

Oil Alert™ Preset Level Sensor

Model: Adjustable Probe | Pumping Range 1.0" - 44.0"

48" Probe Cable, Sensor Only (use with Oil Alert™ Series)



Leading Edge Control Products

Operation, Maintenance and Installation Manual

Safety Guidelines



Before proceeding with the installation or operation of the product, make sure to read all instructions thoroughly, as well as complying with all federal, state and local codes, regulations and practices. The product must be installed by qualified personnel familiar with all applicable local electrical and mechanical codes. Refer to the National Electric Code (NEC) (NFPA 70). Failure to properly install and test this product can result in personal injury or equipment malfunction.

1. DISCONNECT ALL ELECTRICAL SERVICE BEFORE WORKING ON OR HANDLING THE PRODUCT AND/OR THE OIL ALERT™ SYSTEM.
2. DO NOT USE WITH FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. DO NOT USE IN EXPLOSIVE ATMOSPHERES. SENSOR MODULE SHOULD ONLY BE USED WITH WATER.
3. DO NOT HANDLE THE OIL ALERT™ PRODUCT OR CONTROL SYSTEM WITH WET HANDS, WHEN STANDING ON A WET OR DAMP SURFACE, OR IN WATER.
4. SECURE THE PRESET LEVEL SENSOR MODULE ON THE DISCHARGE PIPE AT A LEVEL THAT GUARANTEES PARTIAL PUMP SUBMERGENCE WHEN THE WATER LEVEL IS JUST BELOW THE PUMP STOP PROBE (longest probe; see step 2 on page 2 of this manual). FAILURE TO PROPERLY MOUNT THE PRESET LEVEL SENSOR MODULE MAY CAUSE UNINTENDED CONSEQUENCES.
5. **CAUTION!** REMOVE ANY FLOAT SWITCH THAT IS CURRENTLY USED OR SUPPLIED WITH THE PUMP. IF THE FLOAT CANNOT BE REMOVED, SECURE FLOAT SWITCH SO THAT IT IS ALWAYS ON.

Introduction

The Oil Alert™ preset level sensor, adjustable probe model, is used with Alderon™ Oil Alert™ control panels for the safe operation of pumping, alarming, and monitoring of: elevator sump pits, transformer vaults, and leachate well applications. The Oil Alert™ control panel will activate a pump to remove water from pits in accordance with ASME A17.1, stopping the pump before oil or other harmful substances enter the water supply.

The control panel is operated by the preset level sensor module for pump stop, pump start, high water alarm, and oil detection alarm (high level float switch). As the water level rises touching the pump start probe (middle; fixed), the pump will start and continue to run until the water level recedes below the pump stop probe (longest; adjustable probe) to complete the pump cycle.

The pump stop probe senses air or oil and when the water is no longer touching this probe, the pump stops running so the oil layer will not be pumped out of the sump. Oil will float on top of water, so if oil is present and touching this probe, the pump will also stop running. If the water level rises to activate the high water probe (shortest; fixed) and/or simultaneously activating the high level float switch, then a high water and/or high oil (oil detected) alarm condition will occur.

The preset level sensor is mounted at the desired level to a discharge or separate pipe (mounted to side wall) using a stainless steel pipe clamp and then wired to the control panel using low voltage wires. The adjustable probe is used for the "pump off" detection. The preset level sensor with adjustable probe has a pumping range of 1.0" - 44.0", the distance between the pump stop (longest; adjustable probe) and pump start (middle; fixed) probes.

Specifications

Electrical
12/24VDC, 500mA

Sensor Housing
ABS Plastic

Probes
Stainless Steel

Pumping Range
Adjustable, 1.0 - 44.0 (inches)

Adjustable Probe Electrode Housing
316 Stainless Steel, 1-inch diameter

Adjustable Probe Cable Type
SJOOW (UL/CSA), 18 gauge, 2-conductor, flexible, and water/oil resistant; 48-inches (custom lengths available)

Detection Level
Preset level on discharge pipe in monitoring area and adjustable probe for "pump off"

Sensor Cable Type
25-foot or 50-foot cable
SJE00W (UL) / SJTOOW (CSA), 18 gauge, 5-conductor, flexible, and water/oil resistant

High Level Switch Housing
Polypropylene

High Level Switch
1-foot cable
Narrow Angle, Normally Closed
SJOOW (UL/CSA), 18 gauge, 2-conductor, flexible, and water/oil resistant

Three-Year Limited Warranty

Oil Alert™ Preset Level Sensor

Model: Adjustable Probe | Pumping Range 1.0" - 44.0"

48" Probe Cable, Sensor Only (use with Oil Alert™ Series)



