ft (3m)
Process Mount	3/4" NPT
Classification	General purpose
Compliance*	CE (EN61326, EN61010-1)

Dimensions inches [mm]



Part No. LP15-1405

See our website www.AutomationDirect.com for complete Engineering drawings.

Compatible Products

Switch-Pro™ Remote Level Controllers



LCXX

Switch-Pro™ Junction Box and Strobe



LC06-1001

LC06-1001 with LC09-1004 and LM90-1001

Switch-Pak™ Installation Fittings



LM45-7001-0000

LM45-1001-12

See the Switch-Pro® LCXX and Accessories pages at the end of the section for further details and pricing.

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com



Switch-Tek™ LV10 Buoyancy Level Switch



Part No. LV10-1301

Overview

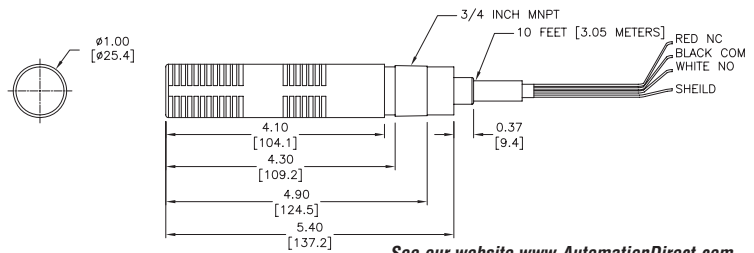
The general purpose buoyancy point level switch provides reliable liquid level detection of relatively clean water and chemical solutions. Media examples include boric acid and ultrapure water. The baffle body eliminates level switch chatter caused by turbulence. The submersible polypropylene (PP) liquid level sensor is mounted vertically inside the tank as a high level or low level alarm.

Features

- Baffle body and stabilized float dampen out switch chatter
- Submersible polypropylene (PP) sensor and cable for corrosive liquids
- 15VA dry contact (reed switch) selectable NO or NC state
- Compatible with Switch-Pak installation fittings
- Ideal for water and waste applications
- Float can wire directly to PLC/SCADA or controller
- Cage helps protect from debris
- Made in the USA



Dimensions inches [mm]



Part No. LV10-1301

See our website www.AutomationDirect.com for complete Engineering drawings.

Switch-Tek LV10 Technical Specifications	
Model	LV10-1301
Price	\$111.00
Weight (lb)	0.7
Insertion Length	4.3 in [108mm]
Orientation	±20° vertical
Accuracy	±2mm [0.08 in] in water
Repeatability	±1mm [0.04 in] in water
Specific Gravity	0.8 minimum
Contact Type	(1) SPDT reed
Contact Rating	15VA, 0.25 A maximum (125VAC max)
Contact Output	Selectable NO / NC
Process Temp.	-40°F to 194°F [-40°C to 90°C]
Pressure	25psi [2bar] @ 25°C, derated @ 1.667 psi [0.113 bar] per °C above 25°C
Sensor Rating	NEMA 6 (IP68)
Sensor Material	PP (polypropylene)
Cable Jacket Material	PP (polypropylene)
Cable Type	3-conductor, #22AWG, shielded
Cable Length	10ft (3m)
Process Mount	3/4" NPT
Classification	General purpose
Compliance*	CE (EN61326)

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Compatible Products

Switch-Pro™
Remote Level Controllers



LCXX

Switch-Pro™
Junction Box and Strobe



LC06-1001 when used with LM45-1001-12 or LM45-7001-0000



LC06-1001 with LC09-1004 and LM90-1001

Switch-Pak™
Installation Fittings



LM45-7001-0000

See the Switch-Pro® LCXX and Accessories pages at the end of the section for further details and pricing.

- Company Information
- Drives
- Soft Starters
- Motors
- Power Transmission
- Motion: Servos and Steppers
- Motor Controls
- Sensors: Proximity
- Sensors: Photoelectric
- Sensors: Encoders
- Sensors: Limit Switches
- Sensors: Current
- Sensors: Pressure
- Sensors: Temperature
- Sensors: Level
- Sensors: Flow
- Pushbuttons and Lights
- Stacklights
- Signal Devices
- Process
- Relays and Timers
- Pneumatics: Air Prep
- Pneumatics: Directional Control Valves
- Pneumatics: Cylinders
- Pneumatics: Tubing
- Pneumatics: Air Fittings
- Appendix Book 2
- Terms and Conditions



Switch-Pro™ Remote Level Controllers

Overview

CSA approved, the Switch-Pro general purpose level controllers are offered in three configurations for alarms, pump and valve control. The LC40 accepts one level sensor input and provides one 10A relay for high level or low level alarm. The LC41 accepts two level sensor inputs and provides one latching 10A relay for automatic fill or empty control. The LC42 accepts three level sensor inputs with one latching 10A relay output for automatic fill or empty control, and a second non-latching 10A relay for high level or low level alarm.



Part No. LC40-1001



Part No. LC41-1001



Part No. LC42-1001

Features

- Fail-safe relay control of pumps or valves with 0-60 second delay
- Easy setup with LED indicators for sensor, power and relay status
- 35mm DIN rail mount or panel mount polypropylene (PP) enclosure with removable terminal strips
- Invert switch changes relay state from NO to NC without rewiring
- Mounts easily in control panel
- Connects to any Flowline level switch
- Interfaces directly with any horn, buzzer, valve, etc...
- Use LC41, LC42 version for automatic fill/empty operations
- Made in the USA



Switch-Pro LC Series Technical Specifications			
Model	LC40-1001	LC41-1001	LC42-1001
Price	\$195.00	\$227.00	\$274.00
Weight (lb)	1.9	1.9	1.9
Supply Voltage	120VAC @ 50-60 Hz (can be field configured for 240VAC)		
Consumption	5W maximum		
Sensor Inputs	(1) two wire level switch	(2) two wire level switches	(3) two wire level switches
Sensor Supply	13.5 VDC @ 27mA		
LED Indication	Sensor (green), power (green) & relay (red)		
Contact Type	(1) SPDT relay (non-latching)	(1) SPDT relay (latching)	(2) SPDT relays, (one non-latching, one latching)
Contact Rating	250VAC @ 10A		
Contact Output	Selectable NO / NC		
Contact Latch	N/A	Selectable ON / OFF	Selectable ON / OFF
Contact Delay	0-60 seconds		
Ambient Temperature	-40°F to 158°F [-40°C to 70°C]		
Enclosure Mounting	35mm DIN rail or thru-hole panel mount		
Enclosure Material	PP (polypropylene), UL94V0		
Classification	General purpose		
Compliance*	CE (EN61326, EN61010-1); CSA LR 79326		

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Switch-Pro™ Remote Level Controllers

Wiring

LC40 series: 1 sensor input, 1 relay output.

Typical Application:

High level or low level alarm



LC41 series: 2 sensor inputs, 1 relay output. The relay included is a latching relay.

Typical Application:

Automatic fill or empty



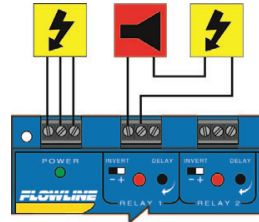
LC42 series: 3 sensor input, 2 relay outputs. One relay is latching and the other is a single input relay.

Typical Application:

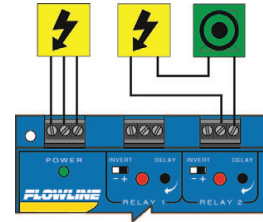
Automatic fill or empty with high level or low level alarm



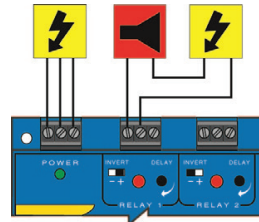
Low Level Alarm Output Wiring Example (One level sensor input required):



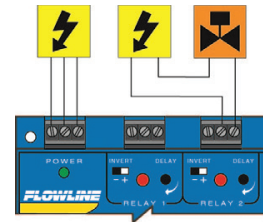
Automatic Fill Output Wiring Example (Two level sensor inputs required):



High Level Alarm Output Wiring Example (One level sensor input required):



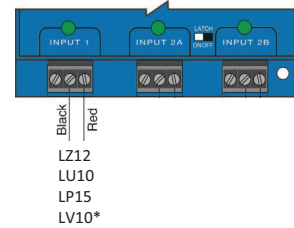
Automatic Empty Output Wiring Example (Two level sensor inputs required):



Symbol Key:



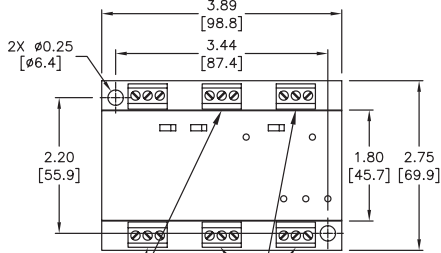
Level Sensor Input Wiring Example:



LV10 series can be wired using the White and Black wires for NO operations or the Red and Black wires for NC operations.

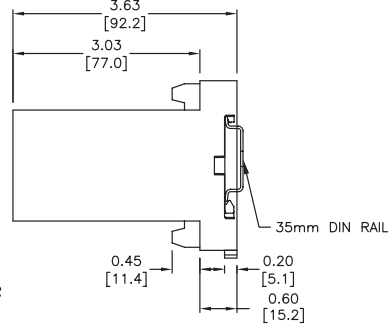
Dimensions inches [mm]

MODEL LC42



TERMINAL BLOCKS N/A FOR LC41 MODELS

TERMINAL BLOCKS N/A FOR LC40 MODELS



See our website www.AutomationDirect.com for complete Engineering drawings.

Compatible Products

ProSense Float Level Switches



Switch-Tek™ Level Switch Sensors





DataPoint™ Remote Level Controller

Overview

The LC52 general purpose controller provides single tank level indication with 2 relays, up to three setpoints and an isolated analog repeater. Relay 1 is configurable on a single setpoint. Relay 2 can be configured on a single setpoint or latched on two setpoints for automatic fill or empty control. The controller accepts a 4-20 mA input from any type of level transmitter. The LC52 has a polycarbonate enclosure with integral 35mm DIN rail mounting.



Part No. LC52-1001

Features

- 3.5 digit LED display indicates level in custom engineering units
- Fail-safe relay control of pumps or valves with 0-60 second delay
- Easy set up with pushbutton calibration for span, display and relay set points
- 35mm DIN rail or panel mount polypropylene (PP) enclosure with removable terminal strips
- Invert switch changes relay state from NO to NC without rewiring
- Simple controller for operating 2 alarms or 1 auto fill/empty with alarm
- Bar graph provides instant confirmation of transmitter's operational performance
- Lock-out feature prevents inadvertent setting changes
- Made in the USA



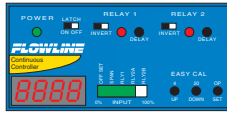
DataPoint LC52 Series Technical Specifications	
Model	LC52-1001
Price	\$344.00
Weight (lb)	1.9
Supply Voltage	120VAC @ 50-60 Hz (can be configured for 240VAC) 50-60 Hz
Display Type	LED, 3.5 digit
Display Units	Engineering
Display Output	0 to 999
LED Indication	Power & relay
LED Bar Graph	Span and setpoints
Memory	Non-volatile
Security	Setpoint lock out
Configuration	Pushbutton
Alarm Indication	Amber: < 4mA; Red: > 20mA
Sensor Input	(1) 4-20 mA
Sensor Supply	24VDC @ 1.5 W
Loop Power	4-20 mA, 18VDC
Consumption	5W maximum
Contact Type	(2) SPDT relays (one non-latching, one latching)
Contact Rating	250VAC @ 10A
Contact Output	Selectable NO / NC
Contact Latch	ON / OFF
Contact Delay	0-60 seconds
Repeater Output	4-20 mA, 12-36 VDC, 1200Ω max
Ambient Temperature	-40°F to 158°F [-40°C to 70°C]
Enclosure Mounting	35mm DIN rail or direct panel mount
Enclosure Material	Polypropylene (PP), UL94V0
Classification	General purpose
Compliance*	CE (EN50082-2, EN55011, EN61010-1)

* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

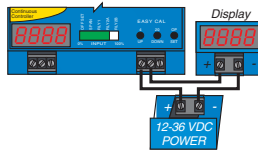
DataPoint™ Remote Level Controller

Wiring

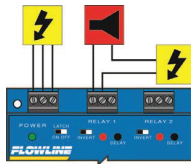
LC52 series: One 4-20mA sensor input, 2 relay outputs, 4-20mA repeater output



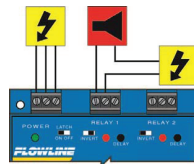
Repeater Output (4-20mA) Wiring Example:



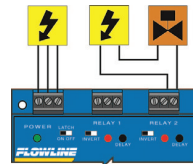
Low Level Alarm Output Wiring Example:



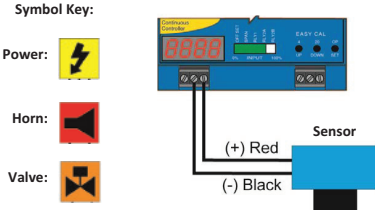
High Level Alarm Output Wiring Example:



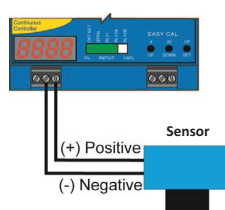
Automatic Fill Output Wiring Example:



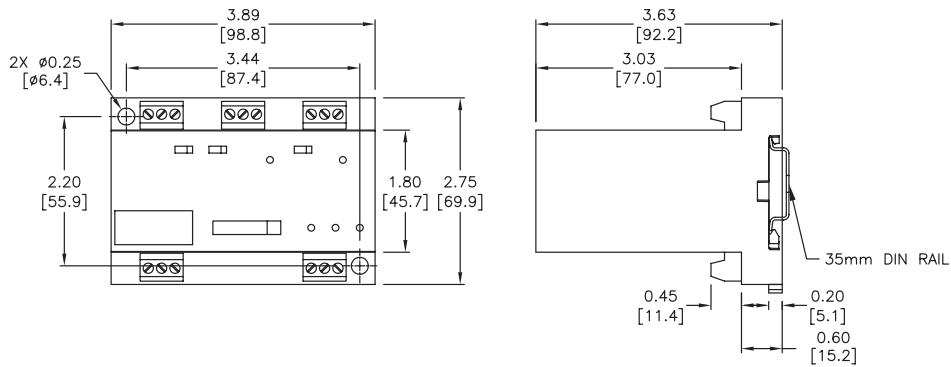
EchoSonic II (LU23, LU27, LU28 & LU29 Sensors & EchoPod (DL10, DL14, DL24 & DL34) Sourcing Mode (Factory Setting) Wiring Example:



EchoSpan (LU80, LU81, LU83 & LU84 Sensors) Sourcing Mode (Factory Setting) Wiring Example:



Dimensions inches [mm]



Compatible Products

See our website www.AutomationDirect.com for complete Engineering drawings.

