

## PowerView™ - Model PV101 – Fuel Sender Calibration

This document contains instructions:

- To configure a PV101 to accept the optional Murphy Fuel Sender (Model ES2F recommended).
- To program a PV101 to accept a non-Murphy fuel sender.

The PV101 is factory-set to accept a backlight dimmer input. In addition, the **Fuel Sender default** is set to work with the Murphy Model ES2F Fuel Sender.

### Navigation Buttons

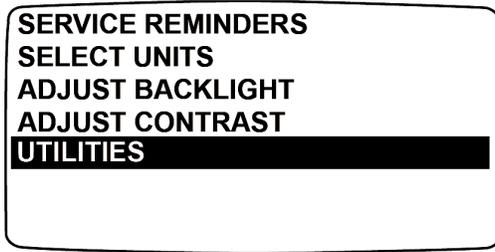
	<p><b>MENU</b></p> <p>Pressing [<b>MENU</b>] displays the top-level menu in the application. To reach other menus in the display, scroll using the Left or Right Arrow Keys. If you are on a lower-level menu (Utilities or OEM), pressing Menu will exit the menu and discard any changes.</p>
	<p><b>LEFT ARROW</b></p> <p>Pressing [<b>LEFT ARROW</b>] will decrement a number. The Left Arrow key also allows you to scroll up through a menu.</p>
	<p><b>RIGHT ARROW</b></p> <p>Pressing [<b>RIGHT ARROW</b>] will increment a number. The Right Arrow key also allows you to scroll down through a menu.</p>
	<p><b>ENTER</b></p> <p>Pressing [<b>Enter</b>] selects the option displayed much like the ENTER key on a keyboard.</p>

### Setting Fuel Level from the Utilities Menu - Analog Input Screen

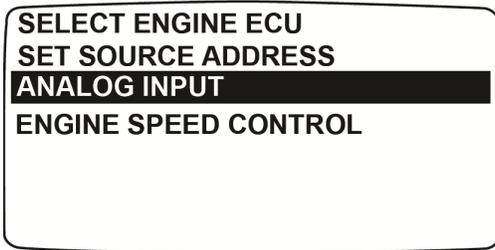
Use the following instructions to set the PV101 analog input to read Model ES2F Murphy Fuel Sender or program the unit for use with a non-Murphy fuel sender (a linear curve is used to calibrate a non-Murphy fuel sender).

#### 1. Location

To begin, scroll through the **Main** menu to **Utilities**. Select **Utilities** and press **Enter**.

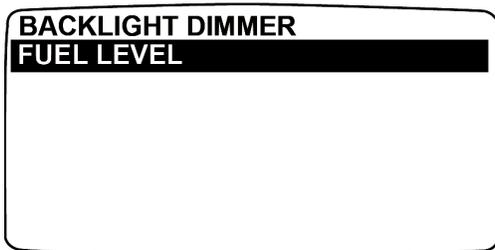


Locate ANALOG INPUT in the Utilities menu and press **Enter**.



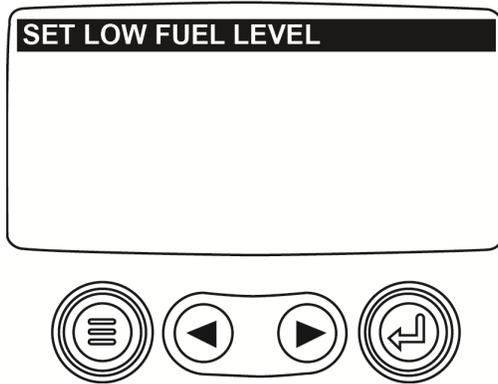
## 2. Select Fuel Level

On the next screen, you will see **BACKLIGHT DIMMER** and **FUEL LEVEL**. Use the right **Arrow Key** to scroll to **FUEL LEVEL** and press **Enter**.

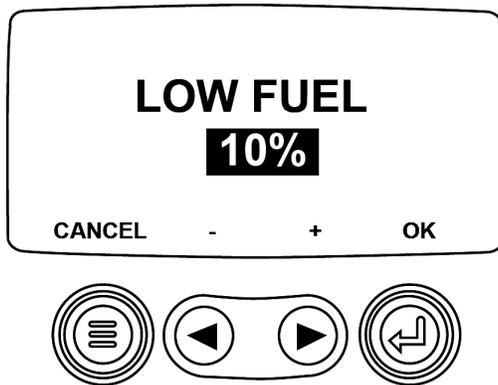


## 3. Low Fuel Level Setpoint

The **SET LOW FUEL LEVEL** screen displays.



