PROTEUS® AUTOMATIC TANK-GAUGING AND
LEAK-DETECTION SYSTEM FOR OIL/WATER SEPARATOR TANKS
OEL8000IIIB/K/X

PROGRAMMING & INSTALLATION INSTRUCTIONS

The Proteus® OEL8000III B, K, or X automatic tank-gauging and leak-detection systems for oil/water separator (OWS) tanks provide complete visibility on the status of your oil/water separator. It features both internal and external tank monitoring, which is easily read on its 7-inch color touchscreen display. The PROTEUS® Series can simultaneously monitor product levels, water levels, temperature, for each OWS. It is easy to understand and able to track multiple OWS from one simple console.

The OEL8000IIIB or OEL8000IIIK ATG can provide level monitoring and leak detection for up to 4 OWS, and up to 8 OWS on the OEL8000IIIB8, OEL8000IIIK8 and OEL8000IIIX.

## Alarm Points

| | |
|---|---|
| High Liquid (Water & Oil) Alarm: | Alarm on a point higher than the invert pipe/outlet downcomer (normally a few inches above top of invert pipe). |
| Low Liquid (Water & Oil) Alarm: | Alarm on a point below the invert pipe/outlet downcomer (normally 4 inches below outlet downcomer opening). |
| High-High Oil Level (Maximum Allowable Oil Level): | Second high oil measurement (product height minus the water height). Normally set to 43% of the height below the invert pipe. Oil is getting close to the input of the invert pipe. (Invert pipe height x .43). See Figure 1.0. |
| High Oil Alarm: | High oil measurement (product height minus the water height). Normally set to 20% of the height below the invert pipe. (Invert pipe height x .20). See Figure 1.0. |
| Leak Alarm: | Monitors one or more BX-PDS sensors located in the interstitial space for fluid. |
| Low Water Alarm: | Alarms when the water nears the bottom of the outlet downcomer opening. |

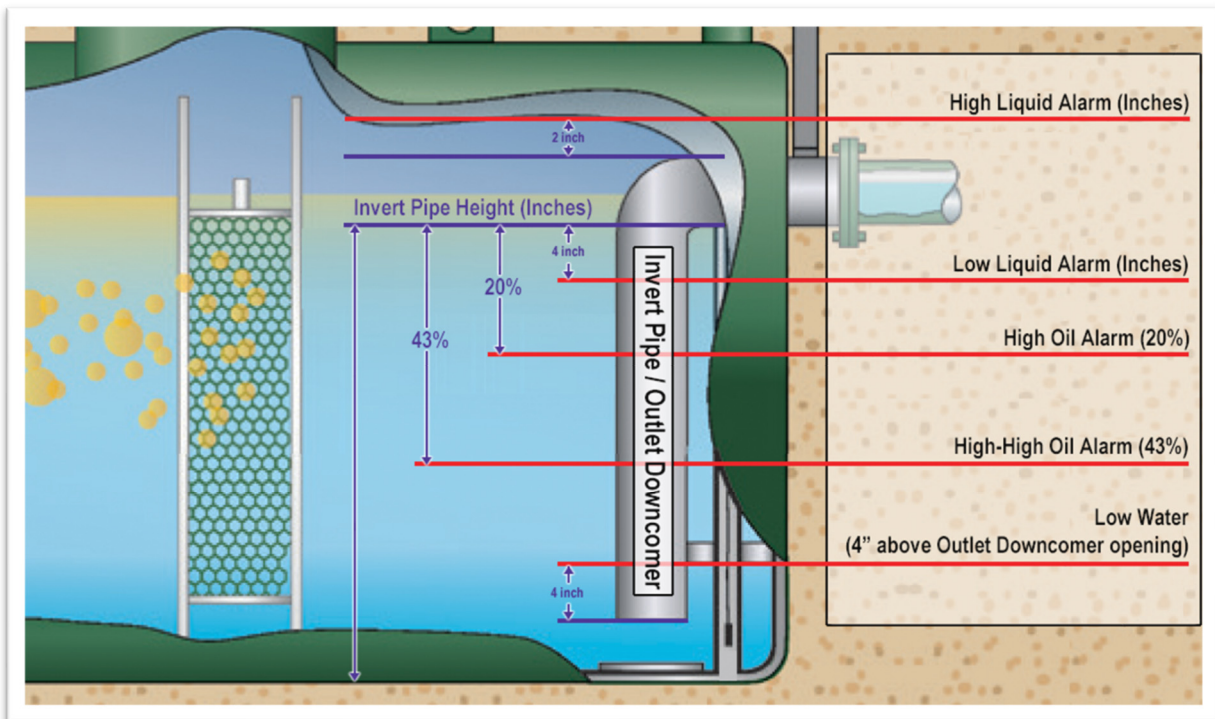**ALL ALARMS ARE PROGRAMMABLE AND SET IN HEIGHT (Inches)**



