



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-761.900(9)

Form Title: Storage Tank Equipment

Registration Form

Effective Date: July 2019

Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: Earthsafe Systems, Inc. Contact Name: Bill Edwards
Company Address: 2300 Wisconsin Ave, Ste 317 City, State: Downers Grove, IL Zip: 60515
E-mail: bill.edwards@earthsafe.com Contact Number: 630-842-8689
Product Name: Earthsafe M4 Fuel Tank Fill Station
Model Number(s): M4 Product Type: AST Spill Containment and Overfill Protection
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST),
62-762.501(2)(e)2

F.A.C.: Write a brief description of equipment registration request including product limitations:

Tank Fill Station with spill containment and overfill protection. Product incorporates high level sensors and leak sensors manufactured by FPI-Rochester Sensors per EQ-817.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☐	☒
10. Any requirements for company-certified installers or trainers?	☒	☐	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- _____	☐	☒	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☐	☒

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

Earthsafe Tank Fill systems have been used for over 30 years to safely transfer fuel from delivery trucks to aboveground storage tanks.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

William Edwards, President

Printed Name and Title

Bill Edwards

Signature (right click to sign)

Digitally signed by Bill Edwards
Date: 2022.10.05 12:29:56 -05'00'

10/05/2022

Date

For Department Use Only:

Date Application Received: 10/05/2022 Application complete: Yes: ☒ No: ☐

EQ- 984 Date of complete or incomplete letter sent: 10/12/2022 Date Equipment Requires Renewal: 10/12/2027

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.

Florida Department of Environmental Protection
Storage Tank System Equipment Registration Form
Earthsafe Systems, Inc for M4 Fuel Tank Fill Station

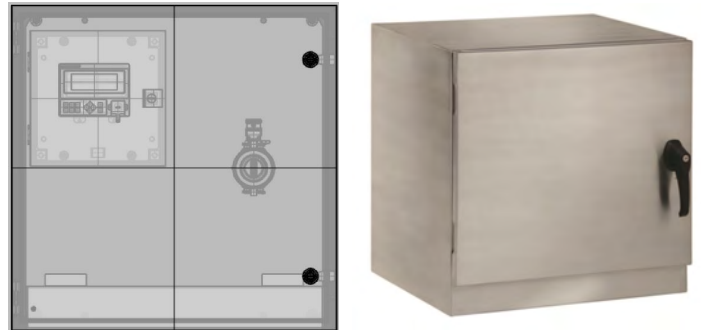
Supplemental Information

1. M4 Data Sheet
2. M4 Drawing
3. M4 Instruction Manual
4. C8 Controller Data Sheet
5. FPI Rochester EQ-817 High Level and Leak Sensors

M4

M4: Remote Tank Fill Station

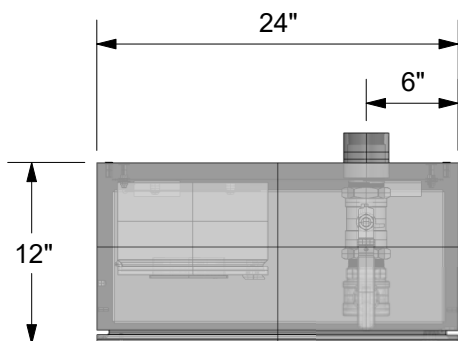
Fill Station for delivery by pump equipped truck. 2 inch tight-fill hose adapter and cap, shutoff valve, check valve, actuated valve. Optional strainer or filter. Controller monitors high level sensor for 85-90-95% points with audible and visual alarms. Optional analog sensor and display for tank gallons, fuel height, and % full.



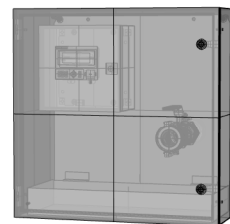
Dimensions	24"W x 24" H x 12"D (600W x 600H x 300D)
Flow Capacity	100 GPM (400 LPM)
Pressure Capacity	150 PSI (690 kPa)
Inlet / Outlet (FNPT)	2 IN (50) Standard 3 IN (75) and 4 IN (200) Opt
Weight (Estimate)	100 LB (50 KG)
Standard Accessories	Hose Adapter and Cap Manual Ball Valve Check Valve Actuated Ball Valve 3 Point High Level Sensor for 85-90-95% Levels
Construction	Stainless Steel Construction Containment Basin (3 GAL)

Power	120-230 VAC, 1P, 50-60 Hz
Controller	C1 Controller
Output Relays (Dry Contact)	Valve Open Fill Alarm
Interface	Fill-Off-Jog Select Power ON Light Valve Open Light Level Alarm Light Audible Horn Silence Pushbutton
Analog Level (Option)	4-20 mA Transmitter Level Display (% Full/ GAL)
Optional Accessories	Floor Stand C8 Control Modbus Interface Dual-Tank Control
How to Order	M4.1 Single Tank Fill M4.2 Dual Tank Fill

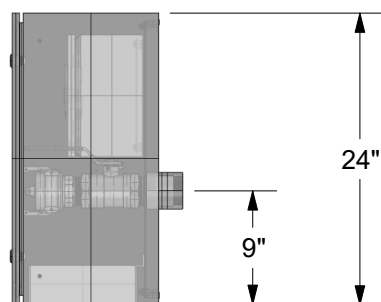
TOP VIEW



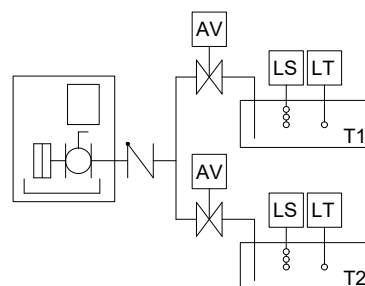
PERSPECTIVE



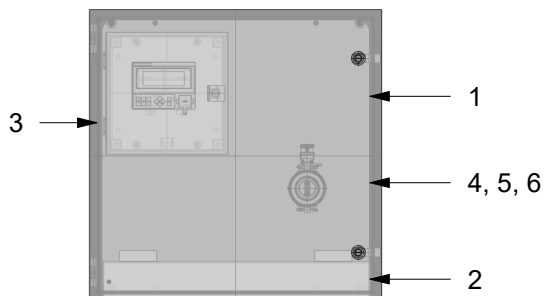
SIDE VIEW



FLOW DIAGRAM



FRONT VIEW



FILL STATION		
MARK	QTY	DESCRIPTION
	EA	
1	1	ENCLOSURE 24X24 STAINLESS
2	1	CONTAINMENT BASIN
3	1	CONTROL PANEL
4	1	2 IN BALL VALVE
5	1	2 IN CAMLOCK ADAPTER
6	1	2 IN CAMLOCK CAP
7	1	2 IN CHECK VALVE
8	1	2 IN ACTUATED BALL VALVE
9	1	3-POINT LEVEL SENSOR
10	1	LEVEL TRANSMITTER



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

Model M4, M4P, M400, M410, MX410
Fuel Tank Fill Station

Earthsafe Systems, Inc.

info@earthsafe.com
www.earthsafe.com

Updated: October 2019

The information contained herein is proprietary and is provided for the sole purpose of the owner's installation, operation, and maintenance of the system. Reproduction of this information for other purposes is prohibited without the prior consent of Earthsafe Systems, Inc.

Notice

Earthsafe makes no warranty of any kind with regard to this publication, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Earthsafe shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance or use of this publication. Earthsafe reserves the right to change system options or features, or the information contained in this publication. This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Earthsafe.

Damage Claims

Thoroughly examine all components and units as soon as they are received. If damaged, write a complete and detailed description of the damage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Immediately notify the delivering carrier of damage or loss. This notification may be given either in person or by telephone. Written confirmation must be mailed within 48 hours. Risk of loss, or damage to merchandise belongs with the buyer. It is the buyer's responsibility to file a claim with the carrier involved. Immediately advise Earthsafe of the problem so that we may assist you.

Safety Information

UL Listed. The Earthsafe Control Module is UL listed.

Intended Use. The Earthsafe Control Module is intended for use with diesel fuel systems for emergency power generators. The control module and any connected sensors or devices are intended for operation only within ordinary electrical areas. Use of the module and connected sensors or devices within hazardous electrical areas is prohibited.

Intellectual Property

The equipment and software described herein are the property of Earthsafe Systems, Inc. and are protected by various trademarks and patents.

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Safety notices – General Safety Rules – Symbols (danger-warning-caution)

SAFETY INFORMATION AND INSTRUCTIONS

Danger — Failure to follow the indicated instruction may result in serious injury or death.

Warning — In addition to possible serious injury or death, failure to follow the indicated instruction may cause damage to pump and/or other equipment.

IMPROPER INSTALLATION, OPERATION OR MAINTENANCE MAY CAUSE SERIOUS INJURY OR DEATH AND/OR RESULT IN DAMAGE TO UNIT AND/OR OTHER EQUIPMENT. EARTHSafe's WARRANTY DOES NOT COVER FAILURE DUE TO IMPROPER INSTALLATION, OPERATION OR MAINTENANCE.

