



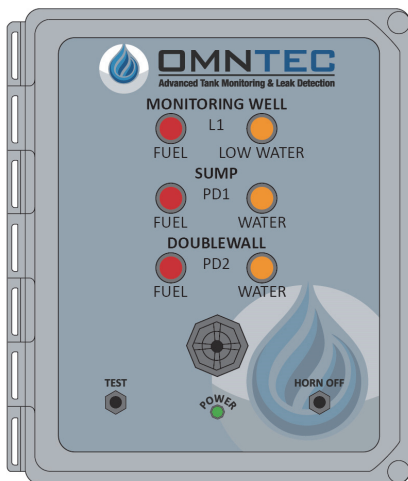
OMNTEC

Advanced Tank Monitoring & Leak Detection



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L1PD2-2PD1PDWL-6R INSTALLATION GUIDE



THREE CHANNEL ALARM PANEL

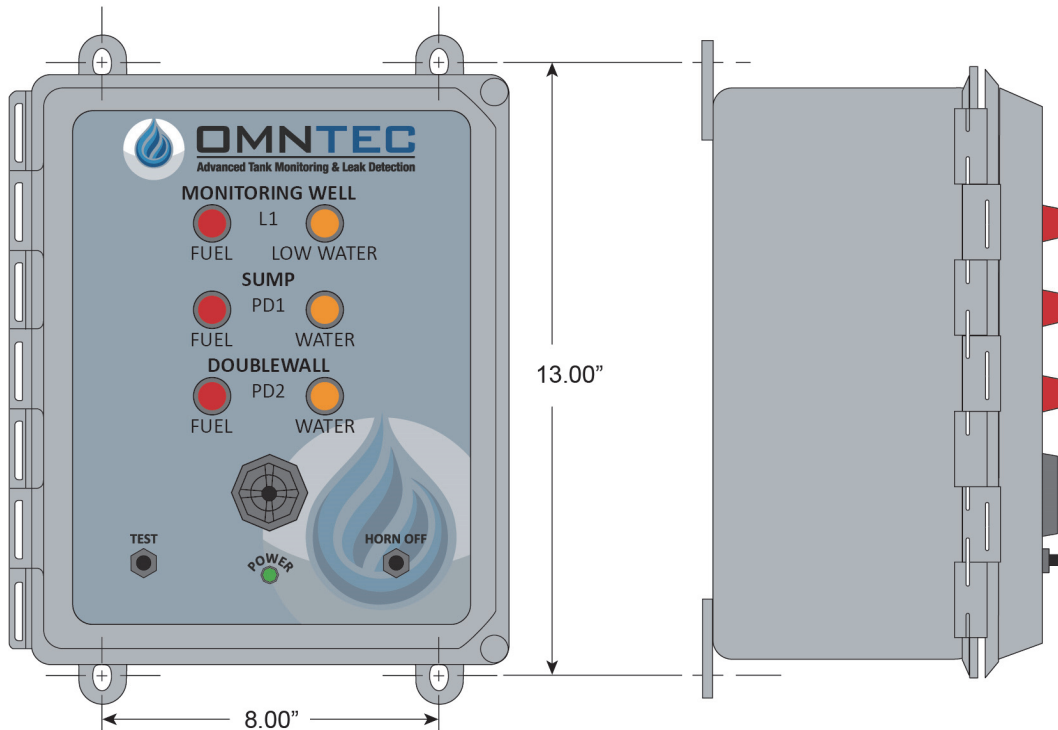
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TABLE OF CONTENTS

L1PD2-2PD1PDWL-6R SPECIFICATIONS	3
DIMENSIONS FOR MOUNTING AND KNOCKOUTS	4
LPD-SERIES INSTALLATION INSTRUCTIONS	5
L1PD2-2PD1PDWL-6R CONTROLLER CONNECTION DIAGRAM.....	7
PDS SENSOR.....	8
PDWF SENSOR	9
PDWL SENSOR	10
RA-SERIES REMOTE HIGH-LEVEL ALARM	12
LOG SHEET	13
WARRANTY	14

L1PD2-2PD1PDWL-6R THREE CHANNEL ALARM PANEL



L1PD2-2PD1PDWL-6R SPECIFICATIONS

POWER INPUT

100-240 VAC, 50-60 Hz
16 Watts maximum

POWER TO SENSORS

2 VDC @ 13 mA

RELAY OUTPUTS

(6) SPST normally open dry contacts 0.5 AMPS, 120 AC switches when an alarm condition occurs

WEIGHT

8.75 LBS.

DIMENSIONS

(W) 10.875" x (H) 12.25"

