MURPHY

PowerView™

Model PV-101
User's Guide

Rev 09-10-08

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Catalog Section 78

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time. The latest version of this manual can be found at www.fwmurphy.com.

Warranty - A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to www.fwmurphy.com/support/warranty.htm

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT:

- Disconnect all electrical power to the machine.
- Make sure the machine cannot operate during installation.
- Follow all safety warnings of the machine manufacturer.
- Read and follow all installation instructions.

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Introduction

Congratulations on purchasing your PowerView display, a multifunction tool that provides a window into the many parameters and service codes of modern electronic engines and transmissions.

This guide is intended to help you set up your PowerView display and identify navigation basics and product features. The display's simple navigation and intuitive yet powerful features allow you to master the product in no time.

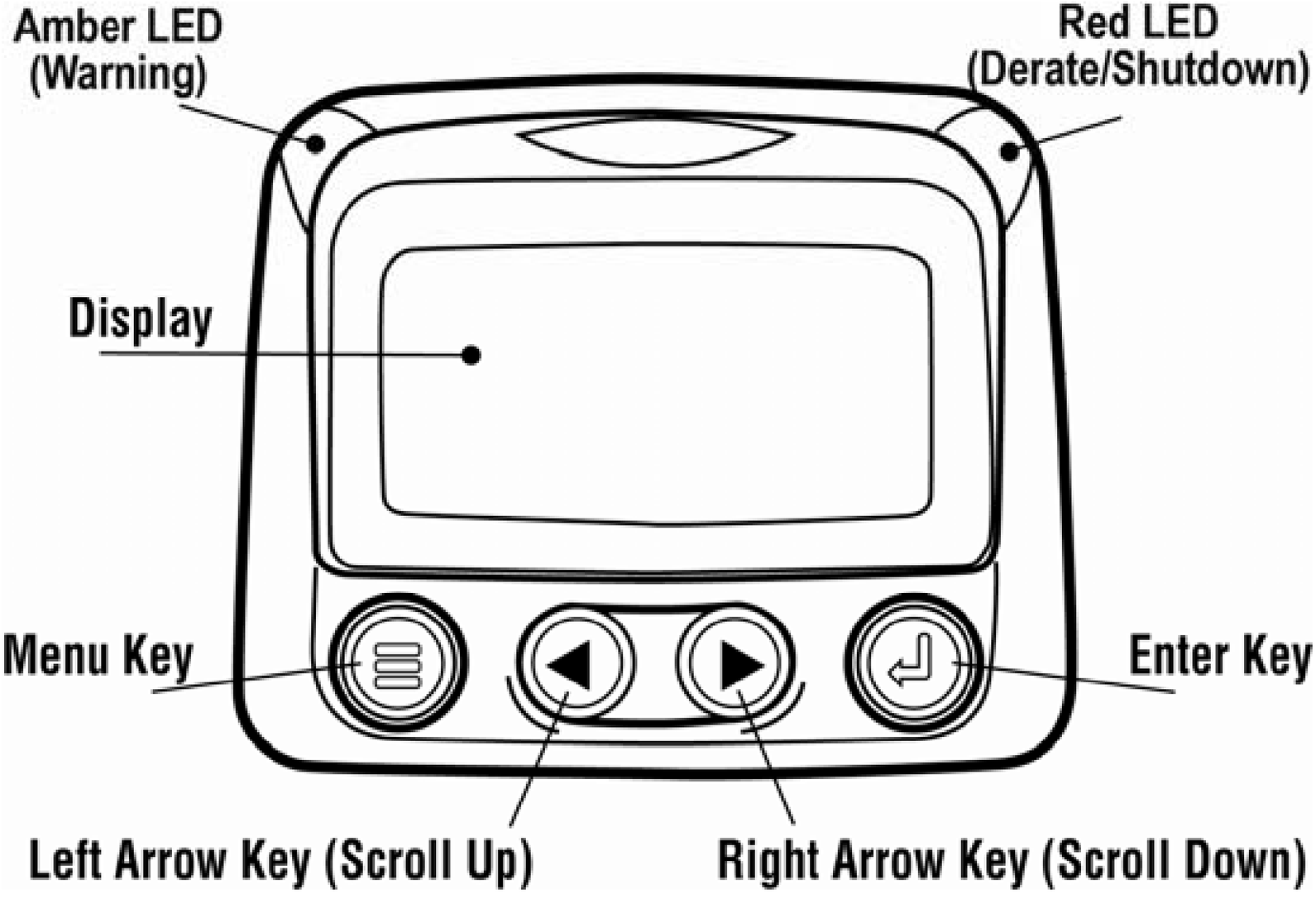
Additional information can be found on our website at www.fwmurphy.com/powerview.