THIS INFORMATION MUST BE FULLY READ BEFORE BEGINNING INSTALLATION, OPERATION OR MAINTENANCE OF EQUIPMENT AND MUST BE KEPT WITH EQUIPMENT. EQUIPMENT MUST BE INSTALLED, OPERATED AND MAINTAINED ONLY BY SUITABLY TRAINED AND QUALIFIED PERSONS.

THE FOLLOWING SAFETY INSTRUCTIONS MUST BE FOLLOWED AND ADHERED TO AT ALL TIMES.

Symbol Legend:

Danger — Failure to follow the indicated instruction may result in serious injury or death

Warning — In addition to possible serious injury or death, failure to follow the indicated instruction may cause damage to pump and/or other equipment.

BEFORE opening any pipe system, pump, or valve be sure that:

- Any pressure in the chamber has been completely vented through the suction or discharge lines or other appropriate openings or connections.
- The electrical system means has been "locked out" or otherwise been made non-operational so that it cannot be started while work is being done on the equipment.
- You have obtained appropriate material safety data sheet (MSDS) and understand and follow all precautions appropriate for the safe handling of the material.

INSTALL pressure gauges/sensors at piping and pump connections to the equipment to monitor pressures.

USE extreme caution when lifting the pump. Suitable lifting devices should be used when appropriate.

THE equipment must be installed in a manner that allows safe access for routine maintenance and for inspection during operation to check for leakage and monitor operation.

General Description

Fill System for Tanks in Buildings.

The Earthsafe M4 Series Fill Station is designed for the safe filling of fuel tanks located inside buildings. The system is designed to install outside the building to accept fuel from delivery trucks and safely transfer fuel to the fuel tank in the building.

Overfill Prevention Safety.

The system is designed with overfill prevention safety. The electronic controller at the fill station monitors the fuel level in the tank as a continuous level reading (0-100%) or as a set of high level sensors (85-90-95%). The controller provides audible and visual high level warning at 85%, high level alarm at 90%, and critical high level at 95%. The controller monitors the position of actuated fill pipe valves, and closes the valve upon high level.

Single or Multi-Tank Systems.

The Earthsafe Fill Station will provide safe filling for a single or multiple fuel storage tanks. In multiple tank systems the controller monitors level sensors in each tank and operates an actuated valve to allow filling of the selected tank.

Passive or Pump Equipped.

The fill station is most commonly used with pump equipped fuel delivery trucks. Where facility based pumps are required, the fill station can be equipped with pumps from 30 to 300 GPM capacity.

M4 SERIES Fuel Tank Fill Station

INSTALLATION, OPERATION, AND MAINTENANCE

EMERGENCY POWER FUEL SYSTEMS

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Physical Description

1. Enclosure: Welded stainless steel enclosure
2. Integral Spill Containment
3. Control Panel: PLC based control panel
4. Hose Connection
5. Manual Shutoff Valve
6. Strainer / Screen
7. Check Valve
8. Manual Cleanup Pump: for handling spilled fuel

Planning the Installation

Location

1. Location — locate the fill station where it will be accessible by fuel delivery trucks.
2. Accessibility — Actuated valve should be visible to confirm position, and accessible for servicing.

Piping

Before starting layout and installation of your piping system, consider the following points:

1. Size the fuel supply piping to allow adequate flow for the size of the tank to be filled.
A 2" pipe will flow up to 100 GPM. So if greater flow rates are required then increase the line size.
2. Where the fuel tank is below the fill point, slope the piping continuously toward the tank without traps to allow drainage.
3. Install gravity overflow pipe so that it slopes continuously from the day tank back to the main storage tank.
4. Be sure the inside of the pipe is clean before connecting to the main tank and fill station.
5. Be sure allowance is made for expansion and contraction of the piping so the fill station and main tank connections are not stressed by the piping.
6. The fill station should not be used to support the piping. The weight of the pipe should be carried by hangers and supports.

Pipe, Conduit, Anchor Penetrations

1. The fill station bottom and lower 6" of wall surface forms a spill containment. Do not drill or otherwise penetrate the fill station enclosure within the containment area.

Installation

1. Remove packaging and inspect for shipping damage. Note any shipping damage on the shipping ticket and notify Earthsafe within 24 hours of receipt.
2. Confirm the size of the wall opening for flush mounted units. For surface mount units confirm the wall construction will support the fill station installation.
3. Set unit at installation location. Use proper handling procedures to avoid damage to the unit.
4. For surface mounted units, install anchor bolts at 4 corners. Use 3/8" diameter expansion anchors with 3" embedment or as required for local code compliance.
5. For flush mounted units, block the unit into the wall opening and provide secure mounting.
6. Connect power to controller. Reference specific installation instructions and wiring diagrams for the controller and motor starter panels.
7. Check tightness of all bolt, which may have loosed during shipment.
8. Pressure test the fill piping to 50 PSI or in accordance with project design requirements. Correct any loose bolts or threaded joints if required.
9. Clean field installed piping. Clean all dirt and debris from field installed piping prior to connecting to the fill station and main tank.
10. Connect piping to the fill station outlet piping. Confirm that field piping is independently supported to avoid stress on the pump set piping.
11. Where a fuel transfer pump is provided, check pump rotation. Energize the pump momentarily to observe direction of motor fan rotation
12. Install actuated valves in fill piping and wire to controller.
13. Install high level sensors in main tank and wire to controller.

Startup

1. Check that the piping from the fill station to the main tank is complete and tested.
Confirm that all manual valves in the fill pipe, outside the fill station, are in an open position.
2. Check that all wiring is completed to the actuated valves and main tank sensors.
3. Turn on power to the controller,
4. Check the closed status of the actuated valves.
5. Operate the control panel test function to check the high level alarm audible signal.
6. Operate the controller to open each actuated valve and check accuracy of the panel display.
7. Operate the fill station in accordance with the tank fill procedure.

M4 SERIES Fuel Tank Fill Station

INSTALLATION, OPERATION, AND MAINTENANCE

EMERGENCY POWER FUEL SYSTEMS

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Testing

Perform the testing procedure in accordance with the startup checklist.

Fill Station Startup and Test Checklist				
Item	Description	Check	Date	Comments
1	Power to control panel			
2	Initial display is accurate			
3	High Warning level input and display			
4	High Alarm level input and display			
5	High stop level input and display			
6	Valve open input and display			
7	Valve close input and display			
8	Test Mode Valve Cycle open and close			
9	Select tank to fill			
10	Confirm valve open			
11	Confirm valve close on OFF select			
12	Confirm valve close on estop			
13	Alarm and display on High Warning level			
14	Alarm, display and valve close on High Alarm			
15	Alarm, display, and valve close on High Stop			
16	Confirm % Fill display accurate			

Operation

1. Fill Station controller operation.

Refer to Controller manual for details of fill station operations.

Fuel Oil Fill Station Operating Procedure

1. Calculate the free volume in the tank to be filled to the 85% fill level. Use the electronic gauging system at the main fuel system controller. Use the clock gauge on the tank to check the existing tank level.
2. The fill operation shall be at all times supervised by facility personnel.
3. Open the cabinet. Remove the fill pipe cover. Slowly open the ball valve to confirm that the fill pipe is vented. Close the ball valve. Connect the fuel delivery hose using a tight fill connection.
4. Using the selector switch on the fill station panel, select the tank to be filled. This will open the actuated valve in the fill pipe at the tank room.
5. Examine the display and confirm that the tank has been properly selected and that the tank level is indicated to be below 85%.
6. Open the ball valve at the fill station and begin the fuel transfer.
7. Monitor the fuel meter on the truck to deliver only the volume calculated to a maximum 85% tank fill level. Monitor the fill station display to assure that the tank level does not exceed 85%.
8. Stop the fuel transfer immediately if the high level 85% warning is activated. Inspect the tank levels and transfer the remaining fuel delivery only if the volume is less than 5% of the tank volume. At 90% tank level, an additional audible – visual alarm will activate, and the actuated valve in the fill pipe will close.
9. After the 90% tank level alarm has been activated, the fill pipe valve can be opened momentarily to allow draining of the fuel delivery hose. At the 95% tank level the fill pipe actuated valve is closed and disabled until the tank fuel level is reduced.
10. At the completion of the fuel transfer, close the ball valve and disconnect the fuel delivery hose.
11. Place the control panel selector switch in the OFF position. Close the valve and re-install the fill connection cap.
12. Use the manual valve to transfer any spilled fuel, either back into the fill pipe or to a portable container. Clean all spilled fuel from the fill station enclosure.
13. Close and lock the fill station enclosure.

