



# Installation Manual

### Contact

#### 1Gauge Sales/Support

Web: [www.1Gauge.com.au](http://www.1Gauge.com.au)

Store: [www.1Gauge.com.au/store.php](http://www.1Gauge.com.au/store.php)

Tel: 0419 382 447 - Daniel

Email: [Sales@1Gauge.com.au](mailto:Sales@1Gauge.com.au)

### What is 1Gauge

1Gauge is an All-In-1 solution for your vehicles instrument needs.

1Gauge consolidates and displays your vehicles vital information on a single easy to read display. Unlike your conventional automotive gauge, 1Gauge also has the ability to log, recall peak values and alert. 1Gauge can be customised to your specifications, with support for most of your vehicles parameters.

### Whats included

#### All packages include:

- 1x 1Gauge controller
- 1x 3" Display + Black CNC bezel
- 1x 2m Black display cable
- 3x Quick release controller Connectors
- 2x Temperature sensor insulators

- 1x VDO Pressure Sender (VDO 320.021)
- 2x VDO Temperature Sender (VDO 360.002)
- 1x Straight Exhaust Gas Temperature Probe
- 1x Pre-configured 4GB Micro SD Card
- 3x Sensor Crimp Terminals





## INSTALLATION MANUAL

### What does 1Gauge measure?

1Gauge has the inbuilt ability to measure the following:

Count	Description	Sender	Part #	Accuracy/Thread
1	Oil Temperature	VDO	320.021	40-150°C, 1/8 NPT
1	Water Temperature	VDO	320.021	40-150°C, 1/8 NPT
1	Transmission Temperature	VDO	320.021	40-150°C, 1/8 NPT
1	Oil Pressure	VDO	360.002	0-145 PSI, 1/8 NPT
1	Fuel Pressure	VDO	360.002	0-145 PSI, 1/8 NPT
1	Intake Air Temperature	Delphi	1GIATS	0-100°C, 3/8 NPT
1	Manifold Air Pressure	Via controller nipple	Internal	-1 BAR (29.5 InHg) - 87 PSI
1	Exhaust Gas Temperature	K-Type Thermocouple	EGT2P2M	50-1000°C, 1/8 NPT
1	Cylinder Head Temperature	K-Type Thermocouple	CHT14M	50-1000°C, 1/8 NPT
2	Voltage	Internal	Internal	7-16v
1	Fuel Level	Internal	Internal	Linear 0-100%
1	Air Fuel Ratio	Via external gauge	Internal	Innovate Petrol
3	Air Fuel Ratio	Via external gauge	Internal	AEM Petrol, E85, Methanol
1	Carburettor Fuel Pressure	1Gauge 15 PSI	1GCFP	15.0 PSI, 1/8 NPT

- 1Gauge provides the ability to display and log existing AEM or Innovate AFR products via the 0-5v output. Note: 1Gauge requires the use of an external gauge to accomplish this
- 1Gauge can be customised to read gauges that are not listed above. Contact us today with your requirements
- The parts numbers listed are the most common and considered our defaults, various size and thread sensors are available from our online store.

### Important Notes

- 1Gauge should be fitted by a qualified technician
- As each vehicle is different, placement of senders is not specified. It is your responsibility to ensure senders are placed in an appropriate position
- Sender placement can affect the accuracy of your readings
- As with any gauge, your gauge should be used to identify abnormalities. To identify these abnormalities, you must first establish and remember your vehicles regular behaviour
- Excessive force on quick release terminals, display connector, SD card or MAP sensor may cause damage to 1Gauge which is not covered by warranty.
- Ensure all connections are insulated appropriately
- Consult with your local transport authority to confirm the legality of installing 1Gauge in your street vehicle
- Do not place the 1Gauge display in a position that may hinder visibility
- 1Gauge is extensively tested prior to shipping to ensure we never supply DOA stock.

## Specifications

Power Supply Voltage	9-16V DC
Current Consumption	IGN Max 1A, typically <~180A
Operating Temperature Range	0 - 55 °C (>55°C may cause inaccuracy)
Controller Dimentions	(LxWxH) 113.7 x 65.6 x 24.7mm
Controller Weight	181g

## 1Gauge Controller

If you have purchased the standard 1Gauge package, each pin should be connected as per the following table. If you have purchased a custom package, you will need to connect pin 1-6 as per the included configuration card.