Figure 1.0

**OMNTEC** *Mfg., Inc., 2420 Pond Road, Ronkonkoma, NY 11779*
*Phone (631) 981-2001 Fax (631) 981-2007 www.OMNTEC.com*
*File Name: DI00014 DI00015 DI00018 DI00020 DI00026-7 rev2043.docx  Page 1 of 6  Rev Date: 10-22-2020*
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## Set Up

***Program the tank to OWS mode.***

From UTILITIES > SETUP MENU > PASSWORD (default 000000) > TANK COLORS & ORIENTATION.
Select the OIL/WATER SEPARATOR icon under SELECT TANK PROFILE (third from left) to set the tank in OWS Mode.
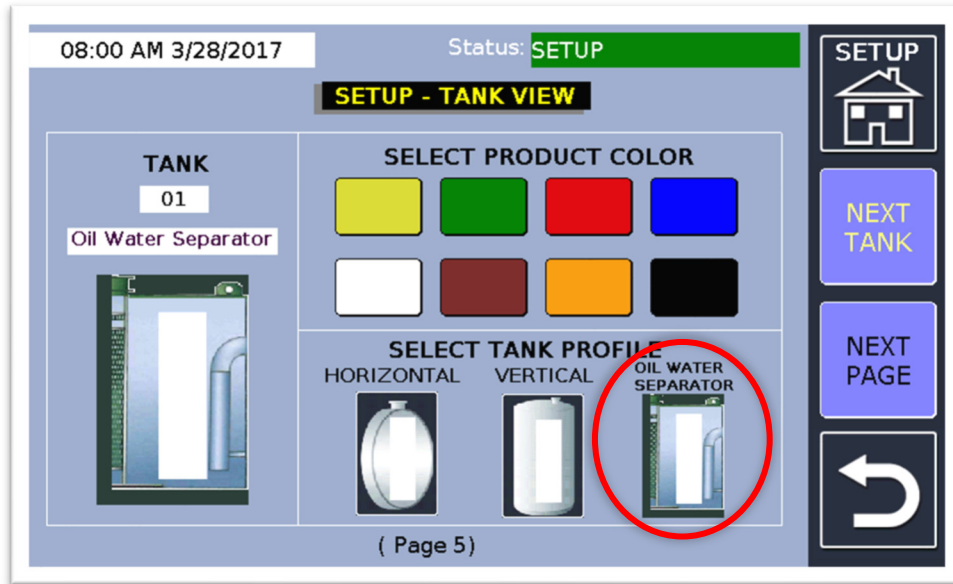See Figure 2.0 (red oval).



Figure 2.0

***Program the tank and probe parameters. (See the Proteus programming manual for definitions of the tank parameters page).***