SENSOR CABLE

Shielded 22 AWG UL-E118830 CM
Maximum length 2000 feet

ENCLOSURE

NEMA 4X

OPERATING TEMPERATURE

-40° to 140° F

AUDIO/VISUAL CONSOLE

AUDIBLE ALARM - 95 dB pulsing horn with no timeout, no horn on well water alarm

RED LIGHT - Indicates fuel alarm

AMBER LIGHT - Indicates water alarm

TEST BUTTON - When pressed will test system lights and horn

GREEN LIGHT - Indicates the power is on

HORN OFF BUTTON - Silences the audible alarm when pressed

SENSORS

(1) PDS Product distinguishing optic leak sensor

(1) PDWF Product distinguishing optic interstitial sensor

(1) PDWL Product distinguishing well sensor

OPTIONAL ACCESSORIES

RA-Series Audio/visual remote annunciator

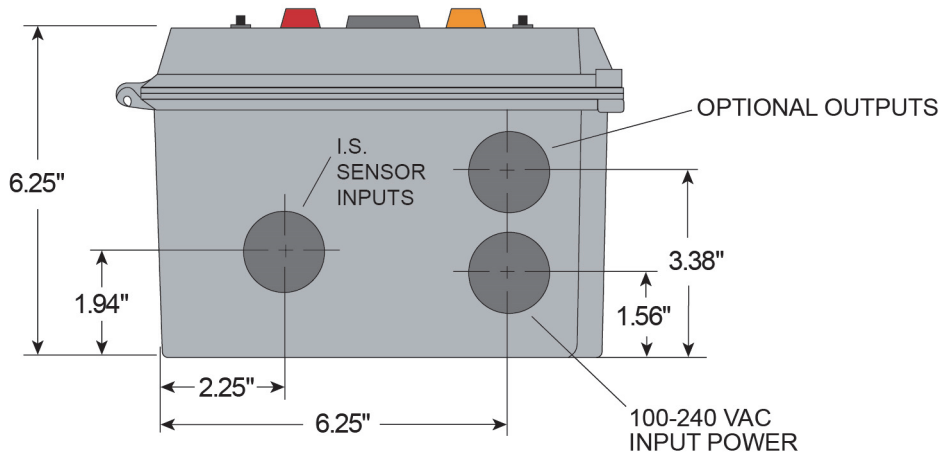
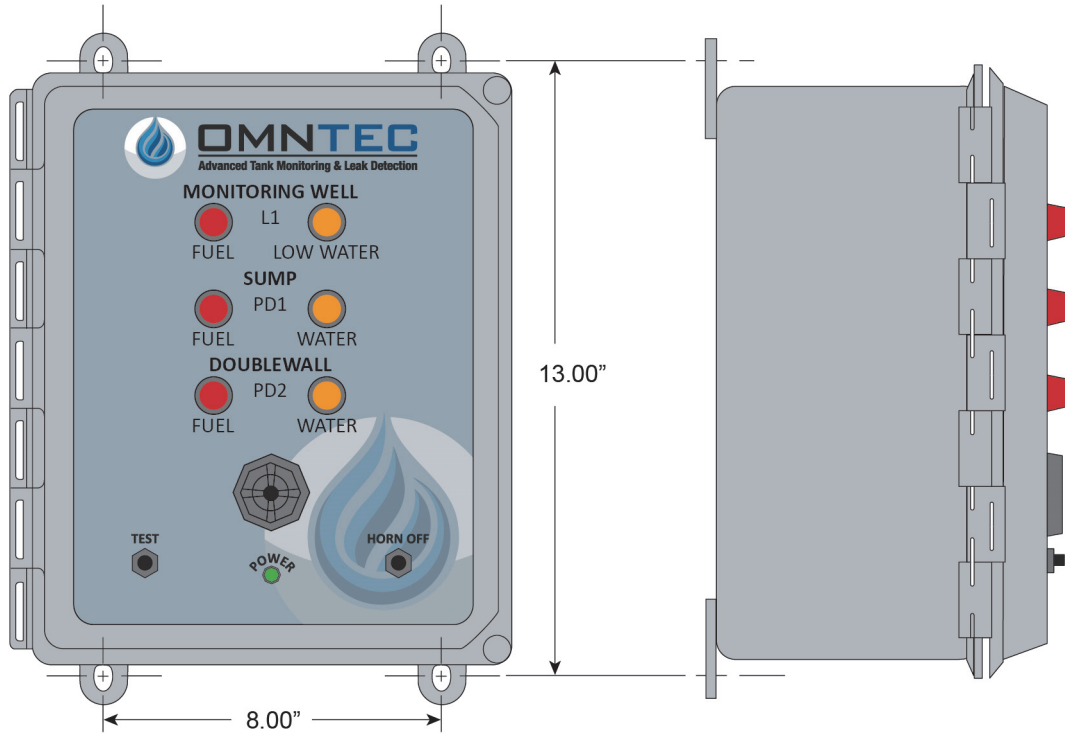
RLY-RA External relay box series