Engine and Transmission 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):

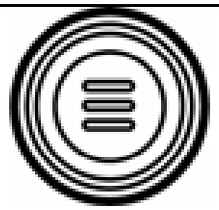
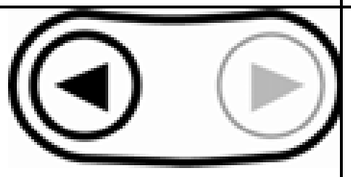
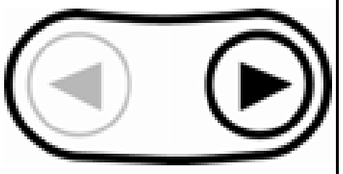
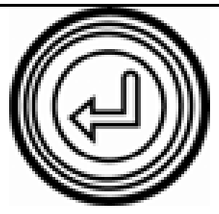
- Engine RPM
- Engine hours
- System voltage
- Percent engine load at the current RPM
- Coolant temperature
- Oil pressure
- Fuel economy
- Throttle position
- Engine manifold air temperature
- Current fuel consumption
- Transmission oil pressure
- Transmission oil temperature
- Transmission gear position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

Faceplate Features



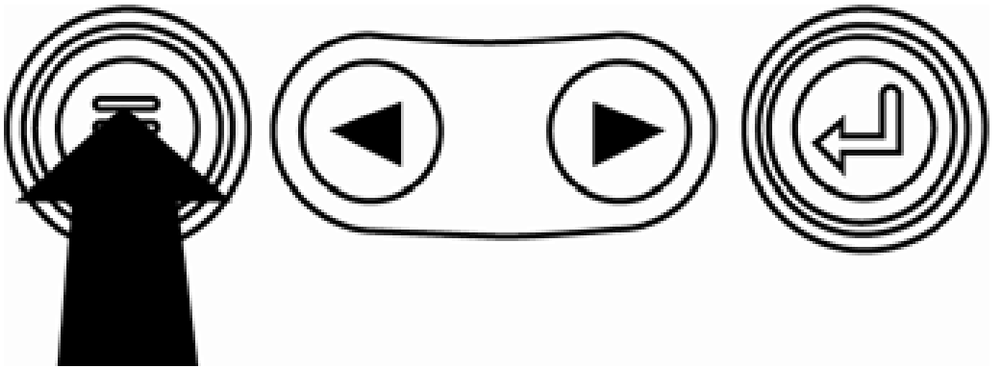
Navigation and Keypad Functions

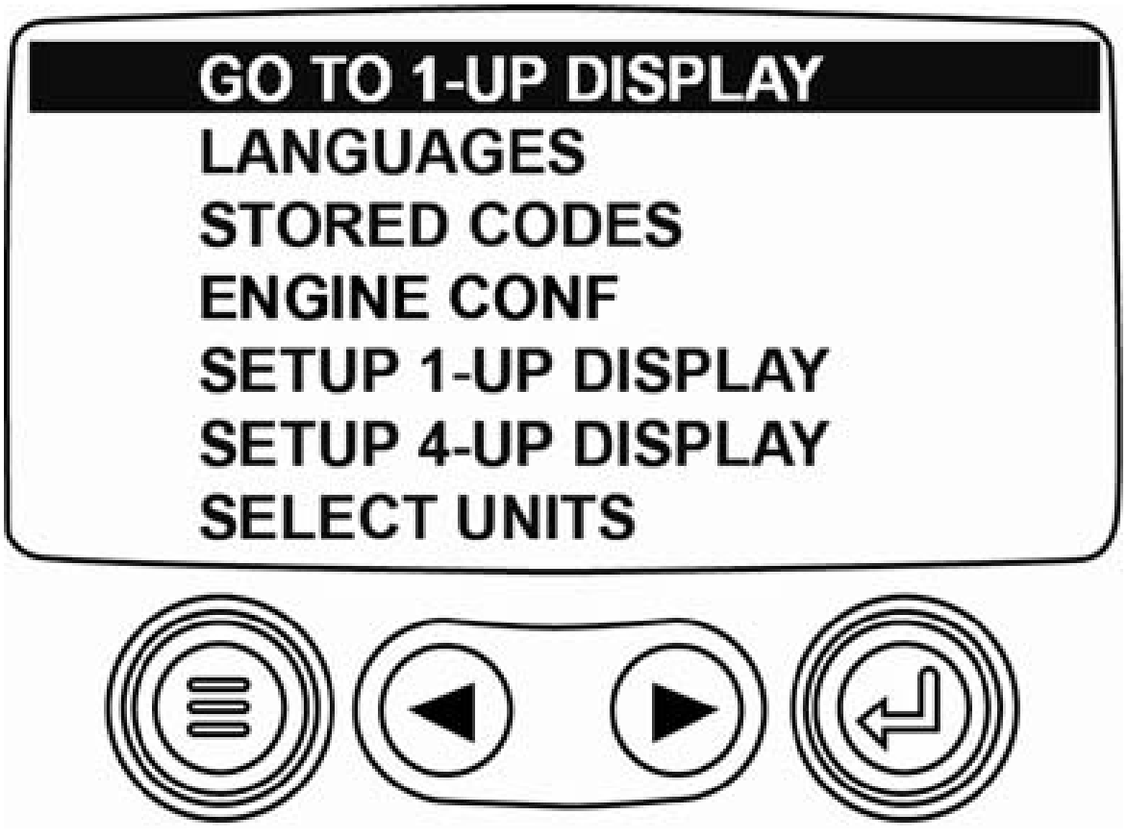
The keypad on the PowerView display is a capacitive touch sensing system. There are no mechanical switches to wear or stick. When a key is touched, feedback is provided by the screen flashing. The keys on the keypad perform the following functions:

