



Using LowranceNET™ NMEA 2000® Devices with LMS-334, LMS-339 & GlobalMap® 3600.

The instructions in this document address the operation of a LowranceNET NMEA 2000 network with the LMS-334, LMS-339 and GlobalMap 3600. The following topics are covered in this document.

NMEA 2000 Menu

- On the GPS and Sonar menus (the GlobalMap 3600 only has a GPS menu), the NMEA 2000 entry allows you to configure, calibrate and monitor devices in a LowranceNET NMEA 2000 network. It also provides access to the Buss Setup, Fuel Management and NMEA 2000 Alarm menus. NMEA 2000 alarms are addressed in your unit's manual.

Buss Setup

- From the Buss Setup configuration menu, you can modify the configuration, calibration and advanced option settings of items on the LowranceNET.

Internal GPS Receiver

- The internal GPS receiver in your unit is a non-network device. That means GPS data you receive from the unit will not be transmitted across the network to other network devices. The only way to transmit GPS data across the network is to switch the active antenna setting to read data from an LGC-2000 on the LowranceNET.

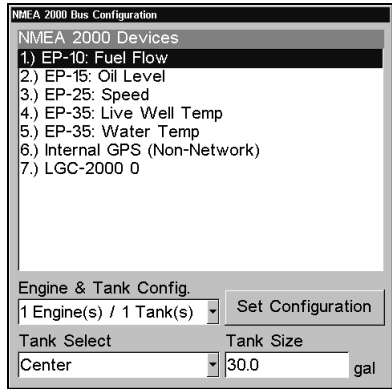
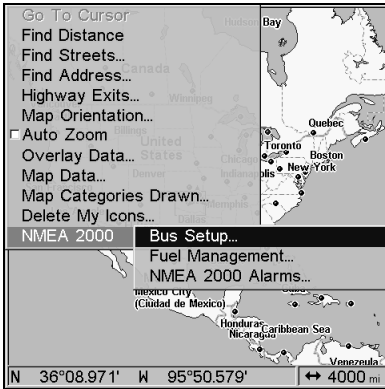
Fuel Management

- The Fuel Management menu allows you to maintain and configure fuel flow and fuel consumption.

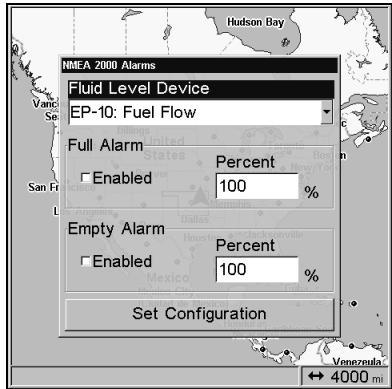
NMEA 2000 Menu

The NMEA 2000 menu, located on the GPS and Sonar menus in your unit contains three items: Buss Setup, Fuel Management and NMEA 2000 Alarms. NMEA 2000 Alarms are addressed in your unit's manual.

To access the NMEA 2000 menu, press **MENU**, select **NMEA 2000** and press **ENT**.



NMEA 2000 menu (left) with Buss Setup menu (right).



Fuel Management menu (left) with NMEA 2000 Alarms menu (right).

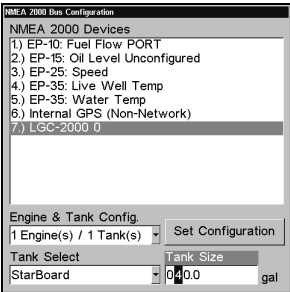
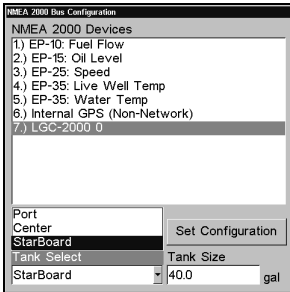
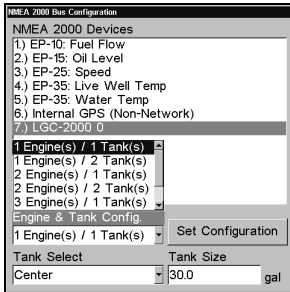
Buss Setup Menu

When Buss Setup is selected, a list of NMEA 2000 devices linked to the LowranceNET will appear. Engine and Tank configuration options are located below the NMEA 2000 Devices list, but only will apply to you if you are using an EP-10 Fuel Flow, EP-15 Fluid Level, EP-50 Storage Device or an Engine Interface.