Maintenance

1. Inspect the fill station for damage or vandalism periodically
2. After each fill operation, visually inspect the fill piping for leaks

Troubleshooting — General

1. **Valve Position not indicated correctly on the controller.**
Check valve actual position versus position indicated on panel.
Check for loose wiring
Check valve position switch settings
2. **Valve does not open with tank level less than 85%**
Check fuse in controller
Check level sensor for proper signals
Check emergency stop
Check controller PLC operating status

Spare Parts

1. **Controllers / Motor Starters**
See Earthsafe Controller manuals for specific information.
2. **Actuated Valves**
RCI Actuators are available from local distributors worldwide.
3. **Level Sensors**
Gems level sensors are available from Gems worldwide.

Technical Support / Warranty Service

Technical Support

Contact Earthsafe at

www.earthsafe.com

Warranty Statement

Earthsafe Systems, Inc. warrants the **product** to be the kind and quality described in specification provided herein and to be free from defects in material or workmanship under normal service for a period of 1 year after shipment. Earthsafe obligations under this warranty shall be limited to repair or replacement, at the option of Earthsafe, of parts deemed to be defective upon inspection by Earthsafe. User is responsible for transportation of parts or assemblies to Earthsafe or its authorized repair location where the repairs are to be performed.

The provisions of the warranty shall not apply to any equipment, part, or accessory which (a) has been improperly specified by buyer, (b) has been improperly stored or handled prior to placing in service, (c) has been damaged or loosened during shipment, (d) has been improperly mounted or connected, (e) has not been operated within the equipment specifications, or (f) has been improperly maintained.

Earthsafe reserves the right to reject warranty claims of any kind for equipment for which it has not received full payment.

This warranty is in lieu of all other warranties, express or implied, and all other obligations or liabilities on the part of Earthsafe. Earthsafe assumes no responsibility or liability for any special, incidental, or consequential damage.



Fuel Systems for Critical Power

C8 Control Module

BACnet, Modbus, Metasys N2, or LON Communications



General Description

The C8 Controller is designed to monitor and control diesel fuel transfer for emergency power applications.

- Generator Tank Level Control
- Duplex Pump Control
- Fuel Filtration / Polishing
- Remote Tank Fill Systems

The new modular wiring system allows for simplified integration of input and output devices:

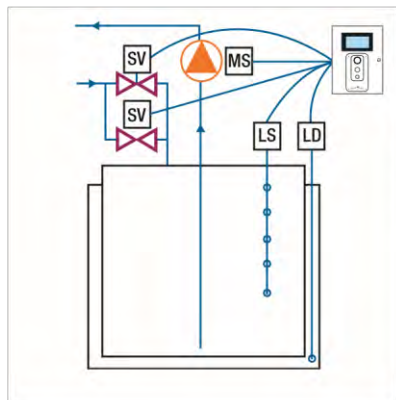
Inputs: (a) tank level sensors, (b) leak detection sensors, (c) flow sensors, (d) pressure sensors, (e) pump current sensors, (f) filter water sensors, (g) filter differential pressure sensors, (h) valve position sensors.

Outputs: (a) solenoid valves, (b) fuel supply pumps, (c) fuel return pumps, (d) actuated ball valves, (e) actuated butterfly valves.



C8 Controller

Dimensions	12"H x 12"W x 6"D (300 x 300 x150)
Approval	UL / CE
Power	120-240 VAC / 5A / 50-60 Hz Single or Dual Source
Enclosure	NEMA 4 Color RAL 7035 (Light Gray)
Environmental	-20 to 130F (-30 - 55C) with heater
Communication	BACnet, Modbus, Metasys N2, or LON
Other	Isolated Inductive Loads 5 Amp Output Relays (Typ)
Options	50 Hz Power CE Approval Intrinsic Safety Barriers Enclosure Heater
Modes	Base or Combined Applications for: Generator Tank Level Control Duplex Pump Control Fuel Filtration / Polishing Remote Tank Fill Systems

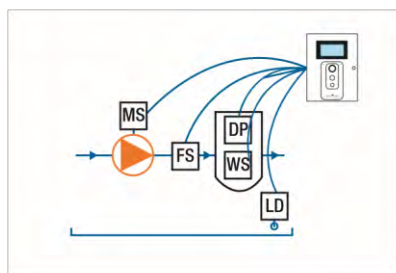
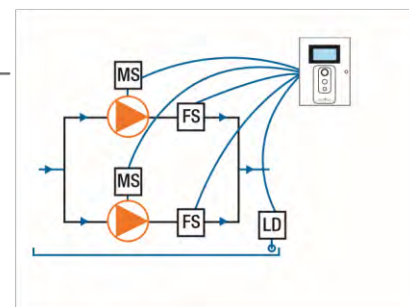


Day Tank Level Control

- Maintains Day Tank Fuel Level
- Alternate Dual Inlet Valves
- Monitors and Activates Overfill Protect Pump
- Alarms: High, Low Warning, Low Alarm, Leak
- Data Share via DeviceNet

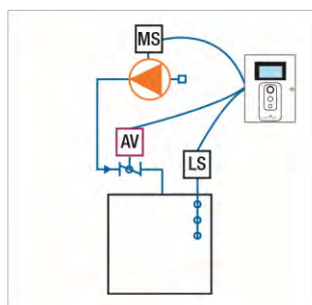
Duplex Pump Control

- Monitor Day Tanks for Fuel Request
- Start and Alternate Pumps
- Monitor Pump Starter for Overload / Not Auto
- Monitor Flow Sensors and Leak Sensor
- Data Share Via DeviceNet



Fuel Filtration Control

- Operate Filter Pump on Timed Cycle
- Monitor Filter Pressure and Water Level
- Signal to Alternate Tanks for Multi Systems
- Data Share Via DeviceNet



Tank Fill Control

- Monitor Tank for High Warn and Alarm
- Operate Tank Inlet Fill Valve
- Operate Tank Fill Pump When Used
- Remote Tank % Fill Display (Optional)
- Data Share Via DeviceNet

DEP Forms



Department of Environmental Protection

2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form: 62-761.850(2)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: FPI Sensors LLC	Contact Name: Customer Service
Company Address: 1301 Corporate Center Dr., Suite 140	City, State: Eagan, MN Zip: 55121
E-mail: CustomerService@RochesterGauges.com	Contact Number: (872) 241-2161
Product Name: FPI Sensors International	
Model Number(s): LD Generic Leak Detection System	Product Type:
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), Chapter 62-761 & Chapter 62-762.851(2)	

F.A.C.: Write a brief description of equipment registration request including product limitations:

LD Generic Leak Detection Sensor arison/off switches that alarm when the fuel level reaches the alarm point of the float. It is constructed of Buna and is compatible with all commonly encountered fuels. This float sensor alarms when the liquids rise approximately one-half inch above the bottom of the float and can be manufactured to any length

Information Checklist (Choose Yes, No, or N/A - Not Applicable)

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☒	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ-817	☒	☐	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Environmental@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399

Write a brief description of equipment installation and performance in the U.S.:

The LD Generic Leak Detection System does not have any limitations or certifications on who can install the float switch. It is resistant to corrosion, UV, and able to withstand deterioration. It is designed to be installed in the field by experienced installers and contractors for underground storage tanks and shop-fabricated aboveground storage tanks and tank components. The sensor must be tested before it is put into initial operation.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Ian Mott-Smith, VP Ian Mott-Smith 9/25/19
Printed Name and Title Signature Date

For Department Use Only:

Date Application Received 9/26/2019 Application complete: Yes: ☒ No: ☐
EQ-817 Date of complete or incomplete letter sent 9/27/2019 Date Equipment Requires Renewal 9/27/2024

UPDATE

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.

FPI Sensors International

Equipment Registration Renewal and Update Request

to the

**Florida Department of Environmental Protection's
Permitting and Compliance Assistance Program
Storage Tank Compliance**

by

**FPI Sensors International
& Rochester Gauges**

for

Underground and Aboveground Storage System Release Detection Equipment

Submitted by

Marshall T. Mott-Smith, President
Mott-Smith Consulting Group, LLC
111 North Calhoun Street
Tallahassee, FL 32301
marshall@mott-smithconsulting.com
850-391-9835 work
850-591-1434 cell
www.mott-smithconsulting.com





September 26, 2019

Kimberly Curran
Permitting and Compliance Assistance Program
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Equipment Registration Renewal Request for FPI Sensors International

Dear Kim:

FPI Sensors International is submitting an Equipment Registration Renewal Form with supporting documentation to the Florida Department of Environmental Protection for several models of storage tank system sensors.

The storage tank system sensors are listed by UL, and therefore provides the third-party certification as a Nationally Recognized Laboratory in accordance with Rule 62-761.200(36), F.A.C.

FPI Sensors was recently purchased by Rochester Gauges, but the branding is still FPI Sensors. The contact information is Customer Service, Contact Number: 972 241-2161, and the E-Mail address is: CustomerService@RochesterGauges.com - This information is provided on the DEP Equipment Registration Form.

FPI Sensors International appreciates your consideration in this matter, and please feel free to contact me if you have any questions or if we need to provide additional information.

