

POWERSVIEW PV101-R2



**THE SIMPLE SOLUTION FOR COMPLEX
ELECTRONIC ENGINES**

Product Manual & Operations Guide

Revision A – March 2023

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INTRODUCTION

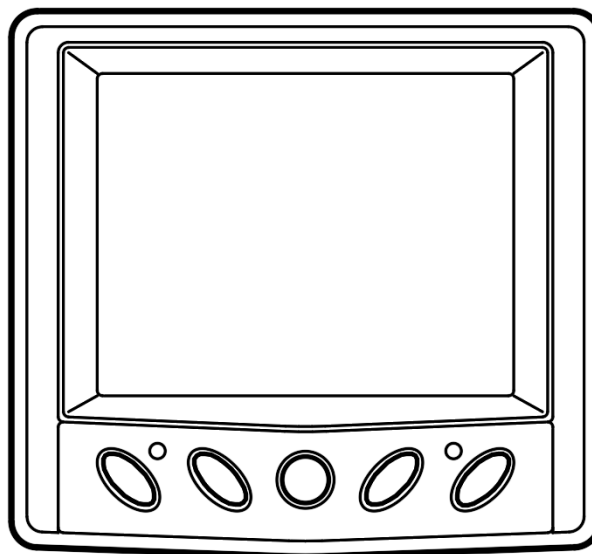
Congratulations on purchasing your PowerView display, a multifunction tool that provides a window into the many parameters and service codes of modern electronic engines and transmissions. This guide is intended to help you set up your PowerView display and identify navigation basics and product features. The display's simple navigation and powerful features allow you to quickly master the product. Additional information can be found on our website at <https://macquarrie.com.au/collections/powerview-displays>

ENGINE AND TRANSMISSION PARAMETERS

















The following are some of the engine and transmission parameters which can 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 current RPM
- Coolant temperature
- Oil pressure
- Fuel economy
- Throttle position
- Engine intake manifold temperature
- Current fuel consumption
- Transmission oil pressure
- Transmission oil temperature
- Active fault codes
- Stored fault codes

FACEPLATE FEATURES



NAVIGATION AND KEYPAD FUNCTIONS

	Menu - Enter menu screens
	Left Arrow – Scroll the screen to the left.
	Right Arrow – Scroll the screen to the right or select the next option.
	Page Marker – To show which page you are on
	Current Page -
	Page Disabled – Page is disabled in menu
	Recall – Go to fault page and display current active faults
	Up Arrow – Menu go to/highlight previous option
	Down Arrow – Menu go to/highlight next option
	Home – Menu back to gauge display
	Back – Menu back to previous menu level.
	Minus – Menu reduce the highlighted value
	Plus – Menu increase the highlighted value
	Enter – Menu go to the next menu level
	Confirm -
	Service – Go to the service page
GET FAULTS	Get Faults – Call stored code from ECU
INHIBIT REGEN	Inhibit Regen – In cases where regen cannot be performed due to restrictions, select this to eliminate the possibility of a regen occurring.
AUTO REGEN	Auto Regen – This is the factory default. Select and PowerView sends a CAN message to the ECU to perform DPF Regeneration (regen) automatically whenever needed.
REQUEST REGEN	Request Regen – Request Diesel Particulate Filter Regen

BASIC NAVIGATION

1. When **Menu** button is Pressed, the Main Menu items display.



2. Press the **Arrow** buttons to move the selection bar to other menu items.



3. Certain menus have multiple pages. Keep scrolling to the top or bottom item on the current page reveals other menu items on additional pages.
4. When the desired item is highlighted by the cursor, pressing +/- or **Enter** selects that item and displays the corresponding updates/screen.



FIRST TIME START UP

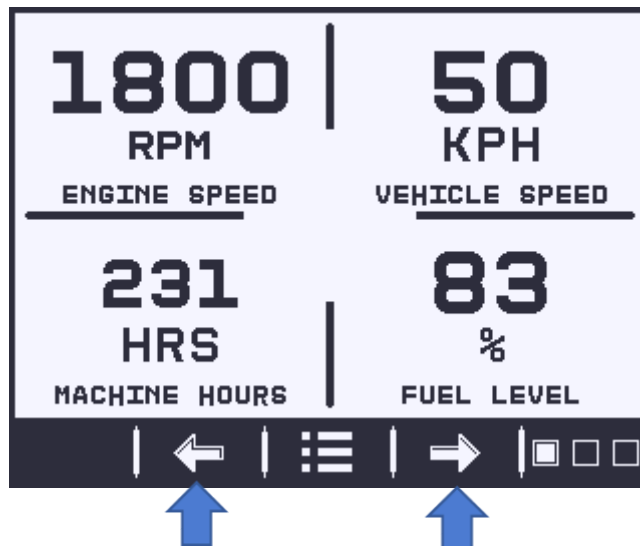
1. When power is first applied to the display, the **Murphy** logo is displayed.

