DM-200 OBDII Universal OLED Gauge

DM-200 OBDII User Guide (V1.0) Jan 1, 2008

A Silicon Valley California Company

DM-200 OBDII Universal OLED Gauge
User Guide

20 SEMA Awards in 2007

6 SEMA Awards in 2006

This Product has Patents Pending
Designed by PLX Devices Inc. in Sunnyvale, CA
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1 Introduction

Thank you for purchasing the PLX DM-200 OBDII Universal OLED Gauge, the world's first "organic light emitting diode" 60mm gauge with plug and play OBDII capability. The PLX DM-200 OBDII allows you to take advantage of the latest and cutting edge technologies only employed in high end consumer electronics today. The Organic LED display offers excellent color contrast and unsurpassed viewing angles which far exceed that of traditional LCD displays. For your enjoyment, we've packed powerful features into the DM-200 OBDII. Colors, gauge styles and data can all be customized on the fly along with many additional features. We hope that you enjoy our product as much as we enjoyed designing it.

1.1 Patents

PLX Devices Inc. currently has patents pending in the OLED display, user interface, digital logic architecture, sensor detection circuitry, and customizable gauge implementation.

1.2 Warnings

To prevent fire or shock hazard, do not expose this product to rain or moisture.

Do not operate this product under direct sunlight or in high temperatures. Damage and malfunction may occur.

Do not operate this product while driving. This may interfere with driving operations, resulting in an accident.

Do not use this product and its accessories in any way other than specified by PLX Devices. PLX Devices is not liable for accidents or damage cause by misuse of this product.

Do not tamper, disassemble, or modify this product. This may cause an accident, fire, electric shock, or product malfunction.

Do not operate this product without a protective fuse. (5-10 Amps)

1.3 Key Features

1) Plug and play OBDII 1996+ Vehicles
2) Color Organic LED Technology (OLED)
3) 180 Deg Viewing Angle
4) High Contrast, Daytime visible
5) Multiple gauge styles (gauge, numeric, plot, 4 parameter, custom)

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6) Peak and hold (4 parameters, high and low)
7) Intelligent warning (4 parameter comparison)
8) Custom gauge design
9) 4 button remote
10) Daisy chain up to 32 sensors iMFD
11) Custom wallpaper upload
12) Automatic sensor detection
13) Extruded aluminum construction

1.4 Package Contents

1) DM-200 OBDII Module
2) HDD-200 60mm OLED Display
3) 6ft 4 button remote
4) Power wire with 2.1mm connector and cigarette adapter
5) 1ft Serial Cable
6) 6ft USB Cable
7) CD (Includes DM-100/200 Utility, Drivers, Documentation in PDF)
8) Users Guide

1.5 Software Requirements

The DM-200 comes with PC software. The PC software allows you to do the following

1) Upload 8 Wallpapers (160 x 128 pixels) to the DM-200
2) Upload Custom Gauges (100 Frames) to the DM-200
3) Update DM-200 Sensor Table (If new sensors are available, sensor table must be updated)

Recommended System Requirements:
Windows 95 or higher operating system
Pentium 4/III/II Celeron 1GHz+
Athlon/Duron 1GHz+
256MB Ram

2 Overview

2.1 DM-200 OBDII Control Box
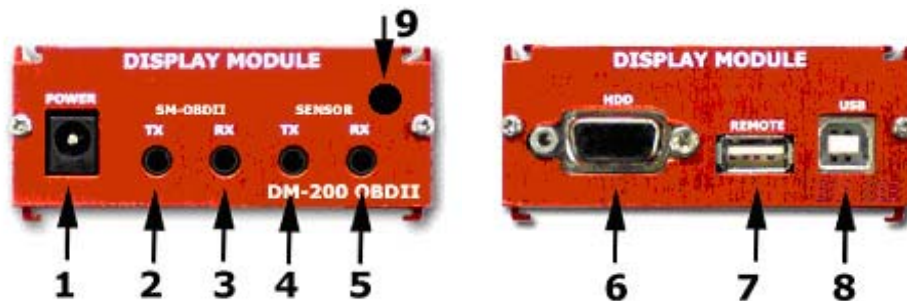
1) Connects to 12V-18V power source.
2) Output of SM-OBDII, Connects to other Display Modules or loops back to sensor input (5)
3) Input of SM-OBDII, Connect to other sensor modules.

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4) Connects to next Display Modules in chain
5) Connects to previous Display Modules or last Sensor Modules in chain
6) Connects to OLED gauge
7) Connects to 4 button remote
8) Connect to USB port on PC for custom gauge, wallpaper upload, update sensor table
9) Connects to OBDII port in vehicle

2.2 Color OLED Display

1) 60mm (2 3/8") OLED Display for DM-200
2) Connects to DM-200 OBDII Control Box. (DO NOT CONNECT TO COMPUTER's MONITOR OUTPUT!)

2.3 OLED 4 Button Remote

In Gauge Mode:

While the DM-200 is in Gauge mode, pressing **Left –Right** Controls the parameter 1-4 which you wish to view. Pressing **Up – Down** controls the type of gauge style you wish to view. Please refer to the state diagrams for more details how to navigate the menu system.

