Displays

PowerView PV-101-C

General

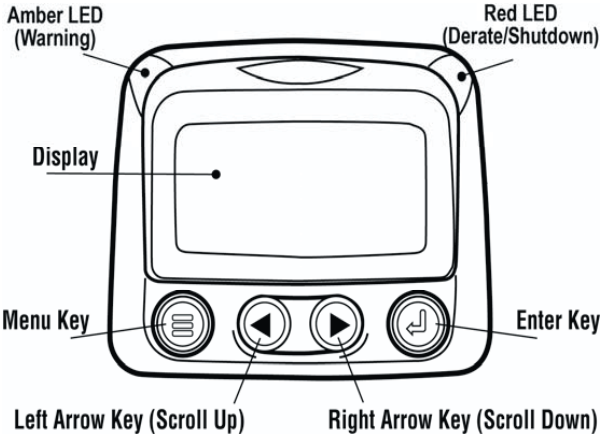
Your Lumberjack is equipped with a PowerView PV-101-C display module, a multifunctional tool that enables you to view many different engine or transmission parameters and service codes. The system allows you to accurately monitor the electronic engine and transmission installed on your Lumberjack. Back lighting can be controlled via menu or external dimmer potentiometer. The display can show either a single parameter or a quadrant display showing four parameters simultaneously. Diagnostic capabilities include fault codes with text translation for the most common fault conditions.

Display Parameters

The following are some of the engine and transmission parameters which may be displayed in standard or metric units as well as in English, Spanish, French, Italian, or German languages (when applicable, consult engine or transmission manufacturer for SAE J1939 supported parameters):

Engine RPM	Engine manifold air temperature
Engine hours	Current fuel consumption
System voltage	Transmission oil pressure
Percent engine load at the current RPM	Transmission oil temperature
Coolant temperature	Transmission gear position
Oil pressure	Engine configuration parameters
Fuel economy	Active fault codes
Throttle position	Stored fault codes
	Hydraulic temperature

Faceplate Features



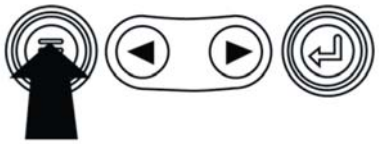
Keypad Functions

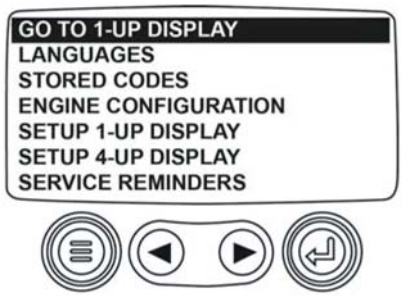
The keypad on the PowerView display is a capacitive touch sensing system. There are no mechanical switches to wear or stick. The keys on the keypad perform the following functions:

	**Menu Key** - Enter or exit menu screens.
	**Left Arrow** - Scroll the screen or move the parameter selection to the left or upward.
	**Right Arrow** - Scroll the screen and move the parameter selection to the right or downward.
	**Enter Key** - Select a menu or parameter or hide/view an active fault code.

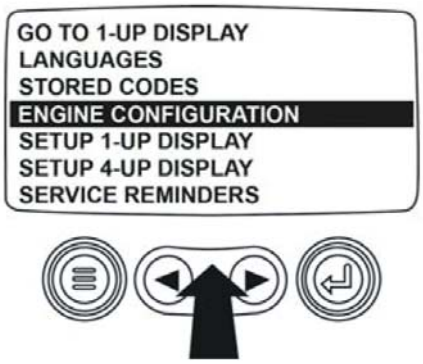
Basic Navigation

1. When Menu is touched, the main menu items are displayed.

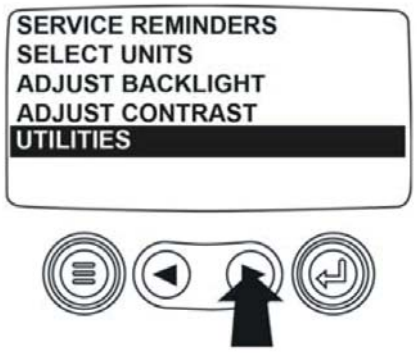




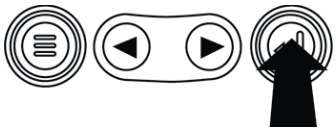
2. Touch the Arrow Keys to move the selection bar to other menu items.