(NOTE: Expect a 20 minute warm up for the display at temperatures of -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 broadcasted from the ECU. Once the ECU stops broadcasting this message, this screen will no longer be displayed.



3. Once the engine has been powered up, the engine parameters are displayed. Pressing the **Left/Right Arrow** buttons to display other parameters. The screen can be changed to other parameters by updating in the Menu.



MAIN MENU OPTIONS

This section describes the features listed on the Main Menu of the PowerView. These menu options display whenever you press Menu. The **Arrow buttons** allow you to scroll through items. **Enter** selects the highlighted option or +/- changes highlighted value.

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.

DISPLAY PARAMETERS

There are **three** 4-up display pages available. Each option can place parameter data in to one of four areas on the screen. Page 2 and Page 3 can be turned off if not required.



1. Press **Menu** and use the **Arrow buttons** to highlight **Display Parameters**, then press **Enter**.
2. Use **Arrow buttons** to highlight the page you want to modify then press **Enter**.
3. To turn off Page 2 and/or Page 3, going into the sub page and highlight Page 2 or Page 3, press **Enter**.
You will not be able to see the parameters if the current page is turned off.



4. Use **Arrow buttons** to highlight the section you want to change, and press **Enter**.
5. Use **Arrow buttons** to highlight the new parameter you want to display on the screen then press **Enter**. The New parameter is set.
6. Repeat the parameter selection process for multiple updates.

SERVICE REMINDERS

SERVICE REMINDERS permit you to SET, MODIFY or RESET REMINDERS for changing engine oil, fuel filter, air filter, and hydraulic oil or for servicing the engine and/or machine.

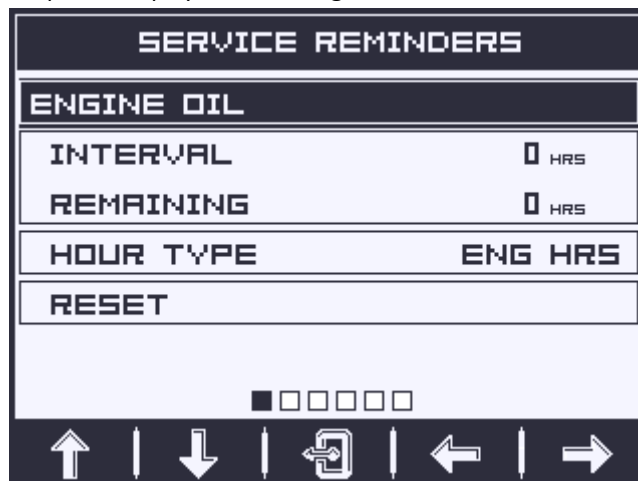
NOTE: Service Reminders are internal reminders within PowerView. Once a Service Reminder is active, reminder screen will pop up and service icon will display on the main screen. Press the SERVICE button to review which reminder is active.



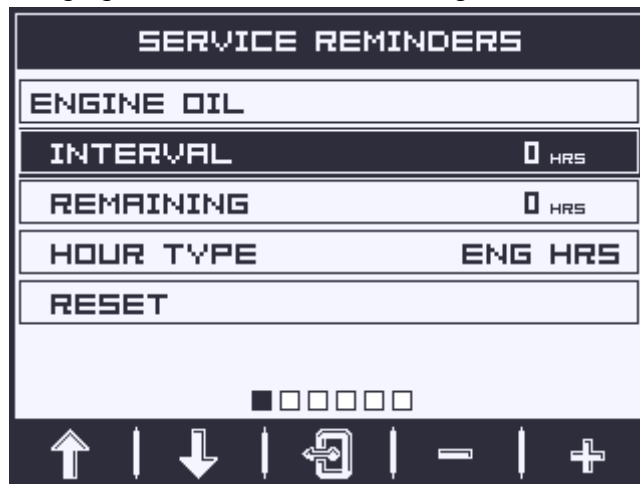
1. Use the **Arrow buttons** to highlight Service Reminders and press **Enter**.