	**Menu** – 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.

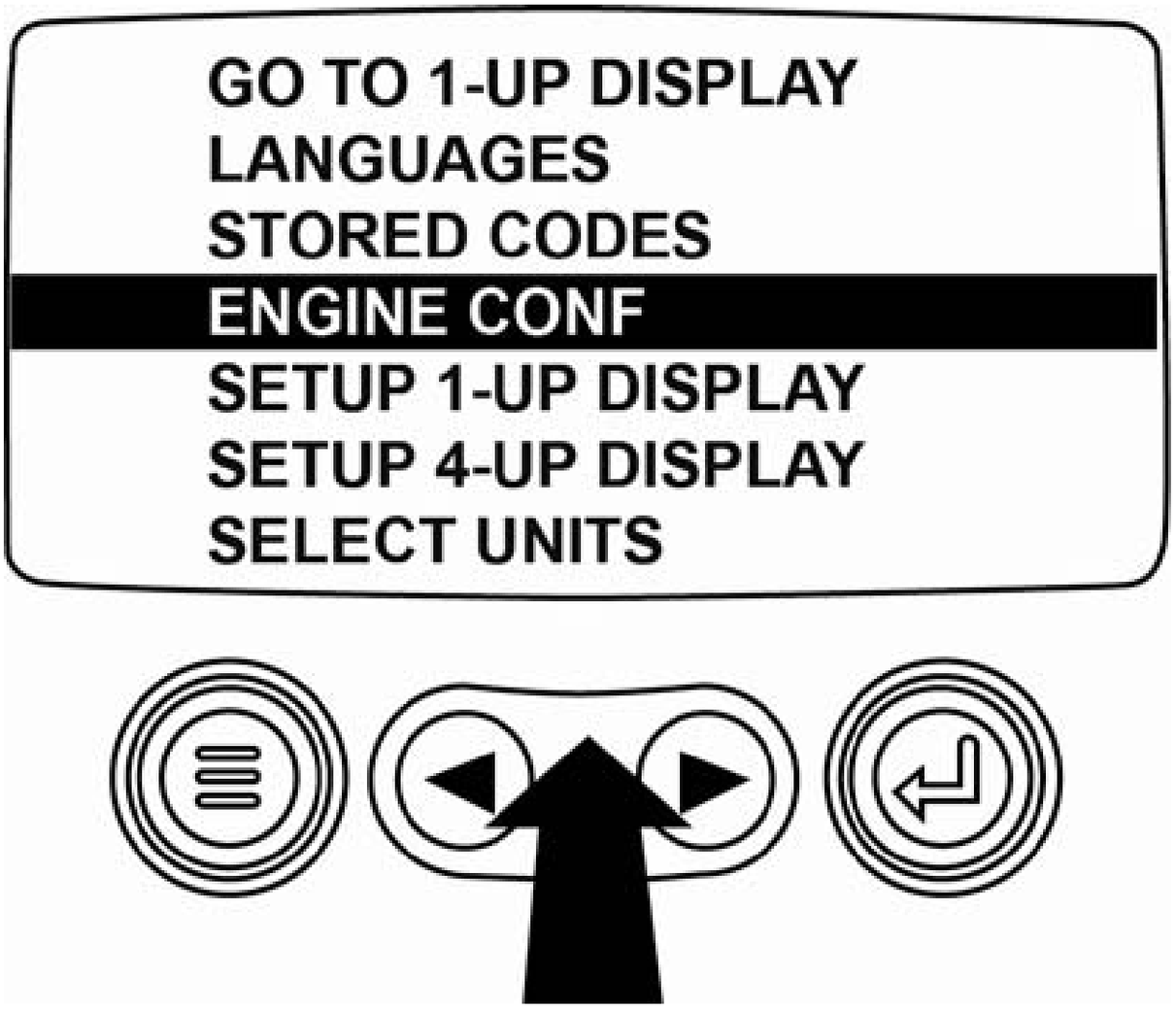
Basic Navigation

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