LABELS

Provided with controller

L1PD2-2PD1PDWL-6R

DIMENSIONS FOR MOUNTING AND KNOCKOUTS



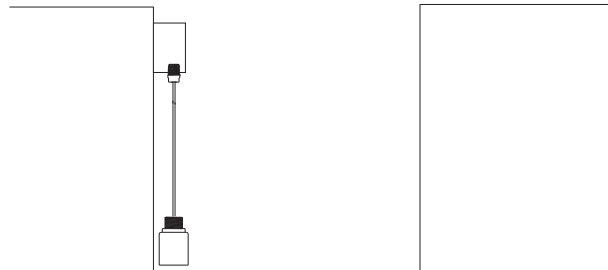
LPD-SERIES INSTALLATION INSTRUCTIONS

READ ALL INSTRUCTIONS PRIOR TO SYSTEM INSTALLATION. ALL WIRING IS TO BE DONE IN ACCORDANCE WITH ALL NATIONAL AND LOCAL ELECTRICAL CODES. POWER IS TO BE OFF DURING ANY WIRING. WIRE AND TEST ENTIRE SYSTEM BEFORE UTILIZING SK-4 CONNECTOR SEALING KITS. STANDARD EQUIPMENT IS COMPATIBLE WITH MOST PETROLEUM PRODUCTS. SOME CHEMICAL AND SOLVENTS REQUIRE SPECIFIC MATERIALS OF CONSTRUCTION. IF UNSURE OF COMPATIBLE CONTACT MANUFACTURER.

1. PDS SENSOR

The PDS sensor (see pg. 8) is designed to detect liquid in sumps or containment areas.

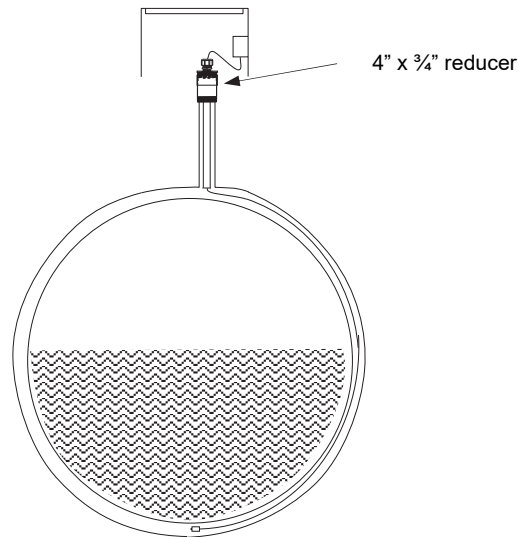
To install the PDS sensor as an above ground sump sensor mount a junction box between 2 and 3 feet above bottom of containment area. Attach sensor to junction box via conduit or cable clamp, leaving a 1/4" clearance between the sensor end and the bottom of the containment area. For detailed wiring scheme refer to appropriate drawing (see pg. 7). Connect sensor cables to control unit cables in junction box using supplied SK-4 connector sealing kit.



2. PDWF SENSOR

PDWF sensor (see pg. 9) is designed to detect liquid and differentiate water from hydrocarbons in the interstitial space of a double wall fiberglass tank.

The PDWF-* sensor is installed through the interstitial port. If the tank is pitched, locate the interstitial sensor at lowest elevation of tank. Insert sensor into the interstitial port and push down around outside of inner tank. When PVC handle contacts the inner tank the sensor should be located at the bottom of interstitial space. Reduce the riser to 3/4" NPT and install the supplied oiltight fitting. The oiltight fitting must be installed to prevent liquids from entering the interstitial space. Run conduit from interstitial manhole to the central junction box, located in the manway. Install a second oiltight on the sensor cable and pull sensor cable through conduit. Connect oiltight to conduit and tighten. For detailed wiring scheme refer to appropriate drawing (see pg. 7). Connect sensor wires in central junction box to control unit cable(s) and use SK-4 connector sealing kit.



3. CONTROL UNIT

The control unit (see pg. 3) should be mounted in a manned area. Route sensor control cable through conduit from the junction box to the control unit. Sensor control cables enter the control unit through the output port only. The cables are wired as shown in the appropriate drawing (see pg. 7). The control unit accepts any possible combination of L-Series sensors.

1. INPUT POWER HOOKUP

Input power requirements are:
100 – 240 VAC
16 Watts max
50 – 60 Hz

Input power cable should be wired in accordance with all pertinent electrical codes. This cable should enter the control unit through the input power port only. The power is hooked up to the power supply and wired as per control drawing.
NOTE: EARTH GROUND TERMINAL MUST BE CONNECTED.