Pin	Connect to
1	Temp/Pressure/Fuel Level
2	Temp/Pressure/Fuel Level
3	Temp/Pressure/Fuel Level
4	AFR 0-5v / 15 PSI Pressure
5	Custom Packages only
6	Secondary battery input
A+	K-Type Channel A +
A-	K-Type Channel A -
B+	K-Type Channel B +
B-	K-Type Channel B -
Aux	Aux Out (12V, 500mA Max)
+	Ignition +12v via 2A Fuse
-	Ground, -, Negative



## Installing 1Gauge

1Gauge should be installed following this procedure:

1. Disconnect your vehicles battery.
2. Install the supplied senders in positions appropriate to your application. If your vehicle does not have provisions for additional 1/8 NPT senders, use a tee piece, oil filter sandwich plate or radiator hose adaptor.

Note: Single wire senders (VDO temperature and pressure) must have a strong connection to ground through the thread.

3. Mount your controller and display in a suitable position. Ensure they are not exposed to extreme heat or moisture. The communication between the display and controller is extremely sensitive to electromagnetic interference. When connecting the supplied display cable, ensure it is not routed close to high current carrying wires. The display must be mounted in a position in which it does not make contact with any conductive surfaces. If conductive surfaces cannot be avoided, please insulate the exposed display circuitry from making contact.

4. Run a length of wire to each sender (optional kit sold separately). The wire used should be well insulated, ideally with a copper cross diameter of 1.13mm<sup>2</sup>. Crimp on the appropriate supplied connector to the sender side of the wire, and use the supplied insulators where necessary.

Terminate the controller side wiring into the appropriate quick release connector pin. Simply unscrew the clamp mechanism, slide in the exposed copper and tighten. Perform this procedure for each sender, ensuring no copper strands fray and make contact with other pins.

If you have purchased our default package, follow the pin layout below, otherwise follow the supplied configuration sheet. Take care when connecting senders, connecting a sender to the wrong pin may cause damage.

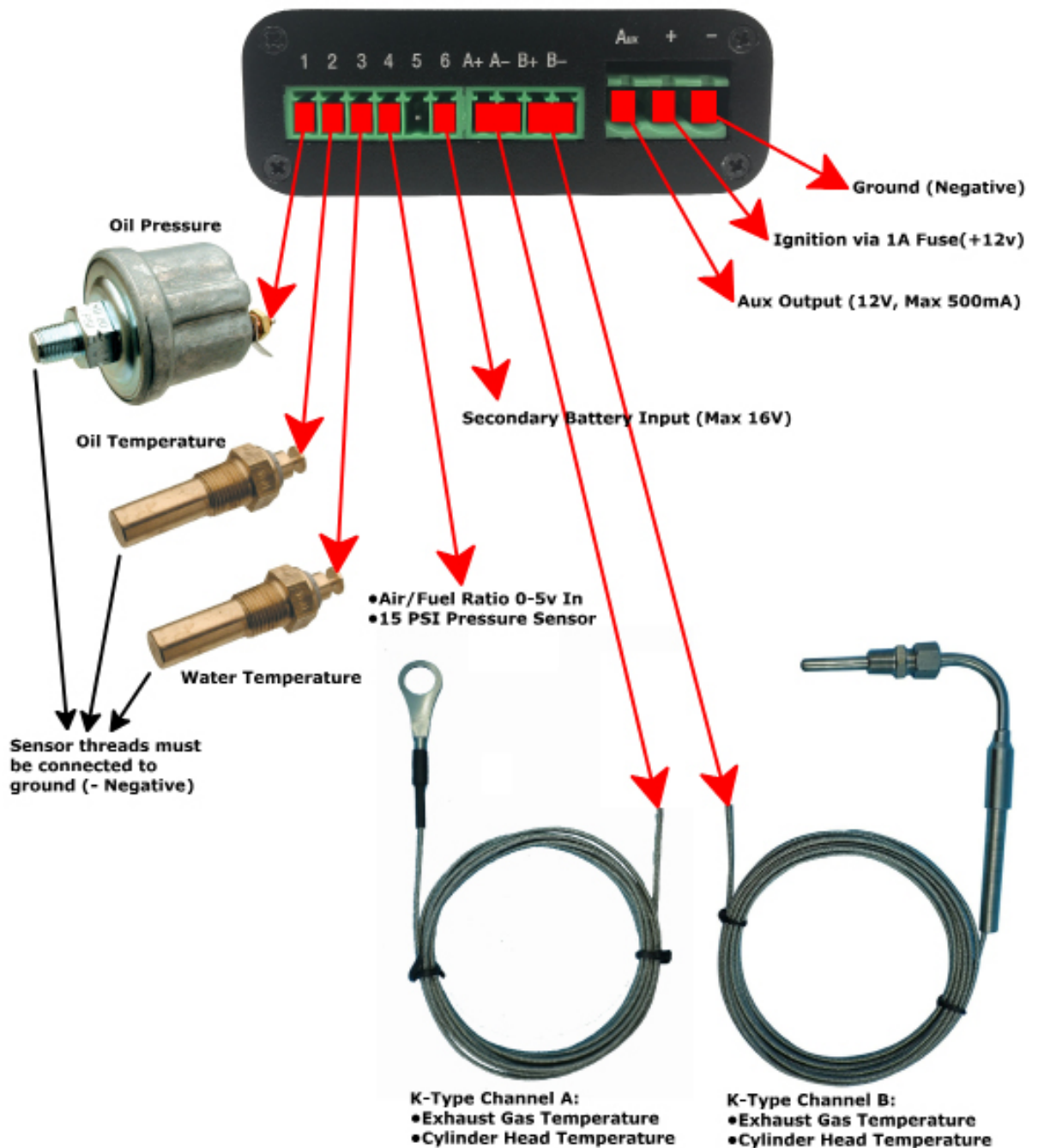
5. Connect exhaust gas / cylinder head temperature senders to the appropriate quick release connector and press into the controller (Pin A+,A-,B+,B-). Connect the red wire to A or B -, and the black to A or B +.
6. If required, connect the MAP nipple on the controller to your manifold air pressure source.
7. Connect pin '-' to ground (negative) and pin '+' to a fused 12v ignition source. A 2A fuse is recommended. Take extra caution and ensure polarity is not reversed.
8. Connect optional warning lights as per instructions on page 9
9. Reconnect your vehicles battery
10. Turn your key to ignition, ensure the green power indicator illuminates and the display lights up
11. You have completed installation of 1Gauge. You can now configure warning thresholds and associated outputs.