EchoSonic® II
Ultrasonic Level Transmitters



EchoPod®
Ultrasonic Level Transmitters



EchoSpan®
Ultrasonic Level Transmitter








EchoTouch®
Ultrasonic Level Transmitters



ProSense®
Submersible Level Transmitters



Level Switch Accessories

Level Sensor Accessories					
Part No.	Item Photo	Description	Quantity	Weight (lb)	Price
LM45-1001-12		Flowline Switch-Pak level sensor extension installation fitting, polypropylene (PP) construction, 12 inch insertion length, 2 inch NPT male process connection, 3/4 inch NPT female sensor threads, 3/4 inch NPT male electrical junction box threads	1	1.1	\$46.00
LM45-7001-0000		Flowline Switch-Pak level sensor extension installation fitting kit, polyvinyl chloride (PVC) construction, includes (1) fitting with 2 inch NPT male process connection, 3/4 inch NPT male electrical junction box threads and 3/4 inch PVC pipe socket; (1) fitting with 3/4 inch NPT female sensor threads and 3/4 inch female PVC pipe socket. Purchase 3/4 inch schedule 40 PVC pipe separately, cut to desired length and solvent weld to fittings in this kit.	1	0.7	\$30.50
LC06-1001		Flowline Switch-Pro compact electrical junction box, polypropylene (PP) construction, screw cover with O-ring gasket, NEMA 4X rated, 3/4 inch NPT female mounting threads with 300 degree swivel base, 1/2 inch NPT female conduit entrance, removable 6-pole terminal strip	1	0.7	\$60.00
LC09-1004		Flowline Strobe Alert flashing alarm beacon, 1 per second, polycarbonate (PC) NEMA 4X housing, amber Xenon tube strobe, powered by 12-36 VDC, 5-inch 22AWG lead wires	1	0.7	\$120.00
LM90-1001		Cable gland, 1/2 inch NPT male thread, Buna N sealing gland accommodates a cable diameter range of 0.180 to 0.400 inches (4.6 to 10.2 mm), nylon housing, IP68 protection level	1	0.4	\$5.50

Accessory Field Assembly Examples



Order the following parts for field assembly:
 (1) LC06-1001 - Junction box
 (1) LM90-1001 - Cable gland
 (1) LC09-1004 - Strobe alert flashing alarm
 (1) LM45-1001-12 Extension installation fitting kit
 (1) LV10 Series buoyancy level switch



Order the following parts for field assembly:
 (1) LC06-1001 - Junction box
 (1) LM90-1001 - Cable gland
 (1) LV10 Series ultrasonic level switch

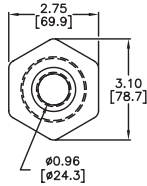


Order the following parts for field assembly:
 (1) LC06-1001 - Junction box
 (1) LM90-1001 - Cable gland
 (1) LC09-1004 - Strobe alert flashing alarm beacon

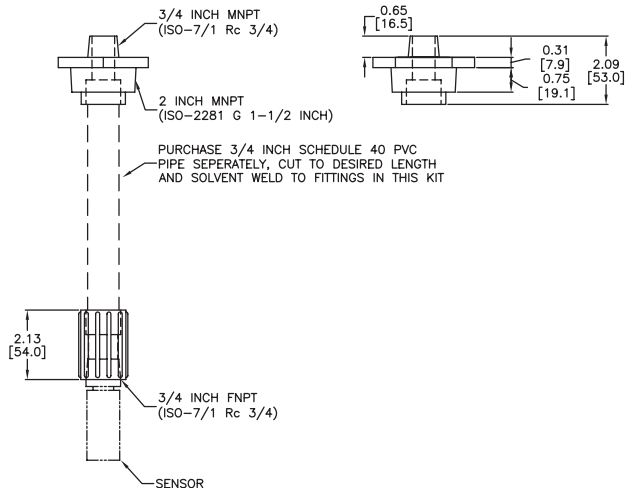
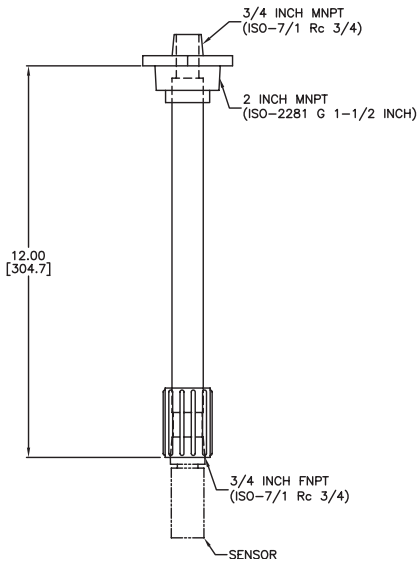
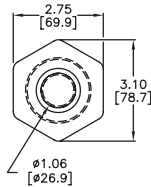
Level Switch Accessory Drawings

Dimensions inches [mm]

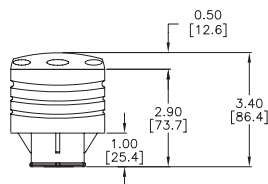
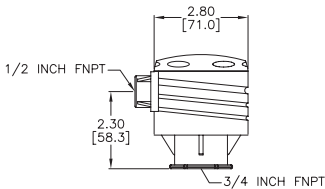
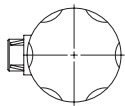
LM45-1001-12



LM45-7001-0000



LC06-1001



See our website www.AutomationDirect.com for complete Engineering drawings.

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

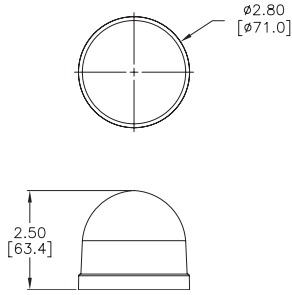
Terms and Conditions



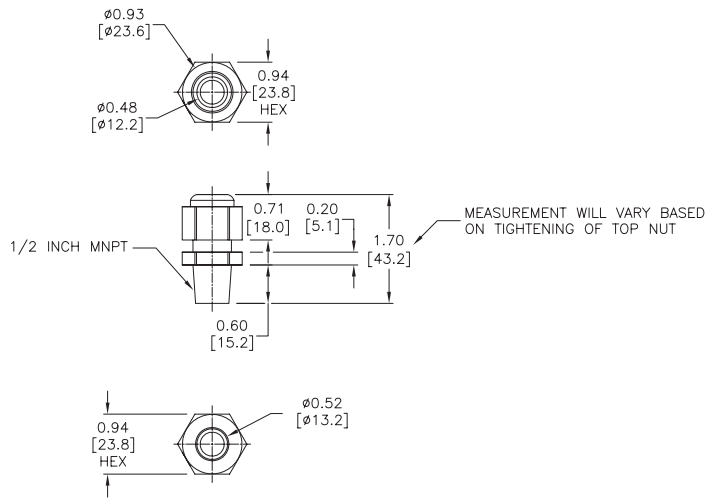
Level Switch Accessory Drawings

Dimensions inches [mm]

LC09-1004



LM90-1001



See our website www.AutomationDirect.com for complete Engineering drawings.

prosense[®] SLT Series Submersible Level Transmitters



Part No. SLT1-005-L30



Part No. SLT2-005-L30

Submersible Level Transmitters

The ProSense SLT series submersible level sensors provide continuous liquid level measurement by sensing the hydrostatic pressure produced by the height of liquid above the sensor and providing a 4-20 mA output signal compatible with PLCs, panel meters, data loggers, and other electronic equipment. The shielded cable with atmospheric vent tube and a tough polyurethane jacket incorporating an exclusive “water block” liner beneath the jacket is attached to the sensor using an over-molding process that prevents moisture intrusion. The SLT1 series has a slim 1-inch diameter housing and a ported bullet nose cap for protection of the sensor diaphragm. The SLT2 series features a large 2.75 inch diameter PTFE flexible diaphragm surrounded by a 316 stainless steel non-fouling protective cage. Accessories include a desiccant vent filter, aneroid bellows, junction boxes, and replacement nose caps.

Features

- Models with ported nose cap or non-fouling cage for diaphragm protection
- Durable 316 SS construction for reliable, long life in harsh environments
- Shielded cable with atmospheric vent; over-molded to prevent moisture intrusion
- 1/2 inch NPT male threaded conduit connection on the sensor housing standard
- Pre-calibrated ranges up to 50 psig (115.3 ftWC) to meet the most common submersible level applications in vented tanks, reservoirs & ground water systems
- +/-0.25% accuracy standard
- All sensors include UL and FM hazardous location approvals for intrinsically safe applications and are CE marked
- Made in the USA

Applications

- Lift station monitoring
- Liquid level in vented tank
- Landfill leachate monitoring
- Construction by-pass pumping
- Dewatering
- Pump control
- Slurry tank liquid level
- Wastewater



SLT Series Submersible Level Transmitters					
Model	Range	Cable Length*	Diaphragm / Protection	Price	Weight (lbs)
SLT1-005-L30	0-5 psig (11.5 ftWC)	30ft (9.1 m)	316 Stainless steel diaphragm / Ported POM (polyoxymethylene) nose cap	\$299.00	1.9
SLT1-010-L40	0-10 psig (23.1 ftWC)	40ft (12.2 m)		\$314.00	2.4
SLT1-015-L60	0-15 psig (34.6 ftWC)	60ft (18.3 m)		\$344.00	3.4
SLT1-020-L60	0-20 psig (46.1 ftWC)	60ft (18.3 m)		\$344.00	3.4
SLT1-030-L100	0-30 psig (69.2 ftWC)	100ft (30.5 m)		\$402.00	5.4
SLT1-050-L140	0-50 psig (115.3 ftWC)	140ft (42.7 m)		\$462.00	7.4
SLT2-005-L30	0-5 psig (11.5 ftWC)	30ft (9.1 m)	Flexible PTFE (polytetrafluoroethylene) diaphragm / Non-fouling stainless steel cage	\$470.00	5.0
SLT2-010-L40	0-10 psig (23.1 ftWC)	40ft (12.2 m)		\$484.00	5.5
SLT2-015-L60	0-15 psig (34.6 ftWC)	60ft (18.3 m)		\$514.00	6.5
SLT2-020-L60	0-20 psig (46.1 ftWC)	60ft (18.3 m)		\$514.00	6.5
SLT2-030-L100	0-30 psig (69.2 ftWC)	100ft (30.5 m)		\$573.00	8.5

* It is required that any excess cable length be accommodated in a service loop and that the cable NOT be shortened as this will void the warranty. If longer transmitter cable is needed, terminate the sensor in an SLT-JB1 or SLT-JB2 junction box and run standard non-vented instrumentation cable between the junction box and the measuring electronics.

proense[®] SLT Series Submersible Level Transmitters

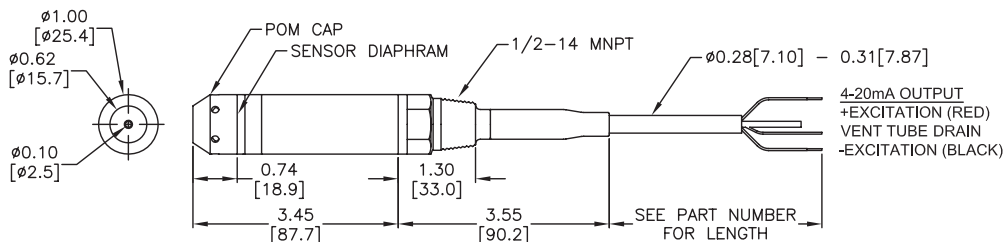
SLT Series Submersible Level Transmitter Technical Specifications	
Static Accuracy*	±0.25% FS (full scale)
Resolution	+0.0001% FS
Wetted Materials	SLT1: 316SS; POM (polyoxymethylene), PUR (polyurethane); SLT2: 316SS; POM (polyoxymethylene), PUR (polyurethane), PTFE (polytetrafluoroethylene)
Compensated Temp. Range	0 to 50°C [32 to 122°F]
Thermal Error	±0.1% FS/°C (maximum allowable deviation from the best fit straight line due to a change in temperature)
Operating Temp. Range	-20 to 60°C [-4 to 140°F]
Protection Rating	IP 68, NEMA 6P
Excitation	9–28 VDC
Input Current	20mA max
Output	4–20 mA
Zero Offset	w0.25 mA
Output Impedance	750Ω max. @ 24VDC (see loop resistance chart by the wiring drawings for other power supply voltages)
Mounting	Vertical
Insulation Resistance	100MΩ at 50VDC
Circuit Protection	Polarity, surge/shorted output
Cable Jacket Material	PUR (polyurethane)
Cable Pull Strength	200lbs (90kg)
Number of Conductors	2 + Drain
Conductor Size	22AWG (0.33 mm ²) spiral tinned copper wire foil shield with 20AWG (0.52 mm ²) drain wire
Vent Tube	PUR (polyethylene) 0.016 in (0.41 mm) ID
Cable Seal	Molded PUR (polyurethane)
Certifications / Agency Approvals	UL (E197886), CE, RoHS, FM (3036412)

* Combined effects of non-linearity, hysteresis and repeatability, best fit straight line method.

Dimensions

inches [mm]

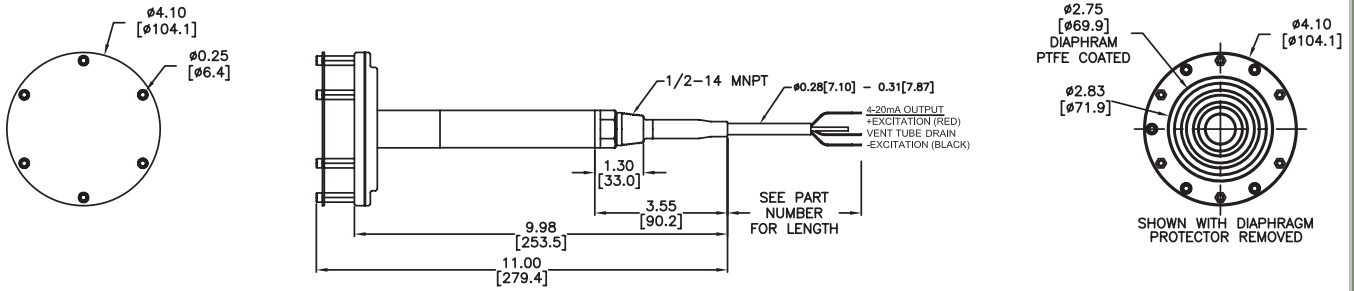
SLT1 Series



See our website www.AutomationDirect.com for complete Engineering drawings.