The product and water nulls are programmed later in this document under the Calibration section (page 6).
From UTILITIES > SETUP MENU > PASSWORD (default 000000) > TANK PARAMETERS. Set the tank and probe parameters. See Figure 3.0. Note; values in image are examples and may vary for your application.
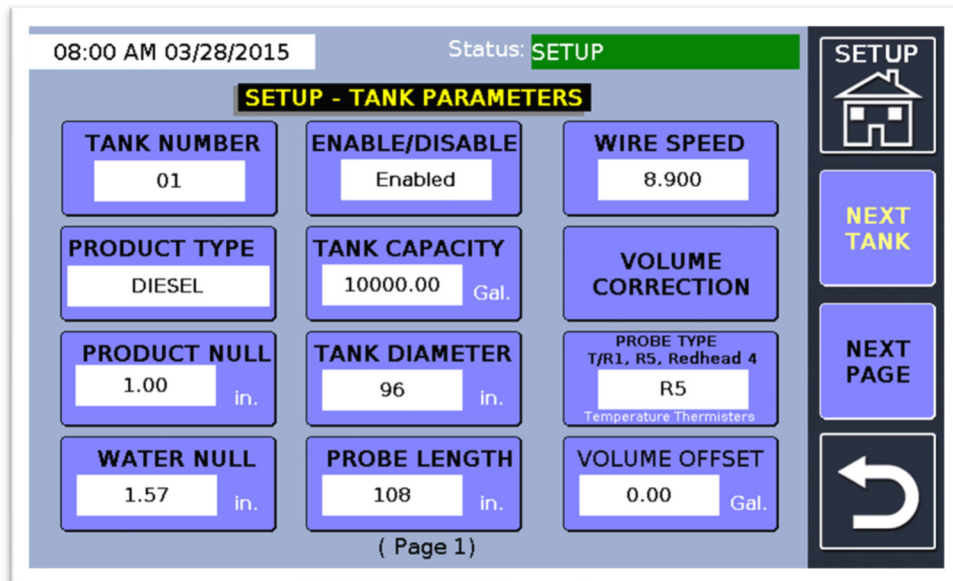


Figure 3.0

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### Program the tank alarm and set points.

Press NEXT PAGE twice from the (previous) SETUP-TANK PARAMETERS page. Note; **INVERT Ht OFFSET** is not used.
See Figure 4.0. Note; values in image are examples and may vary for your application.
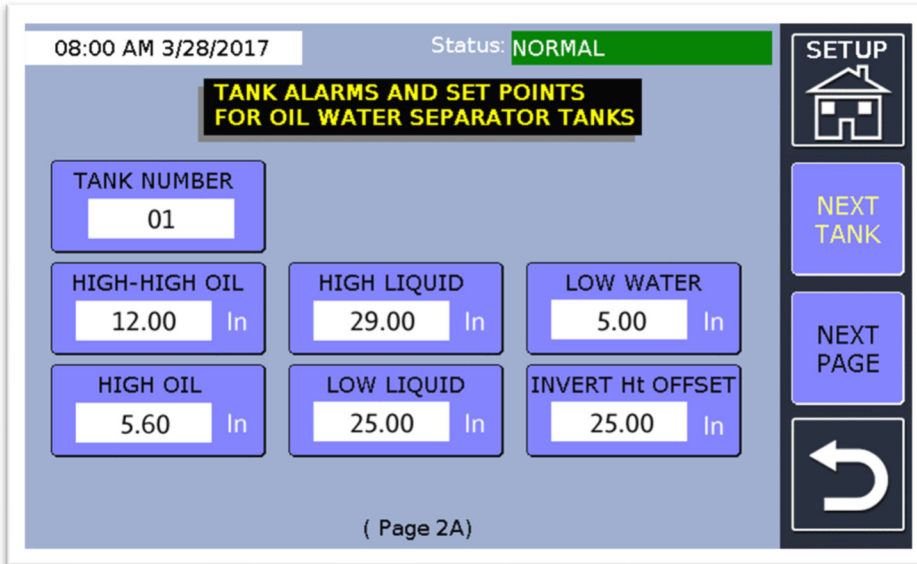


Figure 4.0

**High-High Oil:** Maximum allowable oil level. Second high oil measurement (product height minus the water height). Normally set to 43% of the height below the invert pipe.
**High Oil:** High oil measurement (product height minus the water height). Normally set to 20% of the height below the invert pipe.
**High Liquid:** Alarm on a point higher than the invert pipe (normally a few inches above invert pipe).
**Low Liquid:** Alarm on a point below the outlet downcomer (normally 4 inches below outlet downcomer opening).
**Low Water:** Alarms when the water nears the bottom of outlet downcomer. Normally set to 4" above the bottom of the invert pipe's height.
**Invert Ht Offset:** Do not use or set; for reference only.
*Refer to Figure 1.0*