OBDII Sensor Mode:

While the DM-200 is in OBDII Sensor Mode, pressing **Left –Right** switches the page at which you wish to view. Please refer to the state diagrams for more details how to navigate the menu system.

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2.4 Navigating the Menu System

State diagram assumes DM-200 connectivity to SM-AFR, SM-EGT, SM-Fluid Temp, SM-Vac/Boost

*Custom wallpapers can be uploaded to replace black background

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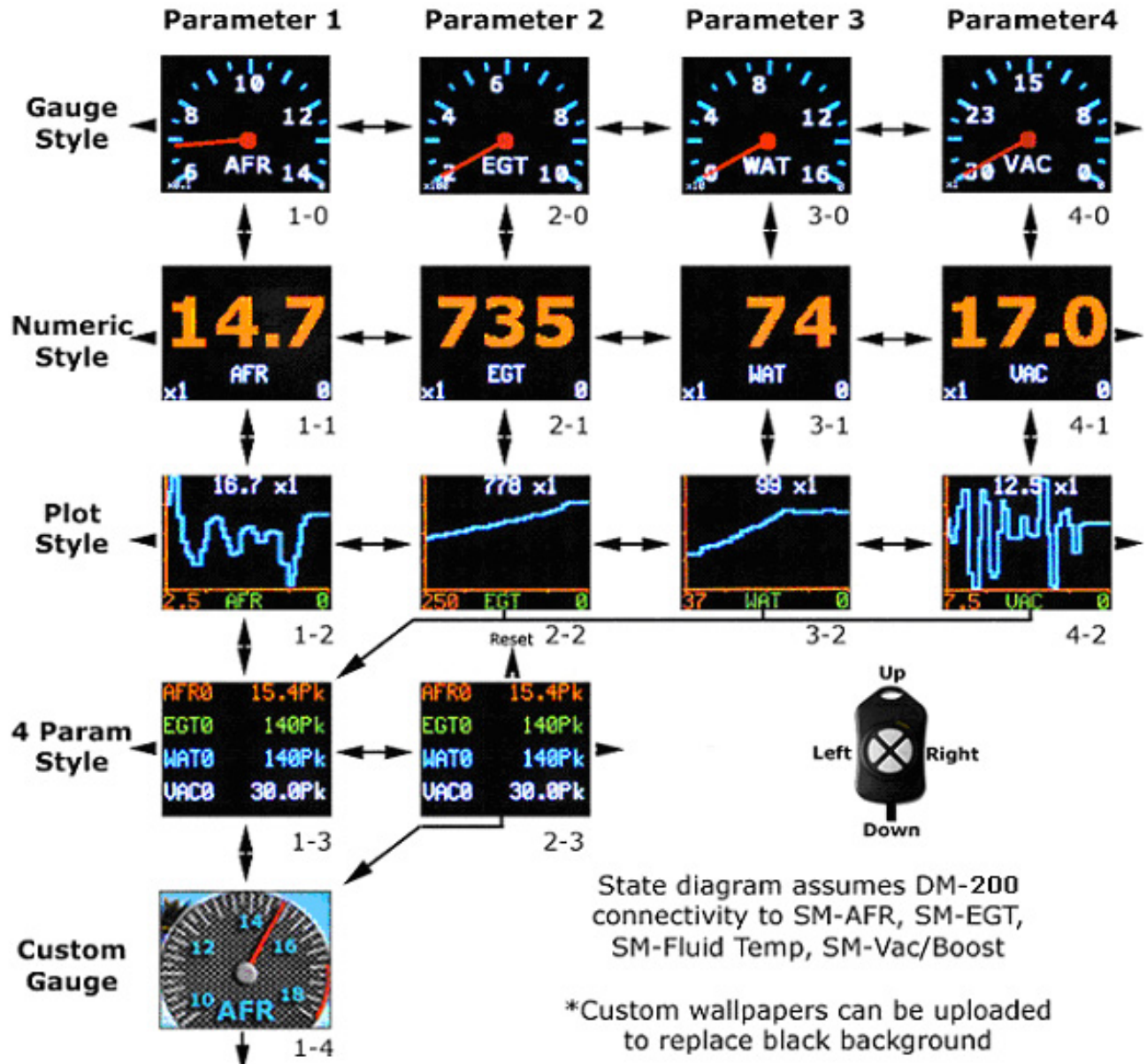
DM-200 OBDII
OBDII SENSOR MODE