If you have purchased our default package, senders should be connected as follows:

Pin	Default Sender	Pin	Default Sender
1	Oil Pressure	4	Air/Fuel Ratio
2	Oil Temperature	5	Custom Packages Only
3	Water Temperature	6	Secondary Battery Input

### Wiring Diagram

The following wiring diagram shows how to connect your controller and senders. This diagram shows the wiring required to connect 1Gauge with a default pin configuration.



## Installing 1Gauge Cont.

1Gauge is very flexible with its inputs. You have the ability to specify which gauge uses which pin. See the configuration section below for more detail.

The controller connects to the display using a conventional network cable\*

1Gauge has inbuilt reverse polarity suppression, however under certain circumstances you may still damage the unit. Take extra care when connecting power sources

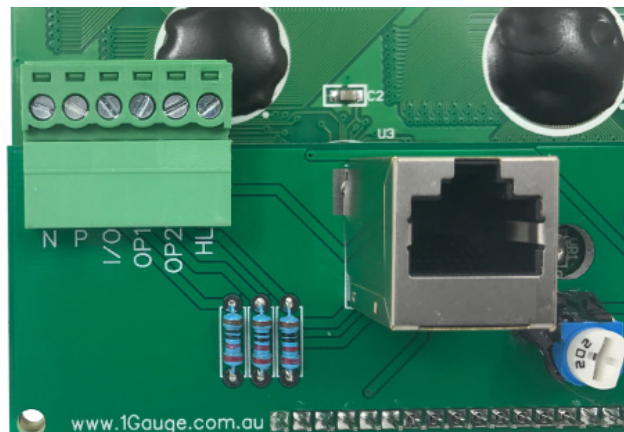
The controller should be mounted securely in the cabin of the vehicle. 1Gauge is not water or fire-proof and can be damaged from exposure to heat or moisture.

The 6 input pins on the controller can be configured to read a variety of senders. The list on page 4 represents the controllers default capabilities. If you would like to change the pin configuration (i.e. change pin 4 to temperature/pressure/fuel level) you will need to contact 1Gauge support before ordering. If the default configuration does not meet your needs, please specify what you would like in the notes section on check-out from our store. Your controller must be returned to change this configuration.

The 6 pin connector located on the back side of the display provides an output for 3 warning lights, allows you to connect a dash light signal for dimming and provides an input for switched data logging. Pin description below:

Pin	Default Sender	Pin	Default Sender
N	Negative/Ground	OP1	Warning Light Output 1
P	5v Output	OP2	Warning Light Output 2
I/O	Data Log Switch Input/ Warning Light Output	HL	Dash Light Input (12V)

Please note: Extra care must be taken when connecting devices to the display. **Incorrectly connecting a power source will result in damage to the controller/display.**



\* Please note, while 1Gauge utilizes a standard network cable for display connectivity it cannot be connected to a computer/network device. Doing so may damage the unit and will not be covered by warranty.

### Display

1Gauge features a 3" backlit LCD (Blue, White, or Yellow/Green). Providing you connect the dash light signal wire, the display will dim when you switch your lights on.