### Acknowledging (silencing) the audible alarm.

When an alarm is triggered, such as a HIGH OIL ALARM, you can acknowledge, or silence, that audible alarm by pressing the ALARM ACK button that will appear to the right of the screen. The STATUS of the system will remain in alarm until that alarm issue is resolved.
See Figure 4.1. Note; values in image are examples and may vary for your application.
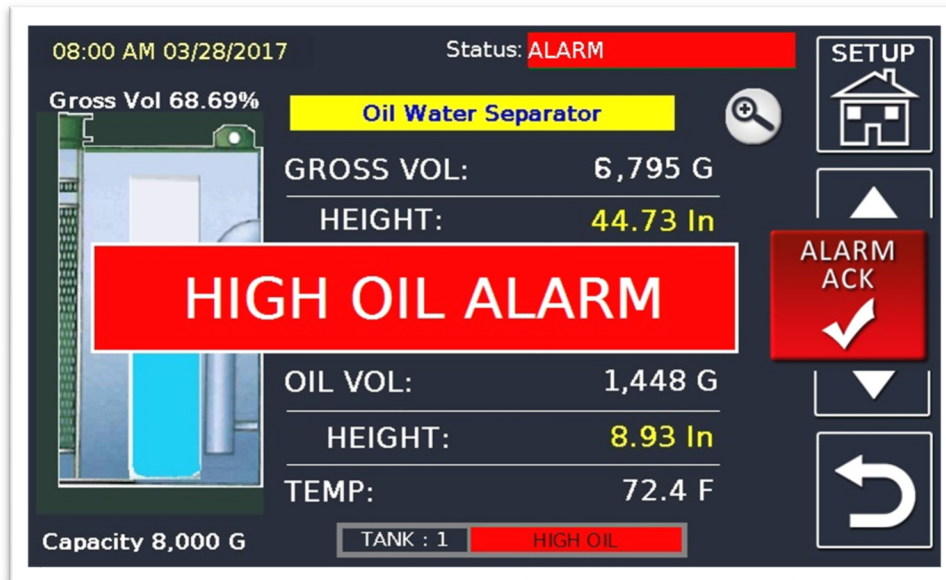


Figure 4.1

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See Figure 5.0 below. **The numbers illustrated are based off OMNTEC default values; your numbers may vary.**
Note; when the bottom float drops below a reading of 3.5 inches, the probe will go into a TIMEOUT. The bottom of the float (magnet) will not read the "dead spot" at the end of the probe, resulting in this TIMEOUT.

*Parameter settings example for a 32" OWS tank with invert pipe height set at 27"*



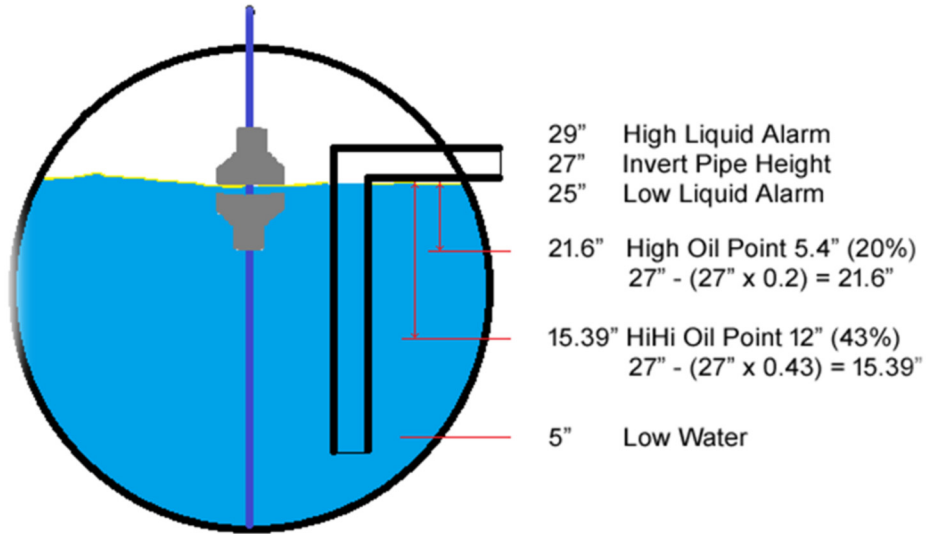| | | |
|---|---|---|
| 29" | High Liquid Alarm | |
| 27" | Invert Pipe Height | |
| 25" | Low Liquid Alarm | |
| 21.6" | High Oil Point 5.4" (20%) | 27" - (27" x 0.2) = 21.6" |
| 15.39" | HiHi Oil Point 12" (43%) | 27" - (27" x 0.43) = 15.39" |
| 5" | Low Water | |