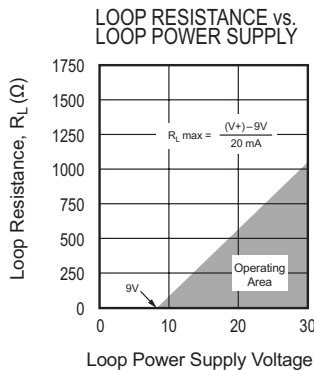
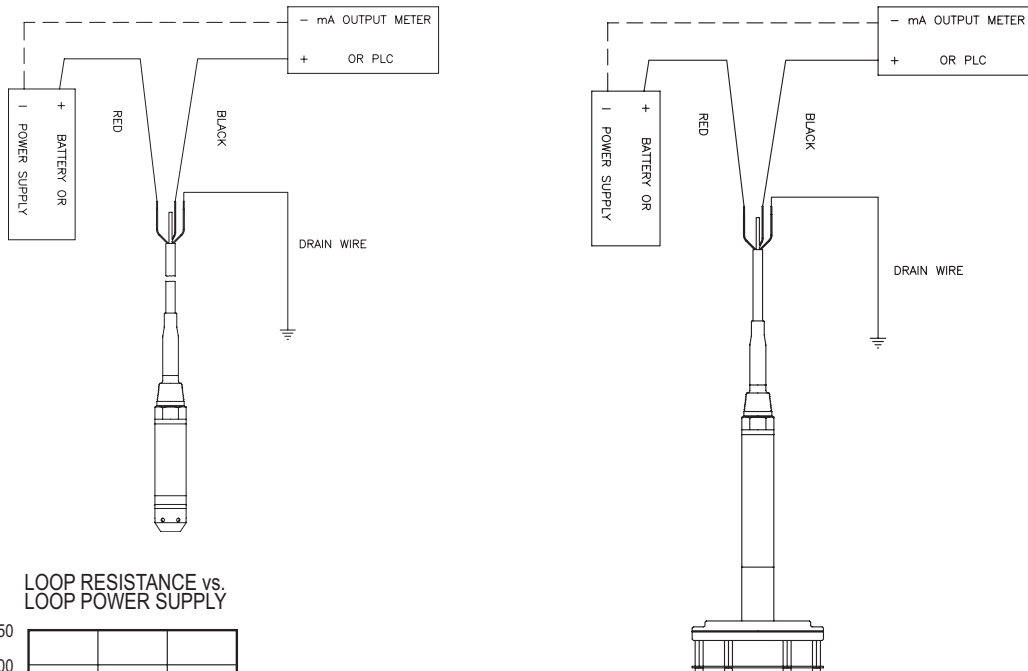
proense[®] SLT Series Submersible Level Transmitters

Dimensions inches [mm] SLT2 Series



See our website www.AutomationDirect.com for complete Engineering drawings.

Wiring



SLT1 & SLT2 Series Wiring Connection	
4-20 mA output (22AWG conductors in a shielded cable with vent tube)	
+ Excitation	Red
- Excitation	Black
Shield	Drain Wire

- Company Information
- Drives
- Soft Starters
- Motors
- Power Transmission
- Motion: Servos and Steppers
- Motor Controls
- Sensors: Proximity
- Sensors: Photoelectric
- Sensors: Encoders
- Sensors: Limit Switches
- Sensors: Current
- Sensors: Pressure
- Sensors: Temperature

Sensors: Level

- Sensors: Flow
- Pushbuttons and Lights
- Stacklights
- Signal Devices
- Process
- Relays and Timers
- Pneumatics: Air Prep
- Pneumatics: Directional Control Valves
- Pneumatics: Cylinders
- Pneumatics: Tubing
- Pneumatics: Air Fittings
- Appendix Book 2
- Terms and Conditions

pro^{sense}® SLT Series Submersible Level Transmitter Accessories



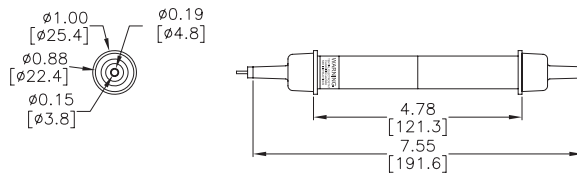
Submersible Level Transmitter Vent Filter (Desiccant)

Vent filters utilize indicating desiccant to prevent moisture from entering the vent tube and damaging transmitters with vented gage reference pressure. The desiccant will turn from blue to pink when exposed to moisture indicating the need for maintenance. This vent filter design prevents moisture from entering the vent tube for at least one year without maintenance.

Submersible Level Transmitter Vent Filter (Desiccant)						
Part No.	Description	Housing Material	Tubing Size	Connector Material	Price	Weight (lbs)
SLT-VF1	ProSense indicating desiccant vent filter, for ProSense submersible hydrostatic level transmitters	PUR (polyethylene) tube with PP (polypropylene) fittings	13in (330mm)	PEEK (Polyetheretherketone)	\$22.00	0.5

Dimensions

inches [mm]



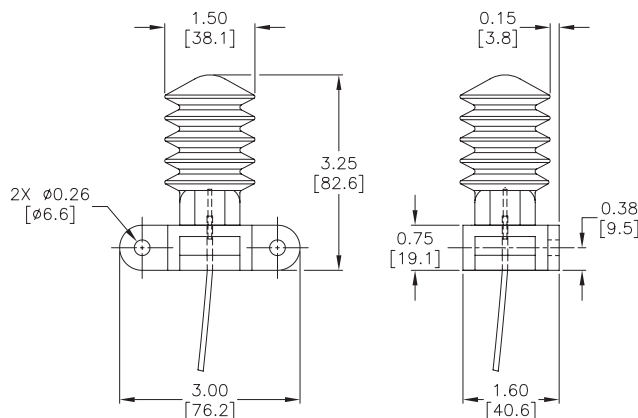
Submersible Level Transmitter Aneroid Bellows

The aneroid bellows is a maintenance-free alternative to desiccant filters for moisture protection on vented gage transmitters. Made of flexible neoprene material attached to a polycarbonate mounting bracket, the bellows fluctuates with changes in atmospheric pressure, maintaining a constant barometric reference. Note that the use of the bellows results in a closed reference pressure system subject to zero shift errors induced by changing temperatures of up to 0.003 psi/°C.

Submersible Level Transmitter Aneroid Bellows						
Part No.	Description	Housing Material	Tubing Size	Connector Material	Price	Weight (lbs)
SLT-AB1	ProSense aneroid bellows, for ProSense submersible hydrostatic level transmitters	Neoprene bellows attached to a PC (polycarbonate) bracket	12in (305mm)	PEEK (Polyetheretherketone)	\$33.00	0.8

Dimensions

inches [mm]



Always install a vent filter (desiccant) or aneroid bellows immediately after transmitter installation. Failure to use one or the other could result in premature failure of the transmitter, which would not be covered by warranty.

See our website www.AutomationDirect.com for complete Engineering drawings.

pro^{sense}® SLT Series Submersible Level Transmitter Accessories

Junction Boxes for Submersible Level Transmitters



The submersible level transmitter junction boxes provide a water-resistant enclosure for electrically connecting the transmitter cable to the user's system via a terminal strip. The enclosure also provides a convenient location for terminating the transmitter's vent tube to a vent filter (included in Part No. SLT-JB1) or an aneroid bellows (included in Part No. SLT-JB2). The enclosure is constructed of polycarbonate with a clear top incorporating a neoprene seal. The junction box is rated IP56.

Application

- If longer transmitter cable is needed, terminate the sensor in an SLT-JB1 or SLT-JB2 junction box and run standard instrumentation cable between the junction box and the measuring electronics.

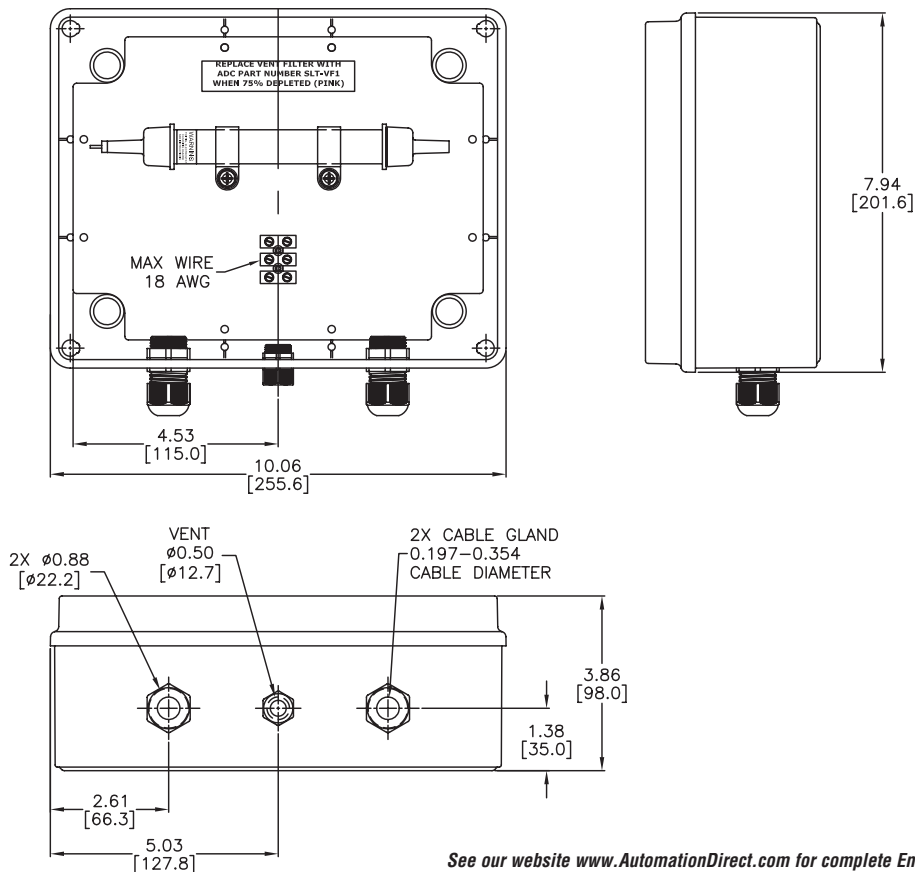
ProSense Junction Boxes for Submersible Level Transmitters

Part No.	Description	Price	Weight (lbs)
SLT-JB1	ProSense junction box for ProSense submersible hydrostatic level transmitter with SLT-VF1 indicating desiccant vent filter	\$149.00	2.5
SLT-JB2	ProSense junction box for ProSense submersible hydrostatic level transmitters with SLT-AB1 aneroid bellows	\$149.00	2.5

Dimensions

inches [mm]

Part No. SLT-JB1



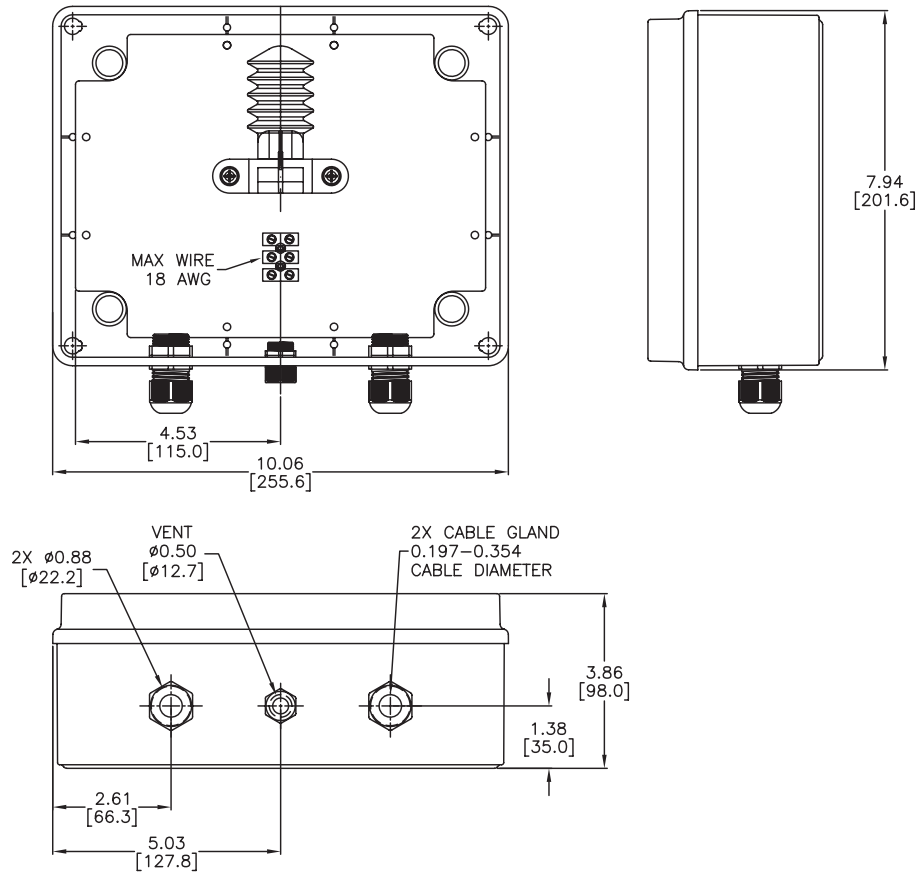
See our website www.AutomationDirect.com for complete Engineering drawings.

prosense[®] SLT Series Submersible Level Transmitter Accessories

Dimensions

inches [mm]

Part No. SLT-JB2



See our website www.AutomationDirect.com for complete Engineering drawings.

prosense[®] SLT Series Submersible Level Transmitters Accessories

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



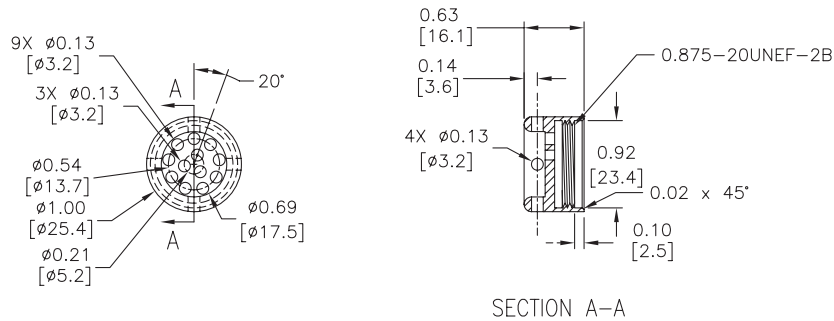
Submersible Level Transmitter Replacement Open-face Nose Cap

The open-face nose cap offers the best resistance to clogging. This single-piece nose cap provides maximum exposure of the sensing diaphragm to the liquid media through a protective perforated screen on the front. The open-face nose cap is constructed from molded polyoxymethylene (POM).