2. The **Service Reminders** options display. Use **Left/Right Arrow** to switch between different options.



- Use **Up/Down Arrow** to highlight **Interval** then use **+/-** to change value.



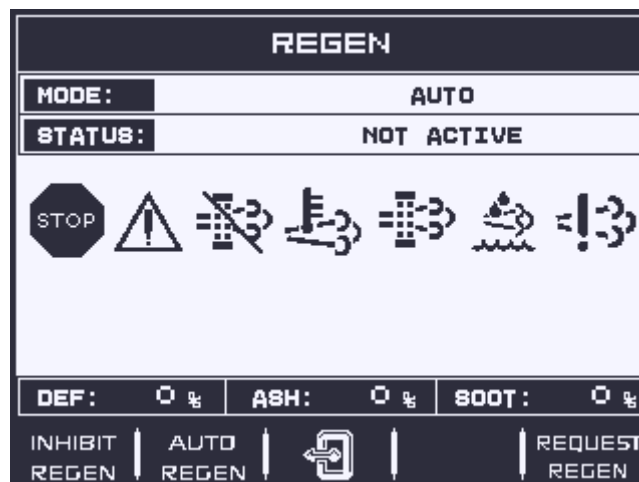
- Highlight **Reset** then press **Enter** once finish service or 1st time set.

NOTE: if **Engine Hours** is used to calculate the time, the **Engine ECU** need to be **ON** when trying to reset.

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:



- Inhibit 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.

2. **Auto Regen:** This is the factory default. Select and PowerView sends a CAN message to the ECU to perform DPF Regeneration (regen) automatically whenever needed.
3. **Request Regen:** Select this and a second confirm screen, **REQUEST DIESEL PARTICULATE FILTER REGEN**, displays. Use this to force a regen when auto regen is not due or is inhibited by PowerView.

Press **YES** 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.

Press **NO** to ignore the regen request and back to the Regen Page.



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	3698	DPF Inhibit lamp indicates an inhibited Regen Status.
	64892	3697	High Exhaust Temperature (HEST) lamp indicates regeneration in process.
	64892	3703	DPF Particulate Filter Restricted lamp indicates a Regen is needed.
	65110	1761	<ul style="list-style-type: none"> • When solid on: Diesel Exhaust Fluid Tank level <= 10% • When Flashing: Diesel Exhaust Fluid Tank Level <= 5%
	65110	5246	Aftertreatment SCR Operator Inducement Severity

BACKLIGHT

ADJUST BACKLIGHT – Use the **Arrow buttons** to highlight Backlight then use +/- to brighten or darken the backlight intensity.

CONTRAST

ADJUST CONTRAST – Use the **Arrow buttons** to highlight Contrast then use **+ / -** to lighten or darken the text and graphics.

UTILITIES OPTIONS

Use the **Arrow buttons** to highlight **Utilities** then press **Enter**.

FAULT CONVERSION

View/Edit the J1939 fault code 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 **Right Arrow**. 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**, this will show analogy fuel level instead of J1939 CAN fuel level which also let you setup the low fuel level and function.

Low Fuel %, Use **+ / -** buttons to increase/decrease the percentage of remaining fuel at which to do the action. The default is 20%.

Low Fuel Action, controller will send an action when remaining fuel lower than the setpoint, the action can be: **WARNING, SHUTDOWN, NONE** (no action).

ENGINE SPEED CONTROL*

This option is disabled in default. It needs to be turned on in the **OEM** menu for functionality to be available.

1. From **Utilities** menu, highlight **Engine Speed Control** then press **Enter** to reach the **Speed Control** screen.
2. To change the setting of the engine speed via TSC1; use the **+/-** buttons to increase or decrease the requested speed.
3. Press button to enable TSC1 speed control.
4. Press button to disable TSC1 speed control.



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

OEM MENU

The **OEM** menu is the last item on the **Utilities** menu. You must have a password to access the **OEM** menu. Once in the OEM Menu, select an item by highlighting it and press Enter to reach additional screens.