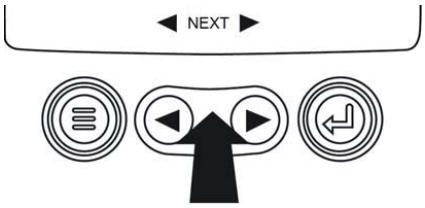
3. Some menus have multiple pages. Scroll to the top or bottom item on the current page to see other menu items on additional pages.



4. When the desired item is highlighted by the cursor, touching Enter selects that item and displays the corresponding screen.



5. Anytime the word NEXT appears above the Arrow Keys there are more screens that may be viewed. Use the Arrow Keys to scroll to the next screen of information.



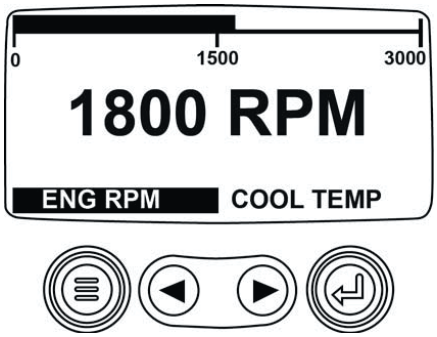
First Time Start Up

1. When power is first applied to the display, the Murphy logo appears.

NOTE: Expect a 20-minute warm up for the display with temperatures at or below -29°C/-20°F.

2. If the Engine ECU is broadcasting a 'Wait to Start' message, this screen will be shown. Engine manufacturers typically recommend against starting the engine while this message is broadcast from the ECU. Once the ECU stops broadcasting this message, this screen will no longer be displayed.

3. Once the engine has started, the single engine parameter is displayed with the engine RPM. Touching the Right Arrow Key displays the coolant temperature. The screen can be changed to other parameters by touching Menu.



Main Menu Options

This section describes the features listed on the Main menu of the PowerView. These menu options display whenever you touch Menu. The Arrow Keys allow you to scroll through items. Enter selects the highlighted option.

Go to 1-Up Display/Go to 4-Up Display

If you want to go to a different display, touch Enter. The alternate view is displayed.

DPF Regen*

*Murphy products are compliant with requirements for U.S. EPA Emission Standard Tier 4 Interim and EU Emissions Standard Stage IIIB for diesel engines. These engines when fitted with a DPF (Diesel Particulate Filter) can self-clean the filter of particulates. This self-cleaning is known as Regeneration. PowerView offers 3-CAN options when DPF REGEN is enabled and available in the engine ECU. For more information, find document # 1110836 on the Murphy Web site (www.fwmurphy.com).

Unless selected in the OEM Menu, DPF REGEN does not display in the Main menu. When available, the following options are presented:

1. **AUTO DPF REGEN** – This is the factory default. Select and PowerView sends a CAN message to the ECU to perform DPF Regeneration (regen) automatically whenever needed.

2. **REQUEST DPF REGEN** – Select this and a second screen, REQUEST DIESEL PARTICULATE FILTER REGEN, displays. Use this to force a regen when autoregen is not due or is inhibited by PowerView. Touch YES (Enter) and PowerView sends a request for a regen every second for 10 seconds. If the engine does not respond, PowerView defaults back to Auto DPF Regen. You may send the request again or exit without sending a request by touching CANCEL (Menu). You return to the Main menu.

3. **INHIBIT DPF REGEN** – In cases where regen cannot be performed due to restrictions, select this to eliminate the possibility of a regen occurring. The inhibit lamp displays when the engine ECU responds to this inhibit request from PowerView. Once this option is selected, it remains in place through power cycles. When inhibit is no longer needed, you can select a different option.

The following ISO symbols indicate regen status. In each case, the symbol displays when the parameter's lamp status is broadcast from the ECU back to the PowerView.

DPF Regen ISO Symbols

Icon	PGN	SPN	Description
	64892	3697	High Exhaust Temperature (HEST) lamp indicates regeneration in process.
	64892	3703	DPF Particulate Filter Restricted lamp indicates a Regen is needed.
	64892	3698	DPF Inhibit lamp indicates an inhibited Regen status.