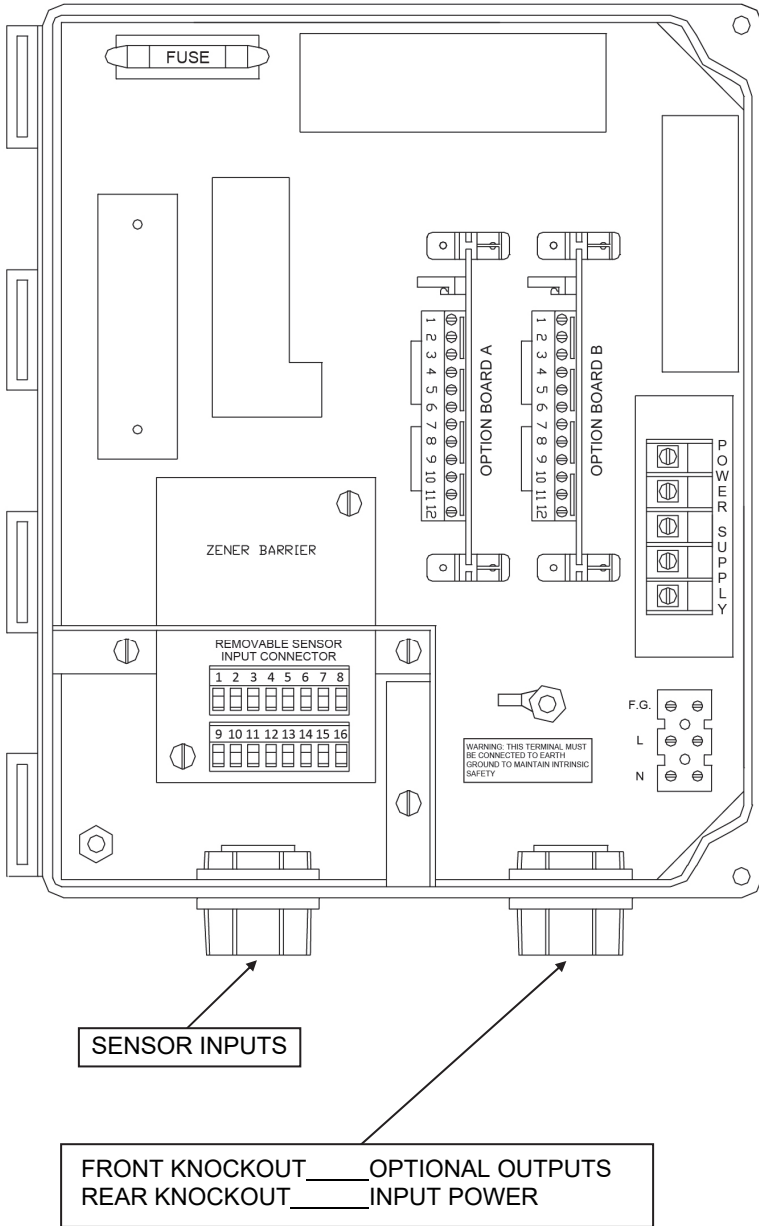
2. REMOTE ANNUNCIATOR OPTION

Mount remote annunciator (see pg. 12) within audio / visual range of the filling operator. NOTE: the remote must be outside of the HAZARDOUS AREA. Pull appropriate low voltage wire from the remote to the control unit. See appropriate drawing for wiring details. Run wires through output port. Connect color coded nuts.

3. SK-4 CONNECTOR SEALING KIT

Make all splices using SK-4 connector kit (supplied).

L1PD2-2PD1PDWL-6R CONTROLLER CONNECTION DIAGRAM



NOTE: To maintain proper shielding, **BLACK sensor wires** and **SHIELD DRAINS** should **not** be connected together at sensors.

COLOR CODE

CABLES FROM SENSORS TO REMOVABLE SENSOR INPUT CONNECTORS

1	RED	L1 WELL SENSOR #1 PDWL FUEL
2	BLACK	L1 WELL SENSOR #1 PDWL LOW WATER
3	RED	PD1 SUMP SENSOR #2 PDS (L.E.D.)
4	WHITE	PD1 SUMP SENSOR #2 PDS FUEL
5	GREEN	PD1 SUMP SENSOR #2 PDS WATER
6	RED	PD2 DOUBLEWALL SENSOR #3 PDWF (L.E.D.)
7	WHITE	PD2 DOUBLEWALL SENSOR #3 PDWF FUEL
8	GREEN	PD2 DOUBLEWALL SENSOR #3 PDWF WATER
9	BLACK	FROM SENSORS #1 - #3
10	SHIELD DRAIN	
11	UNUSED	
12	UNUSED	
13	UNUSED	
14	UNUSED	
15	UNUSED	
16	UNUSED	

WIRES TO OPTION BOARD A

WIRES FROM REMOTE

1	GREEN	- HORN
2	RED	+ HORN
3	BLACK	GROUND
4	WHITE	L1 WELL SENSOR #1 PDWL FUEL
5	ORANGE	PD1 SUMP SENSOR #2 PDS FUEL
6	BLUE	PD2 DOUBLEWALL SENSOR #3 PDWF FUEL

WIRES FROM RELAY OUTPUTS

7	COMMON	PD2 DOUBLEWALL SENSOR #3 PDWF FUEL
8	NORMALLY OPEN	
9	COMMON	PD1 SUMP SENSOR #2 PDS FUEL
10	NORMALLY OPEN	
11	COMMON	L1 WELL SENSOR #1 PDWL FUEL
12	NORMALLY OPEN	