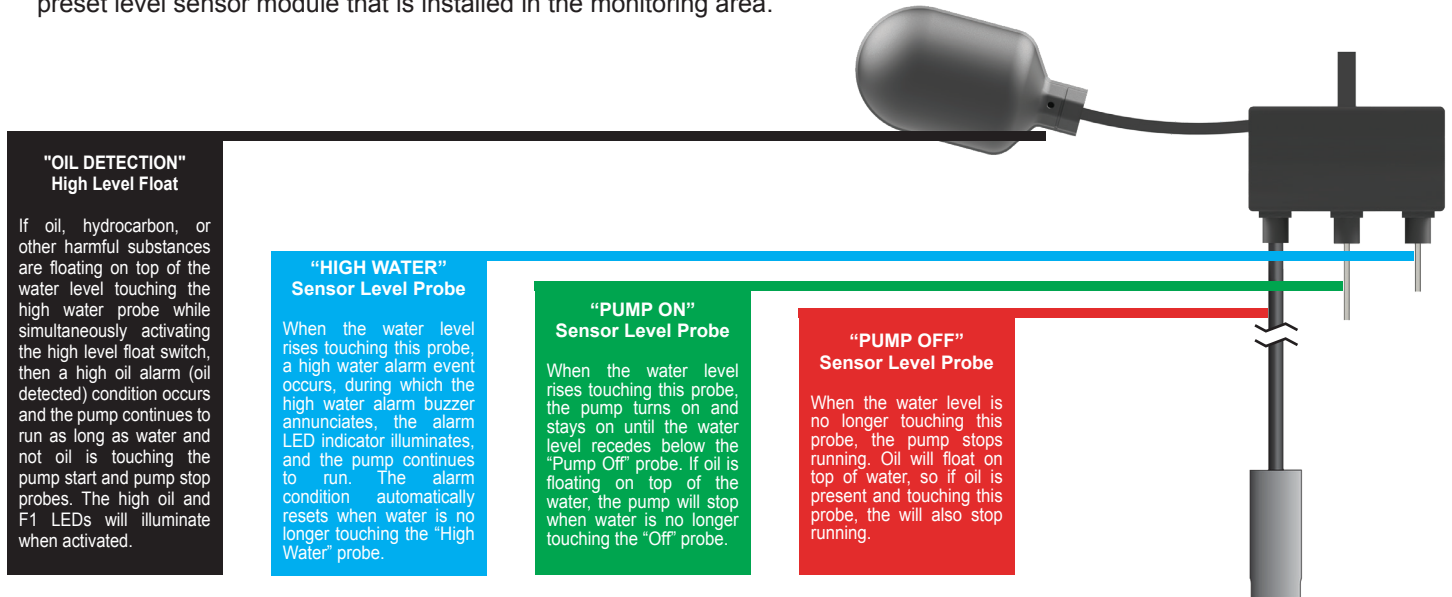
Leading Edge Control Products

Operation, Maintenance and Installation Manual

Application Example | Basic Functions

1. The application example (Fig. 1) shows the basic functions of the preset level sensor module that is installed in the monitoring area.

(Fig. 1)



Installation of Preset Level Sensor

1. Determine the mounting location and attach the preset level sensor to the discharge pipe (Fig. 2A) or a separate pipe mounted to a side wall (not shown) using the provided stainless steel pipe clamp and pipe clamp bracket. Make sure the preset level sensor is clear of inlet water.

CAUTION: To maintain system integrity, Alderon™ recommends to separate the pump power receptacle cable and preset level sensor cable by at least 2-inches (2B) whether the cables are in the tank or when they are above ground in separate conduits/cable grips or junction box. Conductive material could affect the performance of the sensor.

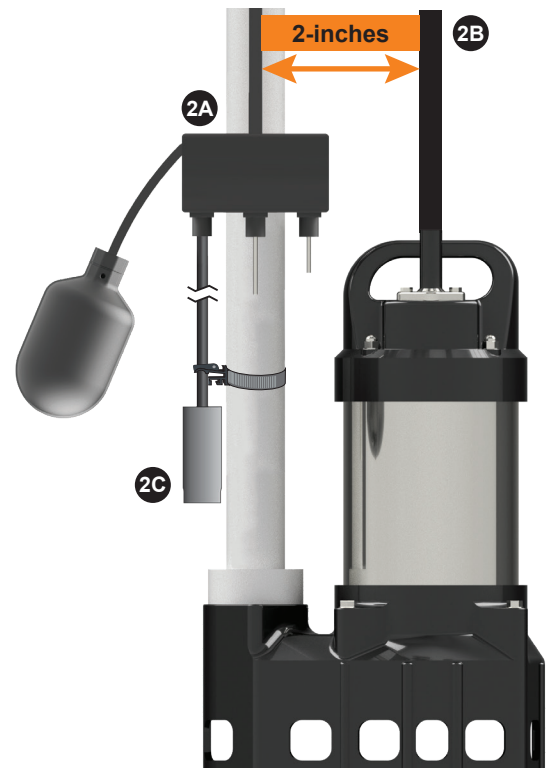
2. The adjustable probe "stop level" (2C) should be mounted at the same height as the top of the pump or slightly below to ensure the pump intake is completely submerged. Tether the adjustable probe to 1-inch, then securely fasten the adjustable probe and preset level sensor using the pipe clamps to maintain system integrity.