Press **Enter** and the **Low Fuel** screen displays. The default setting is 10%. This setting enables the PV101 to generate a DTC (Diagnostic Trouble Code) displaying a low fuel level.



#### 4. Adjusting Low Fuel Level Setting

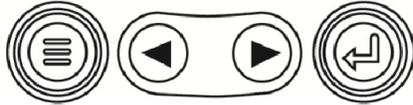
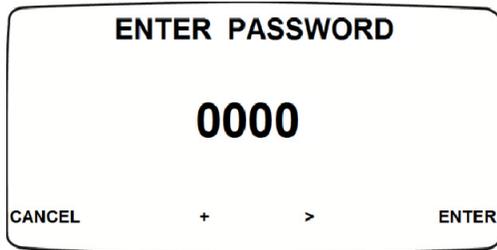
To change the Low Fuel Level setpoint, use the left **Arrow key** to decrease or the right **Arrow key** to increase the set point. Select **[MENU]** to cancel or **[ENTER]** to confirm the setpoint.

**NOTE:** To change the setpoint from Backlight Dimmer input to Fuel Level input the **[ENTER/OK]** selection must be made.

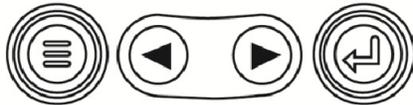
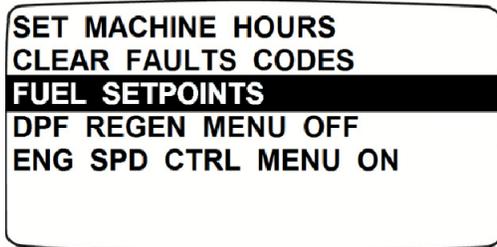
#### Entering the OEM Menu

To configure or program the PV101 for the Murphy or non-Murphy fuel sender, you must access the **Fuel Sender Setup Screen** from the **OEM** menu.

In the **Utilities menu**, scroll down to **OEM** and press **Enter**. You must have and enter a **Password** to access this menu. Use the pass code provided in the PV101 Users Guide or the proprietary code from the OEM if the Murphy standard code does not work. Enter the password starting from the furthest left character using the Arrow keys. When you have finished entering the password, press **Enter**.



The **OEM** menu displays. Scroll through the **OEM** menu until you reach **Fuel Setpoints**, and press **Enter**. The **Fuel Setpoints** setup screen displays.



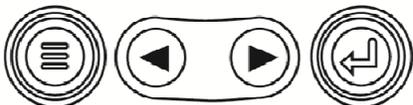
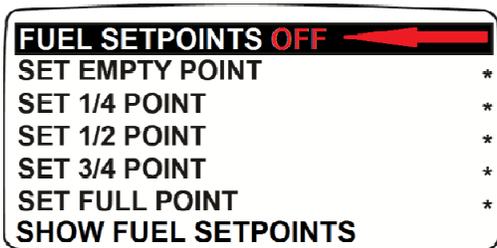
Scroll to **Fuel Setpoints** and press **Enter**.

**NOTE:** Not all PV101 units or Engine Control Units are Tier 4 DPF (Diesel Particulate Filter) enabled.

At this point, if you are using the Murphy Model ES2F Fuel Sender continue the instructions below. If you are using a non-Murphy fuel sender, go to the section “**Using a Non-Murphy Fuel Sender**”.

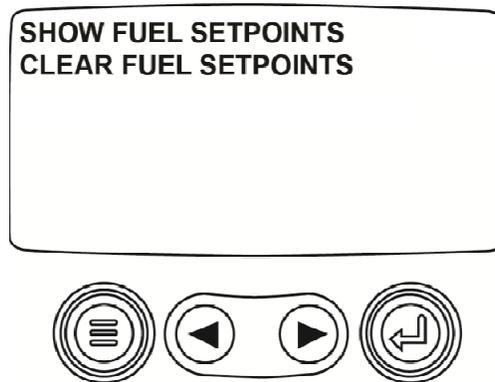
## Using the Murphy Fuel Sender

The PV101 ships from the factory set to be used with a Murphy fuel sender. On the **Fuel Setpoints** setup menu, the first item in the list: **FUEL SETPOINTS** must be set to **OFF** to work with a Murphy fuel sender. Press the right and left arrow keys to navigate the menu. There are two pages to this screen.