Selecting a Language

From LANGUAGES, you may select ENGLISH, ESPA-

NOL, FRANCAIS, ITALIANO, or DEUTSCH. An asterisk to the right of the language indicates it is selected.

Stored Codes

Select this and PowerView requests and displays stored fault codes from the engine ECU. If the engine does not support this function, a “Timeout ECU Not Responding” message displays.

Engine Configuration

This allows you to scroll through and view the engine’s configuration data. If the engine does not support this function, a “No Engine Configuration Data” message displays.

The screen may be configured to display a single engine parameter (1-up display), or four parameters at once (4-up display). Default options are provided or you may customizethe display by selecting the parameters you want.

Setup 1-Up Display

Touch Menu and use the Arrow Keys to highlight SETUP 1-UP DISPLAY, and then touch Enter. Three options are available for modification of the 1-Up display:

1. **Use Defaults** – This option contains a set of engine parameters: Engine Hours, Engine RPM, System Voltage, Battery Voltage, % Engine Load at Current RPM, Coolant Temperature, and Oil Pressure. To select USE DEFAULTS, highlight the option and touch Enter. A message indicating “RESTORED TO DEFAULTS” is displayed.

2. **Custom Setup** – In this option, select the parameters and order in which they will be displayed. The list is long; continue to scroll until you have seen all available parameters. To select Custom Setup, highlight and touch Enter. A list of engine parameters displays.

NOTE: The PV101 must see the parameter being broadcast over J1939 in order to select the parameter from the list.

To select a parameter, use the Arrow Keys to scroll and highlight the parameter, then touch Enter.

Selected parameters are indicated by a number to the right of it. The numbers represent the order in which the parameters will be displayed.

To deselect a parameter and remove it from the list of displayed parameters, highlight the parameter and touch Enter.

Continue to scroll and select additional parameters for the CUSTOM 1-UP DISPLAY. Touch Menu at any time to return to the CUSTOM SETUP menu.

3. **Automatic Scan** – (Default is OFF) Selecting the AUTOMATIC SCAN ON function will cause the 1-up display to scroll through the selected set of parameters one at a time.

Once the Use Defaults, Custom Setup and Automatic Scan functions are set, touch Menu once to return to the Main menu, or twice to display the 1-up display screen.

4-Up Display

There are two 4-up display screens available. Each option can place parameter data into one of four areas on the screen known as quadrants. Factory defaults for the first 4-up display includes coolant temperature, engine speed, oil pressure, and battery voltage. Factory defaults for the second 4-up display includes DEF (diesel exhaust fluid) Level, DPF (diesel particulate filter) active regen status, exhaust filter inlet temperature, and exhaust filter outlet temperature. You can customize each 4-up display with the parameter you define for each quadrant.

1. Touch Menu and use the Arrow Keys to highlight SETUP 4-UP DISPLAY, and touch Enter.

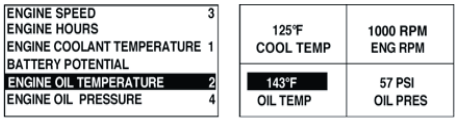
2. To select USE DEFAULTS, highlight the option and touch Enter. A message indicating “RESTORED TO DEFAULTS” is displayed, the default parameters listed above will be displayed.

3. To select CUSTOM SETUP, highlight the option and touch Enter. The 4-up display appears.

4. Use the Arrow Keys to switch between the two 4-updisplays.
5. To edit a 4-up display, touch Enter while that 4-up displays on screen.
6. Use the Arrow Keys to select which quadrant to edit.
7. Once you select a quadrant, touch Enter and you move to a list of parameters.

NOTE: The PowerView must see the parameter being broadcast over J1939 in order to select the parameter from the list.

8. The parameter highlighted is the selected parameter for the screen. The number to the right of the parameter indicates in which quadrant it displays.



1 = upper left quadrant
2 = lower left quadrant
3 = upper right quadrant
4 = lower right quadrant

9. Use the Arrow Keys to highlight the new parameter to be placed in the selected quadrant. Touch Enter.
10. Touch Menu to return to the SETUP 4-UP CUSTOM SETUP screen.
11. The parameter in the selected quadrant has changed to the parameter selected in the previous screen.
12. Repeat the parameter selection process until you fill all quadrants.