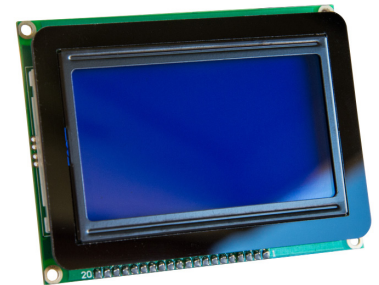
The dim display brightness can be adjusted using the trimpot on the back side of the LCD display. Refer to the image below.

Contrast can be adjusted using the smaller trimpot located on the rear of the display (pictured below) Note: The adjustment is very fine.

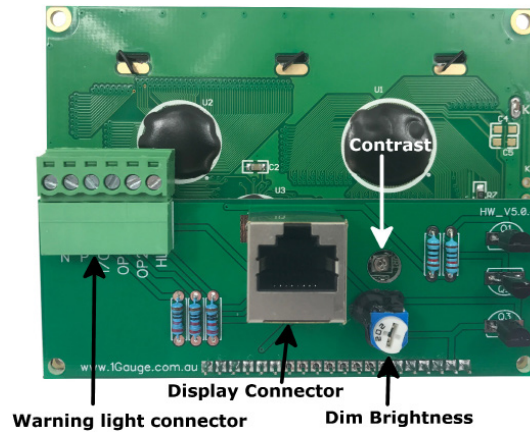
The display is designed to be mounted on a flat surface. A square cutout measuring 78x51mm is required.

The display bezel included with our package makes your install neat and easy.

The bezel measures 90.9 x 63.5 x 2mm and must adhere to your mounting service. As it is hard to cut a perfect 78x51mm rectangle, this bezel is ideal for a neat finish.



Included Bezel:



Warning light connector

Dim Brightness



Display Colour Options (Optional 3D Bezel Pictured):

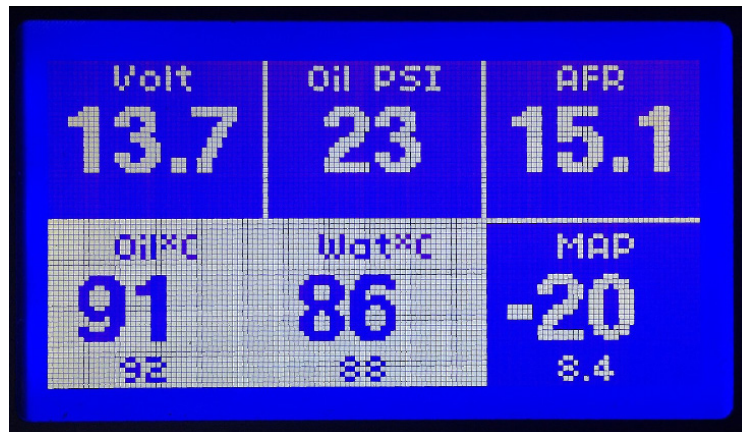


Extra care must be taken when working with the exposed electronics. Please ensure the electronic circuit board does not make contact with any conductive surfaces.



### Gauge Display

1Gauge allows for up to 6 gauges to be displayed (7 in a twin voltage configuration). The position of each gauge can be configured, see the configuration section on page 12 for more info.

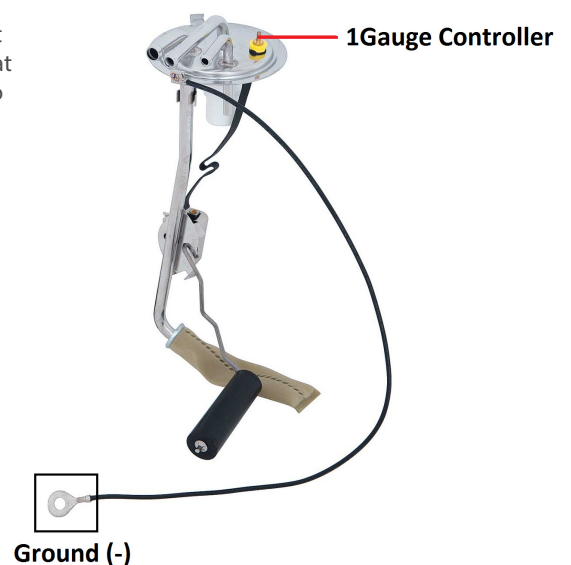


When a warning is triggered the gauge tile will invert. This can be seen in the image above, oil and water temp have both exceeded the user configurable threshold and are displaying a warning state.

Manifold air pressure (MAP) and temperature gauges display a peak value located at the bottom of the gauge tile. This peak value is held until 1Gauge is switched off. In the image above, you can see the peak oil temperature reached 92°C and manifold boost pressure reached 8.4 PSI.