To Gauge Mode

Up
Left ⊗ Right
Down

VIEW OBD II
SENSOR DATA
▸

SENSOR DATA 1
THROTTLE 12%
RPM   9
MPH   26
ENG LOAD   18%
TIMING   -38'
INTPRES   16.8

SENSOR DATA 2
AIR FLOW 0.2
FUEL SYS   NU
STFUELB1 +10%
LTFUELB1 +14%
STFUELB2 +17%
LTFUELB2 +21%

SENSOR DATA 3
AIT   59'
WATER   68'
FUELPRES   110
OBDTYPE   UNKN
O2 1B1   0.22
O2 2B1   0.25

SENSOR DATA 4
O2 1B2   1.02
O2 2B2   1.05
AMB TEMP 347'
FRP REL   2.1
FUEL LEV   76%
BAROPRES 59.0

SENSOR DATA 5
CAT B1S1   183'
CAT B2S1   192'
CAT B1S2   201'
CAT B2S2   210'
ECUVOLTS 14.4
ABS LOAD   46%

To Setup Modes

DM-200 OBDII Firmware Version 1.0

3 Hardware

3.1 Connecting Power

Option 1: Using the Cigarette Lighter Power

This option is ideal if your cigarette lighter power is only ON when your ignition key is turned. In some vehicles, your cigarette lighter power is always ON. Leaving your DM-200 OBDII unit always powered on, will drain your vehicle's battery quickly. If this is the case for your vehicle, we recommend option 2.

Plug the 2.1mm power plug to the DM-200 OBDII main control box where indicated "POWER." Plug the cigarette lighter adapter connector into your cigarette lighter power plug in your vehicle.
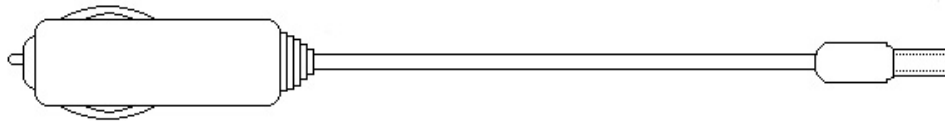
Option 2: Hardwire your power connection

CAUTION! CONNECTING THE DM-200 OBDII IN REVERSE POLARITY WILL DAMAGE THE UNIT! CHECK CONNECTIONS BEFORE POWERING ON.

The DM-200 OBDII accepts 12-18V DC for power. Connect the negative wire (black) to your vehicle's ground. This is usually the negative terminal of your automobile's battery. Connect the positive wire (red) to your vehicle's ignition power. This power is only supplied when your key is turned passed a specific position and is off when your key is removed. Your power connection must be capable of supplying at least

1 amp of current. A 5 Amp fuse is recommended for safety. Plug the 2.1mm power plug to the DM-200 OBDII main control box where indicated "POWER."


The unit is working properly when the OLED screen turns on within 10 seconds. If your gauge does not turn on, check your power connections and gauge connections.

3.2 iMFD Daisy Chain

The iMFD architecture allows you to connect up to 32 Display Modules and 32 Sensors in a daisy chain format. **Please keep in mind that the DM-200 OBDII has 4 SMs built-in.** The 4 built-in SMs can be programmed up to 26 different combinations. See section (3.3).

Basic Setup:
The most basic setup is to have one DM-200 and one Sensor Module connected in the iMFD chain. Make sure that the sensor module has the termination jumper INSTALLED. Use the 1ft serial cable provided to make the connection. **Again please note, your DM-200 OBDII Already has 4 built-in SMs.**
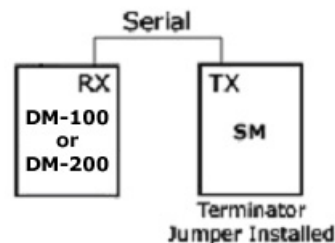

Multiple Sensor Setup:
If you have more sensor modules, simply connect them in between the DM-200 and the Sensor Module. Make sure that any subsequent sensor modules added to the iMFD daisy chain MUST have the termination jumper REMOVED. Use the 1ft serial cable provided to make the connections.
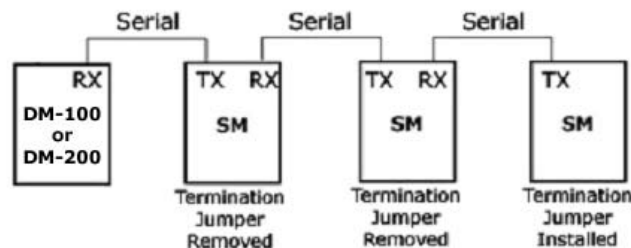
If you have more Display Modules, such as the DM-100, DM-200, DM-5 AFR, DM-5 EGT, and etc. Simply connect them to the left of the DM-100/200 in the above diagram.
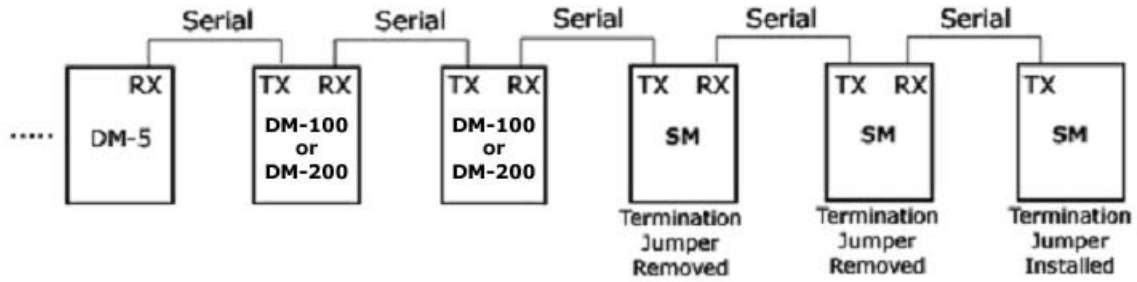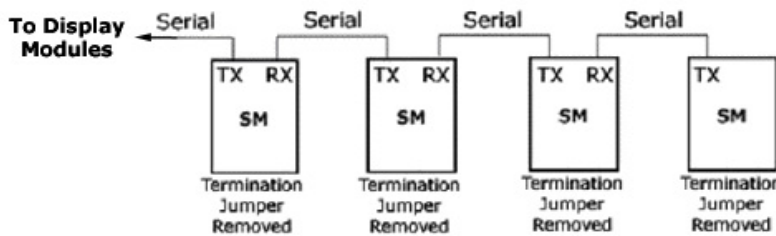