Engine/Tank Configuration menu

To set Engine and Tank configuration, highlight **ENGINE AND TANK CONFIG.** and press **ENT.**

1. Scroll through the Engine/Tank options to select the desired configuration and press **ENT.**
2. Tank Select allows you to configure the capacity of each tank individually. Highlight **TANK SELECT** and press **ENT.** Use **↑ ↓** Select one of the tank locations: Port, Center or Starboard and press **ENT.**



1 Engine/1Tank highlighted on Engine and Tank Configuration menu (left). Starboard highlighted on Tank Select menu (center). Tank Size set to 40 gallons (right).

3. To input tank capacity, press → **TANK SIZE** and press **ENT**. Use ↑ ↓ to enter the first number, then press → to the next number. Repeat those steps until the correct tank size has been entered, then press **ENT**. Repeat Step 3 for each tank.

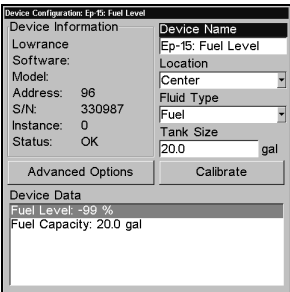
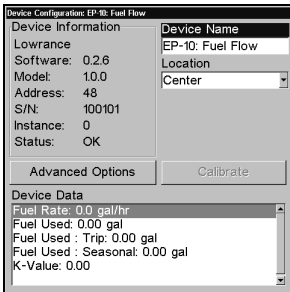
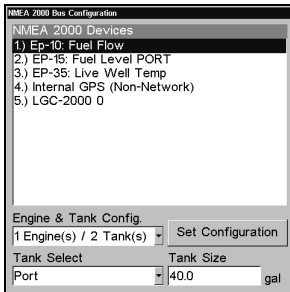
4. When the correct tank settings have been entered, press ↑ to Set Configuration and press **ENT**. A confirmation message will appear. To confirm the configuration, press ← | **ENT**.

NMEA 2000 Devices

To configure items from the Buss configuration list, highlight the desired device and press **ENT**.

To change the Device Name:

1. Select **DEVICE NAME** and press **ENT**.
2. Use ↑ ↓ to change the first character, then press → to input the next character. When desired name has been entered, press **ENT**.



Buss Configuration list (left). Device Configuration menu for Fuel Flow (center) and Fuel Level (right).

To change Location:

1. From device configuration menu, press ↓ to **LOCATION** and press **ENT**.
2. Use ↑ ↓ to select the desired location and press **ENT**. A confirmation message will appear. To confirm the configuration, press ← | **ENT**.

To change Fluid Type:

1. From the device configuration menu, select **FLUID TYPE** and press **ENT**.
2. Highlight the desired fluid type — Fuel, Water, Gray Water, Live Well, Oil or Black Water — and press **ENT**. A confirmation message will appear. To confirm the configuration, press ← | **ENT**.

To change Tank Size:

1. From the device configuration menu, select **TANK SIZE** and press **ENT**.
2. Use ↑ ↓ to change the first digit, then press → to the next digit. Repeat those steps until the correct tank size has been entered, then press **ENT**. A confirmation message will appear. To confirm the configuration, press ← | **ENT**.

Calibration

Calibrating Fluid level is an important step to ensuring the status of your tank is correctly transmitted over the NMEA 2000 buss.