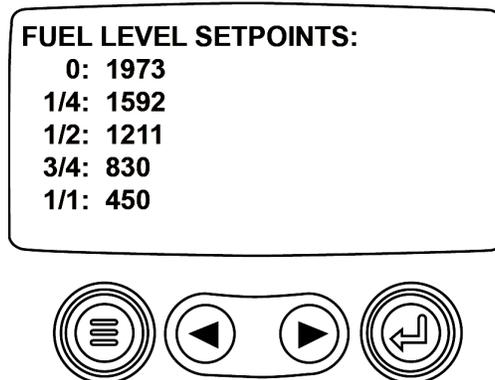


**NOTE:** When **Fuel Setpoints** is set to **OFF**, some options are unavailable for modification. The asterisk indicates that the setpoint has been set.

Using the right Arrow Key, scroll through the list until you can see all selections. The Murphy Standard Fuel Sender settings are preloaded at the factory. To view the settings, select **SHOW FUEL SETPOINTS**.



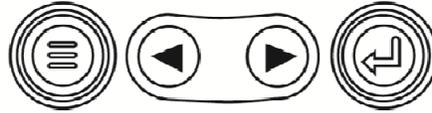
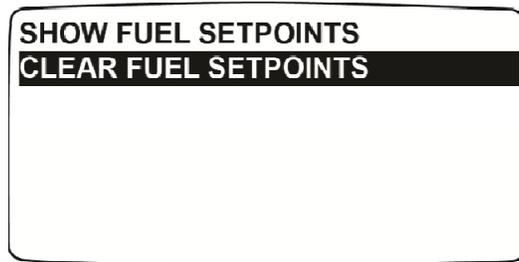
The following screen is displayed,



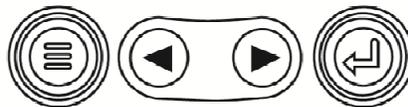
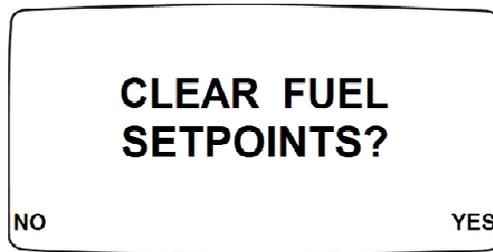
**NOTE:** The numbers displayed on the above screen are Murphy Standard settings. Please note that these are NOT resistance values of the fuel sender.

## Using a Non-Murphy Fuel Sender

Instructions for accessing **Fuel Setpoints** are in the **Entering the OEM Menu** section in this document. **Fuel Setpoints** must be **ON** to work with a non-Murphy fuel sender. Begin by scrolling through the **Fuel Setpoints** list to **Clear Fuel Setpoints**. It is the last item in the list. Select and press **Enter**.



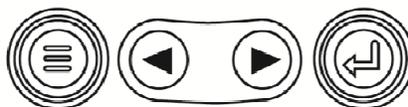
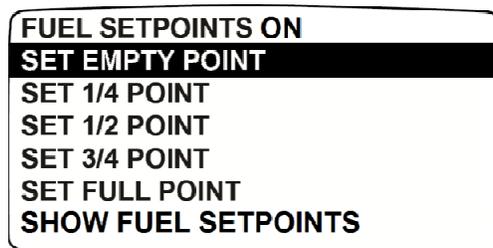
The **Clear Fuel Setpoints** screen displays. Press **Enter** (Yes) to clear the Murphy Standard settings.



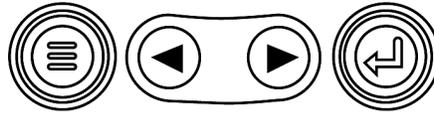
You return to the **Clear Fuel Setpoints** screen. Once fuel setpoints are cleared, asterisks to the right are removed. The fuel setpoints (Empty Point, 1/4 point, 1/2 point, 3/4 point, and Full Point) must be programmed before continuing. Use the left **Arrow Key** to scroll up through the list to **Set Empty Point**.

## Set Empty Point

The fuel tank must be empty for this process to have valid results. With **Set Empty Point** highlighted, press **Enter**.



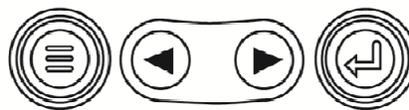
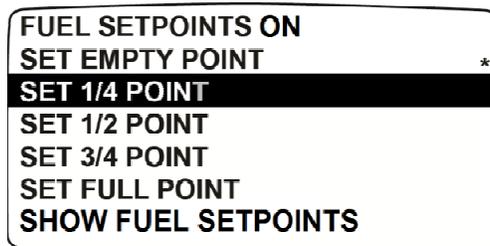
The **Alter Fuel Settings** screen displays. The fuel tank must be empty to send the correct resistive value. The value represents the Empty point from the non-Murphy fuel sender that must be sent to the PV101. While sending the resistive value, press **[YES]** and the PV101 will have a new low fuel setpoint setting.