Best Regards,

Marshall Mott-Smith, President
Mott-Smith Consulting Group, LLC

111 North Calhoun Street
Tallahassee, FL 32301
850.391.9835
888.768.2916 fax
www.mott-smithconsulting.com

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1. Introduction (All Models)

This Equipment Renewal and model designation update is sought in accordance with Florida Administrative Code Rule 62-762.851(2).

The request is sought by FPI Sensors International for model LD Generic Leak Detection System and the model CL Generic Continuous Level 4-20 mA Sensor which are UL listed for tank-monitoring in hazardous locations. The model LS Generic Level Float Switch is UL listed for float and pressure operated locations.

FPI Sensors International models noted above are float sensors that are activated when liquids in a containment sump or interstitial space cause the floats to rise from their installed position and subsequently activate the electronic signal to the monitor. The LS Generic Level Float Switch and the LD Generic Leak Detection Sensor are on/off switches that alarm when the fuel level reaches the alarm point of the float. The CL Continuous Level Sensor is a continuous 4-20 mA float switch. When it is combined with an appropriate readout or monitor, it can be used as a monitoring level device and as a leak detection system in a confined space.

The float for the LD Generic Leak Detection Sensor is constructed of Buna and is compatible with all commonly encountered fuels. This float sensor alarms when the liquids rise approximately one-half inch above the bottom of the float. The LD Generic Leak Detection Sensor can be manufactured to any length. The CL Continuous Level Sensor changes from 4 mA at the low level to 20 mA at the high level. The float utilized by this sensor is constructed of stainless steel. The LS Generic Level Float Switch is a single or multi-level float switch that provides a switch point (alarm or process) in the presence of liquids. A signal occurs when the level of liquid reached in the sensor area reaches approximately one-half inch in depth. The sensors were originally tested by Ken Wilcox Associates from Grain Valley, Missouri. All three sensors are corrosion-resistant, durable, and use UL listed components and parts. They are constructed of materials that are compatible with petroleum products and can be easily installed at new or existing sites. Strict quality control is provided during the manufacturing of these systems. Optional shielding minimizes the effect of turbulence and helps prevent interference of foreign objects. Additional options include weighted collar, customized lead length, magnets for shavings collection. All of the FPI Sensors International system models are designed for either monthly visual inspection or electronic notification as required by Florida Underground and Aboveground Storage Tank Systems rules.

The FPI Sensors Internationals' sensors are designed to be installed in the field by experienced installers and contractors for underground and shop-fabricated aboveground storage tanks and storage tank components. The installation instructions are the same for each of the three models. The post-installation integrity of these systems can be verified using the Operational Testing protocols provided by the FPI Sensors International in Appendix 4.

The specifications for each of the three sensor models are provided in Attachment 5, and include information about operating temperatures, operating pressures, and materials of construction.

All Equipment Registration Forms for each model are attached in Appendix 6.

2. Third Party Certifications (All Models)

The FPI Sensors International models are UL Listed. The Third-Party Certification confirms that the products meet the Department rules contained in Chapter 62-762.501, Chapter 62-762.601, and Chapter 62-762.701, F.A.C., and Chapter 62-761.500, Chapter 62-761.600, and 62-761.700, F.A.C. All of the Rochester Gauges, LLC. models are designed to function in accordance with applicable industry reference standards for underground and shop-fabricated aboveground storage tanks. Mott-Smith Consulting Group, LLC, certifies that the systems provide an equivalent protection to the existing rules.

The UL Certification is provided in Appendix 1 of this Request.

3. The Installation Process (All Models)

The installation process for each model of the FPI Sensors International system's is the same as provided in Appendix 2. The installation procedures contain prescribed instructions for installers to install the equipment with attention to quality control, operability, safety, and leak detection effectiveness. The FPI Sensors International does not have any limitations or certifications on who can install their systems, but as previously mentioned, the systems are designed to be installed in the field by experienced installers and contractors for underground storage tanks and shop-fabricated aboveground storage tanks and tank components.

All leak detection models are constructed with UL listed components that are manufactured in accordance with the highest industry standards. All of the models are resistant to corrosion, UV and weather resistant, and able to withstand deterioration. The sensors must be tested before they are put into initial operation. The testing must be performed in accordance with the operability testing procedures described in Appendix 4 after installation is completed to ensure initial performance of the system meets the design standards.

4. Operability Testing

The FPI Sensors Internationals' leak detection systems can be tested at installation before being placed into service, and annually as required by Florida Department of Environmental Protection UST and AST System Rules. The operational tests vary for each of the three models and are provided in Attachment 4.

5. Compatibility (All models)

The only portions of the FPI Sensors Internationals' model series that are in contact with petroleum products are the floats, casings, submersed electrical cables, and the float support mechanisms. These systems are constructed with corrosion resistant metals such as stainless steel and aluminum, and other materials like Buna that are compatible with light, middle, and heavy distillate petroleum products they are designed to be in contact with, as well as a number of other chemical substances.

The FPI Sensors Internationals' systems are compatible with the types of regulated substances commonly stored in underground and aboveground storage systems. The list includes gasoline, ethanol, bio-diesel, diesel, aviation fuels, jet fuel, kerosene, waste oils, new oils, and numerous other substances.

6. Operation and Maintenance (All Models)

The FPI Sensors Internationals' model series can be easily cleaned and maintained. The Operating Principles and Maintenance Instructions are specified for the three sensors in Appendix 5.

7. Technical Drawings and Information

The technical drawings contain information about the electrical connections, housings, fitting connections, resolution, accuracy, alarms, materials of construction, and other details. The drawings are provided in Appendix 3.

Appendix 1 – UL Certifications

UL Certificate of Compliance

CERTIFICATE OF COMPLIANCE

Certificate Number 20140226-E366291
Report Reference E366291-20140226
Issue Date 2014-FEBRUARY-26

Issued to: FPI SENSORS L L C
SUITE 140, 1301 CORP CTR DR
EAGAN MN 55121

This is to certify that
representative samples of

TANK-MONITORING EQUIPMENT FOR USE IN
HAZARDOUS LOCATIONS

Intrinsically Safe Apparatus for use in Class I, Division 1,
Groups C and D Hazardous Locations.
Liquid Level Probe, Model CLIS Intrinsically Safe for use in
Class I Groups C and D Hazardous Locations when
installed in accordance with manufacturer's control drawing
no. CLIS-1.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

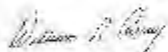
Standard(s) for Safety: UL 913, Intrinsically Safe Apparatus and Associated
Apparatus for Use in Class I, II, and III, Division 1,
Hazardous (Classified) Locations
CAN/CSA C22.2 No. 157-92, Intrinsically Safe and Non-
incendive Equipment for Use in Hazardous Locations

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as
being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US
and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and
"US" identifiers,  the word "LISTED"; a control number (may be alphanumeric) assigned by UL,
and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Gentry, Director, North American Field Operations

UL 332

Any reference to a standard (including UL standards) is a reference to the latest edition of that standard, any subsequent amendments thereto, and any subsequent editions of that standard.



CERTIFICATE OF COMPLIANCE

Certificate Number 20160819-E324587
Report Reference E324587-20160813
Issue Date 2015-AUGUST-19

Issued to: FPI SENSORS LLC
 Suite 140
 1331 Corp Ctr Dr
 Fagan MN 55121

This is to certify that
 representative samples of

**COMPONENT - MOTOR CONTROL LERS, FLOAT- AND
 PRESSURE-OPERATED**

USR, CNR – Float Operated Switches,
 Models LS (SS), LS (Brass), LS (Susp), LS (Temp.Sensor),
 LS (Polypropylene Float), LS (Poly/Poly), LS (SS/SS), LS
 (SS/Buna), LS (Brass/Buna), LTS, (SS/SS), LTS,
 (SS/Buna), LTS, (Brass/Buna), LS Large (SS/Buna), LS
 Large (SS/SS), SM Side (Poly/Poly), SM Side (SS/SS), LD
 (Brass Shroud), LD (SS Shroud), SW, and SM (SS). All
 models may include additional suffixes.

Have been investigated by UL in accordance with the
 Standard(s) indicated on this Certificate

Standard(s) for Safety: Standard for Industrial Control Equipment, UL 508
 Industrial Control Equipment, CSA C22.2 No. 14-13

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
 Certification and Follow-Up Service.

Recognized components are incomplete in certain constructions, features or restrictions in performance
 capabilities and are intended for use as components of complete equipment submitted for investigation rather
 than for direct separate installation in the field. The final acceptance of the component is dependent upon its
 installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



David H. Brown, Director of Field Operations and Certification Services
 UL LLC

Certified products developed under UL's Field Operations and Certification Services (FOPS) program are subject to UL's Field Operations and Certification Services (FOPS) program. For more information, visit www.ul.com/fops.