### Fuel Level

1Gauge is capable of reading fuel level. To do so you must wire your fuel float as per this diagram. Each vehicle is different, if you are unsure please contact an auto electrician. The resistance of the fuel float at full and empty must be measured and entered into the corresponding values in the configuration file located on the SD card)



### Air/Fuel Ratio

1Gauge allows you to connect your existing Air-Fuel Ratio gauge for display and logging purposes. Simply connect the 0-5v output of your existing wideband gauge to pin 4 on the 1Gauge controller, and select the appropriate calibration through the configuration file.(Refer page 12)

1Gauge supports and recommends the Innovate and AEM product range. 1Gauge has support for the following 0-5v AFR Ranges.

- Innovate 7.35-22.4 (Petrol)
- AEM 10-20:1 (Petrol), 6.6-13.2:1 (E85), 4.4-8.8:1 (Methanol)
- Custom ranges by request

Please note: The 0-5v output is very sensitive to interference and can potentially be affected by the connection quality. To ensure an accurate reading, please keep wire length short and away from high current devices.

### Exhaust Gas Temperature / Cylinder Head Temperature

1Gauge supports two K-Type thermocouple sensors. You can choose to use these for either exhaust gas temperature (EGT) or cylinder head temperature (CHT).

Various EGT and CHT sensors are available from our store. By default, we include a straight EGT probe (pictured below) which features a 0-1000°C resolution, 2m lead and a 1/8 NPT thread.

Connection can be made by connecting the probe to either the A+ & A- or B+ & B- pins on the 1Gauge controller. As the probe is extremely sensitive electromagnetic induction, it is recommended the lead be run as far as possible from other circuits, especially if they carry high current. Failure to do so will cause readings to fluctuate.

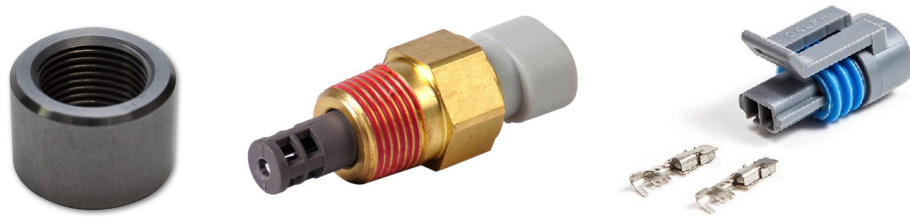


### Warning Light

The optional warning light features a 5mm Red LED in a chrome bezel ideal for mounting directly into your dash or cluster. Simply connect the negative (Black) wire to ground (N) and the red positive wire to the 'I/O,OU1 or OU2' pin on the back of the display. You can then configure when the light illuminates by configuring the I/O,OP1,OP2 output - see page 14 for more details.



### Intake Air Temperature (IAT)



Optional kit (P/N: 1GITAK) provides intake air temperature functionality to your 1Gauge. This kit includes:

- GM Intake Air Temperature sensor
  - 3/8NPT Thread
  - 0-100°C resolution
  - 29PSI sealing pressure
  - Fast response
- 3/8 NPT Aluminum weld on bung
- Connector, insulator and crimp on pins

Wiring:

The GM IAT sensor features a 2 pin connector.

- Simply connect one pin to ground (- Pin on the controller for the most accurate results) and the other to a temperature/pressure input on the controller.
- The sensor does not have a positive or negative terminal, you can connect it either way.

Configuration:

If you have purchased your 1Gauge package optioned with the IAT Kit, your controller will have already been configured. Simply connect the IAT sensor to the pin listed on your configuration card.

If you have purchased an IAT kit separately, you will need to configure one of the 6 gauge tiles to show IAT, additionally you will also need to set which Input put pin you have connected the sensor to. Configuration details can be found on page 12 onward.

### Carburettor Fuel Pressure

Carburettor fuel pressure provides a pressure reading 0.0-15.0 PSI with accuracy down to 1/10th /PSI.

This sensor has a 3 wire interface and must be connected as follows:

Black = N on rear of display  
Red = P on rear of display  
Green = Pin 4 on 1Gauge controller



## Gauge Configuration

1Gauge can be configured to display up to 6 Gauges (7 in a twin voltage configuration).