WIRES TO OPTION BOARD B

WIRES FROM REMOTE

1	GREEN	- HORN
2	RED	+ HORN
3	BLACK	GROUND
4	BROWN	L1 WELL SENSOR #1 PDWL LOW WATER
5	YELLOW	PD1 SUMP SENSOR #2 PDS WATER
6	PURPLE	PD2 DOUBLEWALL SENSOR #3 PDWF WATER

WIRES FROM RELAY OUTPUTS

7	COMMON	PD2 DOUBLEWALL SENSOR #3 PDWF WATER
8	NORMALLY OPEN	
9	COMMON	PD1 SUMP SENSOR #2 PDS WATER
10	NORMALLY OPEN	
11	COMMON	L1 WELL SENSOR #1 PDWL LOW WATER
12	NORMALLY OPEN	

100-240 VAC

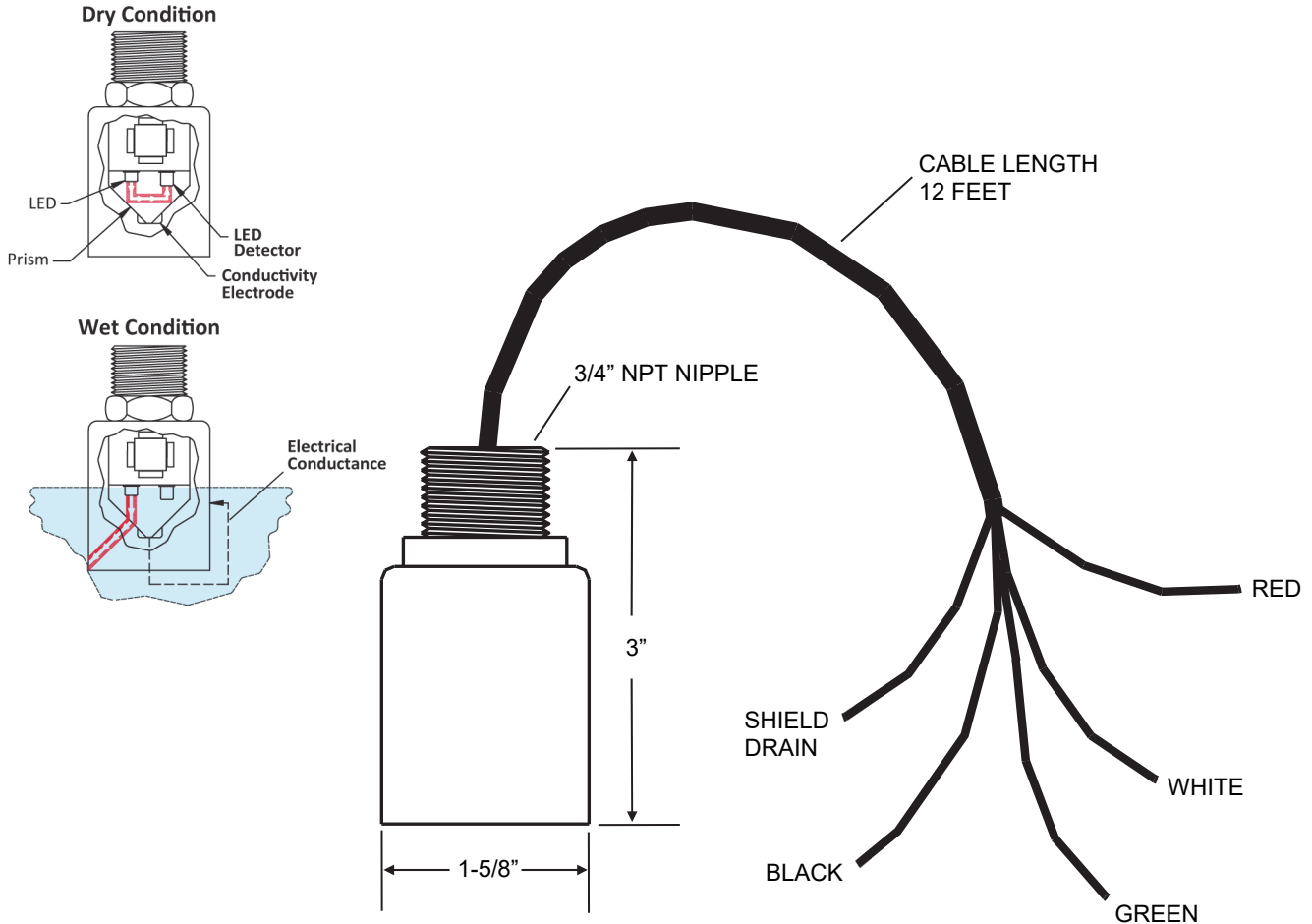
WIRES TO POWERSUPPLY

F.G.	FIELD GROUND
L	LINE
N	NEUTRAL

PDS SENSOR

PRODUCT DISTINGUISHING OPTIC SENSOR

PRINCIPLES OF OPERATION



PDS SPECIFICATIONS

U.L. LISTED 5L04

Intrinsically safe Class I, Group D Hazardous Locations when connected in accordance with control drawing nos. L1PD2, L2PD4, L3PD6