3.3 Programmable SM-OBDII

Your DM-200 OBDII essentially is two products in one. It combines a DM-200 and 4 programmable SM-OBDII module into one product.
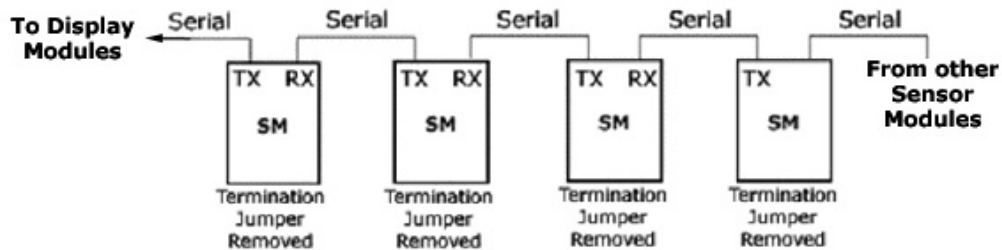

3.3.1   Terminated

There are 2 options, Terminated and NOT Terminated. When the SM-OBD is **Terminated**, it resembles the following diagram

When the SM-OBD is **NOT Terminated** it resembles the following diagram.

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3.3.2   Data Polling

Data Polling means that the SM-OBD "gets" an updated value from the vehicle's ECU (Engine Control Unit). You can choose to turn ON or OFF Data Polling for Sensors 1,2,3,4. **The more sensors you have set to ON, the slower the refresh rate will be.** It is recommended that you turn on data polling only on sensors you wish to monitor, thus maximizing performance. By default, your unit comes preprogrammed with only sensor 1 data polling ON. Sensor 2,3 and 4 are by default OFF.

For example, If you have your SM-OBDII set to:

Sensor1 = RPM
Sensor2 = Throttle Position
Sensor3 = Vehicle Speed
Sensor4 = Timing

And

Sensor1 Data Polling = ON
Sensor2 Data Polling = ON
Sensor3 Data Polling = ON
Sensor4 Data Polling = ON

RPM, Throttle Position, Vehicle Speed and Timing will all be monitored. However, the refresh rate of each sensor is divided into 4. If you only wish to monitor RPM and nothing else, by setting

Sensor1 Data Polling = ON
Sensor2 Data Polling = OFF
Sensor3 Data Polling = OFF
Sensor4 Data Polling = OFF

Will lead to higher performance for sensor 1.

3.3.3   Programming Sensors Modules

Each sensor module, can be programmed into any of the available OBDII sensors. A list of the sensors are below and can be programmed in the following setup menu. Keep in mind that if your vehicle may not support all the sensors listed below.

1) ABS THROTTLE (Absolute Throttle Position)
2) ENGINE RPM
3) VEHICLE SPEED
4) ENGINE LOAD
5) TIMING
6) INTAKE MAP (Manifold Absolute Pressure)
7) INTAKE MAF (Mass Air Flow Sensor)
8) STFUEL B1 (Short Term Fuel Trim Bank 1)
9) LTFUEL B1 (Long Term Fuel Trim Bank 1)
10) STFUEL B2 (Short Term Fuel Trim Bank 2)
11) LTFUEL B2 (Long Term Fuel Trim Bank 2)
12) AIR INT TEMP (Air Intake Temperature)
13) COOLANT TEMP

14) FUEL PRESSURE
15) O2VOLTAGE 1B1 (Narrowband O2 Sensor Voltage 1 Bank 1)
16) O2VOLTAGE 1B2 (Narrowband O2 Sensor Voltage 1 Bank 2)
17) O2VOLTAGE 2B1 (Narrowband O2 Sensor Voltage 2 Bank 1)
18) O2VOLTAGE 2B2 (Narrowband O2 Sensor Voltage 2 Bank 2)
19) FUEL LEVEL
20) CAT TEMP 1B1 (Catalytic Converter Temperature 1 Bank 1)
21) CAT TEMP 2B1 (Catalytic Converter Temperature 2 Bank 1)
22) CAT TEMP 1B2 (Catalytic Converter Temperature 1 Bank 2)
23) CAT TEMP 2B2 (Catalytic Converter Temperature 2 Bank 2)
24) ECU VOLTAGE
25) ABS ENG LOAD (Absolute Engine Load)
26) AMB AIR TEMP (Ambient Air Temperature) "AMB AIR TEMP");

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3.4 Setup Sensors

Once you have all the iMFD daisy chain components properly installed, connected, and powered on, you will need to setup the DM-200 to detect your available sensors. Each DM-200 can display and detect up to 4 sensors simultaneously. These are referred to as **"Parameters."** Please note setting up sensors only affect the standard gauges. It does not affect OBDII Sensor menus.