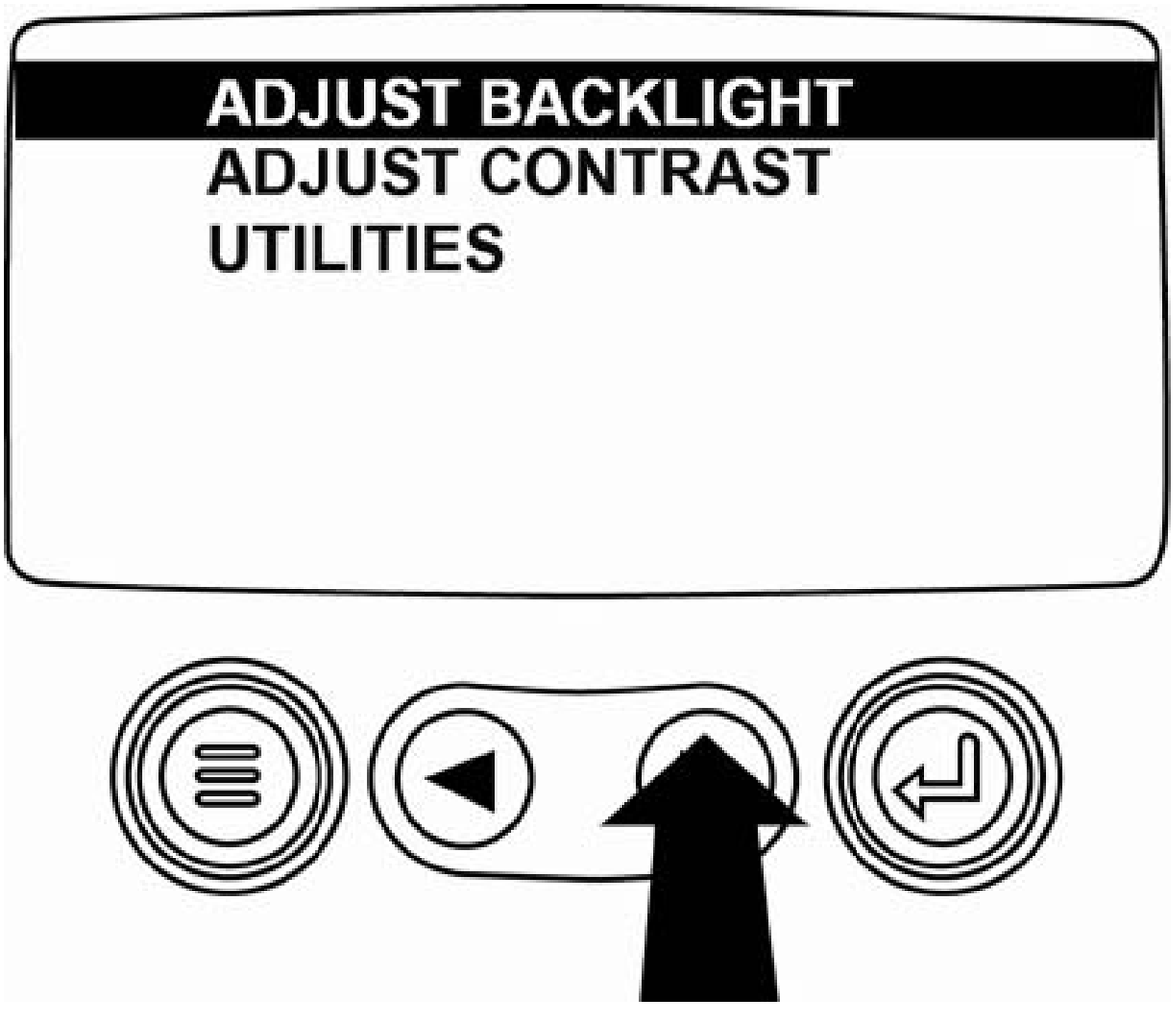




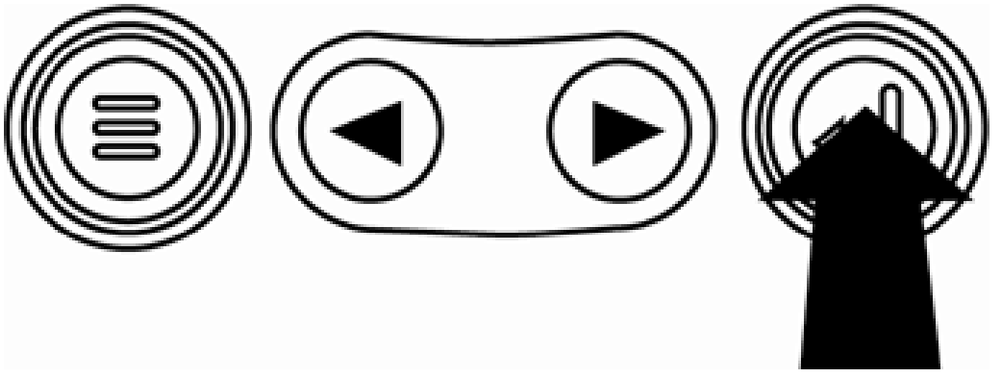
2. Touching the **Arrow Keys** will move the selection bar to other menu items.