OPERATING TEMPERATURE

-40 to +140 F

POWER

2 VDC @ 13 mA

WEIGHT

1/2 pound

PRINCIPLES OF OPERATION

Liquids (ex: fuel, water) - Photo optic
 Dry Condition - Normally closed light beam
 Alarm Condition - Opens (refracts) normally closed light beam
 Water Detection - Conductance

SENSOR CABLE

Shielded 22 AWG UL-E118830 CM
 Maximum length 2000 feet

RESPONSE TIME

Immediate

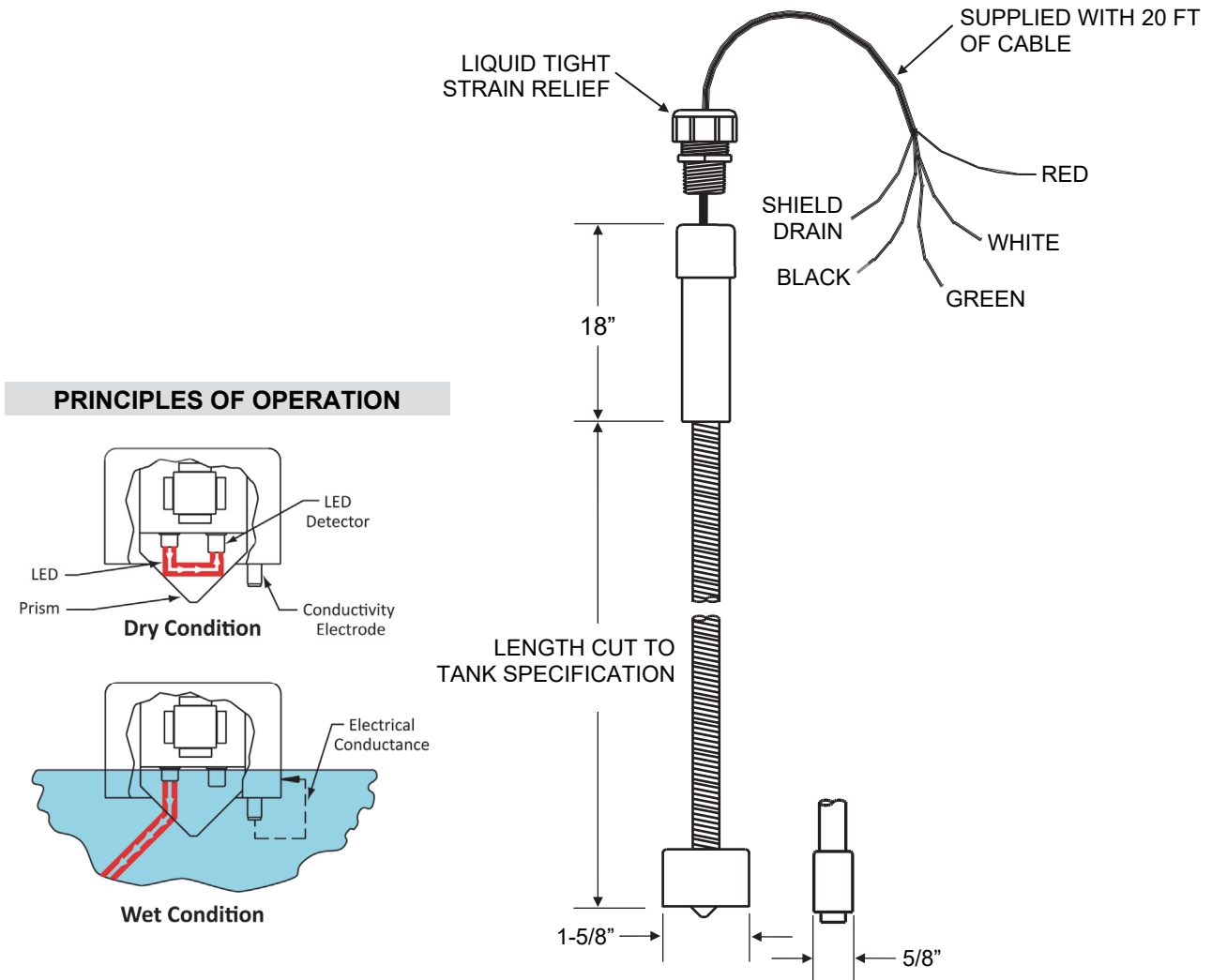


OMNTEC

Advanced Tank Monitoring & Leak Detection

PDWF SENSOR

PRODUCT DISTINGUISHING FIBERGLASS TANK DRY INTERSTITIAL SENSOR



PDWF SPECIFICATIONS

U.L. LISTED 5L04

Intrinsically safe Class I, Group D Hazardous Locations when connected in accordance with control drawing nos. L1PD2, L2PD4, L3PD6