To setup your 4 parameters, you will need toggle all the way down to the "Sensors" menu. You can do this by pressing the down button continuously on your remote control until you reach this menu.


Once you're in the menu, double check your connection and make sure all Display Modules (DM) and all Sensor Modules (SM) are powered ON. Then press the "RIGHT" button on the remote. The DM-200 will start scanning for available sensors.

If your DM-200 gets stuck at the above screen for more than 5 seconds, this means that the DM-200 did not find any sensors. Double check your connections and try again. If you have several sensor modules connected, try connecting only 1 to see if the DM-200 properly detects the sensor. Then continue to add sensor modules systematically and repeat the process. This is a good method to troubleshoot your circuit. Be sure to have your termination jumpers properly installed. Refer to section 3.2 for more details. **Only 1 sensor module should be terminated (with jumper installed) in the iMFD system.**

Once the DM-200 properly detects the iMFD sensors, you should see the Parameter 1 screen.

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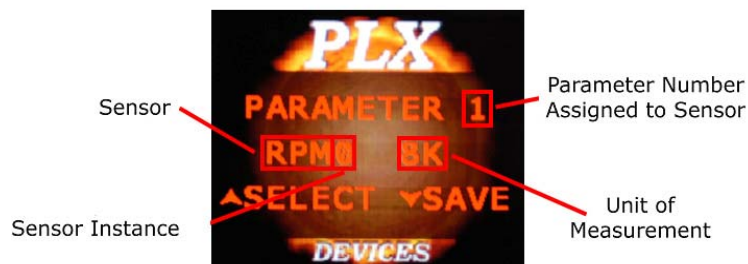
Use the "UP" button to toggle through all the available sensors. Some sensors will have several units of measurements available. For example, a fluid temperature sensor will give you the choice if you want to show degrees Fahrenheit "Fah" or degrees Celsius "Cel."

If you have several of the same sensor modules connected in the iMFD daisy chain. For example, if you have two SM-EGTs in the chain, you will see EGT0 and EGT1 available. EGT0 corresponds to the first SM-EGT in the iMFD chain (closest module to the terminated SM) and EGT1 corresponds to the second SM-EGT. The number after the sensor name is called the "Instance."

By pressing "LEFT" and "RIGHT" changes the parameter number from 1-4.

When you're satisfied with all of your parameter assignments, press "DOWN" to save your changes and the select "Yes." All your gauges will now reflect the new settings.

3.5 Special Note about the DM-200 OBD

If you wish to detect sensors from the SM-OBDII, you MUST connect the TX from the SM-OBD to the RX of Sensors with the supplied 1ft serial cable. See diagram below. Be sure, you set the SM-OBDII to TERMINATED.

4 Standard Gauges

## 4.1 Analog Gauges (Graphical)

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Analog gauges represent sensor data the same way a typical needle gauges does. By pressing "LEFT-RIGHT" toggles between parameter 1,2,3 and 4 (respectively). Pressing the "DOWN" button toggles to digital gauges.

4.2 Digital Gauges (Numeric)

Digital gauges represent sensor data in large numeric form. This is ideal in race applications where visibility is crucial. By pressing "LEFT-RIGHT" toggles between parameter 1,2,3 and 4 (respectively). Pressing the "DOWN" button toggles to plot gauges. Pressing "UP" toggles to analog gauges.

4.3 Plot Gauges
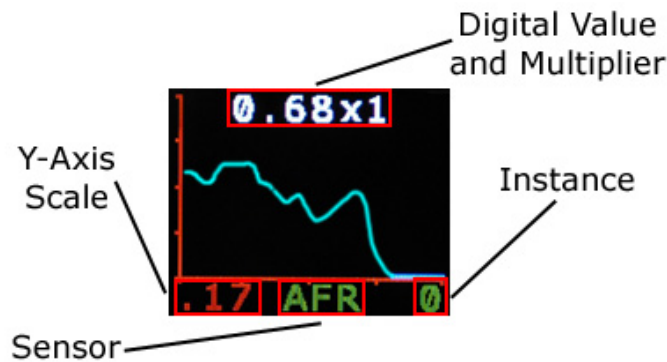
Plot gauges represent sensor data in a real-time graphical form. This is ideal in applications where you want to view the trend of a particular sensor with respect to time. By pressing "LEFT-RIGHT" toggles between parameter 1,2,3 and 4 (respectively). Pressing the "DOWN" button toggles to 4 parameter gauges. Pressing "UP" toggles to digital gauges.