While 1Gauge comes with a default configuration, you can also have the ability to customise displayed gauges, warnings and logging options. Configuration is as simple as answering 6 questions. The following describes how you can customise your gauge:

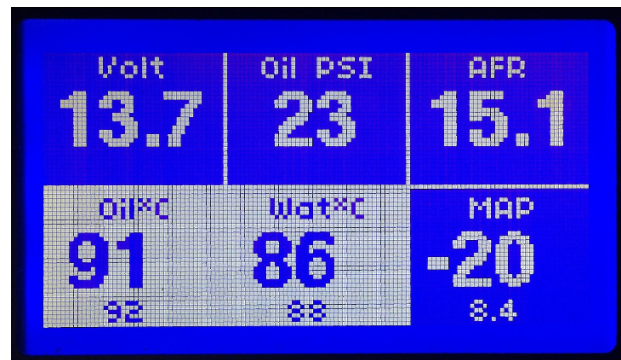
1. With the controller powered off, remove the SD card and connect it to a computer
2. Open 'settings.txt' from the SD card
3. Enter the number corresponding to the gauge you would like for each position. These values are shaded red in the example below.

```
#####
0 = Blank
1 = Oil Pressure
2 = Oil Temperature
3 = Water Temperature
4 = Manifold Air Pressure (Vacuum\Boost)
5 = Exhaust Gas Temperature B(EGT)
6 = Fuel Pressure
7 = Single Voltage
8 = Primary/Secondary Voltage
9 = Fuel Level
10 = Wideband AFR, MTX-L (7.35 - 22.39:1)
11 = Wideband AFR, AEM (10 - 20:1)
12 = Transmission Temperature
13 = Intake Air Temperature
14 = Cylinder Head Temperature A (CHT)
15 = Exhaust Gas Temperature B (EGT)
16 = Cylinder Head Temperature B (CHT)
17 = Fuel Pressure (15 PSI Sender)
18 = Wideband AFR, AEM E85 (6.6-13.2)
19 = Wideband AFR, AEM Methanol (4.4-8.8)
#####
```

1. Enter the desired gauge number for each position:

```
[A=7]
[B=1]
[C=10]
[D=2]
[E=3]
[F=4]
```

This configuration will result in the following:



## Warning Configuration

A warning value can be configured for each gauge. This warning will invert the gauge tile when triggered. The value defined in this section also determines when your Aux output and warning lights are triggered. (See page 10)

To configure 1Gauge warnings, simply follow these steps.

1. With the controller powered off, remove the SD card and connect it to a computer
2. Open 'settings.txt' from the SD card
3. Change the value after the '=' symbol for the corresponding gauge. These values are shaded red in the example below.

```
#####Warnings#####
```

2. Configure a warning threshold for each gauge, set the warning value to "0" to disable the warning. Numbers must not contain a decimal point:

```
Oil Pressure Warning  
[1=9]  
Oil Temperature Warning  
[2=90]  
Water Temperature Warning  
[3=90]  
Boost Pressure Warning  
[4=8]  
Exhaust Gas / Cylinder Head Temperature Channel A Warning  
[5=450]  
Fuel Pressure Warning  
[6=10]  
Primary Voltage Warning  
[7=9]  
Fuel Level Warning  
[9=10]  
Trans Temperature Warning  
[12=85]  
Intake Air Temperature Warning  
[13=50]  
Exhaust Gas / Cylinder Head Temperature Channel B Warning  
[15=450]
```

```
#####
```

1Gauge will display the warning values for 4 seconds when powered up.

## Auxiliary Outputs

1Gauge features 4 Auxiliary outputs. 3 Outputs marked 'I/O,OP1 and OP2' located on the back of the display can be used to power warning lights (available from our online store)

**I/O, OP1 and OP2** must only be used to power devices with a **current draw less than 30mA**.

The third output marked '**Aux**' on the controller can be used to trigger **12v** devices up to **500mA (0.5A)**. This output is ideal to trigger a relay and gives you the ability to trigger high currents such as engine fans.

The Aux outputs can be configured by opening the configuration file located on the SD card.

Simply change the value after the '=' symbol to the corresponding number of the gauge you wish to trigger the Aux output.

#####

The following gauges can be configured to trigger auxiliary warning outputs:

- 1 = Oil Pressure
- 2 = Oil Temperature
- 3 = Water Temperature
- 4 = Manifold Air Pressure (Vacuum\Boost)
- 5 = Exhaust Gas / Cylinder Head Temperature Channel A
- 6 = Fuel Pressure
- 7 = Single Voltage
- 8 = Primary Voltage
- 9 = Fuel Level
- 12 = Transmission Temperature
- 13 = Intake Air Temperature
- 15 = Exhaust Gas / Cylinder Head Temperature Channel B

#####

4. Enter a gauge number to associate the warning output with that gauge:

```
Aux Output (Up to 500mA)
[I=1]
Warning Light Output (I/O, Up to 30mA)
[J=2]
Warning Light Output (OP1, Up to 30mA)
[K=3]
Warning Light Output (OP2, Up to 30mA)
[L=12]
```

#####

In the example above, Aux is triggered by Boost, I/O is triggered by Oil Temperature, OP1 is triggered by Oil Pressure and OP2 is triggered by Transmission Temperature



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## Pin Configuration

In the same way, you can configure which controller pin is used for which gauge. Simply change the value after the '=' symbol to the pin you wish to use. Leave the value blank if not in use.