For example: if you have an odd-shaped tank, like one that is wider at the top than at the bottom, the float inside the tank will tell you there is a half tank of gas when it reaches the midpoint of the tank, regardless of the tank's actual capacity below the midpoint. That could cause you to run out of gas more quickly than expected. Whether the Fluid Type is Fuel, Water, Gray Water, Live Well, Oil or Black Water, calibrating the Fluid Level protects you from unpleasant surprises.

To Calibrate a Device:

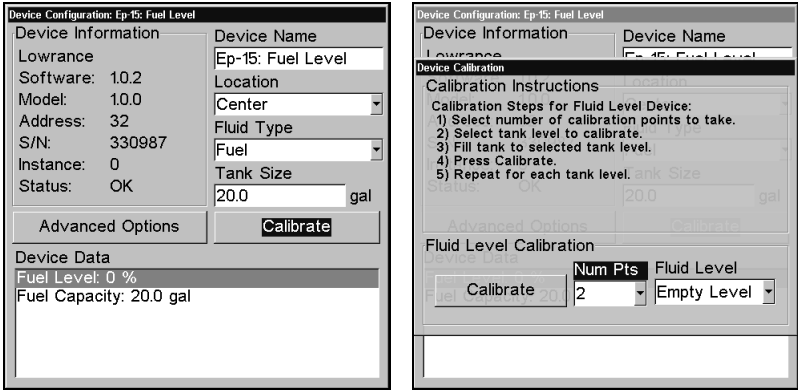
From the device configuration menu, press ↓ **CALIBRATE** and press **ENT** to access the Device Calibration window.

2-Point Calibration

2-Point calibration is best for rectangular or square shaped tanks that allow the fuel level sensor to provide an accurate reading of the fuel level at the top and bottom of the tank. When you select 2-point from the Num Pts menu, the Fluid menu will have two options: Empty Level and Full Level.

1. Highlight **NUM PTS**, press **ENT** and select **2**. Press **ENT**.

2. Press **→** to Fluid Level, press **ENT**, then select the level (**EMPTY OR FULL**) that corresponds with your tank's fuel level and press **ENT**.
3. Press **←** to **CALIBRATE** and press **ENT**. The Calibration Done window will appear confirming calibration has been completed.
4. Press **ENT | EXIT | EXIT** to return to the Buss Setup menu.



Calibrate selected on device configuration menu (left). Calibration menu (right) with calibration instructions listed at the top.

3-Point Calibration

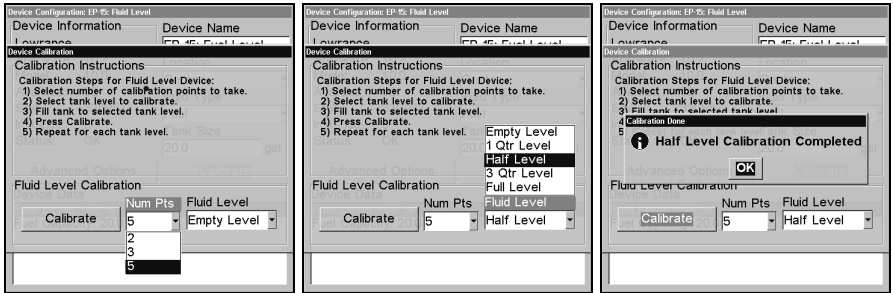
3-point calibration is designed for tanks that vary in shape from the top to the bottom, leading to an inaccurate fuel level sensor reading, in the narrower, bottom portion of the tank. The Fluid Level menu will have three options when 3-point calibration is chosen from the Num Pts menu. The options are: Empty Level, Half Level and Full Level.

1. Highlight **NUM PTS**, press **ENT** and select **3**. Press **ENT**.
2. Press **→** to Fluid Level, press **ENT**, then select the level (**EMPTY, HALF OR FULL**) that corresponds with your tank's fuel level and press **ENT**.
3. Press **←** to **CALIBRATE** and press **ENT**. The Calibration Done window will appear confirming calibration has been completed.
4. Press **ENT | EXIT | EXIT** to return to the Buss Setup menu.