3. The preset level sensor is typically pre-installed from the factory. If rewiring or replacing, refer to step 1 on page 4 for basic wiring of the preset level sensor to the control panel.

CAUTION: The wiring information in this guide is for the sensor only, always refer to the complete Oil Alert™ system installation instructions and electrical schematic per model.

4. If sensor cable splicing is required, use liquid tight junction boxes, conduit, and connectors per NEC/local codes. It is recommended to use standard THHN wire, 600VAC, 18 AWG minimum. For applications where splicing longer than 300 feet is required, consult factory.

(Fig. 2)



Oil Alert™ Preset Level Sensor

Model: Adjustable Probe | Pumping Range 1.0" - 44.0"

48" Probe Cable, Sensor Only (use with Oil Alert™ Series)



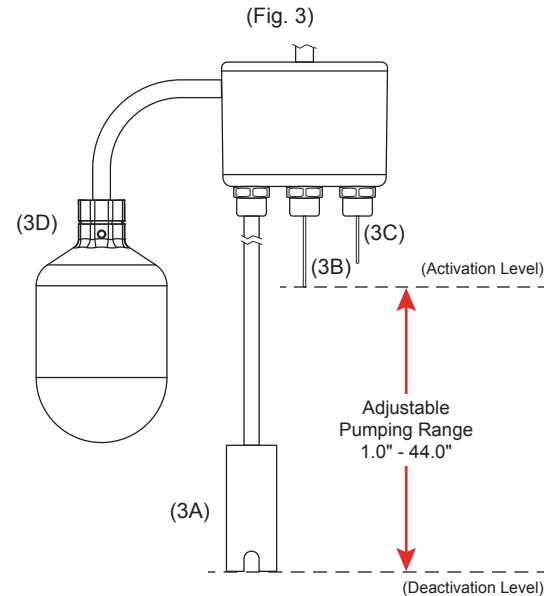
Leading Edge Control Products

Operation, Maintenance and Installation Manual

Pumping Range | Preset Level Sensor

1. Before setting the pumping range, determine the mounting location of the preset level sensor for: pump start, high water alarm, and high oil alarm (oil detected) activation levels per application.
2. The pumping range can be changed by moving the mounting location of the adjustable probe (off level). Tether the suspension probe to 1-inch and move the location of the probe so the bottom is at the desired "pump off" level. Make sure the adjustable probe is mounted at the same height as the top of the pump or slightly below to ensure the pump intake is completely submerged. Securely fasten the preset level sensor and adjustable probe to maintain system integrity.
3. When the water level is no longer touching the pump stop probe (3A; longest/adjustable), the pump stops running. When the water level rises touching the pump start probe (3B; middle/fixed), the pump turns on and remains on until the water level recedes below the pump stop probe. This is the pumping range. The pumping range can be adjusted from 1.0-inch to 44.0-inches based on the mounting location of the pump stop probe (off level).

- 3A = PUMP STOP/Sensor Level Probe (adjustable probe)
- 3B = PUMP START/Sensor Level Probe (preset; fixed probe)
- 3C = HIGH WATER/Sensor Level Probe (preset; fixed probe)
- 3D = OIL DETECTION/High Level Float (narrow angle float switch)



System Wiring | High and Low Voltage Wires

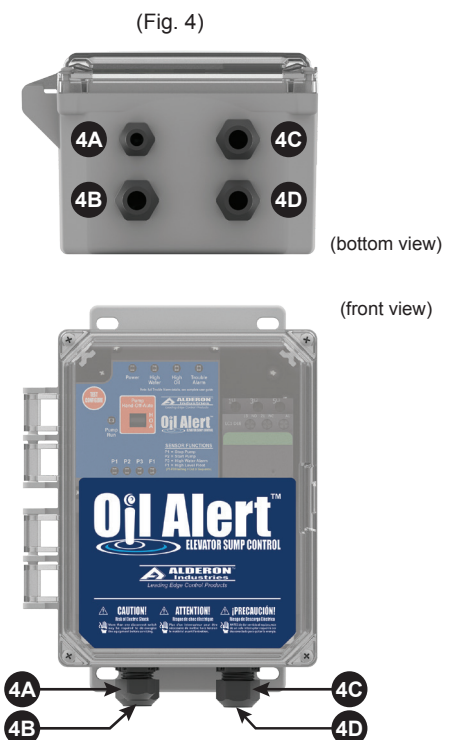
1. A typical Alderon™ Oil Alert™ control panel setup will include separate conduits/cable grips into the enclosure for system wiring of: preset level sensor, incoming pump power, incoming system power, and remote alarm panel or building automation system. Make sure all conduits/cable grips are sealed and waterproof per local codes.