Figure 5.0

*Door ajar input selection.*
If the proteus ATG is in an enclosure you can add a DOOR AJAR HORN alarm. This will set the door switch to turn on the audible display horn. Set the DOOR AJAR HORN setting to the input port on the BX-4IO or MCU board input position.
From the SETUP page, select MISCELLANEOUS SETTINGS; go to the next page (will appear as Page 5).
This will set the door switch to turn on the beeping display horn. **For OWS enclosures only**.
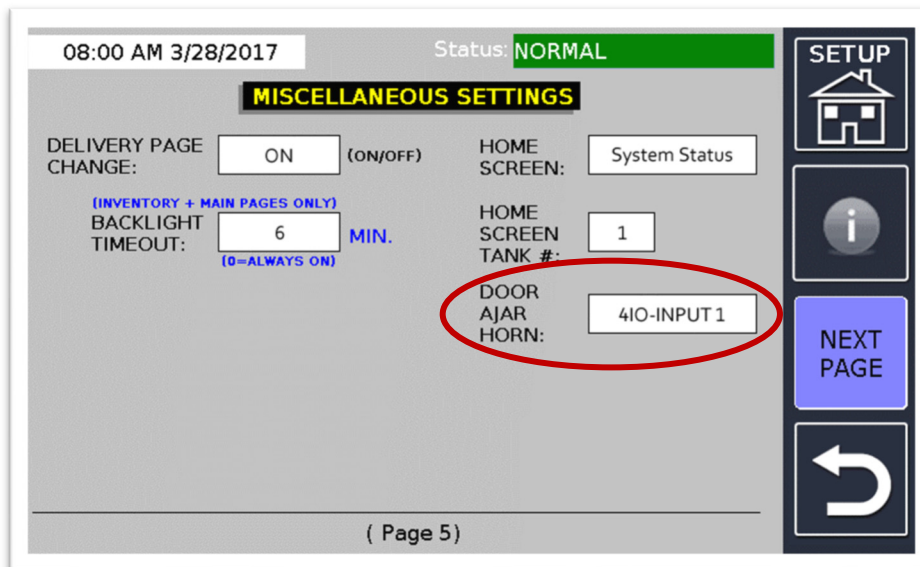See Figure 6.0 (red oval). Note; values in image are examples and may vary for your application.



Figure 6.0

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## Relays

***Program relay card events.*** (All OWS alarms can be used to trip the system's dry contact relays).
From UTILITIES > SETUP MENU > PASSWORD (default 000000) > ARROW DOWN ICON (Setup page 2) > INTERFACE BOARD RELAYS. Select the applicable and available interface board or MCU events relay, depending on your specific application. See the Proteus® ATG manual for more details regarding programming relays.
See Figure 7.0. Note; events and relays in image are examples and may vary for your application.



Figure 7.0

# Calibration

***Program the calibration of the floats.***
The tank must contain ONLY water.
Note; the top float is the product float and the bottom float is the water float. The water float has a metal ring ballast and is labeled "WD". See Figure 8.0 (2" floats pictured to the left, 4" floats pictured to the right).