5-Point Calibration

5-point calibration is designed for the most uniquely formed tanks that vary greatly in shape from top to bottom, making an accurate fuel level sensor reading impossible without calibration. When 5-point calibration is chosen from the Num Pts menu, the Fluid Level menu will have five options: Empty Level, 1 Qtr Level, Half Level, 3 Qtr Level and Full Level.

1. Highlight **NUM Pts**, press **ENT** and select **5**. Press **ENT**.
2. Press **→** to **Fluid Level**, press **ENT**, then select the level (**EMPTY**, **1QTR**, **HALF**, **3QTR** or **FULL**) that corresponds with your tank's fuel level and press **ENT**.

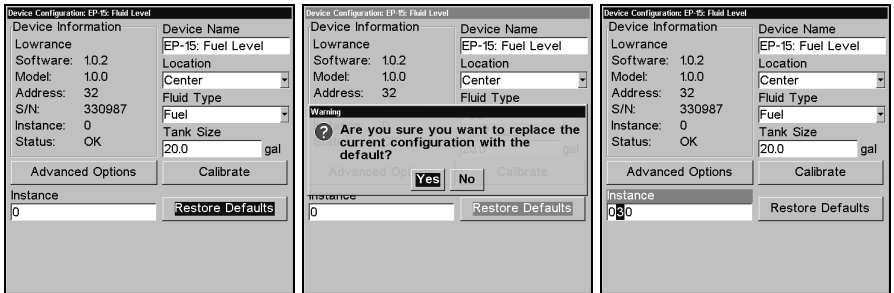


Num Pts menu with 5-point calibration selected (left). **Half level** selected on **Fluid Level** menu (center). **Calibration Done** window (right).

3. Press **←** to **CALIBRATE** and press **ENT**. The **Calibration Done** window will appear confirming calibration has been completed.
4. Press **ENT | EXIT | EXIT** to return to the **Buss Setup** menu.

Advanced Options

When **Advanced Options** is selected, the **Device Data** window at the bottom of the **Device Configuration** menu will be replaced with a pair of categories: **Instance** and **Restore Defaults**.



Restore Defaults selected (left). **Restore Defaults Confirmation** message (center). The **Instance** dialog box (right).

Restore Defaults

The **Restore Defaults** command gives you the option of resetting all the unit's settings back to factory defaults.

1. From the **Device Configuration** menu, you can restore the unit's default settings by selecting **ADVANCED OPTIONS** and pressing **ENT**.
2. Press **↓ →** to **RESTORE DEFAULTS** and press **ENT**, which will launch a confirmation message. To confirm the configuration, press **← | ENT**.

Instance

The Instance command is intended for use *only* by experienced NMEA 2000 network technicians.

You should never need this command if you are connecting your unit to a network with similar display units and/or a series of electronic probes.

Instance allows network technicians to resolve certain electronic probe conflicts. This is most likely to occur if the network includes LMF-200 or LMF-400 digital gauges, which support the display of fewer electronic probes than your GPS or sonar/GPS unit. If you want to use your unit in a network including one of these digital gauges, you may need to consult customer service.

Internal GPS Receiver

The internal GPS receiver in your unit is a non-network device. That means the GPS data you receive from your unit will not be transmitted across the network to other network devices. The only way to transmit GPS data across the network is to add a LGC-2000 to the LowranceNET.

To switch from internal GPS to LGC-2000

Press **MENU**, select **NMEA 2000** and press **ENT**. Choose **BUSS SETUP** and press **ENT**.



LGC-2000 highlighted on Buss Setup menu (left). LGC-2000 Device Configuration menu with the Set Active checkbox selected (center).

LGC-2000 is now listed as Active on the Buss Setup menu (right).