- 4A = Low Voltage, Remote Alarm Panel or BAS/SCADA System
- 4B = Low Voltage, Preset Level Sensor Cable
- 4C = High Voltage, Incoming Pump Power Cable
- 4D = High Voltage, Incoming System Power Cable

WARNING: If the preset level sensor and power wires are run in the same conduit/cable grip or junction box, follow the NEC requirements pertaining to separation of voltages.

2. Alderon™ recommends to separate the incoming pump power cable and preset level sensor cable by at least 2-inches, whether the cables are in the tank or when they are above ground in separate conduits/cable grips or junction box.

Note: The control panel should be mounted within the distance of the preset level sensor cable from the monitoring area to the control panel. Splicing may be required for some installations. Always refer to the included electrical schematic for complete wiring and voltage information.



Oil Alert™ Preset Level Sensor

Model: Adjustable Probe | Pumping Range 1.0" - 44.0"

48" Probe Cable, Sensor Only (use with Oil Alert™ Series)



Leading Edge Control Products

Operation, Maintenance and Installation Manual

System Wiring | Preset Level Sensor to Control Panel

1. The preset level sensor is typically pre-installed from the factory. If rewiring or replacing, route the 5-conductor sensor cable from the mounting location in the sump through the low voltage conduit/cable grip into the Oil Alert™ control panel and connect the wires to the terminals listed below and shown in the diagram (Fig. 5).

- GREEN = TB-G (Stop Probe)
- YELLOW = TB-Y (Start Probe)
- RED = TB-R (High Water Alarm Probe)
- WHITE = TB-W (Float Switch Wire 1, Oil Detection)
- BLACK = TB-B (Float Switch Wire 2, Oil Detection)

CAUTION: The wiring information and diagram are for the sensor module only, always refer to the complete Oil Alert™ system installation instructions and electrical schematic per model.

Testing | Preset Level Sensor and Control Panel, Bucket Test (5 gallon pail)

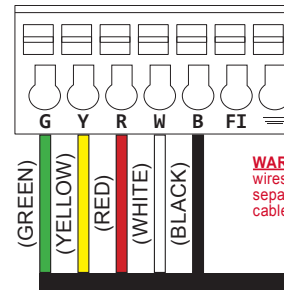
When an Oil Alert™ full system installation test is not possible, perform a quick test of the control panel operation using the preset level sensor module and a 5-gallon pail filled with water.

*Note: To perform this test, you **MUST** place a ground rod/wire into the pail and connect the ground wire to an open terminal on the control panel ground bar or the pump will not activate (start).*

1. Verify the incoming voltages match the Oil Alert™ system and all steps of the wiring and installation are completed before applying power for the quick test.
2. Fill a 5-gallon pail with water and place a ground rod/wire into the pail to introduce earth ground to the water and connect the wire into an open terminal on the Oil Alert™ control panel ground bar.
3. Toggle the control panel hand-off-auto (HOA) pump selector switch to the AUTO position.
4. Before lowering the preset level sensor into the water (Fig. 6), test a high oil (oil detected) alarm condition by raising (6A; activate) and lowering (6B; deactivate) the high level float switch. When activated, an alarm condition should occur on the control panel. The alarm condition should automatically reset when the float switch is deactivated.
5. As the sensor is slowly lowered into the water, immersing the pump stop probe (6C; longest) and pump start probe (6D; middle), the pump should start and continue to run as long as water is touching both of these probes.
6. If the sensor is slowly lowered into the water, immersing the pump stop probe (6C; longest), pump start probe (6D; middle), and high water alarm probe (6E; shortest), a high water alarm should occur on the control panel. The alarm condition should automatically reset once the shortest probe (6E; shortest) is removed from the water.

(Fig. 5)

(Oil Alert™ Control Panel Terminals)



WARNING: The sensor contacts are low voltage wires, follow the NEC requirements pertaining to separation of voltages if run in the same conduit/cable grip or junction box with high voltage wires.

5-conductor sensor wire (sensor to control panel)

(Fig. 6)