OPERATING TEMPERATURE

-40 to +140 F

POWER

2 VDC @ 13 mA

WEIGHT

2 pounds

PRINCIPLES OF OPERATION

Liquids (ex: fuel, water) - Photo optic
Dry Condition - Normally closed light beam
Alarm Condition - Opens (refracts) normally closed light beam
Water Detection - Conductance

SENSOR CABLE

Shielded 22 AWG UL-E118830 CM
Maximum length 2000 feet

RESPONSE TIME

Immediate

PDWL SENSOR GROUNDWATER SENSOR

Features

- > Ideal for areas with high water table
- > Long service life and reusable
- > Continuous sensing along entire length of unit
- > Lockable, water tight cap for 4" wells
- > Available lengths up to 25'

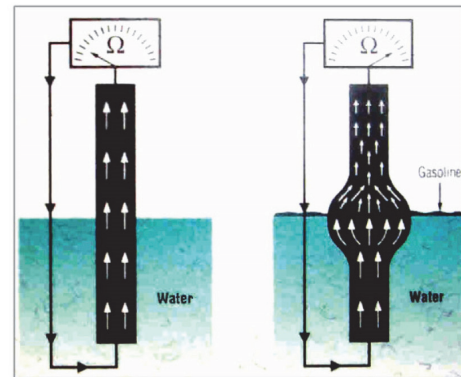
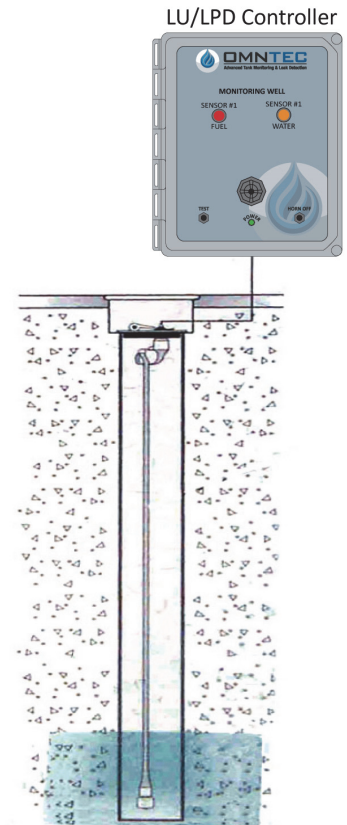
Description

The PDWL groundwater sensor can be incorporated with associated electronics to meet EPA requirements for out of tank product detection. It detects as little as 1/32" of floating hydrocarbon product on the water table. Designed for observation wells up to 25' deep, a liquid level switch detects drop in the water below the hydrocarbon sensor. Quicker than most vapor well monitors, the PDWL responds to gasoline within ten minutes. Response time for other hydrocarbons, the C₅ to C₁₆ range, takes only a bit longer. A watertight cap prevents spilled fuel from entering the well.

The entire unit is easily removed for periodic inspection. If the probe comes in contact with hydrocarbon, simply allow it to air out and reuse. OMNTEC recommends these units for installation in non-contaminated sites only; they are not designed for remediation applications.

Simple, Reliable Operation

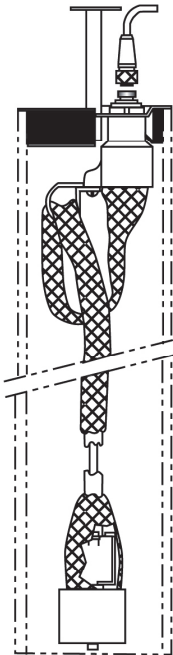
To detect liquid hydrocarbons, PDWL well monitoring sensors incorporate an innovative polymer strip that continuously conducts electricity when voltage is applied. Extending longitudinally within the unit's protective braiding, the polymer strip physically swells on contact with liquid hydrocarbons anywhere along its length. The swelling causes a dramatic increase in the electrical resistance of the polymer, and may be used as a switch when incorporated with associated system electronics. When allowed to recover, outside the well, the polymer reverts to its normal conductive state for reuse. In absence of hydrocarbons, the polymer strip has a base resistance of 0.8 to 3.0 kW/ft.



Electrical resistance is unaffected by non-hydrocarbon liquid.

Hydrocarbon based liquids swell strip and increase electrical resistance

PDWL SENSOR GROUNDWATER SENSOR



SPECIFICATIONS

Wetted Materials	PVC Polyester, Polysulfone, Polypropylene, Nitrile, Epoxy
Operating Temperature	-20°F to 150°F (-28.9°C to +65.5°C)
Polymer Base Resistance	0.8 to 3.0 kW/ft.

Note: PDWL sensors are non-voltage producing devices and do not contain energy storing components. However, since primary use is in hazardous locations, an appropriate intrinsically safe interface device is required.