Submersible Level Transmitter Replacement Open-Face Nose Cap			
Part No.	Description	Price	Weight (lbs)
SLT-CAP1	ProSense open-faced nose cap, interchangeable with ported bullet nose cap on any ProSense SLT1 series hydrostatic level transmitter, polyoxymethylene (POM)	\$25.00	0.1

Dimensions

inches [mm]



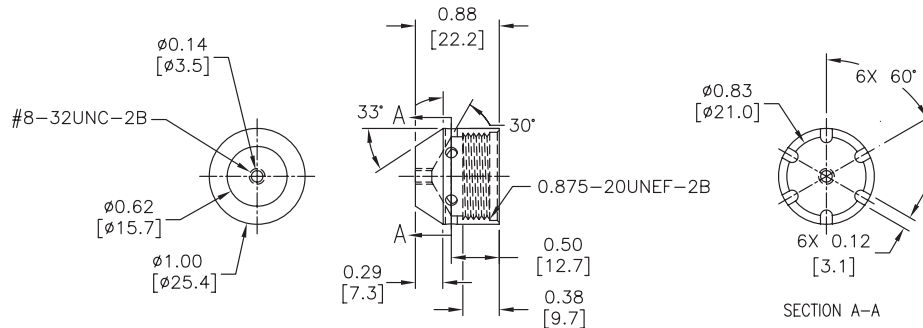
Submersible Level Transmitter Replacement Ported Bullet Nose Cap

The ported bullet nose cap offers the best protection against damage to the sensing diaphragm. This single-piece nose cap allows the liquid media to enter through six 1/8" holes around the outside and includes a #8-32 UNC-2B threaded hole on the front. The closed-face nose cap is constructed of molded polyoxymethylene (POM).

Submersible Level Transmitter Replacement Ported Bullet Nose Cap			
Part No.	Description	Price	Weight (lbs)
SLT-CAP2	ProSense ported bullet nose cap, replacement, for ProSense SLT1 series submersible hydrostatic level transmitters, polyoxymethylene (POM)	\$25.00	0.1

Dimensions

inches [mm]



See our website www.AutomationDirect.com for complete Engineering drawings.

proSense® Float Level Switches

Float Level Switches, Vertical Top-Mount

Float materials: Polypropylene (PP), Buna-N, 316SS, Kynar (PVDF), PTFE "Teflon"

- Stem materials: Polypropylene (PP), Polybutylene Terephthalate (PBT), Brass, 316SS, Kynar (PVDF), PTFE "Teflon"
- Mounting: 3/8-16 UNC, 1/8" MNPT, 1/4" MNPT (install +/- 30° from vertical)
- Can also be mounted with the mounting threads below the float (bottom mount) as in the bottom of a tank
- Temperature range: -40°F up to 392°F (depending on model)
- Max pressure ratings: up to 500 psig (FLS VL-600)
- Made in the USA



See pg. **IE-46**

Float Level Switches, Vertical Suspensible / Submersible

Float material: Buna-N

- Stem material: Brass
- Slosh shield: Polybutylene Terephthalate (PBT)
- Mounting: Suspensible cable
- Temperature range: -40°F to 221°F
- Max pressure: 50 psig
- Made in the USA
- The FLS-VL-900 suspensible / submersible float



See pg. **IE-55**

Float Level Switches, Horizontal Side-Mount

Float materials: Polypropylene (PP), Polybutylene Terephthalate (PBT), 316SS, Kynar (PVDF), Buna-N

- Stem materials: Polypropylene (PP), Polybutylene Terephthalate (PBT), 316SS, Kynar (PVDF), Brass
- Mounting: 3/8-24 UNC, 5/8-11 UNC, 1/2-13 UNC, 1/2" MNPT, dual 1/2" MNPT, 1" MNPT x 1/2" MNPT
- Temperature ranges: -40°F up to 392°F (depending on model)
- Max pressures: up to 300 psig
- Made in the USA



See pg. **IE-56**

Float Level Switch Kits

ProSense float level switch kits provide the opportunity to fabricate in the field a customized two-float level switch using the supplied kit components. Level switch kits are available in three different material constructions (polypropylene, brass, stainless steel) for compatibility with different liquids

Each kit contains:

- 2-inch NPT male threaded pipe plug with attached cuttable mounting tube
- Two additional cuttable connecting tubes
- Two floats
- Two SPST switch capsules that can function as either normally closed or normally open depending on float orientation
- Four compression unions
- One compression end cap
- Made in the USA



See pg. **IE-62**

Float Level Tilt Switches

Float level tilt switches provide inexpensive, efficient and highly reliable level detection in open vessels, sumps and ponds. The molded rubber float has an integral

three-conductor cable and operates on a mercury-free micro-switch device that is located inside the float on an anti-vibration mount.



See pg. **IE-66**



ProSense Float Level Switches

ProSense float level switches provide a low-cost general purpose solution for single point monitoring of liquid level in a variety of applications. Powerful permanent magnets within the float actuate a highly reliable and repeatable hermetically sealed reed switch as the float rises and lowers with liquid level. These switches are available in several different material constructions for compatibility with many types of liquids, a wide temperature range, and system pressure requirements. Vertical and horizontal mounting styles with several mounting thread variations are offered for ease of installation. Reed switches carry electrical ratings for both AC and DC voltage for adaptability to many control interface applications. Although these switches come configured for normally closed operation, most models can be easily converted to normally open operation in the field. Designed to be shock and vibration resistant, ProSense float level switches ensure long and trouble-free service.

Features

- Low-cost solution for general purpose single point liquid level monitoring
- Magnetically operated, highly reliable and repeatable hermetically sealed reed switch
- Vertical and horizontal mounting styles with a variety of mounting threads
- Several material constructions for compatibility with different liquids
- Electrical ratings for AC and DC voltage
- Most switches easily converted in the field from normally closed to normally open operation
- Made in the USA

Operation

ProSense float level switches are shipped configured for normally closed switch operation. Except where noted, most models can be easily converted to normally open operation in the field.

Vertical Mount Switches

For Vertical Mount switches, normally closed is defined as the switch mounted in a vertical position with the mounting threads above the float (top mount) and the float in the "dry" position at the bottom of the stem (Figure 1). When the liquid raises the float, the switch will open.

To change the operation of the switch to normally open, remove the C-clip, remove the float from the stem, flip the float 180 degrees, re-install the float on the stem and replace the C-clip. Now the switch will be normally open in the "dry" position and will close when the liquid raises the float.

Normally Closed Installation (Dry)

To Change Operation To
Normally Open

- Step 1: Remove C-Clip
- Step 2: Flip Float On Stem 180°
- Step 3: Reinstall C-Clip



Figure 1: Vertical (Top) Mount Switch Operation

Vertical Mount switches can also be mounted with the mounting threads below the float (bottom mount) as in the bottom of a tank. If bottom mounted, switch operation will be the opposite of top mounted installation described above.

Horizontal Mount Switches

For Horizontal Mount switches installed in the side of a tank (side-mounted), normally closed is defined as when the float arm is below and parallel with the stem in the "dry" position (Figure 2). When the liquid raises the float, the switch will open.

To change the operation of the switch, rotate the installed position of the switch 180 degrees so the float arm is above and hanging at an angle with the stem. Now the switch will be normally open in the "dry" position and will close when the liquid raises the float.

Normally Closed Installation (Dry)



Normally Open Installation (Dry)

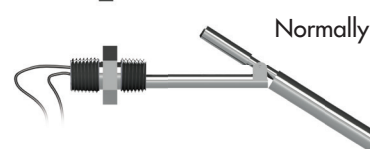


Figure 2: Horizontal Mount Switch Operation

pro^{ense}® Float Level Switches, Vertical Top-Mount

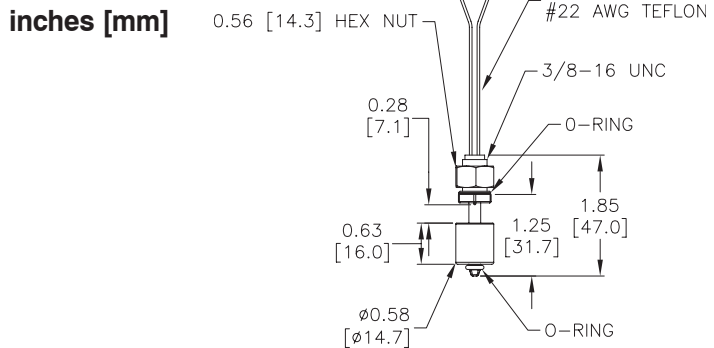
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-VS-100	\$20.25	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	50 psig [3.4 bar]	0.7	SPST-NC, 15W max 120VAC, 0.12 A 100VDC, 0.1 A 24VDC, 0.3 A 12VDC, 0.3 A	22AWG, Teflon 24in	Ø 0.375 in [9.53 mm] (Install ± 30° max from vertical)	cURus, CE (See Approvals table for details)	0.02

* Normally closed switch only. Cannot be converted to function as normally open. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions



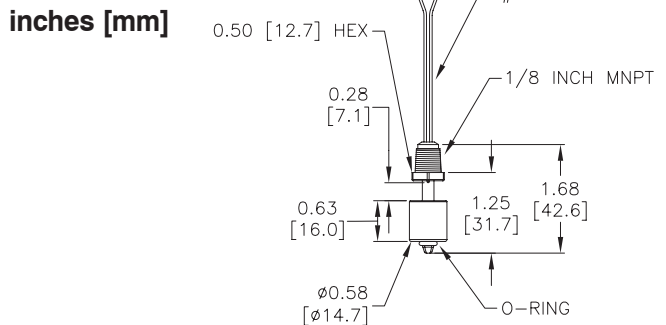
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VS-200	\$20.25	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	50 psig [3.4 bar]	0.7	SPST-NC, 15W max 120VAC, 0.12 A 100VDC, 0.1 A 24VDC, 0.3 A 12VDC, 0.3 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	CE (See approvals table for details)	0.02

* Normally closed switch only. Cannot be converted to function as normally open. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions



proense® Float Level Switches, Vertical Top-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

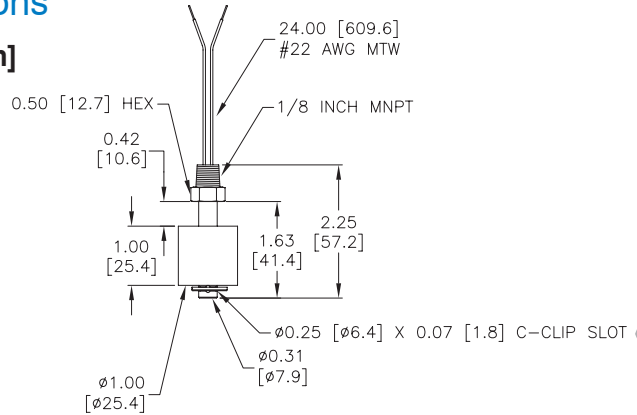
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-100	\$10.50	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.8	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range*	Pressure	Float Specific Gravity	Electrical Rating†	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-200	\$12.00	Buna-N	Polybutylene Terephthalate (PBT)	-40°F to 221°F [-40°C to 105°C]	150 psig [10.4 bar]	0.45	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

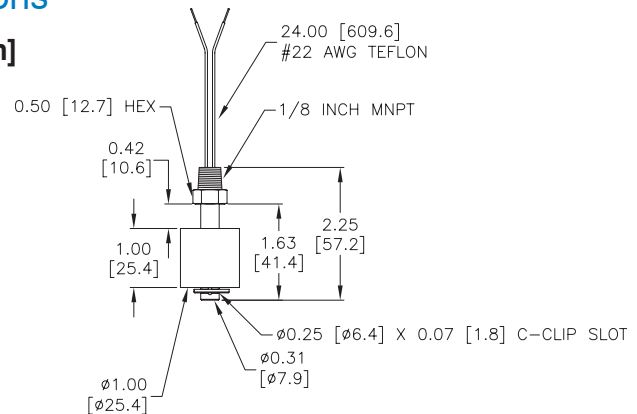
* Not for use in hot water at temperatures above 149°F [65°C]

† Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



pro^{sense}® Float Level Switches, Vertical Top-Mount

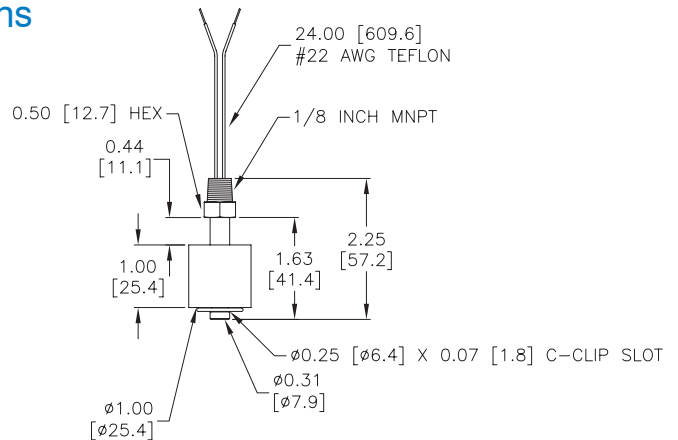
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-300	\$23.50	Buna-N	Brass	-40°F to 221°F [-40°C to 105°C]	150 psig [10.3 bar]	0.45	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