1. Stick the tank. Acquire an accurate reading of the liquid (water) in the tank used for this calibration.
2. Go to UTILITIES > SETUP MENU > PASSWORD (default 000000) > TANK PARAMETERS
   a. Program the product null to the liquid height.
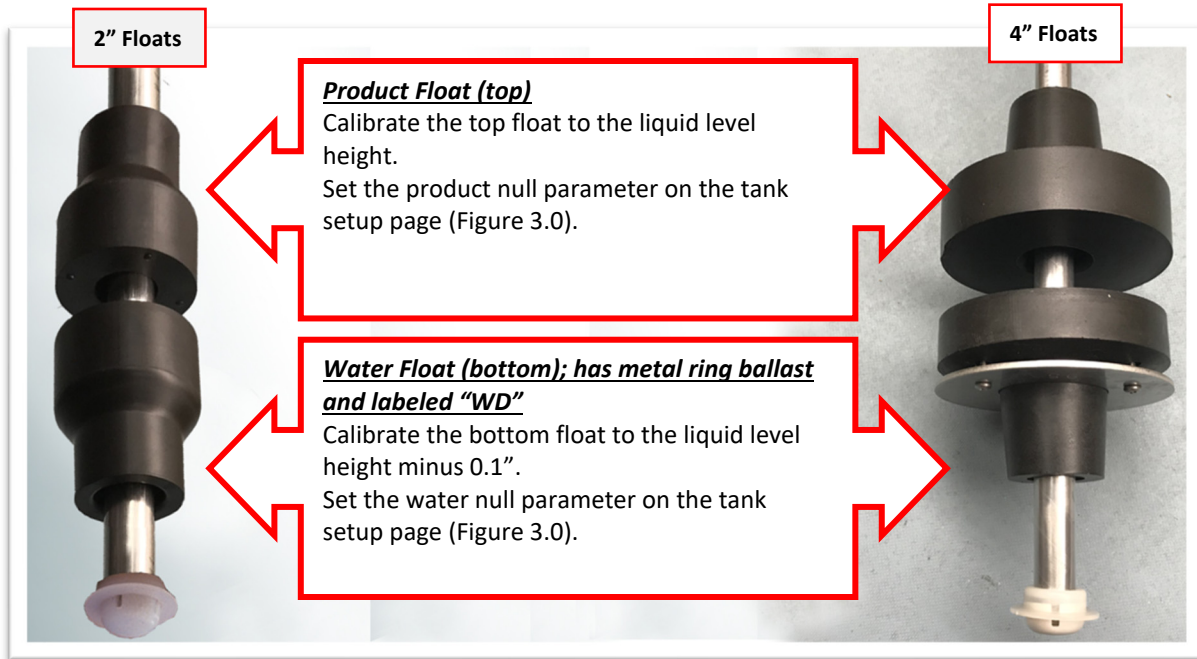   b. Program the water null to 0.1" less than the liquid height used on the product null.

**2" Floats**

**Product Float (top)**
Calibrate the top float to the liquid level height.
Set the product null parameter on the tank setup page (Figure 3.0).

**4" Floats**

**Water Float (bottom); has metal ring ballast and labeled "WD"**
Calibrate the bottom float to the liquid level height minus 0.1".
Set the water null parameter on the tank setup page (Figure 3.0).

Figure 8.0

***OWS Display Level Adjustment Mode.***
**This feature is purely for aesthetics only**; e.g., if tank's level is not shown at the invert pipe but the tank is full, you can adjust the height of the tank graphic.
From UTILITIES > DIAGNOSTICS. See Figure 9.0 (red oval).
Move the level height adjustment scroll bar with your fingertip to align the liquid level to the invert pipe when the tank is filled with water. See Figure 9.1 (yellow oval). This will adjust the tank's level (height) on the screen.
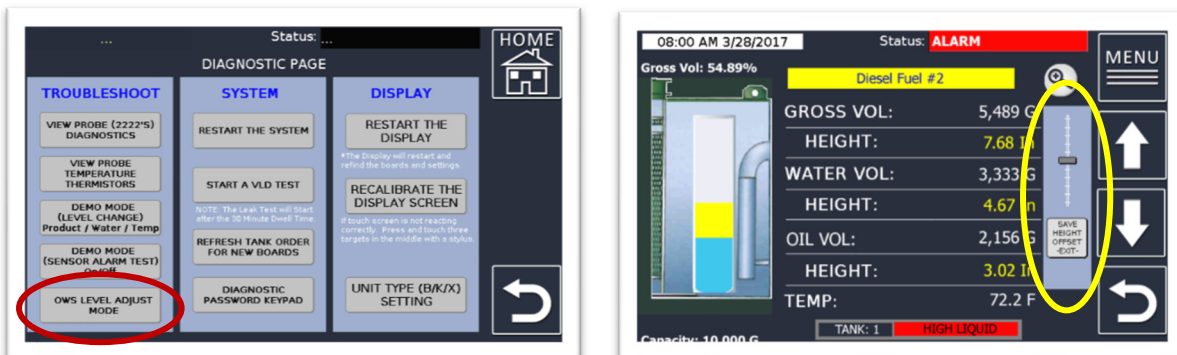
Figure 9.0 and 9.1

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