#####

Enter the pin number corresponding to each sender you have installed.

Incorrect configuration can cause damage. Please contact support@1Gauge.com.au if you are unsure.

Please refer to the "C:" value displayed on start-up. This 6 digit number indicates the hardware configuration of each pin.

- 0 = Not Used
- 1 = AFR/15 PSI Pressure Sender
- 2 = VDO Temperature, Pressure, Fuel Level and Intake Air Temperature
- 3 = 12V Input

For example, a C: value of 222103 refers to the following

Pin 1 = VDO Temperature, Pressure, Fuel Level and Intake Air Temperature

Pin 2 = VDO Temperature, Pressure, Fuel Level and Intake Air Temperature

Pin 3 = VDO Temperature, Pressure, Fuel Level and Intake Air Temperature

Pin 4 = AFR/15 PSI Pressure Sender

Pin 5 = Not Used

Pin 6 = 12V Input

#####

5. Enter the pin number corresponding to the gauges you have selected:

- Oil Pressure  
[M=1]
- Water Temperature  
[N=3]
- Oil Temperature  
[O=2]
- Trans Temperature  
[P=]
- Fuel Pressure  
[Q=]
- Fuel Level  
[R=]
- Intake Air Temperature  
[S=]

In the example above, Oil pressure is configured on pin 1, oil temperature on pin 2, water temperature on pin 3, air fuel ratio on pin 4 and secondary voltage on pin 6.

## Data Logging Trigger

Data logging can be configured with the followign three states:

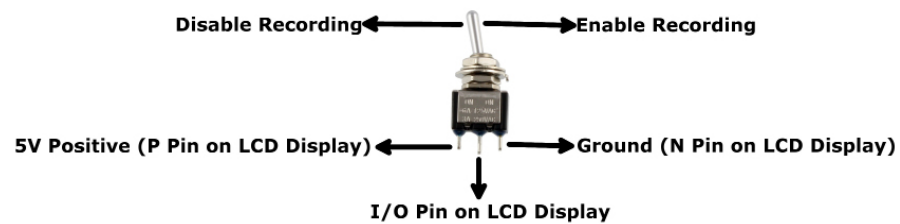
- 0 = Never Record
- 1 = Always Record
- 2 = Switched Recording

Your preference must be configured by answering question 7 in settings.txt

#####

7. Would you like to enable data logging (0=No, 1=Yes, 2=Switched):  
[W=1]

If you choose option 2 (switched recording) you must connect a SPDT switch as follows:



## Data Logging

1Gauge produces a log file in comma separated value format (.csv). This format can be easily graphed using Microsoft excel or DBPLOT.

The micro SD Card (Refer to page 4) must only be inserted or removed while 1Gauge is powered off, failure to do so may cause the SD Card to become corrupt.

The Data logging module will hold 32000 log files.

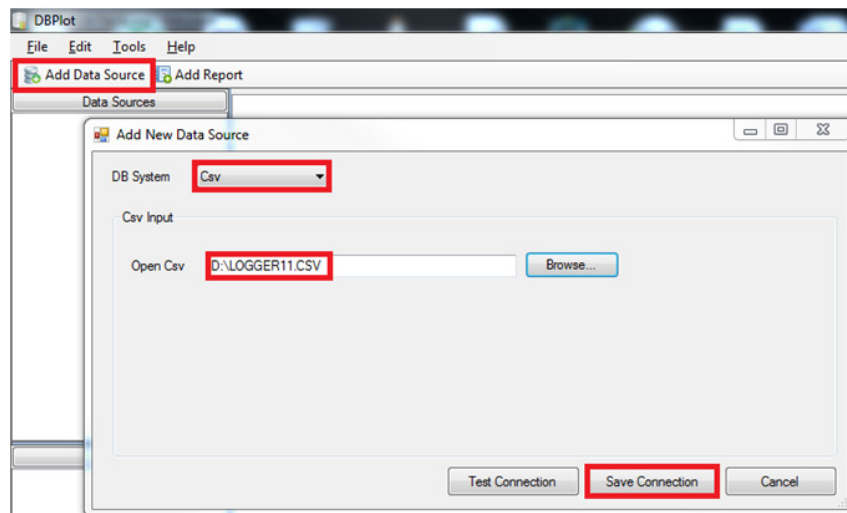
The included 4GB Micro SD Card will record up to 7200 hours of data with an average sample interval of 6 samples per second.