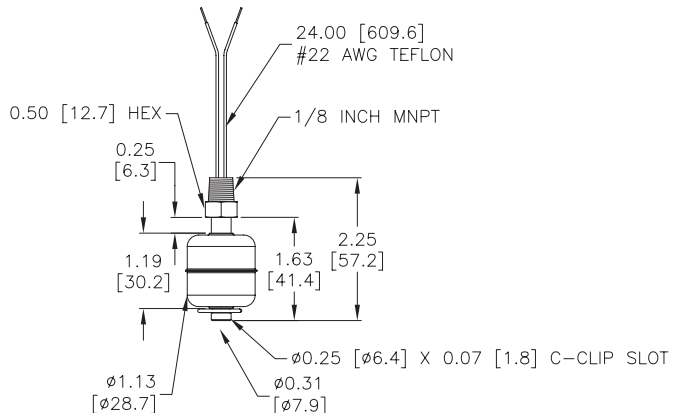
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-400	\$38.00	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	300 psig [20.7 bar]	0.7	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



proense® Float Level Switches, Vertical Top-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

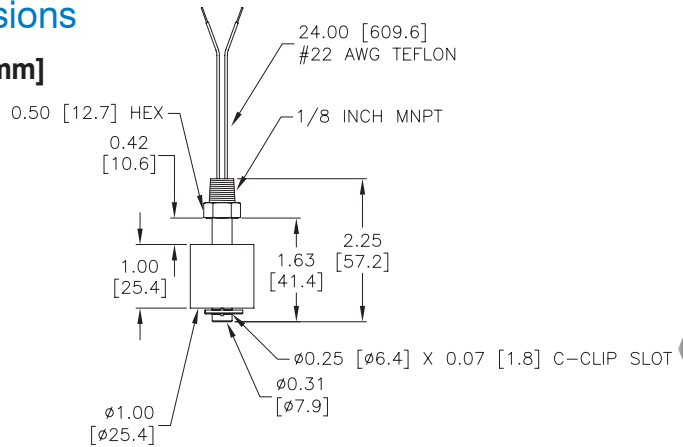
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-500	\$29.50	Kynar (PVDF)	Kynar (PVDF)	-40°F to 221°F [-40°C to 105°C]	15 psig [1bar]	0.85	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CE (See Approvals table for details)	0.1

* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



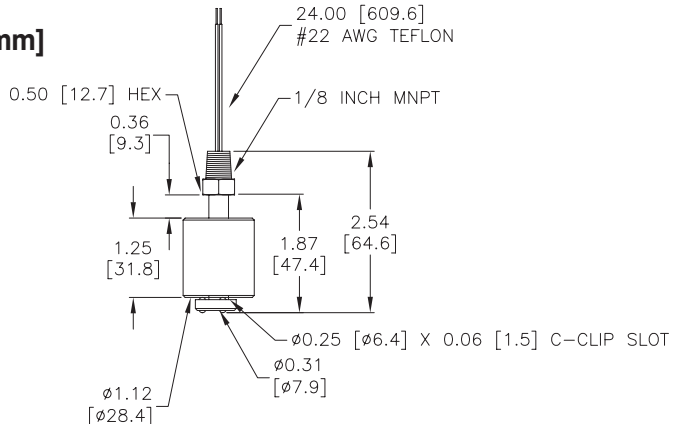
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VM-600	\$173.00	Polytetrafluoroethylene (PTFE) "Teflon"	PTFE "Teflon"	-40°F to 302°F [-40°C to 150°C]	25 psig [1.7 bar] @ 21°C [69.8°F]	0.69	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	CE (See Approvals table for details)	0.1

* Normally closed switch. Cannot be converted to function as normally open. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



pro^o sense® Float Level Switches, Vertical Top-Mount

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem / Slosh Shield Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-010	\$20.75	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.8	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

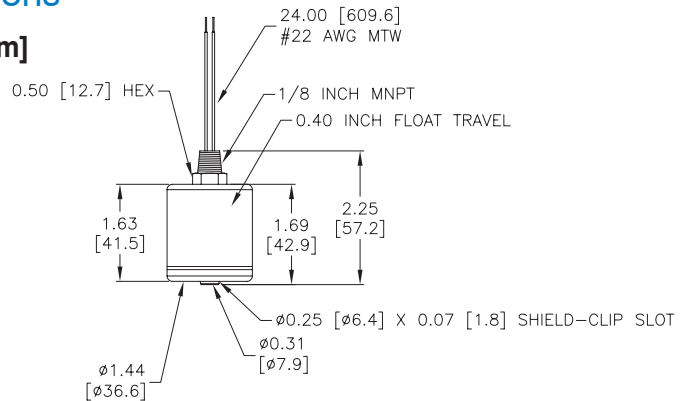
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem / Slosh Shield Material	Temperature Range*	Pressure	Float Specific Gravity	Electrical Rating ¹	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-020	\$25.25	Buna-N	Polybutylene Terephthalate (PBT)	-40°F to 221°F [-40°C to 105°C]	150 psig [10.3 bar]	0.45	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

* Not for use in hot water at temperatures above 149°F [65°C]

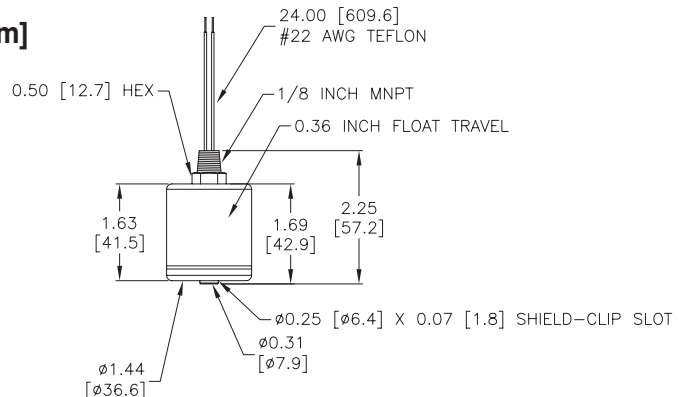
¹ Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^{sense}® Float Level Switches, Vertical Top-Mount

Company Information

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Motor Controls

Sensors: Proximity

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Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem / Slosh Shield Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-030	\$53.00	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	300 psig [20.7 bar]	0.7	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/8 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.2

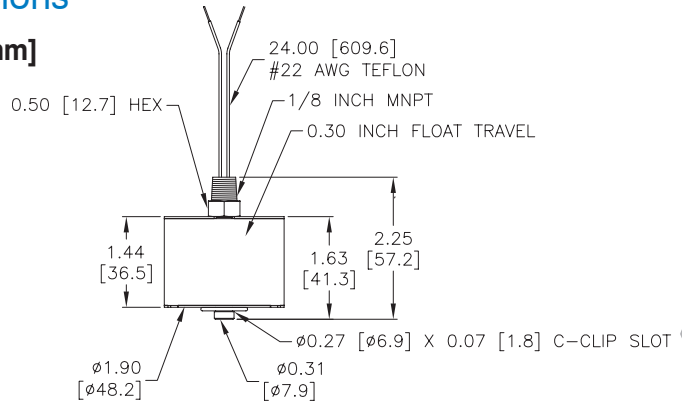
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem / Slosh Shield Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-040	\$93.00	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	200 psig [13.8 bar]	0.55	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/4 in MNPT (Install ± 30° max from vertical)	CSA, CE, (See Approvals table for details)	0.4

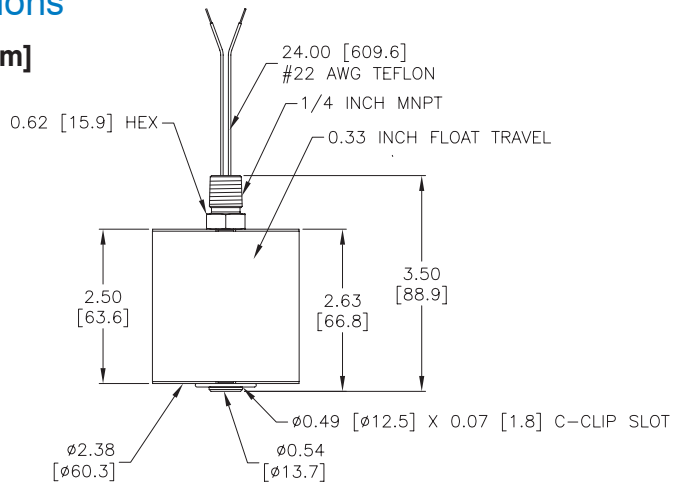
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^oense® Float Level Switches, Vertical Top-Mount

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-100	\$43.25	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.75	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, MTW 24in	1/4 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

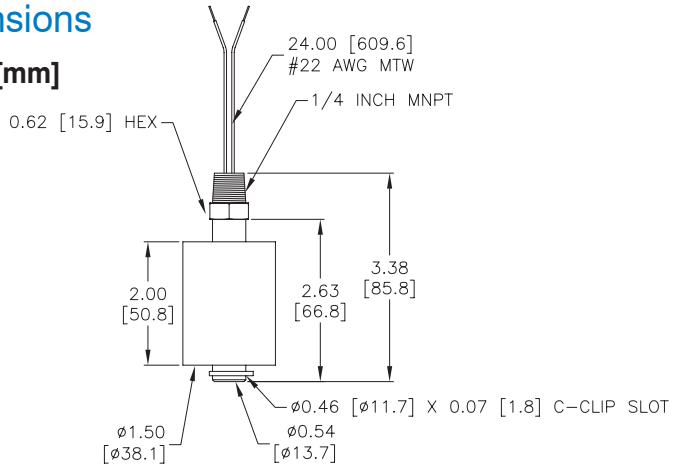
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range*	Pressure	Float Specific Gravity	Electrical Rating ¹	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-200	\$25.00	Buna-N	Polybutylene Terephthalate (PBT)	-40°F to 221°F [-40°C to 105°C]	150 psig [10.3 bar]	0.45	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/4 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.1

* Not for use in hot water at temperatures above 149°F [65°C]

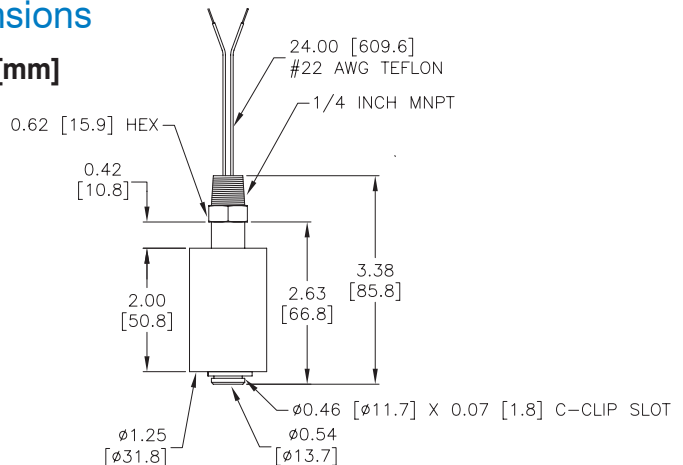
¹ Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



prosense® Float Level Switches, Vertical Top-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

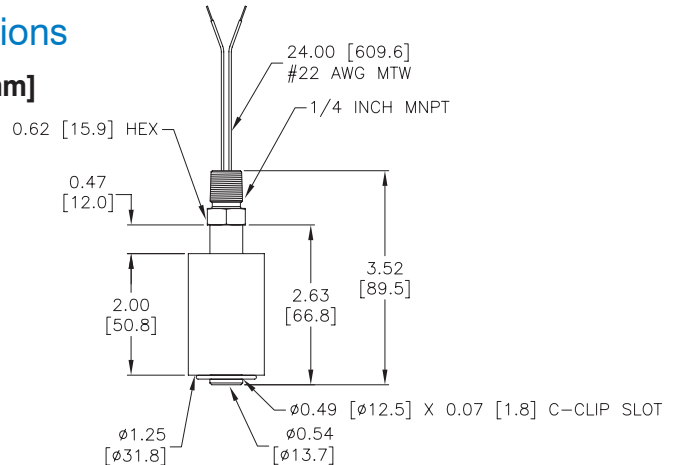
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-300	\$25.00	Buna-N	Brass	-40°F to 221°F [-40°C to 105°C]	150 psig [10.3 bar]	0.45	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, MTW 24in	1/4 in MNPT (Install ± 30° max from vertical)	cURus, CSA, CE (See Approvals table for details)	0.3

* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



Float Level Switch Specifications												
Part No.	Price	Float Material	Stem Material	Minimum** Temperature	Maximum Temperature	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-400	\$53.00	316SS	316SS	-40°F [-40°C]	392°F [200°C]	200 psig [13.8 bar]	0.55	240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/4 in MNPT (Install ± 30° max from vertical)	UR, CSA, CE, (See Approvals table for details) Haz-Loc Approvals	0.3

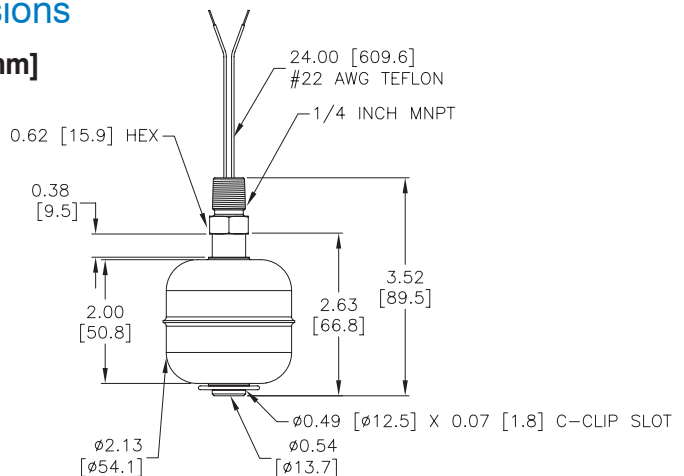
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

** -40°F [-40°C] rating not UL tested

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



pro^{ense}® Float Level Switches, Vertical Top-Mount

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-500	\$257.00	Polytetrafluoroethylene (PTFE) "Teflon"	PTFE "Teflon"	-40°F to 302°F [-40°C to 150°C]	40 psig [2.8 bar] @ 21°C [69.8°F]	0.63	SPST-NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 24in	1/4 in MNPT (Install ± 30° max from vertical)	CE (See Approvals table for details)	0.1