1. From the Buss Configuration list, select LGC-2000 and press **ENT**.
2. Press ↓ to Set Active and press **ENT**. The LGC-2000 is now the active antenna for your unit. The Internal GPS antenna was automatically disabled when the LGC-2000 was set to active.

NOTE:

To switch back to the internal GPS antenna, repeat the steps above. The internal GPS will be automatically enabled when you turn off (uncheck) the LGC-2000 Set Active box.

Fuel Management

The Fuel Management menu allows you to maintain and configure fuel flow and fuel consumption.

To get to the Fuel Management menu, press **MENU**, select **NMEA 2000** and press **ENT**. Highlight **FUEL MANAGEMENT** and press **ENT**.

Fuel Used Location

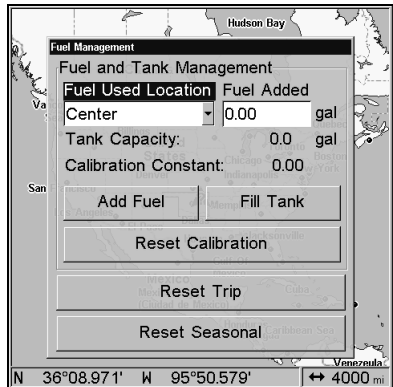
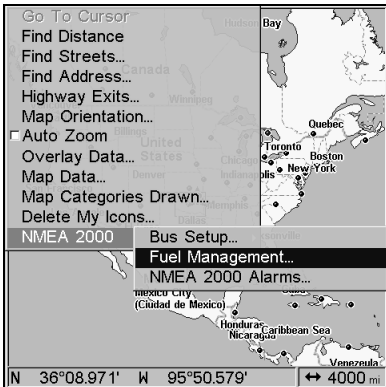
If there is more than one tank on your vessel, the Fuel Used Location scroll box allows you to select the tank you want to monitor or configure. It can support up to three tank locations: Port, Center and Starboard.

1. If you have more than one tank and want to check other tanks, highlight **FUEL USED LOCATION** and press **ENT**.
2. Use $\downarrow \uparrow$ to select a different tank location and press **ENT**.

Fuel Added

The Fuel Added dialog box is used to enter the amount of fuel added to the tank after you have added fuel to your vessel.

1. To input the amount of fuel added to the tank, highlight **FUEL ADDED** and press **ENT**.
2. Use $\uparrow \downarrow$ to enter the first digit, the press \rightarrow to move to the next number. Repeat those steps until the correct amount of fuel added has been entered, then press **ENT**.



**Fuel Management highlighted on the NMEA 2000 menu (left).
Fuel Management menu (right).**

Add Fuel

When using the EP-10 Fuel Flow on your vessel, you must use either the Add Fuel or Fill Tank commands when fuel is added to the tank. If adding fuel, but not filling the tank, use the **ADD FUEL** option.

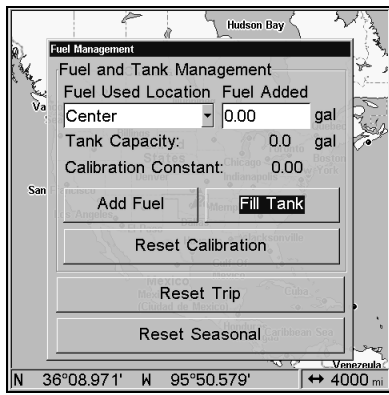
1. Highlight the **FUEL ADDED** dialog box and press **ENT**. Use $\uparrow \downarrow$ to enter the first digit, then press \rightarrow to move to the next number. Repeat those steps until the correct amount of fuel added is input, then press **ENT**.
2. Press \downarrow to **ADD FUEL** and press **ENT**, which will launch a confirmation message. To confirm the selection of add fuel, press \leftarrow | **ENT**.