Service Reminders

SERVICE REMINDERS permit you to RESET REMINDERS or MODIFY REMINDERS for changing engine oil, air filters, and hydraulic oil or for servicing the engine and/or machine. NOTE: Service Reminders are internal reminders within PowerView. Once a Service Reminder is active, warnings will show SPN 916 and FMI 17. Check PowerView Service Reminders prior to calling Technical Support.

1. Use the Arrow Keys to highlight Service Reminders and touch Enter.
2. The Service Reminders options display. Use the Arrow Keys to select either Reset Reminders or Modify Reminders, and then touch Enter.
3. If you select Reset Reminders, use the Arrow Keys to highlight the Reminder you wish to edit. Touch Enter.
4. The Reminder name appears at the top of the screen. The action (ON or OFF) displays mid-screen, and two choices display at screen bottom. Touch Menu to Cancel the action. Touch Enter to choose Reset.
5. If you select Modify Reminders, use the Arrow Keys to highlight the Reminder to modify and touch Enter.
6. The Reminder name appears at top screen. The hour value displays mid-screen and allows you to set the number of hours to elapse before a Reminder prompts. Bottom screen shows Cancel and Save. Touch Cancel to discard changes and return to Reminders list.
7. Use the right Arrow Key to increment the highlighted number. Use the left Arrow Key to move to the next number space.
8. Touch Save. The Modify Service Reminder screen displays. Touch YES to save or NO to return to the Reminders list.
9. A modified Reminder displays a (+) at right of Reminder name when successfully completed. Follow the above steps to modify other Reminders.

When finished, touch Menu to return to the Main Menu.

Select Units

From SELECT UNITS, you may select how information is displayed:

ENGLISH for Imperial units (PSI, °F)

METRIC KPA

METRIC BAR for **IS** units (kPa, Bar, °C).

Backlight Adjustment

ADJUST BACKLIGHT – Use the Arrow Keys to brighten or darken the backlight intensity.

Contrast Adjustment
ADJUST CONTRAST – Use the Arrow Keys to lighten or darken the text and graphics.

Utilities Menu

UTILITIES is the last item on the Main Menu. The Utilities menu provides troubleshooting features and other information about the PowerView configuration.

Gage Data
View data for optional connected PVA gages. When Slave Active is enabled, gage data is not available.

Remove All Gages
Reset the gage memory on the PowerView. When Slave Active is enabled, this function is not available.

Software Version
This screen lists Configuration, Firmware, Languages, and Bootloader versions for this PowerView unit. You may need this information if requesting assistance from Technical Support.

Fault Conversion
View/Edit the J1939 fault code version. Use the Arrow Keys to move between Versions, and then touch Enter to select a version.

NOTE: There are four methods for converting fault codes. The PowerView always looks for J1939-Version 4.

However, PowerView can be set to read one of three other J1939 versions, if Version 4 is not used/unavailable. Most ECU's use Version 4, so adjustment of this menu option is rarely required.

Upon receiving an unrecognizable fault, change to a different J1939 Version in the list. If the fault SPN does not change when the version is changed, the ECU generating the fault is using Fault Conversion Method 4. If the SPN number does change, but is still unrecognizable, try changing to another unused J1939 Version and continue to check the SPN number.

Analog Input
With Analog Input highlighted, press Enter. You can select between two settings:

1) BACKLIGHT DIMMER, this is in factory default upon first use. The unit accepts an optional backlighting dimmer (0-1k Ω potentiometer).

2) FUEL LEVEL, touch Enter to reach SET LOW FUEL LEVEL screen. Then, touch Enter to reach LOW FUEL % screen. Use the right Arrow Key to increase, and left Arrow Key to decrease the percentage of remaining fuel at which to send a warning. The default is 20%.

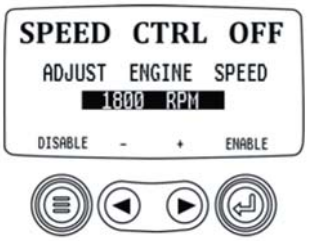
NOTE: The PowerView accepts optional Murphy fuel sender (recommend Model ES2F) for fuel level information. A custom setup for a non-Murphy fuel sender is available. For more information, see FUEL SETPOINTS, page 31 (OEM Menu).