Appendix 2 – Installation

FPI SENSORS INTERNATIONAL

A HIGHER LEVEL OF SATISFACTION

4-20 mA CONTINUOUS LEVEL USER GUIDE

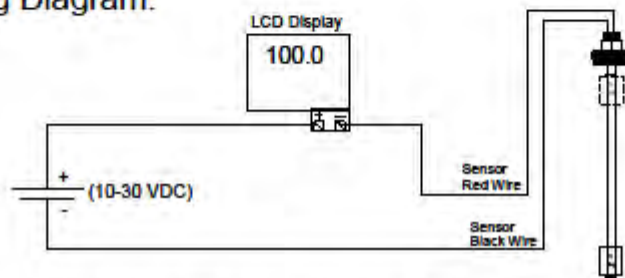
INSTALLATION:

When initially installing, mount the sensor into the tank with the matching fitting. When threading metal threads into a metal coupling, pipe sealant or Teflon® tape is recommended. After the sensor is mounted in tank, add the conduit. Use only appropriate conduit hubs that are specified to maintain the desired UL/CSA rating.

Associated apparatus must be installed in accordance with its manufacturers control drawing and Article 504 of the National Electrical Code (ANSI/NFPA 70) for installation in the United States, or Section 18 of the Canadian Electrical code for installations in Canada.

Associated apparatus must not be used in combination unless permitted by the associate's apparatus certification.

CL Wiring Diagram:



The sensor should be wired by qualified, licensed technicians only. There are two wires exiting the housing of the sensor. The red wire connects to signal (or + VDC), the black wire connects to - VDC. The power supply should be fused with a 25mA/24VDC fast blow fuse.

OPERATION:

The 4-20 mA sensor operates on a loop power or a separate power supply of 10-30 VDC. The sensor will provide a linear output between 4-20mA across the measuring range. When the float is at the bottom of the measuring range (furthest away from the fitting) the signal output will be 4 mA. As the float moves closer to the fitting, the mA output will increase until it reaches the top of the measuring range, providing a 20 mA signal. The mA signal will change every 1/4" of float movement. The mA value will change with every 1/4" of float movement. The value of mA change per 1/4" of float movement equals 4 divided by total measuring range inches.

CALIBRATION AND MAINTENANCE:

There is no calibration necessary. For reliable operation, the float and stem need to remain clean so the float has unrestricted movement as it travels up and down the stem. When cleaning, only use solutions that are compatible with the sensor material. It is also necessary that the leads exiting the sensor are kept dry and protected.

TROUBLESHOOTING:

Verify that the wiring is correct and proper power is being applied to the sensor. If the system is still not working, isolate the sensor from the system, apply 24VDC and monitor the sensor's output with a mA meter. Wire the independent meter and power supply as shown above. Move the float up and down the stem to verify the sensor's signal is correct. If the sensor is still not operating, contact FPI Sensors for assistance.

FPI Sensors 1-800-852-9984 info@FPIsensors.com

Appendix 3 – Technical Drawings

Model LD-

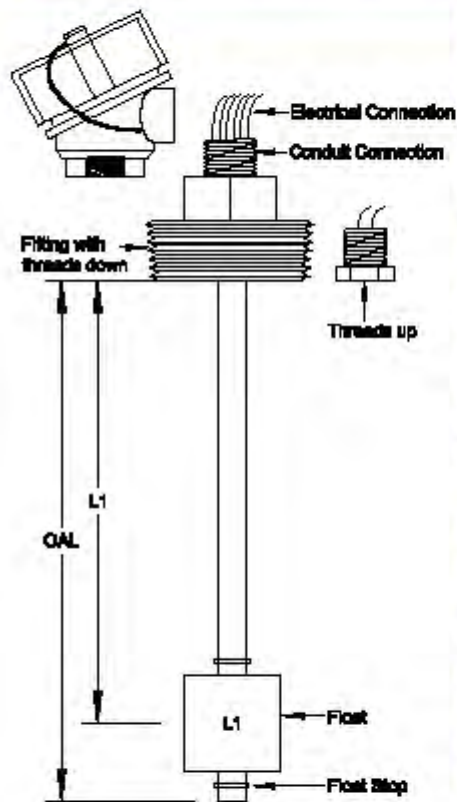
FPI SENSORS INTERNATIONAL

A H I G H E R L E V E L O F S A T I S F A C T I O N

Single Level Configurator – Build to Order

We excel in **LOW COST** » **HIGH QUALITY** » **72 HOUR MFG TIME**

MANY OTHER VARIATIONS AND OPTIONS ARE AVAILABLE



HOUSING:

☐ Nema 4X Explosion Proof ☐ Watertight ☐ NA

ELECTRICAL CONNECTION:

☐ Wire ☐ Cable ☐ Connector (specify) _____

CONDUIT CONNECTION:

☐ 1/2" NPT ☐ Other _____ ☐ NA

FITTING AND STEM MATERIAL:

☐ SS ☐ Brass ☐ PVC ☐ Poly ☐ Teflon

FITTING SIZE (NPT):

☐ 1/4" ☐ 1/2" ☐ 3/4" ☐ 1" ☐ 1 1/4" ☐ 1 1/2" ☐ 2"
☐ Flange _____ ☐ Other _____

THREAD ORIENTATION:

☐ Threads down (threads from outside of the tank)
☐ Threads up (threads from inside of the tank)

LEAD LENGTH: _____ *

FLOAT STOPS:

☐ Retaining ring ☐ Set collar

FLOAT MATERIAL:

☐ SS ☐ Buna ☐ Poly ☐ Teflon ☐ PVC

SWITCH TYPE:

☐ SPST ☐ SPDT

SWITCH RATING:

☐ 10 watt (500ma) ☐ 50 watt (1 amp) ☐ 100 watt (3 amp)

ACTUATION:

L1 _____ *

OPERATION:

☐ N.O. ☐ N.C.

SPECIFIC GRAVITY:

☐ .60sg ☐ .93sg

Minimum actuation is 1" Maximum actuation is 235"

OPTIONS:

☐ Shroud ☐ Centering Disk
☐ Field Adjustable Length ☐ Compression Union
☐ Thermocouple _____ ☐ Thermistor _____
☐ Temp Switch ☐ N.O. or ☐ N.C. _____ °F set point

1.800.852.9984

www.FPISensors.com

info@FPISensors.com

Fax 631.681.1888

Model CL-

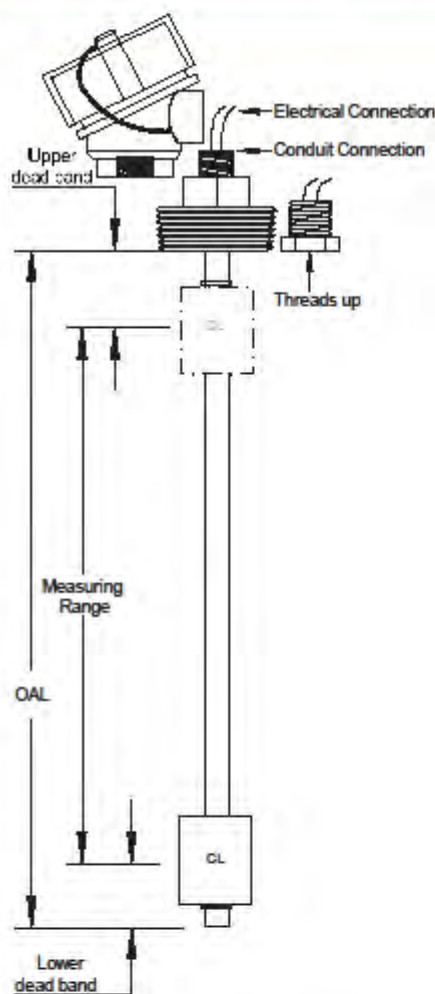
FPI SENSORS INTERNATIONAL

A H I G H E R L E V E L O F S A T I S F A C T I O N

Continuous Level (4-20ma) Configurator – Build to Order

We excel in **LOW COST** » **HIGH QUALITY** » **72 HOUR MFG TIME**

MANY OTHER VARIATIONS AND OPTIONS ARE AVAILABLE



HOUSING:

☐ Nema 4X & Explosion Proof ☐ Watertight ☐ NA

ELECTRICAL CONNECTION:

☐ Wire ☐ Cable ☐ Connector (specify) _____

WIRING:

Red Wire = Signal
Black Wire = Negative voltage
(Loop powered 10-30 VDC)

CONDUIT CONNECTION:

☐ 1/2" NPT ☐ Other _____ ☐ NA

FITTING AND STEM MATERIAL:

☐ SS ☐ Brass

FITTING SIZE (NPT):

☐ 1/4" ☐ 1/2" ☐ 3/4" ☐ 1" ☐ 1 1/4" ☐ 1 1/2" ☐ 2"

☐ Flange _____ ☐ Other _____

THREAD ORIENTATION:

☐ Threads down (threads from outside of the tank)

☐ Threads up (threads from inside of the tank)

LEAD LENGTH: _____"

FLOAT MATERIAL:

☐ SS ☐ Buna

MEASURING RANGE: _____"

(4" – 96", 1-inch increments only)

UPPER DEAD BAND: _____" (1" minimum)

LOWER DEAD BAND: _____" (1" minimum)

OPERATIONAL INDEPENDENT ALARM SWITCH(S):

ALARM: #1 _____" **OPERATION:** ☐ N.O. ☐ N.C. **SPECIFIC GRAVITY:** ☐ .60sg ☐ .93sg

#2 _____" ☐ N.O. ☐ N.C. ☐ .60sg ☐ .93sg

If alarm point is outside of the measuring range, dead band dimensions will be affected. If alarm point is inside the measuring range, contact factory for details.