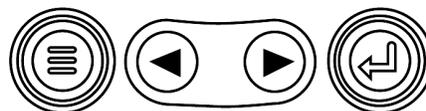
Once the new settings are set, the menu will be displayed and an asterisk is displayed to the right of the setpoint.

### **Set 1/4 Point, 1/2 Point, and 3/4 Point**

Add fuel to 25% of the tank's capacity and select the 1/4 point setpoint.



The following screen is displayed,



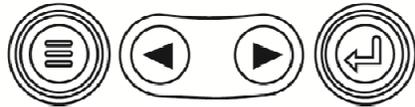
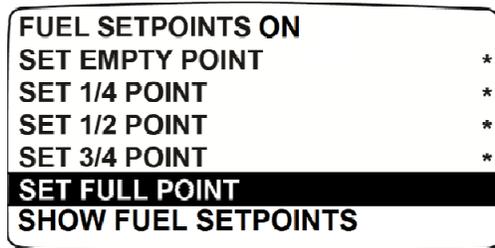
Select [YES] while sending the resistive value.

### **Set Remaining Setpoints**

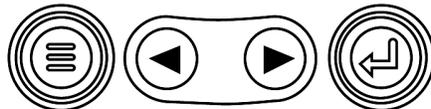
Add fuel to 50% of the tank's capacity to set the 1/2 point setpoint and 75% of the tank's capacity to set the 3/4 point setpoint.

### **Set Full Point**

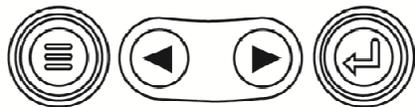
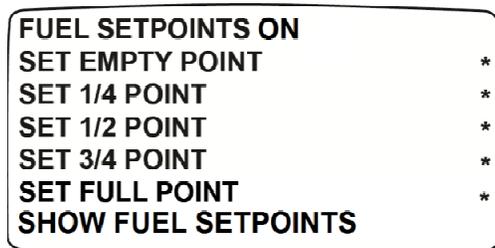
Add fuel to fill the tank to its full capacity and select **SET FULL POINT**.



The following screen is displayed, and now the resistive value that represents the Full point from the non-Murphy fuel sender must be sent to the PV101. While sending the resistive value, select **[YES]** and the PV101 will have a new Full fuel setpoint setting.

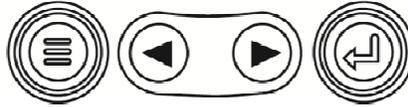
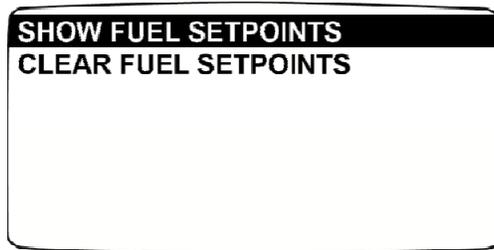


Now that the Non-Murphy fuel sender calibration process is completed, the **FUEL SENDER SETUP SCREEN** will be displayed.

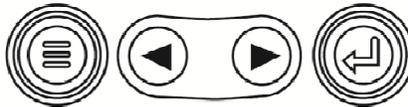
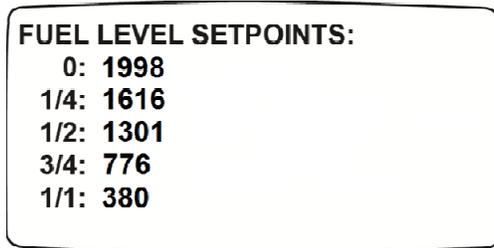


## Show Fuel Setpoints

After programming the Empty,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and Full settings for the non-Murphy Fuel Sender, the new sender settings are loaded in the device. To view these settings select **SHOW FUEL SETPOINTS** and press **Enter**.



The following screen is displayed with the corresponding level setpoints. Once these setpoints are known, you can use these settings in the configuration tool under the Fuel Sender table to eliminate manual processing.



**NOTE:** The numbers displayed on the above screen are **examples only**. The numbers displayed on the newly set PV101 will be different.

**NOTE:** Once these setpoints are complete, you can add them to your configuration via the Configuration tool and they can become default values.

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