Engine Speed Control
This option must be ON in the OEM Menu for functionality to be available from the Utilities Menu.

1) From the Engine Speed Control screen, touch Enter to reach the Speed Control screen.

2) To change the setting of the engine speed via TSC1; use the right Arrow Key to increase or left Arrow key to decrease the throttle setting.

3) Once the target speed is reached, select ENABLE (Enter) to turn ON the TSC1 throttling control. (Use Disable to turn throttling control OFF and discard changes).



NOTE: Once enabled Engine Speed Control will stay enabled even through power cycles. To turn OFF, you must disable the feature from the SPEED CTRL screen.

OEM

The OEM menu is the last item on the Utilities menu. You must have a password to access the OEM menu. The OEM menu information can be found in section 6-2 of your service manual.

Faults And Warnings

The PowerView provides two means for detecting faults and warnings: visual LEDs on the casing (*Amber* in the upper left corner, and *Red* in the upper right corner) and fault

indicators on the display.

Visual Indication

Amber LED (Warning)

Red LED (Derate / Shutdown)

Fault Indicators

Auxiliary Gage Fault

Warning

Derate / Shutdown

Auxiliary Gage Fault

Murphy's PVA Gauges can be attached to the PowerView. If an auxiliary gage should fail, the 1-up or 4-up display will be replaced with the fault message "GAGE NOT RESPONDING".

NOTE: The fault can only be cleared by correcting the cause of the fault condition (See Troubleshooting in this document).

Active Fault Codes

When the PowerView receives a fault code from an engine, the 1-up or 4-up display will be replaced with the active fault codes message. See following fault example:

Example: Active Fault Code screen

Derate / Shutdown Codes

When the PowerView receives a severe fault code from an engine control unit the 1-up or 4-up display will be replaced with the SHUTDOWN message.

Acknowledging Fault Codes

1. To acknowledge and hide the fault and return to the 1-up or 4-up display, touch Enter. The display will return to the 1-up or 4-up display, but the display will contain the shutdown icon.

2. Touch Enter to redisplay the hidden fault. Touch Enter once again will hide the fault and return the screen to the 1-up or 4-up display.

TROUBLESHOOTING

WAIT TO START PREHEATING - The ECU is broadcasting a 'Wait to Start' message. Engine manufacturers typically recommend against starting the engine while the ECU is broadcasting this message. Once the ECU stops broadcasting this message, this screen will no longer be displayed on the PowerView.

CANBUS FAILURE - The PowerView has not received any valid J1939 CAN messages for at least 30 seconds. Check wiring, CANBUS, termination resistors, and Engine ECU address in the OEM Menu.

TIMEOUT ECU NOT RESPONDING - The PowerView sent a request to the ECU for Stored Fault Code (DM2) information, and the ECU did not respond to the request. This message on the PowerView indicates the ECU may not support Stored Fault Code (DM2) functionality over J1939.

NO STORED CODES is displayed - The PowerView sent a request to the ECU for Stored Fault Code (DM2) information. The ECU responded: There are zero stored codes.

NO GAGE DATA is displayed - The PowerView has no record of gauges connected to the RS485 bus.

NO DATA is displayed in place of a parameter value The PowerView has not received data for the selected parameter for at least 5 seconds.

NOT SUPPORTED is displayed in place of a parameter value.

This means the data received for this parameter is not valid or not supported.

DATA ERROR is displayed in place of a parameter value. The ECU is sending a message that there is a data error with this parameter. Alternatively, (PV101 only) FUEL LEVEL has been selected for display, ANALOG INPUT has been set to FUEL LEVEL, but no Murphy Fuel Sender has been connected to the analog input.

One of the 4-UP quadrants is empty.

No parameter has been selected for display in this quadrant.

Display is not readable, either very dim or very dark.

The LCD contrast may have been over or under adjusted. Press and hold the MENU key for approximately 5 seconds. This will reset the LCD contrast setting to factory default.

PVA Gages not working.

When PVA Gages are connected and do not seem to work, go to the Utilities menu and select Remove all Gages.

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