4.4 Four Parameter Gauges

4 parameter gauges represent sensor data by showing all 4 parameters simultaneously on the same screen. This is ideal in applications where you want to view multiple sensors or compare sensor readings

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side by side. Pressing "RIGHT" or "LEFT" toggles to peak and hold. Pressing the "DOWN" button toggles to custom gauges. Pressing "UP" toggles to plot gauges (parameter 1).

4.5 Peak and Hold

4 parameter peak and hold gauges represent sensor data by showing all 4 parameters peak values. The DM-200 can be set to detect both minimum and maximum values. The peak and hold function works in any gauge mode, and you are not limited to having to remain on this screen for the DM-200 to "memorize" peak values. This is ideal in applications where you want to detect crucial parameters such as RPM, maximum boost and temperatures. By pressing "RIGHT" or "LEFT" toggles to 4 parameter gauges. Pressing the "DOWN" button toggles to custom gauges. Pressing "UP" resets the peak and hold values.

4.6 Custom Gauge

For standard users:

Please visit our online custom gauge database located here
http://www.plxdevices.com/products/dm100/customgauges.html

You will need to install the USB device drivers and the DM-100/200 Utility before you can upload your custom gauge. The files are located here

http://www.plxdevices.com/products/dm100/utility.htm

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For advanced users:

This option is not recommended unless you have experience with graphic design.

Steps to creating and uploading your own custom gauge:

1. Set Parameter 1 with your desired sensor
2. Determine the measurement range for 0th frame through the 99th frame
3. Design your gauge
4. Upload your design to the DM-200

The DM-200 gives you the capability of designing your own gauge from the PC and uploading it to the DM-200. You can do this in Photoshop or any other image processing software you have. You will need **100 images or "frames" of (160 x 128 pixels) in JPG, BMP, TIFF or GIF format**. Each image corresponds to a specific measured value to **Parameter 1**. For example, if parameter 1 is set to WAT (water temperature from the SM-FluidTemp) with the units set to "Cel" (Celsius). Toggle to the analog gauge style parameter 1 (1-0) to determine your range.

Notice that on the bottom left of the above analog gauge reads 0 and the bottom right reads 16 (160 Deg because of the x10). This tells you the minimum and maximum range of your custom gauge. Custom gauges simply displays the corresponding "frame" or image which is associated to the measured value in Parameter 1.

0th frame = 0 Deg C
1st frame = 1.6 Deg C
2nd frame = 3.2 Deg C
.
.
.
98th frame = 158.4 Deg C
99th frame = 160 Deg C

When you create your 100 images, make sure you create your 0th frame to depict a reading of 0 Deg C, your 1st frame to depict a reading of 1.6 Deg C, your 2nd frame to depict a reading of 3.2 Deg C and so on until your 99th frame depicts a reading of 160 Deg C.

When you name the files on your PC, it is suggested you name them in the according fashion.

YourFilename000.jpg
YourFilename001.jpg
YourFilename002.jpg
.
.
.
YourFilename098.jpg
YourFilename099.jpg

Once you've successfully made or obtained your 100 frames, you will need to use DM-200 Utility PC software (included in the CD, also available from the PLX website) to upload your custom gauge to the DM-200. You can do this by connecting the DM-200 to your PC with the supplied USB cable. The DM-200

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must be powered on and toggled to the setup mode "Connect to PC" for successful uploading to occur. Please refer to the DM-100/200 Programmer users guide included on the CD for details how to upload your design.

You will need to install the USB device driver (included on the CD) for Windows to properly detect the DM-200.

5 OBD II Sensors

The DM-200 OBDII in the OBDII Sensors Mode displays sensor information in a page format. To navigate to this mode, please refer to section (2.4) navigating the menu system. By pressing the "RIGHT" and "LEFT" button, toggles between the 5 available pages.

Page1:

Sensor	Standard Units	Metric Units
Throttle Position	%	%
Engine Speed	rev/min	rev/min
Vehicle Speed	MPH	KMH
Engine Load	%	%
Engine Timing	Degrees	Degrees
Intake Pressure (MAP)	inHG	Kpa

Page2:

Sensor	Standard Units	Metric Units
Air Flow Rate (MAF)	LBS/min	grams/sec
Fuel System Status	Open or Closed	Open or Closed
Short Term Fuel Trim Bank1	%	%
Long Term Fuel Trim Bank1	%	%
Short Term Fuel Trim Bank2	%	%
Long Term Fuel Trim Bank2	%	%

Page3:

Sensor	Standard Units	Metric Units
Air Intake Temperature	Fahrenheit	Celsius
Water Temperature	Fahrenheit	Celsius
Fuel Pressure	PSI	Kpa
OBD Type	Type	Type
Narrowband O2 Sensor Voltage Sensor 1 Bank 1	Volts	Volts
Narrowband O2 Sensor Voltage Sensor 2 Bank 1	Volts	Volts

