



## MTX-A, Oil Pressure Gauge 0-120 PSI

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# 1 Mounting and Sensor Installation

## 1.1 Gauge Mounting

The MTX-A gauge fits in any standard 2 1/16" (52mm) gauge pod. Mounting of the gauge should be done in such a manner that the cables are not being forcefully pulled and strained from the gauge itself. Avoid routing the cables near ignition components or other sources of RF (radio frequency) and EMI (Electromagnetic interference) noise.

The MTX-A gauge is splash resistant (not water proof) and can be mounted so that it is exposed to the outdoor elements. The MTX-A should not be submerged and special consideration should be taken to protect the gauge from direct water spray (water coming from a pressurized source.) When replacing the bezel and/or gauge face verify that the o-ring is properly seated.



**Make sure the mounting location does not impair visibility or interfere with driving.**

### 1.1.1 Changing the MTX-A's Gauge Bezel

1. Lay the MTX-A face down and remove the three #2 phillips screws from the outside rim of the back plate.
2. Carefully lift out the bezel from the gauge cup.
3. Configure the gauge as desired making sure not to disturb the needle.
4. Make sure every piece is positioned correctly using the locating tab and reassemble the gauge.
5. Reinstall the 3 #2 phillips screws.

## 1.2 Oil Pressure Sensor

- The oil pressure sensor provided in the kit has 1/8 NPT external threads.
- Mount the sensor using Teflon tape over the threads to avoid oil leaks.
- Do not install the sensor near the oil pump or to the pressure switch directly. Failure to do so could damage the sensor due to the pressure pulsations.

## 2 Wiring

OIL PRESSURE SENSOR  
3-PIN CONNECTOR



BLACK  
RED  
WHITE

BLACK

MOUNTING  
BRACKET



SERIAL IN & OUT  
4-PIN CONNECTORS

### 2.1 Main Gauge Wiring

1. Connect the **RED** wire to a switched 12V source. A switched 12V source comes ON as soon as the ignition on the car is keyed on. Make sure the connection is fused with a minimum fuse size of 2A.



**Circuits that share power with the vehicle's stereo, ignition system, ECU or fuel pump should not be used.**

2. Connect the main **BLACK** wire to a ground source. Note that there is an additional black wire coming out of the 3 pin connector, this is not the main gauge ground and will be covered later in the Oil Pressure sensor wiring. Avoid noisy ground sources, such as grounds used for the radio and or ignition.
3. Connect the **WHITE** wire to a headlight power wire (a wire that supplies current when the headlights are on). This enables the display to dim for better nighttime viewing. **DO NOT CONNECT THIS WIRE TO THE HEADLIGHT DIMMING WIRE.** Connection to this rheostat type of switch will cause the gauge to malfunction. If you chose not to utilize the dimming feature, connect the WHITE wire to ground.

### 2.2 Oil Pressure Sensor Wiring

1. Route the pressure sensor cable to the gauge and connect it to the 3 pin connector.
2. Coming out of the female three pin connector from the gauge you will find a black wire with a stripped end. Connect this black wire to the same ground source as the gauge.
3. Connect the other end of the pressure sensor cable to the pressure transducer.

### 3 Download the Logworks 3 software package

1. Open your web browser and go to:  
<http://www.innovatemotorsports.com/support.php>
2. The LogWorks 3 software download will be the very first thing on the page, click the link to download the software.

#### 3.1 Installing software

1. Double click on the Logworks 3 installer previously downloaded.
2. The installer will start, follow the prompts to install the software.
3. Once the software has been installed the LogWorks software, LM Programmer and the MTX-A manual can then be located by navigating through Start->Programs->LogWorks3.

#### 3.2 LM Programmer Software

LM Programmer is used to configure the pressure alarm and upgrade the firmware

1. Connect the OUT port of the MTX-A to the provided serial programming cable. Connect the other end of the serial programming cable to your computer. If your computer does not have a serial port, you can purchase a USB to Serial adapter from Innovate Motorsports (P/N 3733) or use any USB to serial adaptor that includes drivers. Make sure that nothing is connected to the IN port of the MTX-A
2. Power up the MTX-A.
3. Launch LM Programmer. The LM Programmer application can be launched from *Start->Programs->LogWorks3->LM Programmer* from the Windows task bar.



**Avoid connecting or disconnecting any of the ports labeled IN or OUT while the unit is powered ON.**

### 3.2.1 Pressure Tab

The pressure alarm setting can be configured in the Pressure tab in LM Programmer. When the pressure threshold has been exceeded the entire gauge's backlight will flash. To enable this feature, the "Enabled" option must be checked.

Whenever a change is made to the programming of the gauge click the Program button for the change to take effect. Once the gauge has been programmed the Program button will grey out.

To set the gauge back to the factory settings click the Set to Defaults button and then click the Program button

### 3.2.2 Updating the Firmware

The LM Programmer Info tab reports the firmware version currently installed on your unit. **Do not update the firmware if the versions are the same. A firmware update should only be necessary if there has been a new release that specifically fixes a problem that you are experiencing with the unit.**

Firmware for the MTX-A Oil Pressure gauge has the extension dld. New firmware releases are available for download on the Innovate Motorsports' web site ([www.tuneyouengine.com](http://www.tuneyouengine.com)) under 'Support.'