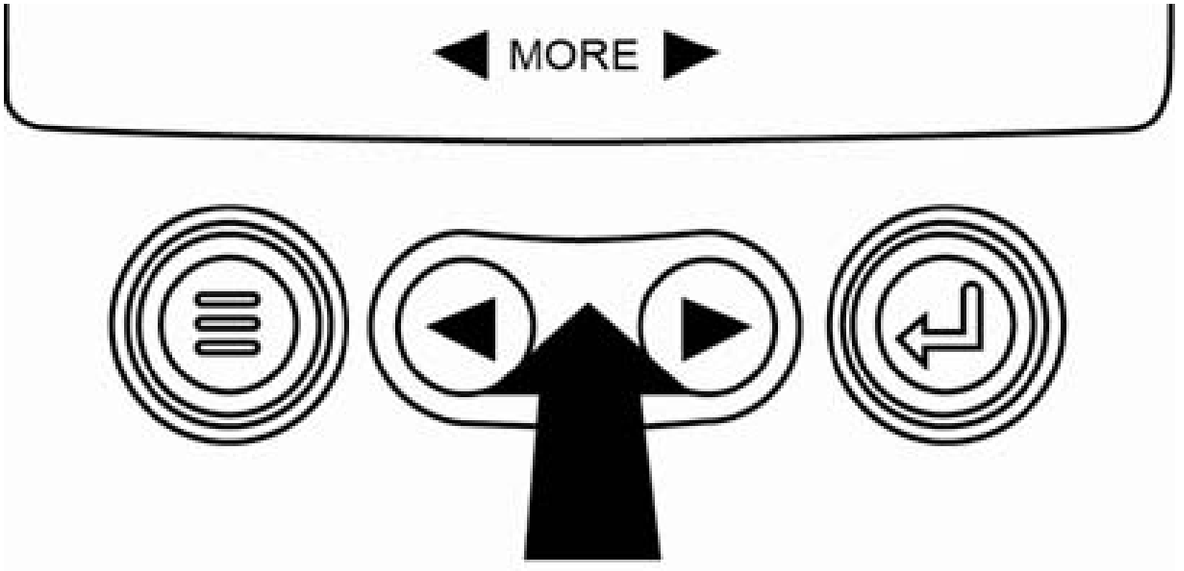
3. Certain menus have multiple pages of items. Scrolling past the top item or bottom item on the current page will reveal other menu items on additional pages.



4. When the desired item is highlighted by the cursor, pressing **Enter** will select that item and display the corresponding screen.



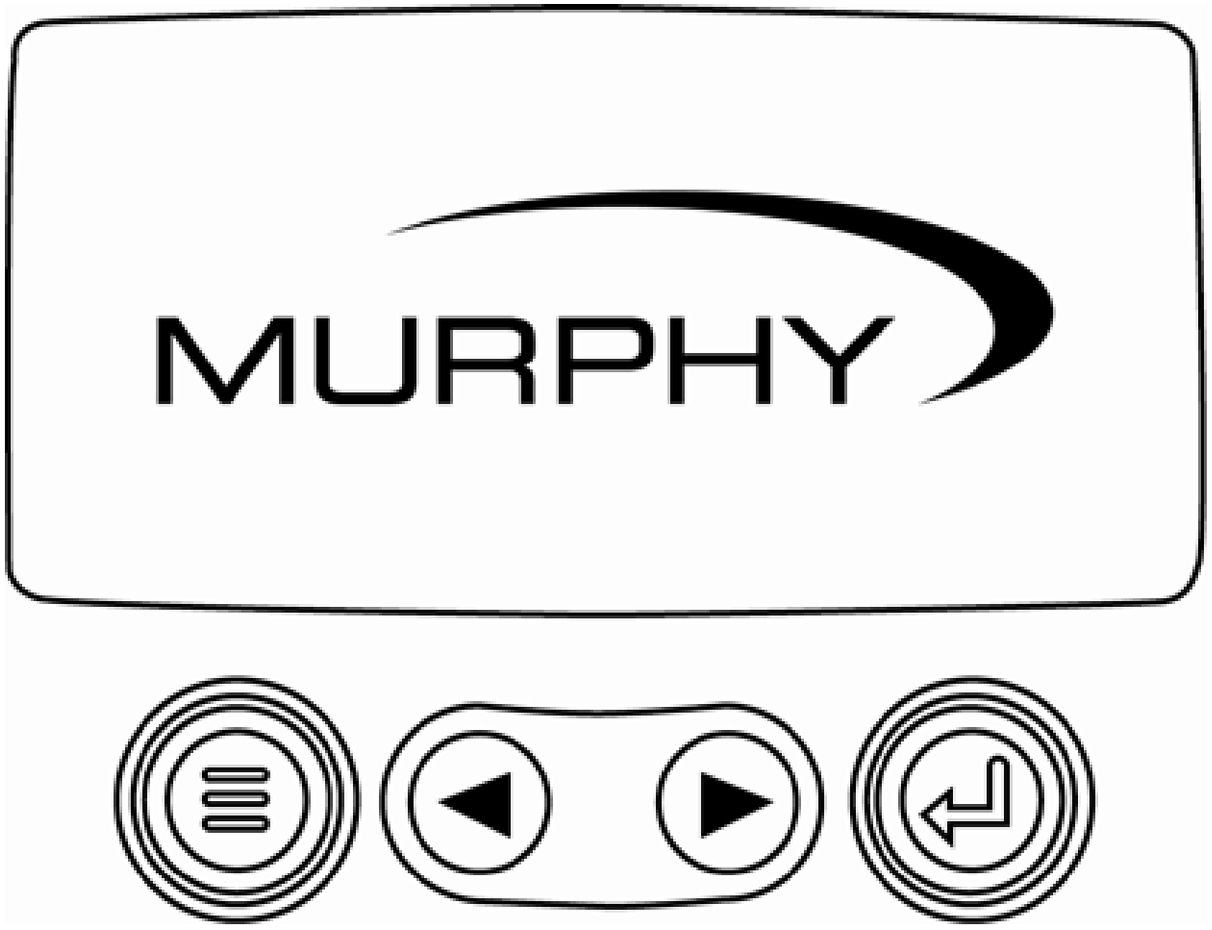
5. Anytime the word MORE appears above the **Arrow Keys** there are more screens that may be viewed. Use the **Arrow Keys** to scroll to the next screen of information.