Page4:

Sensor	Standard Units	Metric Units
Narrowband O2 Sensor Voltage Sensor 1 Bank 2	Volts	Volts
Narrowband O2 Sensor Voltage Sensor 2 Bank 2	Volts	Volts
Ambient Air Temperature	Fahrenheit	Celsius
Relative Fuel Pressure	PSI	Kpa
Fuel Level	%	%
Barometric Pressure	inHG	Kpa

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Page5:

Sensor	Standard Units	Metric Units
Catalytic Converter Bank 1 Sensor 1	Fahrenheit	Celsius
Catalytic Converter Bank 2 Sensor 1	Fahrenheit	Celsius
Catalytic Converter Bank 1 Sensor 2	Fahrenheit	Celsius
Catalytic Converter Bank 2 Sensor 2	Fahrenheit	Celsius
ECU Voltage	Volts	Volts
Absolute Engine Load	%	%

6 Engine Check

6.1 Viewing Trouble Codes

This mode views your trouble codes. A typical trouble code looks like the following

P0171

First Character – System
The first character identifies the system related to the trouble code.

P = Powertrain
B = Body
C = Chassis
U = Undefined

Second Digit - Code Type
The second digit identifies whether the code is a generic code (same on all OBD-II equipped vehicles), or a manufacturer specific code.

0 = Generic (this is the digit zero -- not the letter "O")
1 = Enhanced (manufacturer specific)

Third Digit - Sub-System
The third digit denotes the type of sub-system that pertains to the code

1 = Emission Management (Fuel or Air)
2 = Injector Circuit (Fuel or Air)
3 = Ignition or Misfire
4 = Emission Control
5 = Vehicle Speed & Idle Control
6 = Computer & Output Circuit
7 = Transmission
8 = Transmission
9 = SAE Reserved
0 = SAE Reserved

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Fourth and Fifth Digits

These digits, along with the others, are variable, and relate to a particular problem. For example, a P0171 code means P0171 - System Too Lean (Bank 1). To lookup your particular code, visit http://www.obd-codes.com/trouble_codes/

6.2 Resetting Trouble Codes

This mode clears your engine check light. The process should take approximately 5 seconds.

7 Setup

To enter setup mode, press the "down" button while you're in the View OBDII Sensor Data menu. This will take you to the first setup menu option.

7.1 Customizing Colors

Each gauge style can be customized to any color and any wallpaper by navigating through the above menus.

UP – Exits the color palette mode and does not save changes

DOWN – Saves changes

LEFT – Toggles to select the desired color by moving the cursor left. The cursor will wrap and increment up one row.

RIGHT – Toggles to select the desired color by moving the cursor right. The cursor will wrap and increment down one row.

7.2 Connect to PC
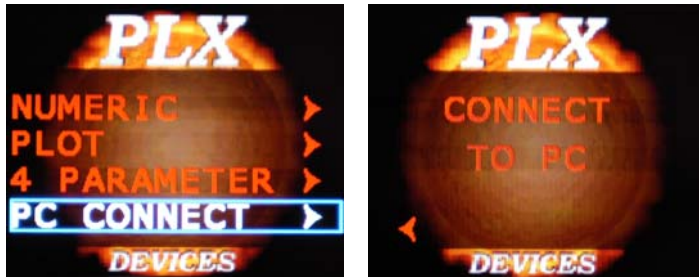
The DM-200 must be in this menu for the PC to communicate with the device. Toggle to this menu if you want to upload wallpapers, custom gauge, and/or update your sensor table.

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7.3 Warnings

The DM-200 can monitor up to 4 parameters for warnings. The DM-200 monitors 4 parameters simultaneously and evaluates if any trigger points have been exceeded. If any of the 4 parameter trigger points have been exceeded then the DM-200 will evaluate if a warning message should appear on the display based on the "scheme" setting. To better explain this powerful feature, let's look at an example.

Let's say for example Parameter 1 is set to read AFR, Parameter 2 is set to read EGT, Parameter 3 is set to read Oil Temperature and Parameter 4 is set to read Boost. The trigger points are set to the following.

Trigger point settings:
(Parameter 1) AFR > 15.0
(Parameter 2) EGT > 800
(Parameter 3) Oil > 110
(Parameter 4) BST > 15

Example:

If the DM-200 measures the following values and the "scheme" setting is set to P1 | P2, this means that if the Parameter 1 is TRUE OR Parameter 2 is TRUE, a warning will trigger. Parameter 3 and 4 are ignored.

Measured values:
(Parameter 1) AFR = 14.0 FALSE
(Parameter 2) EGT = 850 TRUE
(Parameter 3) Oil = 105 FALSE
(Parameter 4) BST = 20 TRUE

Since Parameter 2 is TRUE, a warning will trigger according to the above example.

What will happen if the scheme is set to P1 & P2? This means that if Parameter 1 is TRUE AND Parameter 2 is TRUE, a warning will trigger. Since Parameter 1 is FALSE, a warning will not trigger. Parameter 3 and 4 are ignored.