OPTIONS:

☐ Centering Disk ☐ Field Adjustable Length
☐ Thermocouple ☐ Thermistor
☐ Temp Switch ☐ N.O. or ☐ N.C. _____ °F set point

RESOLUTION: 1/4" increments

ACCURACY: +/-2% of measuring range

MAXIMUM OPERATING PRESSURE: 200 PSI

OPERATING TEMPERATURE RANGE: -20°F – 210°F

1.800.852.9984

www.FPIsensors.com

info@FPIsensors.com

Fax 651.681.1088

Model LS-

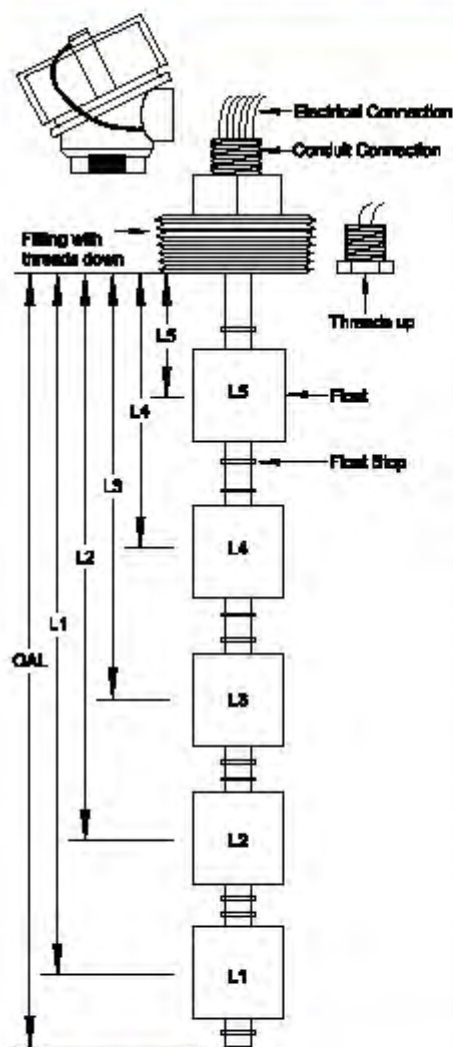
FPI SENSORS INTERNATIONAL

A HIGHER LEVEL OF SATISFACTION

Five Level Configurator – Build to Order

We excel in **LOW COST** » **HIGH QUALITY** » **72 HOUR MFG TIME**

MANY OTHER VARIATIONS AND OPTIONS ARE AVAILABLE



HOUSING:

☐ Nema 4X Explosion Proof ☐ Watertight ☐ NA

ELECTRICAL CONNECTION:

☐ Wire ☐ Cable ☐ Connector (specify) _____

CONDUIT CONNECTION:

☐ 1/2" NPT ☐ Other _____ ☐ NA

FITTING AND STEM MATERIAL:

☐ SS ☐ Brass ☐ PVC ☐ Poly ☐ Teflon

FITTING SIZE (NPT):

☐ 1/4" ☐ 1/2" ☐ 3/4" ☐ 1" ☐ 1 1/4" ☐ 1 1/2" ☐ 2"

☐ Flange _____ ☐ Other _____

THREAD ORIENTATION:

☐ Threads down (threads from outside of the tank)
☐ Threads up (threads from inside of the tank)

LEAD LENGTH: _____"

FLOAT STOPS:

☐ Retaining ring ☐ Set collar

FLOAT MATERIAL:

☐ SS ☐ Buna ☐ Poly ☐ Teflon ☐ PVC

SWITCH TYPE:

☐ SPST ☐ SPDT

SWITCH RATING:

☐ 10 watt (500ma) ☐ 50 watt (1 amp) ☐ 100 watt (3 amp)

ACTUATION:

L5 _____"
L4 _____"
L3 _____"
L2 _____"
L1 _____"

OPERATION:

☐ N.O. ☐ N.C.
☐ N.O. ☐ N.C.
☐ N.O. ☐ N.C.
☐ N.O. ☐ N.C.
☐ N.O. ☐ N.C.

SPECIFIC GRAVITY:

☐ .60sg ☐ .93sg
☐ .60sg ☐ .93sg
☐ .60sg ☐ .93sg
☐ .60sg ☐ .93sg
☐ .60sg ☐ .93sg

Minimum actuation is 1" Maximum actuation is 235"

OPTIONS:

☐ Shroud ☐ Centering Disk
☐ Field Adjustable Length ☐ Compression Union
☐ Thermocouple ☐ Thermistor _____
☐ Temp Switch ☐ N.O. or ☐ N.C. _____ °F set point

1.800.852.9984

www.FPISensors.com

info@FPISensors.com

Fax 631.681.1088

Appendix 4 – Annual Operability



Annual operability test

To perform annual operability tests on FPI Sensors models LS-, LD- and CL, you must have access to the float(s) of the sensor.

Model LS-

If access to float is available without uninstalling the sensors, simply observe the tank monitoring system (AGC or similar) and individually move each float up to the top float stop. You should observe the tank monitoring system indicate the appropriate alarm or process condition has been activated. Move the float back to its original position and you should observe the tank monitoring system return to its original state. If the alarm or process condition is not observed when the float is moved, see the float sensor trouble-shooting guide.

If the sensor is not accessible, then it is necessary to remove the sensor from the tank. After removal, inspect the sensor for damage or corrosion. Move the float from the bottom clip to the top clip and hold it in place while observing the tank monitoring system. Move the float back to its original position and you should observe the tank monitoring system return to its original state. If the alarm or process condition is not observed when the float is moved, see the float sensor trouble-shooting guide.

Model LD-

The model LD is tested the Model LS explained above, however the float may have a shroud around it. If a shroud is in place, to move the float from the bottom clip to the top clip, simply invert the sensor assembly so the leads are pointing down which will result in the float moving to the top clip. Follow the instructions shown above.

Model CL-

Model CL is tested the same as the Model LS as defined above. The only difference is that the travel distance of the float will be about the full length of the stem.

6-17



1301 Corporate Center Drive, Suite 115, Cager, MN 55121
1-800-862-4984 Fax 631-681-1828
www.FPISensors.com

Appendix 5 – Operating Principles and Maintenance



Float Style Level Sensor- Operating Principles and Maintenance

The FPI Sensors float style level sensor operates with an internal magnetic reed switch and an external magnetic field in the float.

Inside the stem, there is an individual, hermetically sealed, electrically insulated, magnetically activated dry contact reed switch. The reed switch is classified by its maximum power ratings and magnetic sensitivity. Because this is a dry contact, it stores no power. The reed switches are electrically isolated to pass a minimum 1.6KV Hipot (dielectric breakdown) test.

The float on the outside of the stem provides the magnetic field (which is matched to the reed switch) to activate the internal reed switch.

These float style level sensors are listed under UL File E324587. In addition, these sensors are designed to be compatible with intrinsically safe circuits for use in hazardous locations.

Maintenance of the float is suggested for applications where there is a potential for material buildup that would prevent the float from operating. For cleaning, remove the sensor assembly from the tank and inspect for any material build up. If build up is present, select a cleaning solution that is compatible with the sensor's float and stem material and clean appropriately. If the float needs to be removed, make sure the top of the float and the float stop locations are identified so insure the float goes back on to the stem with the proper orientation and the float stops are returned to there original location.

To confirm the sensors operation, disconnect the wires from your control system. Connect an ohm meter or continuity meter to the sensor wires. Move the float up and down to verify the switch opens and closes in the designed float location. The design dimensions of the sensor are typically measured from the face of the mounting fitting. See the specific drawing information for more detailed information.