Fill Tank

When using the EP-10 Fuel Flow on your vessel, you must use either the Add Fuel or Fill Tank commands when fuel is added to the tank. The **FILL TANK** command is used when you refill the fuel tank.

It always will be followed by an option to recalibrate the tank. Tank recalibration is described below under the heading To Recalibrate.

1. After the tank has been filled, select **FILL TANK** from the Fuel Management menu and press **ENT**. A confirmation message will appear. To confirm the selection of fill tank, press \leftarrow | **ENT**.
2. That will launch another message window which will give you the option of recalibrating the tank. We just want to fill the tank without recalibrating, so choose **No** and press **ENT**.



Fill Tank highlighted on Fuel Management menu (left). Fill Tank confirmation message (right).

WARNING:

Carefully follow these instructions, otherwise fuel calibration could be inaccurate, resulting in incorrect Fuel Management.

To Recalibrate

To calibrate the EP-10 Fuel Flow, you must use the Fill Tank option.

1. After filling the tank, input the amount of fuel added to the tank in the Fuel Added window. Use $\uparrow \downarrow$ to enter the first digit, then press \rightarrow to move to the next number. When the correct amount of fuel added has been input, press **ENT**.

2. Highlight Fill Tank and press **ENT**. A confirmation message will appear. To confirm the selection of fill tank, press **←|ENT**.

That will launch the recalibrate window message, but we are not ready to recalibrate yet, so highlight **No** and press **ENT**.

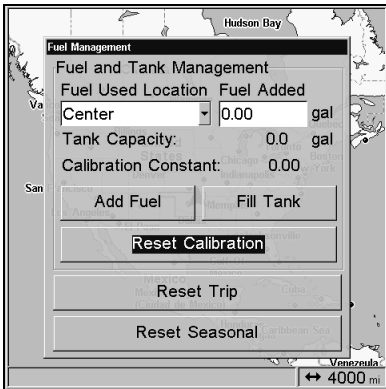
3. Take your boat out and burn at least 5 gallons of fuel. Fill up the tank again, carefully noting how much fuel was added to top off the tank.

The amount of fuel added should be very close to the amount of fuel used. If the difference between these two figures is greater than 5 percent, the unit needs to be recalibrated.

4. To recalibrate, input the amount of fuel added to tank in the Fuel Added dialog box, then select **FILL TANK** and press **ENT**. A confirmation message will appear. To confirm the selection of fill tank, press **←|ENT**.

5. That will launch a window giving you the option to recalibrate. Press **←|ENT** to recalibrate.

6. The calibration is calculated by comparing the actual fuel used to the calculated fuel used. It is vital to get an accurate reading of the actual fuel used and the amount of fuel added to fill the tank the second time. On multiple engine installations with a single tank configuration, only one engine should be run when calibrating the EP-10 Fuel Flow. This is the only way to know how much fuel has gone through the EP-10 Fuel Flow you want to calibrate.



Reset Calibration highlighted (left). Reset Calibration confirmation window (right). Reset Calibration will return the unit to the factory default calibration settings.

To Reset Calibration:

Choosing the Reset Calibration command will set the calibration settings back to factory defaults.

1. From the Fuel Management menu, press ↓ to **RESET CALIBRATION**. Press **ENT**. A confirmation message will appear. To confirm the selection of Reset Calibration, press ← | **ENT**.

To Reset Trip:

The Reset Trip function allows you to reset to zero the running tally of how much fuel you have used on a particular trip.

1. From the Fuel Management menu, select **RESET TRIP** and press **ENT**. A confirmation message will appear. To confirm the selection of Reset Trip, press ← | **ENT**.

To Reset Seasonal:

Your unit can track fuel usage not only for trips, but also for entire seasons. The reset seasonal option allows you to reset the running tally of seasonal fuel usage to zero.

1. From the Fuel Management menu, use ↓ to select **RESET SEASONAL** and press **ENT**. A confirmation message will appear. To confirm the selection of Reset Seasonal, press ← | **ENT**.

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