What will happen if the scheme is set to P1 | P2 | P3 | P4? This means that if any parameter 1-4 is TRUE, a warning will trigger. For this example, a warning will trigger.

What if the scheme is set to P1 & P2 & P3 & P4? This means that all parameter 1-4 must be true to trigger a warning. For this example, a warning will not trigger.

Several other scheme combinations are available for you to fully customize your warnings as they work on the same principal as the example above.

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When a warning triggers, a flashing red and white background will appear with "WARNING" on the top of the screen. The parameter which is TRUE will also be displayed in the same format as 4 parameters gauges. This allows you to see the actual value measured instantaneously.

*Please note if you are in the OBDII Sensors Pages, Intelligent Warning is NOT monitored. It is ONLY monitored in Standard Gauges.

7.4 General Setup
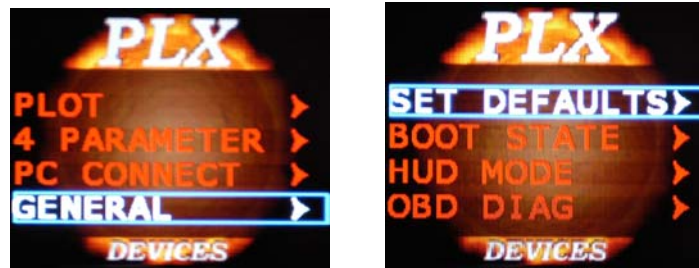
7.4.1   Set Defaults

This option resets the DM-200 back to factory defaults. Custom wallpapers, gauges and sensor tables are NOT affected.

7.4.2   Boot State

This option allows you to set which gauge show up when the device is powered on.

7.4.3   HUD Mode

This option allows you to "flip" the image for Heads Up Display Applications. Images viewed off of a mirror or reflective surface can be seen in the correct orientation if this mode is turned "on."

7.4.4   OBD Diag

In this mode, your DM-200 OBDII can be connected and controlled from the PC with powerful software available here. http://plxdevices.com/PLXSoftware/scantool_net113win.exe

7.4.5   Boot Screen

This option allows you to select from the 8 available wallpapers stored on your unit to display for 5 seconds during boot up.

7.5 Setup Sensors

See section 3.4

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7.6 The Color Palette

UP – Exits the color palette mode and does not save changes

DOWN – Saves changes

LEFT – Toggles to select the desired color by moving the cursor left. The cursor will wrap and increment up one row.

RIGHT – Toggles to select the desired color by moving the cursor right. The cursor will wrap and increment down one row.

7.7 Wallpaper Backgrounds

Up to 8 wallpaper images can be uploaded to the DM-200. The DM-200 comes default with 8 standard images, however you may use **ANY** color image formatted to the size of **(160 x 128 pixels)** as your wallpaper background. You may want to upload your company's logo, a picture of your vehicle, or any other image your imagination takes you. Your custom wallpaper can be uploaded to the DM-200 via USB port with the DM-100/200 Utility PC software. You have the option to select a different wallpaper background for analog gauges, digital gauges, plot gauges and 4 parameter gauges. The wallpaper image will automatically be superimposed under the gauges.

7.8 Sensor Table

As more sensor modules are available the Sensor Table must be updated for the DM-200 to properly interpret and detect new sensors. You will know if your sensor table needs to be updated if your DM-200 does not properly detect your new sensor module in the setup sensors menu (section 3.3). The sensor table is stored in the flash memory of the DM-200 control box and can be updated by connecting to the USB port on your PC. The DM-100/200 Utility PC software, included on your CD, is used to upload the updated sensor table. Please refer to the DM-100/200 Utility user guide for more details.

8 Technical Specifications

8.1 DM-200 OBDII Control Box

Physical Dimensions (Box)	4" x 2.875" x 1.125" (104mm x 75mm x 28mm) L x W x H
Power Consumption	1.5 Watts
OBDII/CAN Protocols	ISO-9141, VPW, PWM, KWP 2000, 11Bit CAN, 29Bit CAN
OBDII PIDs	26 PIDs
Compatible HDD	HDD-200
Processors	Custom PLX 32 Bit Processor, Custom PLX GPU (Graphics Processor Unit)
Operating Temperature	0 - 85 Deg C
Operating Voltage	10V-18V
Automatic Sensor Detection	YES
Human Interface	4 Button Remote
PC Interface	USB 2.0
# Sensor Modules	1-32
Firmware Upgradeable	Yes
Enclosure	Extruded Aluminum

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8.2 DM-200 Display

Physical Dimensions	2 3/8" (60mm) x 0.7" (18mm)
Display Technology	OLED 220 x 176 (38720 pixels)
Color Depth	16 Bit
Viewing Angle	180 Degrees
Polarization	None (Viewable with polarized sunglasses)
Power Consumption	0.6 Watts Typical
Cable Length	6ft (~2m)
Operating Temperature	0 - 85 Deg C

9 Revision History

Version 1.0 (1/1/08)	Initial release

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