1. Power OFF the MTX-A gauge
2. Connect the supplied serial cable to the port labeled OUT.
3. There should be nothing connected to the port labeled IN.
4. Power ON the MTX-A gauge.
5. Connect the serial cable to your computer. If you are using a serial to USB adapter, connect the serial cable to the adapter then connect the adapter to the computer.
6. Launch LM Programmer. The LM Programmer application can be launched from *Start->Programs->LogWorks3->LM Programmer* from the Windows task bar.
7. Once connected the LM Programmer will display the current version of the firmware that is installed in the MTX-A. Do not update the firmware if the versions are the same. A firmware update should only be necessary if there has been a new release.
8. On the very first tab of LM Programmer you will see a button labeled "Update Firmware," click this button.
9. Select the firmware file with the dld extension.

10. Do not disconnect the unit from the computer until the firmware progress screen completely disappears. Once finished you may disconnect the unit from the computer and exit out of the software.

If your computer crashes during a firmware upgrade, the MTX-A gauge has a recovery mechanism where it will be able to retry the download again and not be disabled by half loaded firmware. Switch the MTX-A gauge off and on again and then reload LM Programmer. The recovery mechanism is designed to be able to recover 99.9% of the time. While we don't anticipate this occurring, it is possible that the MTX will not recover correctly and may need to be serviced at our factory. If you suspect this is the case, contact Innovate support.

### **3.3 LogWorks Software**

The MTX-A gauge can be connected to the LogWorks software to record and analyze the oil pressure readings. The gauge can also be connected to other Innovate Motorsports products to create a log chain with additional gauges and sensors.

#### **3.3.1 MTS Serial Communication**

The MTX-A gauge has a port labeled IN and a port labeled OUT. These connections allow multiple MTS (Modular Tuning System) devices to be connected together in order to form a single log chain.

There are two types of cables used to interface the MTX-A gauge. The 3812 cable is a 4 pin micro fit to 2.5mm male stereo plug used. The 3846 cable is a 4pin Micro fit to 4pin Micro fit. These cables are sold separately, make sure to select the correct cables to interface the product you own.

1. Power OFF all your MTS devices.
2. Start with the first product in the serial chain. Using the appropriate mating cable, connect the OUT port from the first device and feed it into the IN port of the second device. *(Note: If you have an LC-1, there must be a terminator plug in the serial IN if it is the first device in the serial chain.)*
3. Continue connecting the OUT port of each device into the IN until all your devices are connected together.
4. If a recording device is not connected to the serial chain, e.g. DL-32, LM-2, the OUT port of the last device can be connected directly to a computer to log with the LogWorks software

5. Once all the connections of the ports labeled IN and OUT are made the MTS devices can be powered ON.

### 3.3.2 Logging data

1. Power OFF the MTX-A gauge
2. Connect the supplied serial cable to the port labeled OUT.
3. Power ON the MTX-A gauge.
4. Connect the serial cable to your computer. If you are using a serial to USB adapter, connect the serial cable to the adapter then connect the adapter to the computer.
5. Launch LogWorks. The LogWorks application can be launched from *Start->Programs->LogWorks3->Logworks3* from the Windows task bar.
6. Once LogWorks launches go to *File->Connect*. You will be prompted to connect to serial COM port. Click Connect.
7. *To start recording go to File->New Real-time Log* or, in the Toolbar, click on the  Tool.

## **Appendix A: Limited Warranty**

### **LIMITED WARRANTY**

Innovate stands behind the quality of its products. Innovate makes the following warranty to purchasers of its products: All new Innovate products carry a one year warranty from the date of purchase. If proof of purchase cannot be provided, warranty will be determined by date of manufacture.

### **When Warranty Void**

This warranty shall terminate and Innovate shall have no obligation pursuant to it if (i) your Innovate product has been modified or repaired in a manner not previously authorized by Innovate in writing, (ii) the identification markings on your Innovate product have been removed, defaced, or altered; (iii) your Innovate product was subjected to accident, abuse, shipping damage, or improper use; (iv) your Innovate product was not used or configured as specified in the product manual; or (v) your Innovate product was subjected to operating conditions more severe than those specified in the product manual.

### **Repairs Under This Warranty**

In the unlikely event that your Innovate hardware product should prove defective during the warranty period, contact Innovate Customer Support for a return material authorization (RMA) at (800) 348 3037. Products returned for service must be securely packed to prevent damage and shipped charges pre paid, along with proof of purchase and the return material authorization form, to the Innovate repair location as instructed by Customer Service. Innovate within a reasonable amount of time from its receipt of your product so shipped, will ship to you, at its option, the repaired product or a new or reconditioned product of comparable or greater specified functionality. All repaired or replacement products shall be warranted for the remainder of the original product warranty.

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