Updated July 2012



1301 Corporate Center Drive - Suite 140 Eau Claire, MN 56121
1-800-852-0984 Fax 651-681-1888
www.FPISensors.com

DEP Forms



Department of Environmental Protection

2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form: 62-761.800(9)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: FPI Sensors LLC	Contact Name: Customer Service
Company Address: 1301 Corporate Center Dr., Suite 140	City, State: Eagan, MN Zip: 55121
E-mail: CustomerService@RochesterGauges.com	Contact Number: (972) 241-2161
Product Name: FPI Sensors International	
Model Number(s): LD Generic Leak Detection System	Product Type:
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), Chapter 62-761 and Chapter 62-762.851(2)	

F.A.C.: Write a brief description of equipment registration request including product limitations:

LD Generic Leak Detection Sensor are on/off switches that alarm when the fuel level reaches the alarm point of the float. It is constructed of Buna and is compatible with all commonly encountered fuels. This float sensor alarms when the liquids rise approximately one-half inch above the bottom of the float and can be manufactured to any length.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (if so provide list)	☐	☒	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- <u>817</u>	☒	☐	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The LD Generic Leak Detection System does not have any limitations or certifications on who can install the float switch. It is resistant to corrosion, UV, and able to withstand deterioration. It is designed to be installed in the field by experienced installers and contractors for underground storage tanks and shop-fabricated aboveground storage tanks and tank components. The sensor must be tested before it is put into initial operation.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Ian Mott-Smith, VP Ian Mott-Smith 9/25/19
Printed Name and Title Signature (right click to sign) Date

For Department Use Only:

Date Application Received: _____ Application complete: Yes: ☐ No: ☐

EQ- 817 Date of complete or incomplete letter sent: _____ Date Equipment Requires Renewal: _____

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.



Department of Environmental Protection

2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form: 62-761.90(9)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: <u>FPI Sensors LLC</u>	Contact Name: <u>Customer Service</u>
Company Address: <u>1301 Corporate Center Dr., Suite 140</u>	City, State: <u>Eagan, MN</u> Zip: <u>55121</u>
E-mail: <u>CustomerService@RochesterGauges.com</u>	Contact Number: <u>(972) 241-2181</u>
Product Name: <u>FPI Sensors International</u>	
Model Number(s): <u>LS Generic Level Float Switch</u>	Product Type: _____
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), <u>Chapter 62-762.851(2)</u>	
F.A.C.: Write a brief description of equipment registration request including product limitations: <u>LS Generic Level Float Switch is UL listed for float and pressure operated locations.</u>	

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☒	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- <u>817</u>	☒	☐	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The LS Generic Level Float Switch does not have any limitations or certifications on who can install the float switch. It is designed to be installed in the field by experienced installers and contractors for underground storage tanks and shop-fabricated aboveground storage tanks and tank components. The sensor must be tested before it is put into initial operation.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

<u>Jan Mott-Smith, VP</u>	<u>Jan Mott-Smith</u>	<u>9/25/19</u>
Printed Name and Title	Signature (print name)	Date

For Department Use Only:

Date Application Received: _____ Application complete: Yes ☐ No ☐

EQ- Date of complete or incomplete letter sent: _____ Date Equipment Requires Renewal:

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.



Department of Environmental Protection

2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form: 62-761.850(2)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely.

General Information

Company Name: FPI Sensors LLC Contact Name: Customer Service
Company Address: 1301 Corporate Center Dr., Suite 140 City, State: Eagan, MN Zip: 55121
E-mail: CustomerService@RochesterGauges.com Contact Number: (972) 241-2161
Product Name: FPI Sensors International
Model Number(s): CL Generic Continuous Level 4-20mA Product Type: _____

Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), Chapter 62-761 and Chapter 62-762.851(2)

F.A.C.: Write a brief description of equipment registration request including product limitations:

The CL Generic Continuous Level 4-20mA Sensor is UL listed for tank monitoring in hazardous locations. The float is constructed of stainless steel. The sensor changes from 4 mA at the low level to 20 mA at the high level.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☒	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- <u>817</u>	☒	☐	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknetify@floridadeep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The CL Generic Continuous Level 4-20mA Float Switch does not have any limitations or certifications on who can install the float switch. It is resistant to corrosion, UV, and able to withstand deterioration. It is designed to be installed in the field by experienced installers and contractors for underground storage tanks and shop-fabricated aboveground storage tanks and tank components. The sensor must be tested before it is put into initial operation.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Jon Mott-Smith, VP Jon Mott-Smith 9/25/19
Printed Name and Title Signature (sign date to sign) Date

For Department Use Only:

Date Application Received: _____ Application complete: Yes ☐ No ☐

EQ- 817 Date of complete or incomplete letter sent: _____ Date Equipment Requires Renewal: _____

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

BOB MARTINEZ CENTER
2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

January 13, 2014

Mr. Marshall T. Mott-Smith
Mott-Smith Consulting Group
1933 Commonwealth Lane
Tallahassee, FL 32303

Subject: Approval of the FPI Sensors International
Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level
4-20 mA Sensor, and LS 1001 Generic Level Float Switch.
File No. EQ-817

Dear Mr. Mott-Smith:

The Office of District and Business Support has concluded its review of the Equipment Approval request dated October 31, 2013 that was submitted for FPI Sensors International Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level 4-20 mA Sensor, and LS 1001 Generic Level Float Switch, pursuant to Rules 62-761.640(3)(a), 62-761.850(2), 62-762.641(3)(a), and 62-762.851(2), Florida Administrative Code (F.A.C.). The Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level 4-20 mA Sensor, and LS 1001 Generic Level Float Switch are release detection sensors for monitoring secondary containment systems associated with underground and aboveground storage tanks and for an associated float switch associated with the sensors. The Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level 4-20 mA Sensor, and LS 1001 Generic Level Float Switch have been third party evaluated by Ken Wilcox Associates and meet the technical requirements of the Florida storage tank system rules.

Based on the information provided by FPI Sensors International, the Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level 4-20 mA Sensor, and LS 1001 Generic Level Float Switch provide environmental protection substantially equivalent to that provided by compliance with the requirements established in to Rules 62-761.640(3)(a), and 62-762.641(3)(a), F.A.C. and may be used as release detection sensors and a float switch associated with underground and aboveground storage tanks systems.

Pursuant to Rules 62-761.850(2) and 62-762.851(2), F.A.C., the request for the use of the FPI Sensors International Models LD 1001 Generic Leak Detection Sensor, CL1001 Generic Continuous Level 4-20 mA Sensor, and LS 1001 Generic Level Float Switch are approved in the State of Florida as release detection sensors and a float switch associated with underground and

aboveground storage tank systems. The installation and operation of the release detection sensors and the float switch shall be made in accordance with the manufacturer's recommendations.

Please be advised that the above referenced DEP rules are subject to change. If the above rule standards are modified in the future, this order may be modified or rescinded for future upgrades and installations. Additionally, if the product(s) show a consistent pattern of failure(s), and therefore does not provide substantially equivalent environmental protection, the Department may rescind this order.

The Department's Order shall become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57, F.S., within **21** days of receipt of this Order. Persons who have filed such a petition may seek to mediate the dispute and choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning a hearing and pursuing mediation are set forth below.

Persons affected by this Order have the following options:

- A. If you choose to accept the Department's decision regarding the Order, you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.
- B. If you choose to challenge the decision, you may do the following:
 - 1. File a request for an extension of time to file a petition for hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order. This request should be made if you wish to meet with the Department in an attempt to resolve any disputes without first filing a petition for hearing or negotiate an agreement to mediate; or
 - 2. File a petition for administrative hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order.

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation under Section 120.573, F.S., and must negotiate an agreement to mediate within **10** days after the deadline for filing a petition.

How to Request an Extension of Time to File a Petition for Hearing

For good cause shown, pursuant to Rule 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for hearing. Such a request must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant, shall mail a copy of the request to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant shall mail a copy of the petition to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Subsection 120.569(2), F.S., and Rule 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information.

- a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the DEP facility number, and the name and address of the facility;
- b) A statement of when and how the petitioner received notice of the Department's action or proposed action;
- c) An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
- d) A statement of the disputed issues of material fact, or a statement that there are no disputed facts;
- e) A concise statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f) A statement of the specific rules or statutes the petitioner contends requires reversal or modification of the Department's action or proposed action; and
- g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

How to Pursue Mediation

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation. The election may be accomplished by filing with the Department a mediation agreement with all parties to the proceeding (i.e., the applicant, the Department, and any person who has filed a timely and sufficient petition for hearing). The agreement must contain all the information required by Rule 28-106.404, F.A.C. The agreement, signed by all parties, must be received by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000 within **10** days after the deadline for filing a petition, as set forth above. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement.

Pursuant to Rule 28-106.404, F.A.C., an agreement to mediate must include the following.

- (i) The name, address, and telephone number of the persons who may attend the mediation, (also the DEP facility number, the name and address of the facility if applicable);
- (ii) The name, address, and telephone number of the mediator agreed to by the parties;
- (iii) How the costs and fees associated with the mediation will be allocated (the Department will not pay any of the costs of mediation);
- (iv) The agreement of the parties regarding the confidentiality of discussions and documents introduced during mediation to the extent authorized by law;
- (v) The date, time, and place of the first mediation session;
- (vi) The name of the party's representative who shall have authority to settle or recommend settlement; and
- (vii) The signature of the parties.