Operation

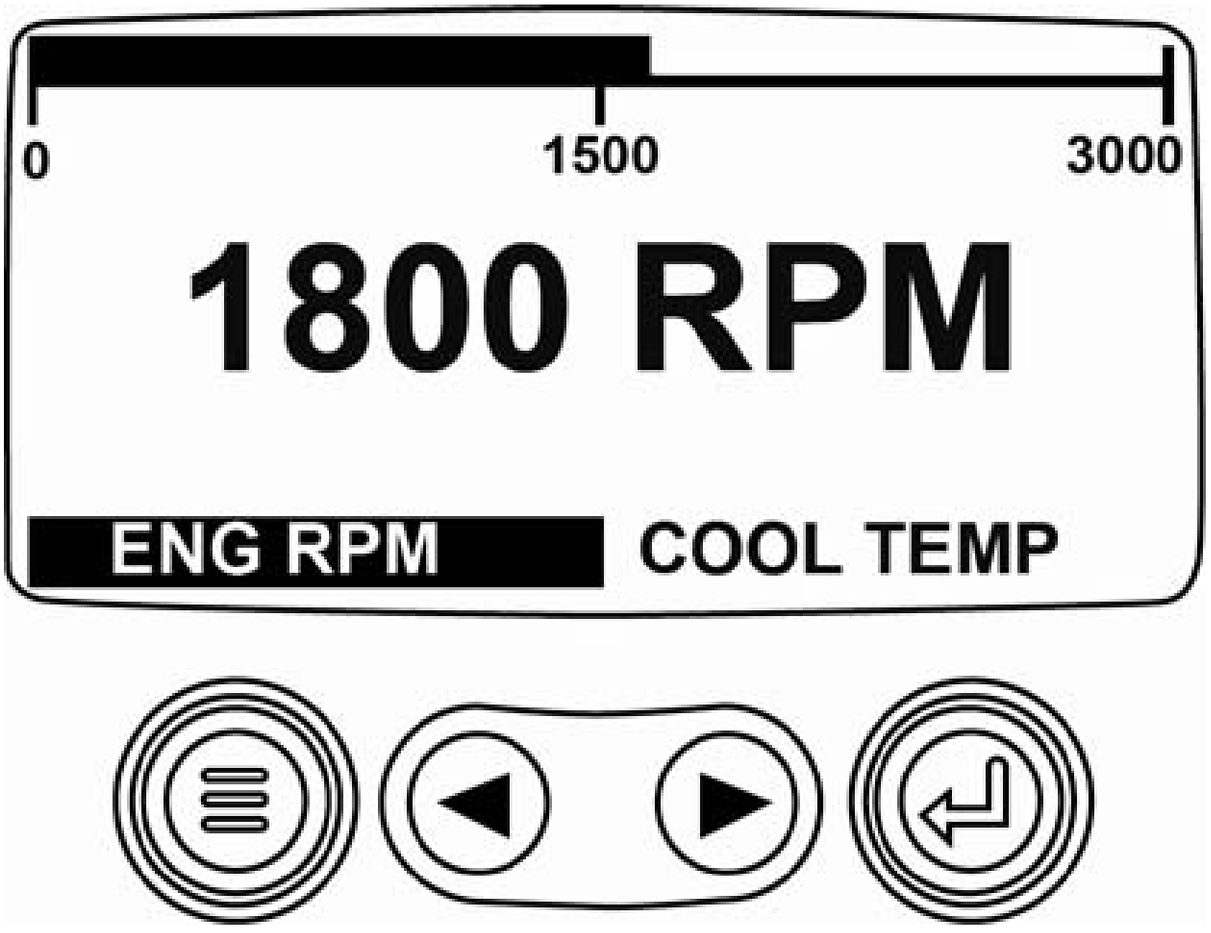
PowerView Menus (First Time Start Up)

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



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 broadcasted 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 appears with the engine RPM displayed. Pressing the **Right Arrow Key** will display the coolant temperature. The screen can be changed to other parameters by pressing **Menu**.



Setting Up the Display

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 customize the display by selecting the parameters you want.

1-Up Display

Three options are available for modification of the 1-Up display.

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.
Custom Setup – This option allows for the modification of which parameter, the number of parameters, and the order in which the parameters are being displayed.
Automatic Scan – Selecting the scan function will cause the 1-Up Display to scroll through the selected set of parameters one at a time, momentarily pausing at each.

1-Up Display Settings

1. Touch **Menu** and use the **Arrow Keys** to highlight SETUP 1-UP DISPLAY, then press **Enter**.

2. To select USE DEFAULTS, highlight the option and press **Enter**. A message indicating “RESTORED TO DEFAULTS” is displayed.