ENTER PASSWORD screen – Enter **3482** in the numeric spaces provided. Start at the furthest left numeric value and use +/- buttons to increment/decrement the number and the **Right Arrow** button to move to the next numeric position. If the Murphy standard password does not work, contact the OEM from whom the engine or machine was purchased.

The following items are in the OEM Menu.

MODBUS SETUP

To set the MODBUS, highlight **MODBUS Setup** then press **Enter**.

There are four selections: Factory Defaults, Baud Rate, Parity and Stop Bits.

CANBUS DATA RATE

Use +/- buttons to switch between nine CANBUS data rates after highlighted **CANBUS Data Rate**.

ECU ADDRESS

Highlight **ECU Address** and press +/- to change:

1. The message "**Listen to All**" displays as the default setting. This message indicates the unit is listening to all devices on the network.
2. To change the setting to a specific address, press the +/- buttons to scroll through the selections.
3. Unit will save the updates automatically.
4. Unit need restart before update activated.

UNIT ADDRESS

This option allows setting the source claim address for the Unit on the CAN Network. Highlight **Unit Address** and press +/- to change. Options are **Auto Claim** or **0** to **253**.

RESTORE ALL DEFAULT

This will reset all settings to default.

Unit need restart before update activated.

CLEAR MACHINE HOURS

Use this to clear machine hours internal to PowerView outside of ECU hours.

SET MACHINE HOURS

Machine hours calculate internally when the RPM is greater than 50. Use this if you want to track hours for machine running.

CLEAR FAULT CODES

FUEL SETPOINTS

Highlight and press **Enter** to enter **Fuel Setpoints** page.

SENSOR TYPE

There are three fuel sensor types to select.

- ESF/ES2F: FW Murphy fuel sensor. Curve is built in so no need to enter manually.
- Other Linear: A linear curve fuel sensor. **Full** (100%) and **Empty** (0%) setpoints are required.
- Other Log: This is for the sensors using log curve. **Full** (100%) **3/4** (75%) **1/2** (50%) **1/4** (25%) **Empty** (0%) setpoints are required.

DPF REGEN

Highlight and press **Enter** to turn this option **Enabled** or **Disabled**.

Turn this option **Enabled** to have it available in the **Main** menu or **OFF** for no availability in the **Main** menu.

SPEED CONTROL

This option must be **Enabled** in the **OEM** menu for functionality to be available in the **Utilities** menu. Highlight and press **Enter**. The Speed Control can be **Enabled** or **Disabled**.

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

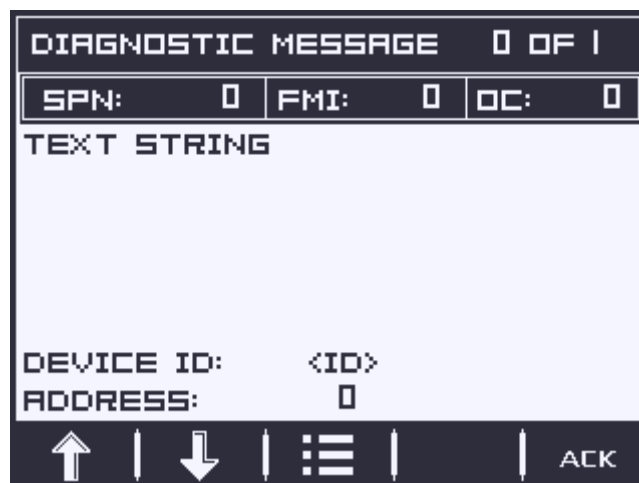
- Amber LED (Warning)
- Red LED (Derate / Shutdown)

FAULT INDICATORS

-  Warning
-  Derate / Shutdown

ACTIVE FAULT CODES

When controller receives a fault code from an engine, the display will be replaced with the active fault code message.   buttons will appear if more than one faults active.



At the same time, related LED will be turned on.

ACKNOWLEDGING FAULT CODES

1. Press **ACK** to Acknowledge and hide the fault and return to the gauge display, but the display will contain the warning or shutdown icon.
2. Press **RECALL** to redisplay the hidden fault. Press **BACK** button to return the gauge display screen.

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. Check wiring, CANBUS, termination resistors, and Engine ECU address in the OEM Menu.

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. The ECU responded: There are zero stored codes.

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  for approximately 5 seconds. This will reset the LCD contrast setting to factory default.

IMPORTANT!

Before returning your controller for Warranty, please call our Technical Support team to further troubleshoot any issues.