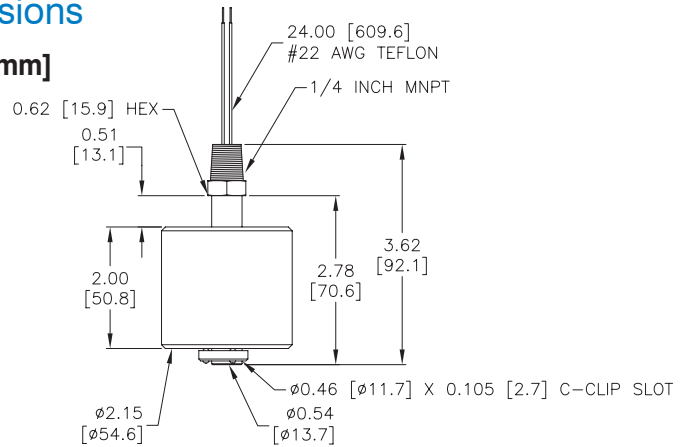
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VL-600	\$67.25	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	500 psig [34.5 bar]	0.7	SPST-NC, 100W max 240VAC, 0.4 A 120VAC, 1A 120VDC, 0.4 A 24VDC, 1A	22AWG, Teflon 24in	1/4 in MNPT (Install ± 30° max from vertical)	CE (See Approvals table for details)	0.3

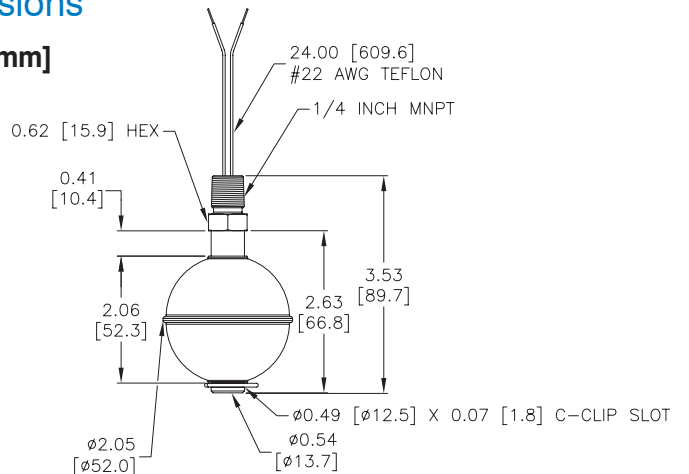
* Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^oense® Float Level Switches, Vertical Suspendible / Submersible

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

Float Level Switch Specifications												
Part No.	Price	Float Material	Stem Material	Slosh Shield	Temperature Range*	Pressure	Float Specific Gravity	Electrical Rating ¹	Lead Wires	Mounting	Approvals	Weight (lbs)
FLS-VL-900	\$98.75	Buna-N	Brass	Polybutylene Terephthalate (PBT)	-40°F to 221°F [-40°C to 105°C]	50 psig [3.4 bar]	0.45	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Halar jacketed 20-foot cable	Suspendible cable	CE (See Approvals table for details)	0.3

* Not for use in hot water at temperatures above 149°F [65°C]

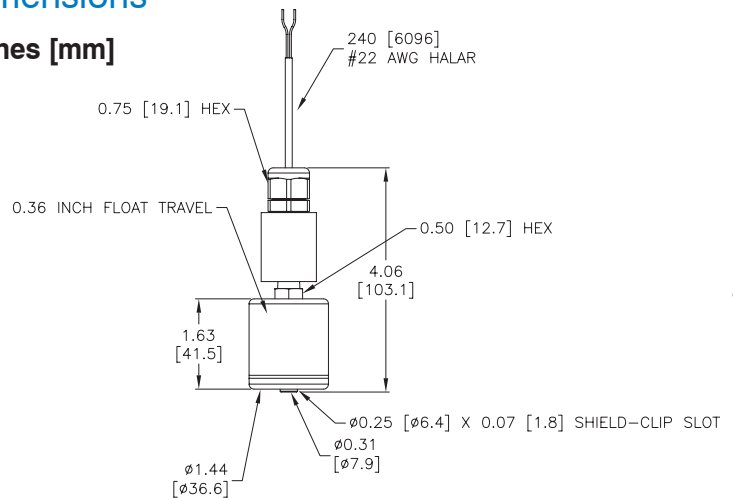
¹ Normally closed switch. Can be converted in the field to function as normally open as described under "Operation". Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^{sense}® Float Level Switches, Horizontal Side-Mount

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-HS-100	\$12.00	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.6	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	Dual 1/2 in MNPT	cURus, CSA, CE (See Approvals table for details)	0.1

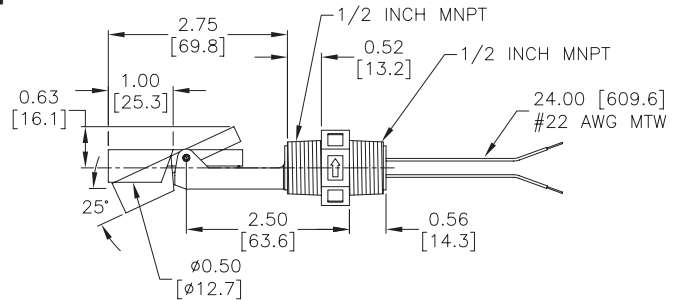
* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-HS-200	\$14.25	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.6	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	Ø 0.625 in [16 mm]	cURus, CSA, CE (See Approvals table for details)	0.1

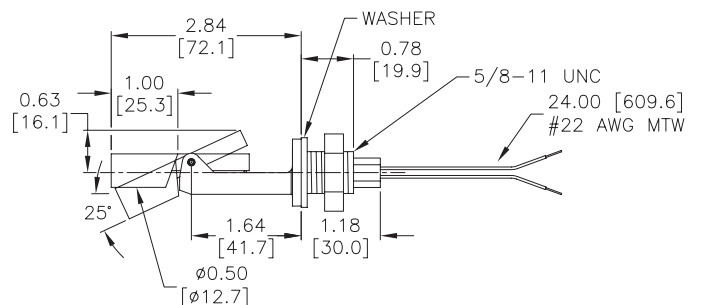
* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^{sense}® Float Level Switches, Horizontal Side-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

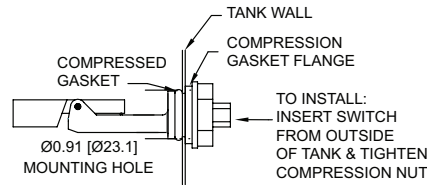
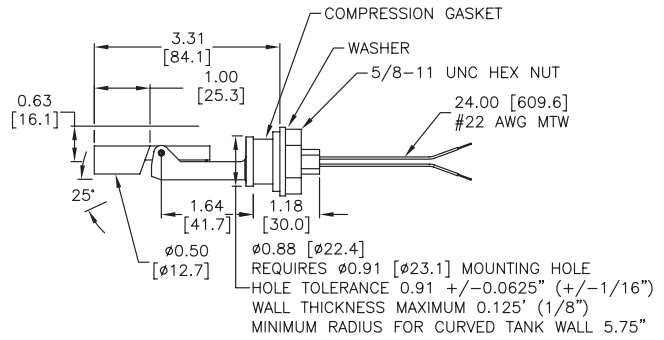
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-HS-300	\$25.75	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.6	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	Ø 0.91 in [23.1 mm]	CE (See Approvals table for details)	0.1

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range*	Pressure	Float Specific Gravity	Electrical Rating ¹	Lead Wires ²	Mounting Thread	Approvals	Weight (lbs)
FLS-HM-100	\$18.00	Polybutylene Terephthalate (PBT)	Polybutylene Terephthalate (PBT)	-40°F to 266°F [-40°C to 130°C]	100 psig [6.9 bar]	0.7	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Dual 1/2 in MNPT	cURus, CSA, CE (See Approvals table for details)	0.1

* Not for use in hot water at temperatures above 149°F [65°C]

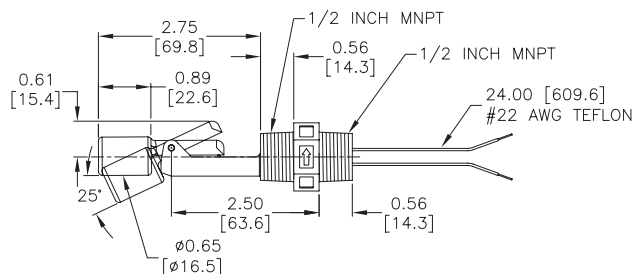
¹ Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

² Leadwires rated for 140°F [60°C] max when exposed to oil

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



pro^{sense}® Float Level Switches, Horizontal Side-Mount

Float Level Switch Specifications												
Part No.	Price	Float Material	Stem Material	Minimum**	Maximum	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-HM-200	\$130.00	316SS	316SS	-40°F [-40°C]	392°F [200°C]	300 psig [20.7 bar]	0.6	240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Dual 1/2 in MNPT	UR, CSA, CE (See Approvals table for details) Haz-Loc Approvals	0.3

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

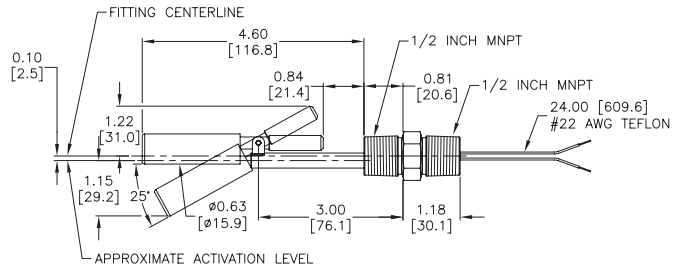
** -40°F [-40°C] rating not UL tested

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications												
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)	
FLS-HM-300	\$24.50	Kynar (PVDF)	Kynar (PVDF)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.93	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Dual 1/2 in MNPT	cURus, CE, (See Approvals table for details)	0.2	

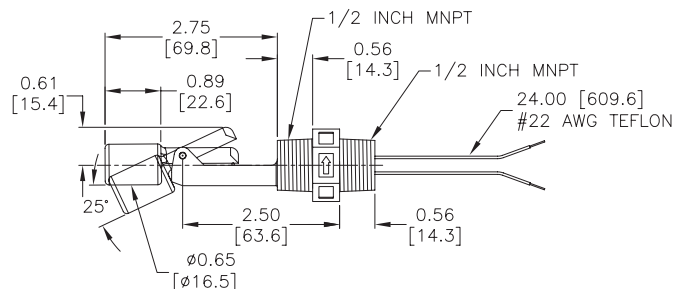
* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



pro^{sense}® Float Level Switches, Horizontal Side-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

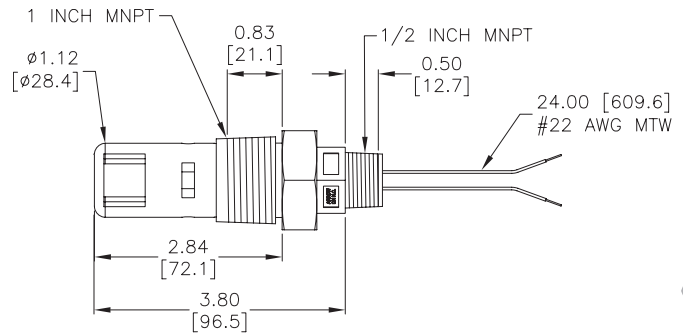
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem / Slosh Shield Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-HL-010	\$25.25	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.6	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, MTW 24in	1in MNPT x 1/2 in MNPT	CE (See Approvals table for details)	0.2

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.

Dimensions

inches [mm]



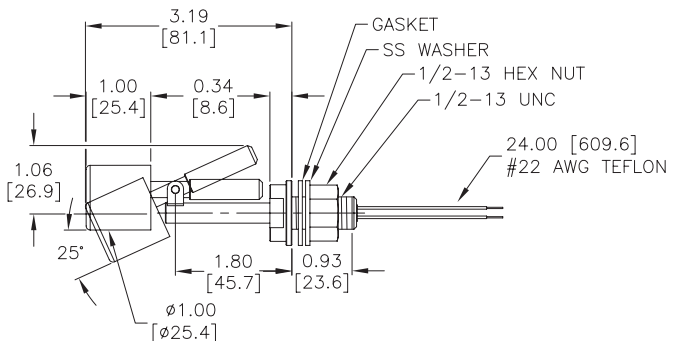
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-HL-200	\$72.50	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	100 psig [6.9 bar]	0.7	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Ø 0.563 in [14.3 mm]	cURus, CE (See Approvals table for details)	0.3

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.