Current published specifications are subject to change without notification. Verify specifications with manufacturer.

NOTES:

1. Recommended for installation in non-contaminated sites only; not designed for remediation applications.
2. Locking cap (lock not included) is designed to satisfy underground monitoring applications per EPA requirements. Federal register Vol.53, No.185, rules and regulations.
3. Designed for 4" schedule 40 PVC (per ASTM D 1785-64T) with an inside diameter of 3.980" to 4.026".

RA-SERIES REMOTE HIGH-LEVEL ALARM

RA-1



RA-2



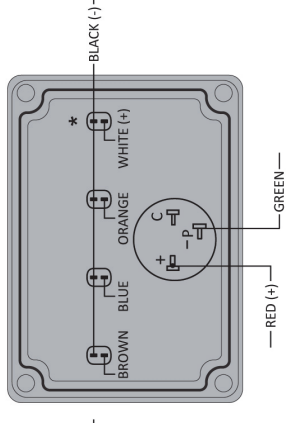
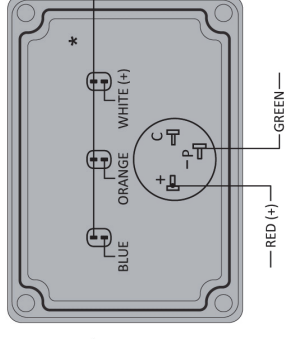
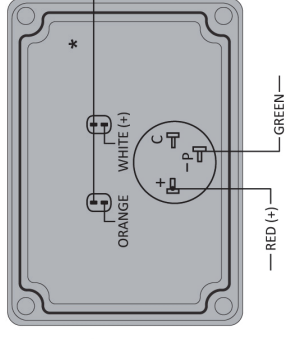
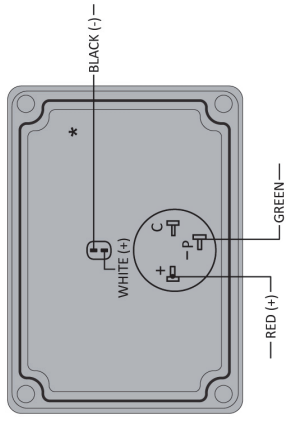
RA-3



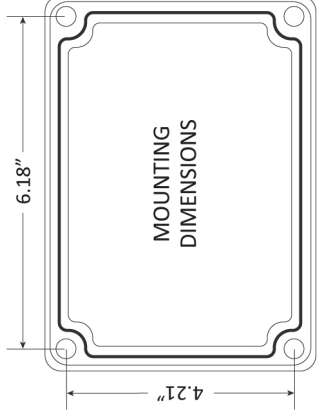
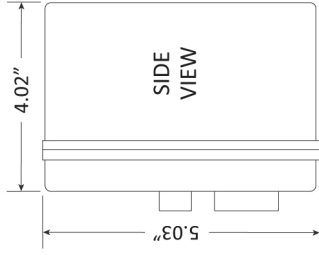
RA-4



INTERNAL WIRING COLOR CODE



***Warning Label Placed Here** **WARNING: LOW VOLTAGE INPUTS ONLY**



SPECIFICATIONS	
Audible Alarm	95 dB pulsing horn
Red Light	Liquid-high-level alarm
Response Time	Immediate
Power Input	12VDC @200mA maximum from controller
Wire	22 AWG minimum
Weight	1 lb.

Note: It is recommended that knockouts be placed in the bottom of enclosure.

WARRANTY

The seller OMNTEC Mfg., Inc. warrants to buyer defects when properly installed, and maintained by user. The seller's sole obligation is to repair or replace parts found to be defective, or non-conforming for one year and only after evaluation by factory. The liability of the seller shall not exceed the price paid for the components found to be defective. The above warranty is exclusive of all other warranties whether implied or expressed. Seller assumes no obligation for special or, indirect damages incurred by user.

All standard tank gauging systems are free of defects when properly installed and maintained by user. Warranty on tank gauging systems will only be effective after proper documentation has been submitted by the buyer to OMNTEC Mfg., Inc. The seller's sole obligation is to repair or replace parts found to be defective, or non-conforming for one year and only after evaluation by factory. Technical support must be contacted for a Return Material Authorization (RMA #) prior to sending any potentially defective parts. The liability of the seller shall not exceed the price paid for the components found to be defective. The above warranty is exclusive of all other warranties whether implied or expressed. Seller assumes no obligation for special or indirect damages incurred by user.

All standard replacement parts, "add-ons", or spare parts are free of defects when properly installed and maintained by user. The seller's sole obligation is to repair or replace parts found to be defective or non-conforming for 90 days and only after evaluation by factory. The liability of the seller shall not exceed the price paid for the components found to be defective. The above warranty is exclusive of all other warranties whether implied or expressed. Seller assumes no obligation for special or indirect damages incurred by user.

Equipment not covered by this warranty includes but is not limited to: custom equipment and control systems.