3. To select CUSTOM SETUP, highlight the option and press **Enter**. A list of engine parameters is displayed.

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

   Selected parameters are indicated by a # symbol to the right of it and represent the order in which the parameter will be displayed.

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

6. 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.

7. Selecting the AUTOMATIC SCAN ON function will cause the 1-up display to scroll through the selected set of parameters one at a time.

8. Once the USE DEFAULTS, CUSTOM SETUP and AUTOMATIC SCAN functions have been set, touch **Menu** once to return to the main menu, or twice to display the 1-up display screen.

4-Up Display

The 4-up display places the parameter data into four areas of the screen known as quadrants. Factory defaults for the 4-up display include coolant temperature, engine speed, oil pressure, and battery voltage. You may customize the 4-up display with parameters you define for each quadrant.

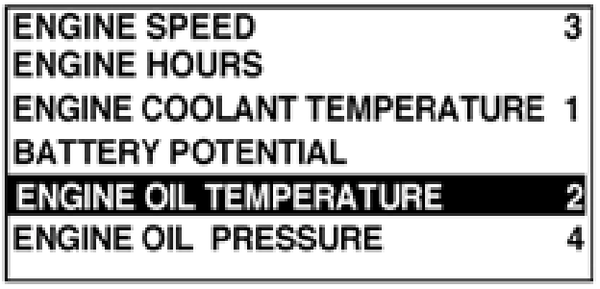
1. Touch **Menu** and use the **Arrow Keys** to highlight SETUP 4-UP DISPLAY, then press **Enter**.

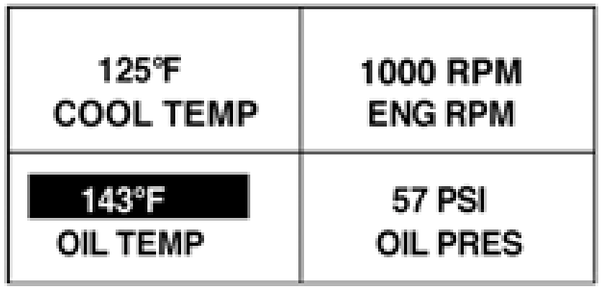
2. To select USE DEFAULTS, highlight the option and press **Enter**. A message indicating “RESTORED TO DEFAULTS” is displayed.

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

4. The quadrant with the backlit parameter value is the currently selected parameter. Use the **Arrow Keys** to select which quadrant you wish to edit.

5. Touch **Enter** and a list of parameters will appear. The parameter that is highlighted is the selected parameter for the screen. The number to the right of the parameter indicates the quadrant in which it is displayed.





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

6. Use the **Arrow Keys** to highlight the new parameter to be placed in the quadrant that was selected in step 4 and touch **Enter**.

7. Touch **Menu** to return to the 4-UP CUSTOM SETUP screen.

8. The parameter in the selected quadrant has changed to the parameter selected in the previous screen.

9. Repeat the parameter selection process until all spaces are filled.

Main Menu Options

This section describes the features listed on the main menu of the PowerView. These menu options are displayed whenever you touch **Menu**. The **Arrow Keys** allow you to scroll the items, and **Enter** selects the highlighted option.

Selecting a Language

From LANGUAGES, you may select ENGLISH, ESPANOL, FRANCAIS, ITALIANO, or DEUTSCH. The currently selected language is indicated by an asterisk.

Stored Fault Codes*

Request stored fault code information.

Engine Configuration Data*

ENGINE CONFG allows you to scroll through engine configuration data.

* This function may not be supported by all manufacturers.

Backlight Adjustment

ADJUST BACKLIGHT allows you to select the desired backlight intensity.

Contrast Adjustment

From ADJUST CONTRAST, you may select the desired contrast intensity.

Select Units

From SELECT UNITS, you may select how information is displayed. ENGLISH for Imperial units, i.e., PSI, °F or METRIC KPA, METRIC BAR for IS units, i.e., kPa, Bar, °C.

Utilities

UTILITIES provide troubleshooting features and displays information about the PowerView configuration. (See “Utilities Menu”)

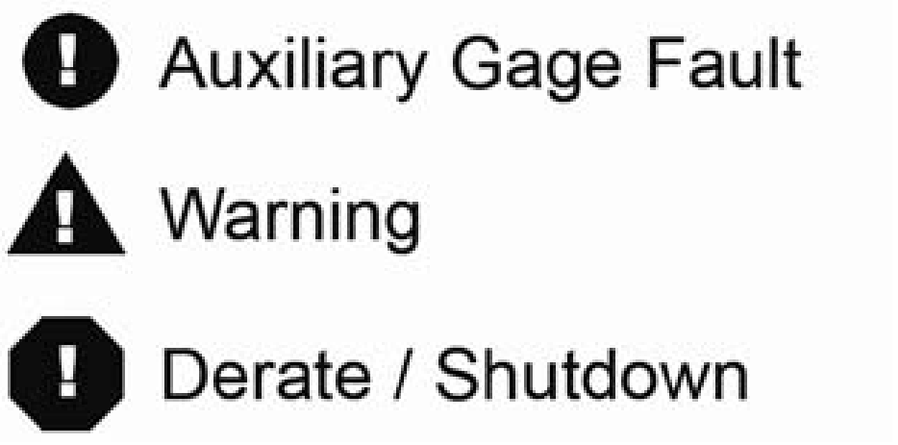
Faults and Warnings

The PowerView provides two means for detecting faults and warnings: visual LEDs on the casing (See “Faceplate Features”) and fault indicators on the display.