Dimensions

inches [mm]



pro^{sense}® Float Level Switches, Horizontal Side-Mount

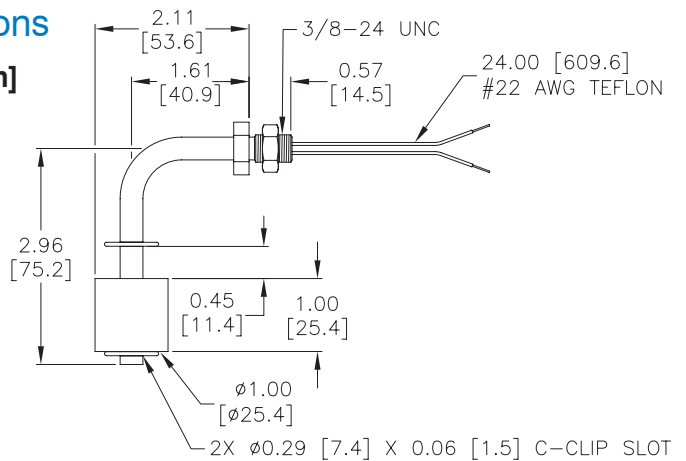
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-BM-100	\$44.25	Polypropylene (PP)	316SS	-40°F to 221°F [-40°C to 105°C]	100 psig [6.9 bar]	0.8	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Ø 0.406 in [10.3 mm]	CE (See Approvals table for details)	0.2

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



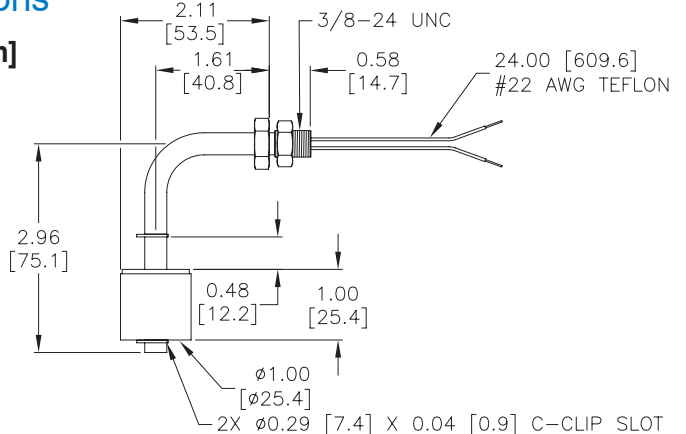
Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-BM-200	\$38.00	Buna-N	Brass	-40°F to 221°F [-40°C to 105°C]	150 psig [10.3 bar]	0.45	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Ø 0.406 in [10.3 mm]	CE (See Approvals table for details)	0.2

* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions inches [mm]



proense® Float Level Switches, Horizontal Side-Mount

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

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Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Hole	Approvals	Weight (lbs)
FLS-BM-300	\$41.50	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	300 psig [20.7 bar]	0.7	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	Ø 0.406 in [10.3 mm]	CSA, cURus, CE (See Approvals table for details)	0.2

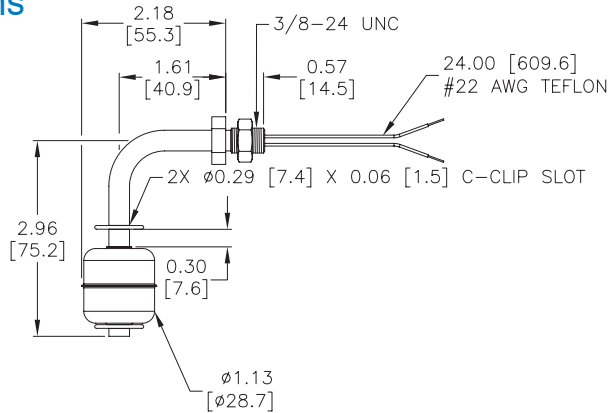
* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



Float Level Switch Specifications											
Part No.	Price	Float Material	Stem Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-BL-100	\$91.75	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	50 psig (3.4 bar)	0.6	SPST-NC, 30W max 240VAC, 0.14 A 120VAC, 0.28 A 120VDC, 0.07 A 24VDC, 0.28 A	22AWG, Teflon 24in	1/2 in MNPT	CE (See Approvals table for details)	0.3

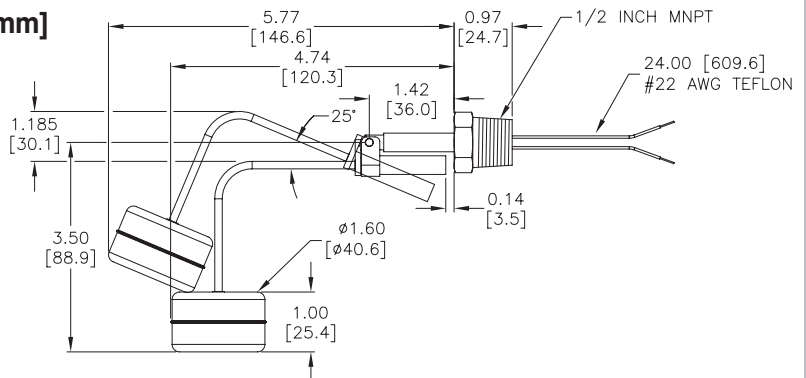
* Can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



Dimensions

inches [mm]



proSense® Float Level Switch Kits



Plastic



Brass



Stainless Steel

Float Level Switch Kits

ProSense float level switch kits provide the opportunity to fabricate in the field a customized two-float level switch with a maximum stem length of 36 inches (914.4 mm) using the supplied kit components. Level switch kits are available in three different material constructions for compatibility with different liquids.

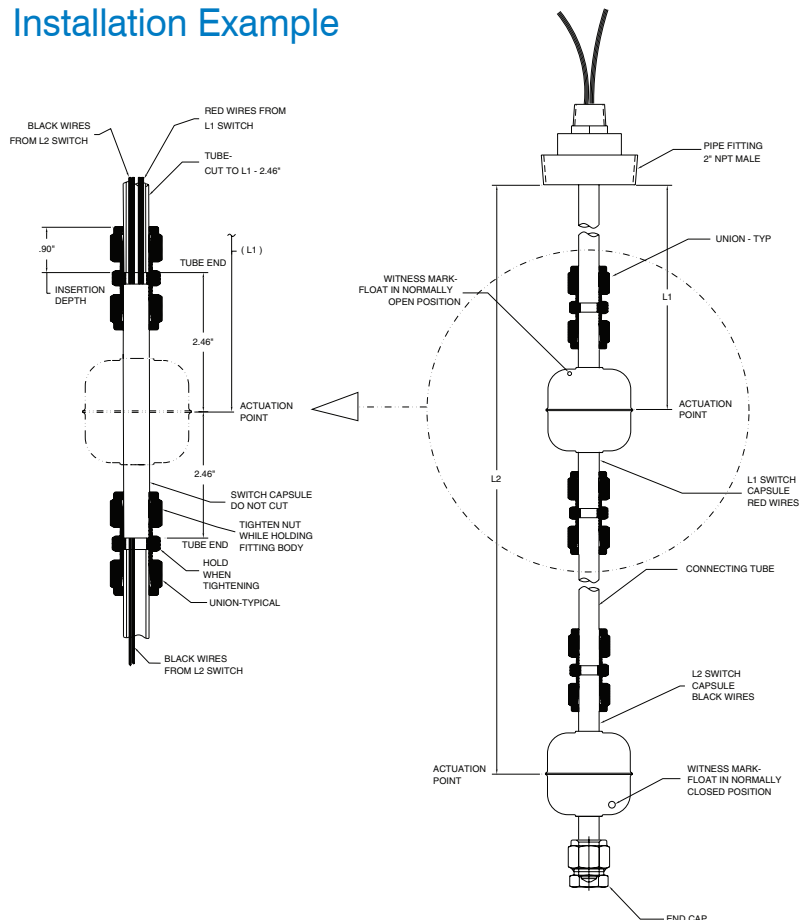
Each kit is furnished with the following components:

- 2-inch NPT male threaded pipe plug with attached cuttable mounting tube
- Two additional cuttable connecting tubes
- Two floats
- Two SPST switch capsules that can function as either normally closed or normally open depending on float orientation
- Four compression unions
- One compression end cap

Assembly of ProSense float level switch kits generally involves the following steps:

- Lay out the supplied components in the required configuration
- Determine the lengths of the connecting tubes and cut them accordingly
- De-burr and smooth the sharp edges of the cut tubes prior to installation
- Perform a trial assembly and using a continuity indicator (light, buzzer, Ohm meter, etc.), verify that the switch actuation levels are at the required levels and the switch action (normally open or normally closed) is correct for the application.
- When switch set-up is satisfactory, tighten the fittings and apply thread sealant to the pipe threads on the top fitting before installing the switch into the tank.

Installation Example



proense® Float Level Switch Kits

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

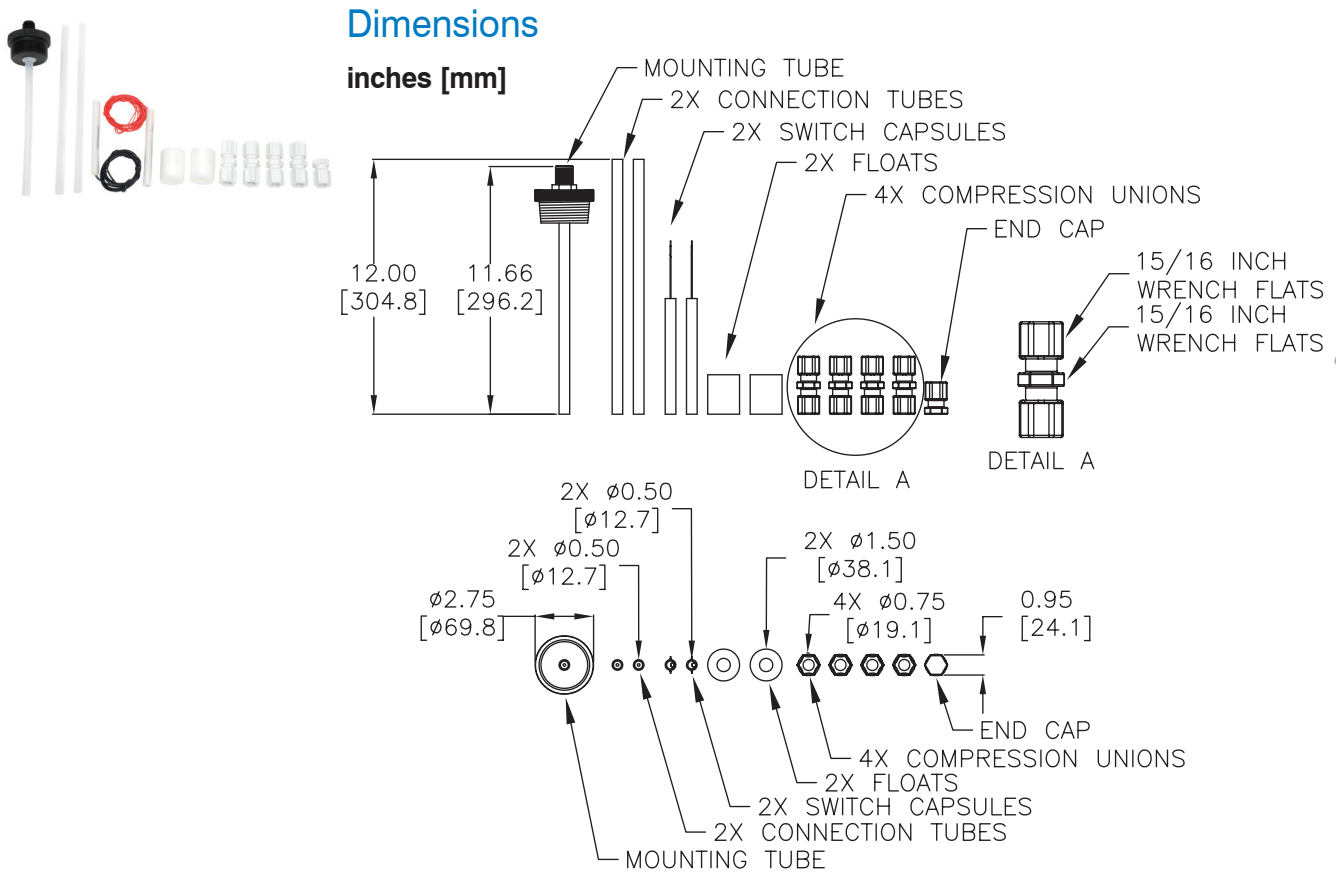
Appendix Book 2

Terms and Conditions

Float Level Switch Specifications											
Part No.	Price	Float Material	Other Components Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VK-100	\$314.00	Polypropylene (PP)	Polypropylene (PP)	-40°F to 221°F [-40°C to 105°C]	100 psig [6.89 bar]	0.75	SPST NO or NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 6ft	2in MNPT pipe plug / 1/2 in MNPT conduit	cURus, CE (See Approvals table for details)	1.0

* Each float can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.

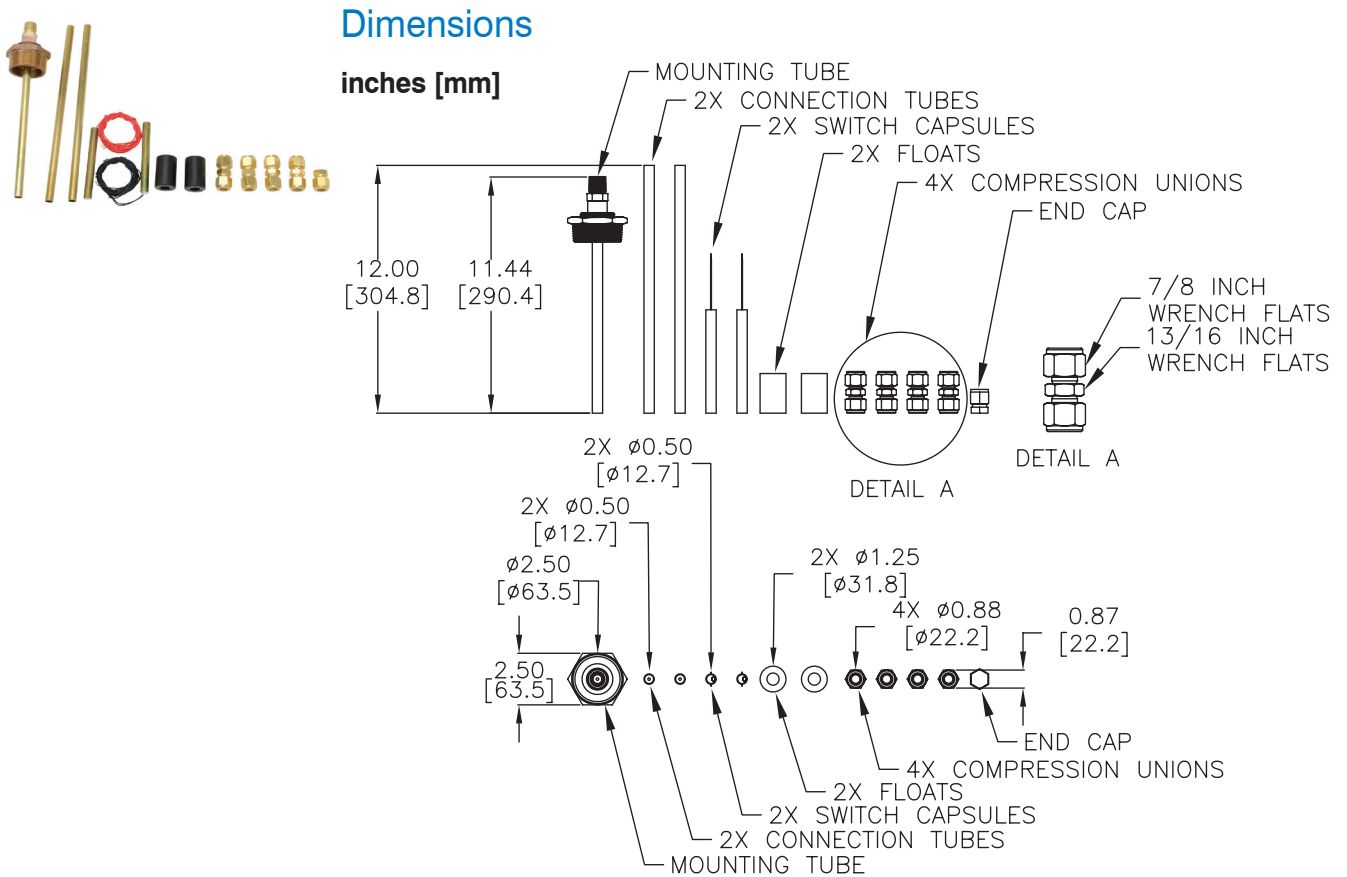


pro^oense® Float Level Switch Kits

Float Level Switch Specifications											
Part No.	Price	Float Material	Other Components Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VK-200	\$177.00	Buna-N	Brass	-40°F to 221°F [-40°C to 105°C]	150 psig [10.34 bar]	0.45	SPST NO or NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 6ft	2in MNPT pipe plug / 1/2 in MNPT conduit	cURus, CE (See Approvals table for details)	4.0