As provided in Section 120.573, F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, F.S., for holding an administrative hearing and issuing a final order. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons seeking to protect their substantial interests that would be affected by such a modified final decision must file their petitions within **21** days of receipt of this notice, or they shall be deemed to have waived their right to a proceeding under Sections 120.569 and 120.57, F.S. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, F.S., are resumed.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or mediation settlement.

Judicial Review

Any party to this Order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Agency Clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this order is filed with the clerk of the Department (see below).

Questions

Any questions regarding the Department's review of your equipment approval should be directed to John Svec at (850)245-8845. Questions regarding legal issues should be referred to Rebecca

Robinette, Office of General Counsel, at (850)245-2242. Contact with any of the above does not constitute a petition for administrative hearing, a request for a time extension to file a petition for hearing or an agreement to mediate.

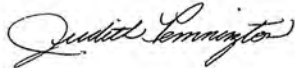
Sincerely,



John A. Coates, PE, Assistant Division Director
Division of Waste Management

JAC/js

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52 Florida Statutes,
with the designated Department Clerk, receipt of
which is hereby acknowledged.



Clerk
(or Deputy Clerk)

01/13/2014
Date

FPI Sensors International

Equipment Approval Request

to the

Florida Department of Environmental Protection

by

FPI Sensors International

for

**Underground and Aboveground
Storage System Release Detection Equipment**

Submitted by

Marshall T. Mott-Smith, President
Mott-Smith Consulting Group, LLC
1933 Commonwealth Lane
Tallahassee, FL 32303
marshall@mott-smithconsulting.com
850-391-9835 work
850-591-1434 cell
www.mott-smithconsulting.com

BUREAU OF WASTE CLEANUP

OCT 31 2013

**PROGRAM & TECHNICAL
SUPPORT SECTION**





October 31, 2013

John Svec, P.E.
Storage Tank Program
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Equipment Approval Request for FPI Sensors International

Dear John,

FPI Sensors International is requesting approval from the Florida Department of Environmental Protection for several models of storage tank system sensors.

Ken Wilcox Associates, Inc. has performed the third party certification as a Nationally Recognized Laboratory in accordance with Rule 62-761.200(36), F.A.C.

FPI Sensors International appreciates your consideration in this matter, and please feel free to contact me if you have any questions or if we need to provide additional information.

Best Regards,

Marshall Tipton Mott-Smith

Marshall Mott-Smith, President
Mott-Smith Consulting Group, LLC

1933 Commonwealth Lane
Tallahassee, FL 32303
850.391.9835
888.768.2916 fax
www.mott-smithconsulting.com

1. Introduction

This Equipment Approval Request is sought in accordance with Florida Administrative Code Rule 62-761.600(2). The FPI Sensors International Corporation is requesting that stamped documents within this Equipment Approval Request be considered **CONFIDENTIAL**. The reason that FPI Sensors International Corporation is requesting confidentiality is because of the proprietary nature of the information, and the FPI Sensors International does not want to share this information with competitors and adversely affect the marketability of their leak detection systems.

The Contact information for FPI Sensors International is:

Gary Maas
FPI Sensors International
1301 Corporate Center Drive
Suite 140
Eagan, MN 55121

1-800-852-9984
Fax 651-681-1888
gary.maas@fpisensors.com
www.FPIsensors.com

The Request is sought by the FPI Sensors International for the product line model numbers listed below. Product specifications, installation instructions, and testing requirements are all provided in the attachments of this document.

The FPI International Sensors are leak detection systems that are designed to be installed in confined spaces such as piping and dispenser sumps, or the interstice of a double wall storage tank for shop-fabricated aboveground storage tanks and underground storage tanks containing regulated petroleum products. The following is a list of the models along with the model numbers:

<u>Model</u>	<u>Model #</u>
LD 1001 Generic Leak Detection Sensor	LD FPI BB15
CL 1001 Generic Continuous Level 4-20 mA Sensor	LD FPI SP15
LS 1001 Generic Level Float Switch	LD FPI SP12

These models are float sensors that are activated when liquids in a containment sump or interstitial space cause the floats to rise from their installed position and subsequently activate the electronic signal to the monitor. The LS-1001 Level Float Switch and the LD 1001 Leak Detection Sensor are on/off switches that alarm when the fuel level reaches the alarm point of the float. The CL 1001 Continuous Level Sensor is a continuous 4-20 ma float switch. When it is combined with an appropriate readout or

FPI Operational Test

Certain organizations and jurisdictions require operational periodic operational test for level detection sensors. FPI Sensors can be tested with a few different methods

LEAK DETECTION SENSORS:

If the sensor can maintain its connection to the monitoring system, remove the sensor from the tank and turn the sensor 180 degrees so that gravity will cause the float to move from the bottom position to the top position. As the float is observed to move the monitoring systems should provide the signal that the float has changed state.

If the sensor is not connected to the monitoring system, connect the two float wires to a continuity meter or an ohm meter. Remove the sensor from the tank and turn the sensor 180 degrees so that gravity will cause the float to move from the bottom position to the top position. As the float movement is observed, the meter should provide the signal that the float has changed state.

4-20 mA SENSOR

If the sensor can maintain its connection to the monitoring system, remove the sensor from the tank and slide the float up the stem. While moving the float, observe the monitoring system changing its tank reading.

If the sensor is not connected to the monitoring system, connect the sensor wires to a ma meter. It will also be necessary to provide 24 VDC power, in series with the 4-20 ma sensor and the ma meter.

Remove the sensor from the tank and slide the float up the stem. While moving the float, observe the ma meter changing its reading. It should read 4 ma when the float is at the bottom position and 20 ma when the float is at the top position.

PROCESS LEVEL SENSOR

If the sensor can maintain its connection to the monitoring system, remove the sensor from the tank and move each float up and down while observing the systems operation. Confirm the system operation is in agreement with the float position.

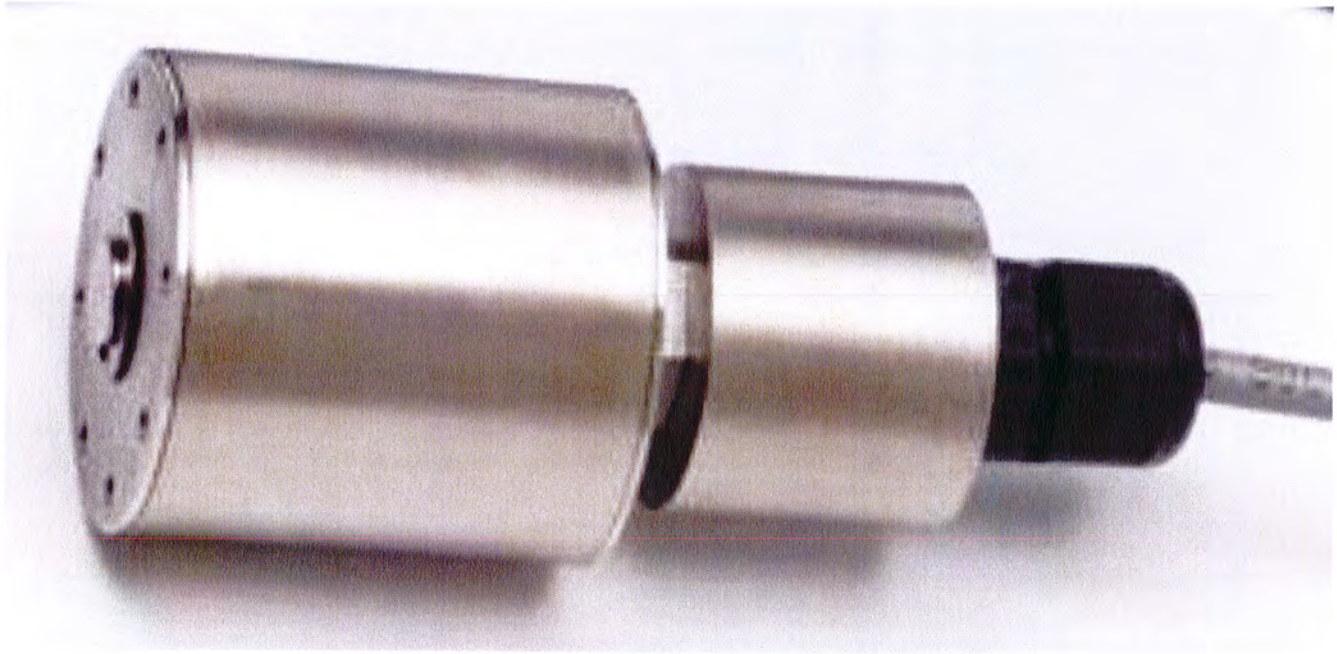
If the sensor is not connected to the monitoring system, connect the float wires to a continuity meter or an ohm meter. Remove the sensor from the tank and move each float up and down while observing the ohm meter or continuity meter. As the float movement is observed, the meter should provide the signal replicating the systems operation.

September 2013





Model Number LD FPI BB15



Model Number LD FPI SP15



Model Number LD FPI SP12