Visual Indication

- Amber LED (Warning)
- Red LED (Derate / Shutdown)

Fault Indicators



Auxiliary Gage Fault

Murphy's PVA Gages 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.

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.

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.

Utilities Menu

The following steps take place starting at the UTILITIES menu option.

1. GAGE DATA - View information for optional connected PVA gages.

2. REMOVE ALL GAGES - Reset the PowerView's gage memory.

3. SOFTWARE VERSION - View the PowerView's software version.

4. MODBUS SETUP – refer to ‘Modbus Setup’ section.

5. FAULT CODE CONVERSION - View/edit the J1939 fault code conversion method.

   NOTE: There are four (4) different methods for converting fault codes. The PowerView always looks for J1939 Version 4 and can be set to read the code as one of three (3) other J1939 versions if Version 4 is not

being used. Most engine ECU's use Version 4, therefore in most cases adjustment of this menu option will not be required.

Upon receiving an unrecognizable fault, change to a different J1939 Version. 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 J1939 Version not yet used and continue to check the SPN number.

6. ANALOG INPUT – provides two setting options:

   - BACKLIGHT DIMMER, the default setting, will accept an optional backlighting dimmer.

   - FUEL LEVEL accepts an optional Murphy fuel sender (model ES2F recommended) for fuel level information.

7. SELECT ENGINE ECU – listens to all ECUs or scrolls to a specific engine ECU.

Modbus® Setup

1. From the UTILITIES menu, select MODBUS SETUP.

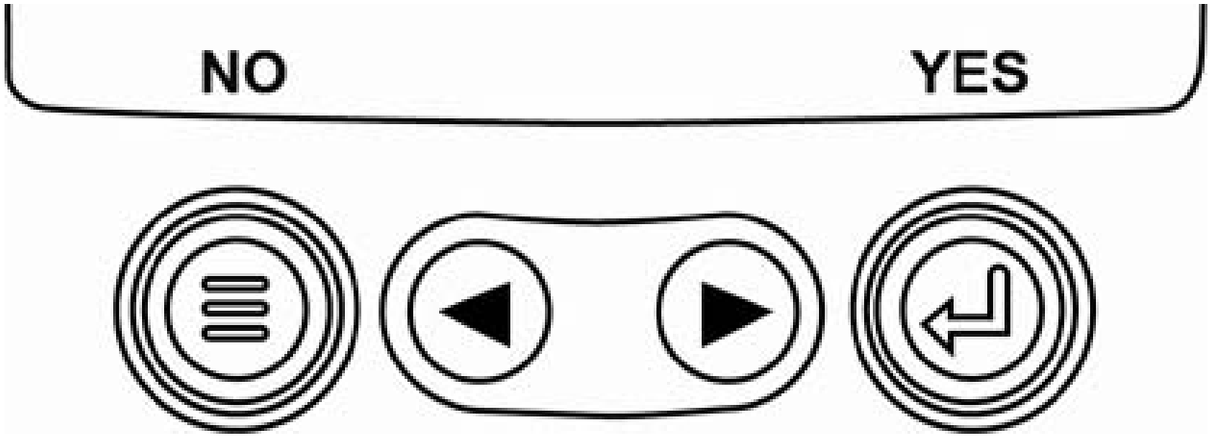
2. Select either the SLAVE ACTIVE (SCADA or remote Modbus master) or MASTER ACTIVE (auxiliary gages) modes. Touch **Enter** to toggle between master and slave.

3. Select SERIAL PORT SETUP (slave mode only), then touch **Enter**.

4. Continue to scroll each selection (BAUD RATE, PARITY, DATA BITS, STOP BITS) to configure the serial port parameters for your Modbus slave application.

Selecting Engine ECU

1. From the UTILITIES menu, choose SELECT ENGINE ECU.
2. The message “LISTEN TO ECU: ALL” is displayed as the default setting, and indicates the PV101 is listening to all devices on the network.
3. To change the setting to a specific address, press the **Arrow Keys** to scroll through the numbers (0-253).
4. Once the target address is displayed, press **Enter**.
5. A confirmation screen displays. Selecting “NO” (shown above Menu key) returns to the SELECT ENGINE ECU screen. Selecting “YES” (shown above Enter key) stores the selected address and returns to the UTILITIES menu.



Troubleshooting

“WAIT TO START PREHEATING” is displayed

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” is displayed

The PowerView has not received any valid J1939 CAN messages for at least 30 seconds.

“TIMEOUT ECU NOT RESPONDING” is displayed

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, and the ECU responded. There are zero stored codes.

“NO GAGE DATA” is displayed

The PowerView has no record of gages 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

The ECU is sending a message that it does not support this parameter.

“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. Or (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.

NOTES

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