* Each float can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



prosense® Float Level Switch Kits

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

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Sensors: Flow

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Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

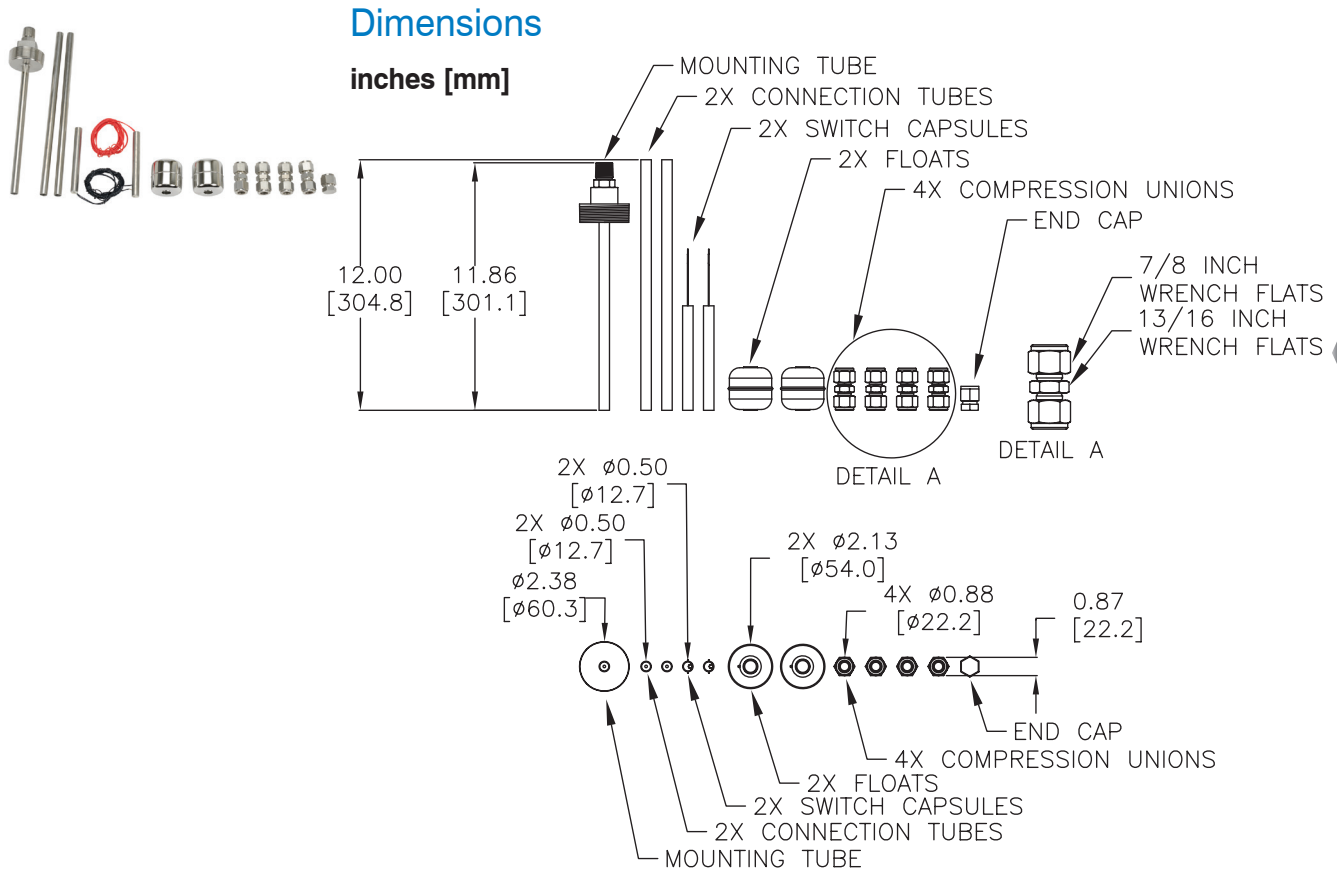
Appendix Book 2

Terms and Conditions

Float Level Switch Specifications											
Part No.	Price	Float Material	Other Components Material	Temperature Range	Pressure	Float Specific Gravity	Electrical Rating*	Lead Wires	Mounting Thread	Approvals	Weight (lbs)
FLS-VK-300	\$358.00	316SS	316SS	-40°F to 392°F [-40°C to 200°C]	200 psig [13.79 bar]	0.55	SPST NO or NC, 60W max 240VAC, 0.4 A 120VAC, 0.5 A 120VDC, 0.2 A 24VDC, 0.5 A	22AWG, Teflon 6ft	2in MNPT pipe plug / 1/2 in MNPT conduit	cURus, CE (See Approvals table for details)	4.0

* Each float can be installed to function as either normally open or normally closed switch. Electrical ratings are for resistive loads ONLY. For inductive loads, maximum life will be obtained with the use of appropriate transient suppression such as an MOV or TVS.

Caution: Not recommended for use with PLC AC inputs or other digital AC input devices due to damage that may occur to the switch or input device.



pro^osense® Float Level Tilt Switches

Float Level Tilt Switches

Float level tilt switches provide inexpensive, efficient and highly reliable level detection in open vessels, sumps and ponds.

The molded rubber float has an integral three-conductor cable and operates on a mercury-free micro-switch device that is located inside the float on an antivibration mount.

The rubber float is constructed of ethylene propylene diene (EPDM), a synthetic rubber with rigid and durable characteristics for long service life and resistance to heat, oxidation, ozone and aging due to weather. EPDM has good electrical resistivity, as well as resistance to solvents such as water, acids, alkalies, phosphate esters and many ketones and alcohols.

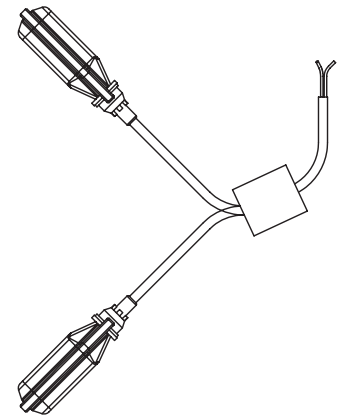
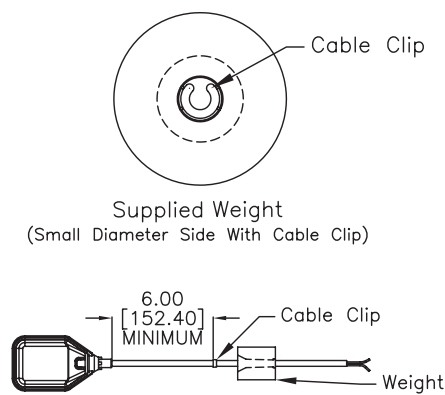
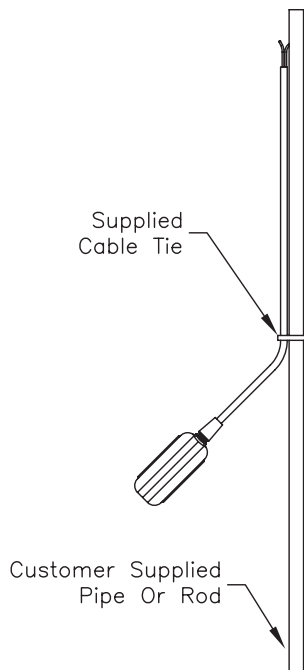
The basic operating principle is that as the fluid level rises, the float will rise, causing the microswitch to tilt and generate a signal that can be used to start or stop a pump, open or close a valve or actuate indicator alarms as required. Float travel is in an approximately $\pm 45^\circ$ arc from its nominal position.

Features

- Low cost
- Easy installation
- Versatile application
- Mercury-free SPDT 16 amp switch
- 7 meter (22.9 foot) PVC jacketed cable



Installation Example



Float Travel is proportional to distance between float body and weight or anchor point.

Example 1: 6 inches between float body and weight will require 12 inches total float travel for proper operation of switch.

Example 2: 18 inches between float body and weight will require 36 inches total float travel to proper operation of switch.

Switch point is approximately $\pm 45^\circ$ deg from horizontal at tethered or weighted point on cable.

proense® Float Level Tilt Switches

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow

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Signal Devices

Process

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Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

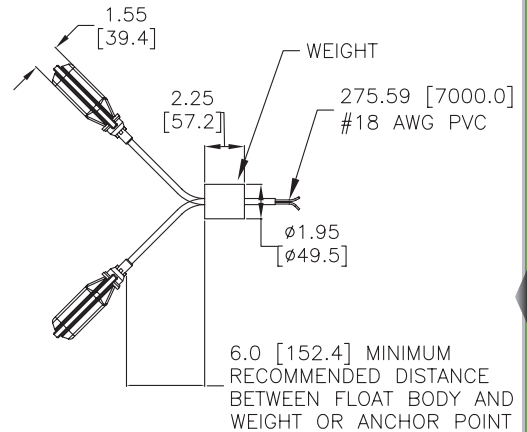
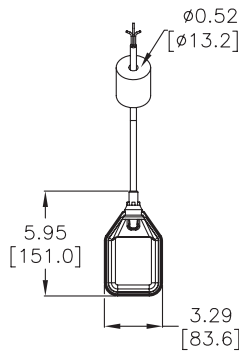
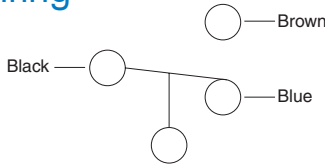
Float Level Tilt Switch Specifications											
Part No.	Price	Float Material	Sealed Weight Housing Material	Float Shape	Temperature Range	Pressure	Float Specific Gravity	Electrical Ratings*	Cable	Approvals	Weight
FLS-HT-100	\$32.25	EPDM Rubber	Polypropylene (PP)	Rectangle	32°F to 158°F [0°C to 70°C]	14.5 psig [1bar] Max submerged depth 65 feet [20 meters]	0.9 to 1.3	SPDT 16A 250VAC, 60Hz 1/2 HP, 250VAC, 60Hz 10A, 24VDC	3-conductor 18AWG PVC jacket 22.9 ft [7 meter]	CE	3.5

Dimensions

inches [mm]



Wiring



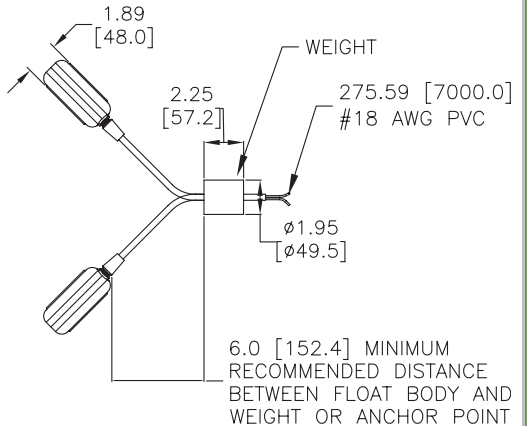
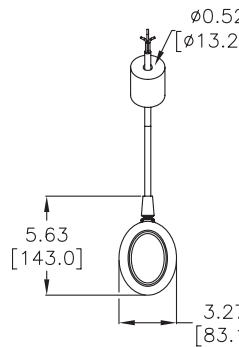
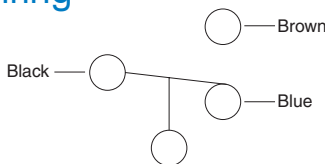
Float Level Tilt Switch Specifications											
Part No.	Price	Float Material	Sealed Weight Housing Material	Float Shape	Temperature Range	Pressure	Float Specific Gravity	Electrical Ratings*	Cable	Approvals	Weight
FLS-HT-200	\$32.25	EPDM Rubber	Polypropylene (PP)	Oval	32°F to 158°F (0°C to 70°C)	14.5 psig [1bar] Max submerged depth 65 feet [20 meters]	0.7 to 1.3	SPDT 16A 250VAC, 60Hz 1/2 HP, 250VAC, 60Hz 10A, 24VDC	3-conductor 18AWG PVC jacket 22.9 ft [7 meter]	CE	3.5

Dimensions

inches [mm]



Wiring



pro^oense® Float Level Switches

Agency Approvals					
Part Number	cURus (E320431)	UR Class I, Group A,B,C,D / Class II, Group E, F, G / Class III (E366154)	CSA (2679134)	CSA Class I, Group A,B,C,D / Class II, Group E, F, G / Class III (2685021)	CE
FLS-VS-100	✓				✓
FLS-VS-200					✓
FLS-VM-100	✓		✓		✓
FLS-VM-200	✓		✓		✓
FLS-VM-300	✓		✓		✓
FLS-VM-400	✓		✓		✓
FLS-VM-500	✓				✓
FLS-VM-600					✓
FLS-VL-010	✓		✓		✓
FLS-VL-020	✓		✓		✓
FLS-VL-030	✓		✓		✓
FLS-VL-040			✓		✓
FLS-VL-100	✓		✓		✓
FLS-VL-200	✓		✓		✓
FLS-VL-300	✓		✓		✓
FLS-VL-400		✓		✓	✓
FLS-VL-500					✓
FLS-VL-600					✓
FLS-VL-900					✓
FLS-HS-100	✓		✓		✓
FLS-HS-200	✓		✓		✓
FLS-HS-300					✓
FLS-HM-100	✓		✓		✓
FLS-HM-200	✓	✓		✓	✓
FLS-HM-300	✓				✓
FLS-HL-010					✓
FLS-HL-200	✓				✓
FLS-BM-100					✓
FLS-BM-200					✓
FLS-BM-300	✓		✓		✓
FLS-BL-100					✓
FLS-VK-100	✓				✓
FLS-VK-200	✓				✓
FLS-VK-300	✓				✓
FLS-HT-100					✓
FLS-HT-200					✓