1Gauge will not support Micro SD Cards greater than 4GB.

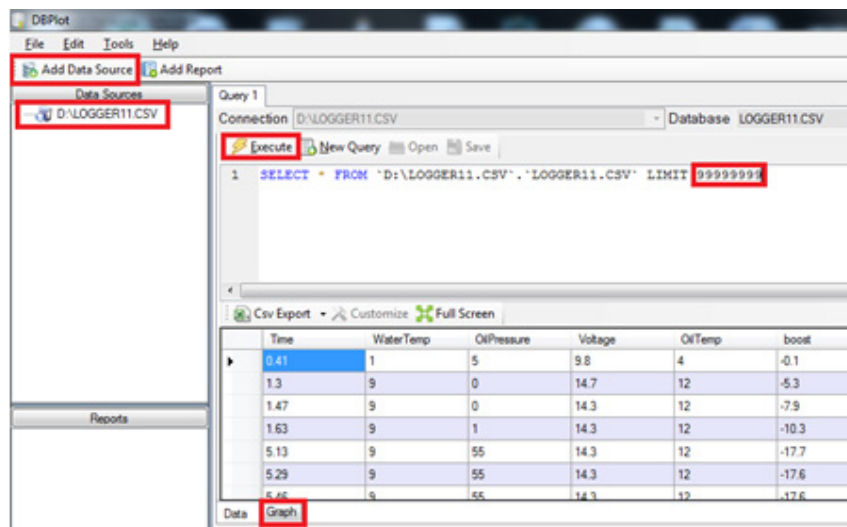


### Graphing the output using DBPLOT \*\*

1. Download and Install DBPLOT - <http://sourceforge.net/projects/dbplot/>
2. Click "Add Data Source" from the top left hand corner
3. Choose DB System "CSV"
4. Select the .csv file you wish to graph
5. Click "Save Connection"



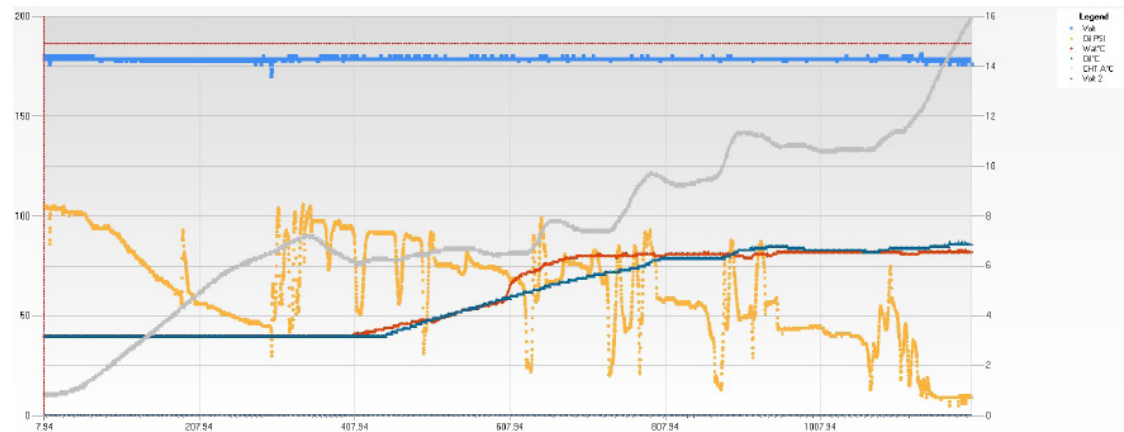
6. Double click the data source csv from the list on the left hand column
7. Change LIMIT to a large value such as 9999999
8. Click "Execute"
9. Click "Graph"



\*\* Dbplot is a free program it can be downloaded here: <http://sourceforge.net/projects/dbplot/>  
We do not offer support on this application. Installation is at your own risk.

### Graphing the output using DBPLOT \*\*

10. On the 'X' Axis, select Time from the dropdown box (Time is measure in seconds)
11. Choose 'Fast line' from the graph type drop down
12. On the Y axis 1, choose WaterTemperature, OilPressure and OilTemperature
13. On Y axis 2, choose Voltage and boost.
14. The graph will automatically populate. You can use the cursor to pinpoint exact values
15. You can export the graph using the 'Export Chart' button in the top left hand corner



\*\* Dbplot is a free program it can be downloaded here: <http://sourceforge.net/projects/dbplot/>  
We do not offer support on this application. Installation is at your own risk.



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### Warranty

1Gauge comes with a 1 year return to base warranty. Warranty will be valid providing the tamper proof void stickers on the controller are intact. Additionally, there is a moisture detection sticker on the inside of the controller, which must show the controller has not been exposed to moisture. There are no user serviceable components inside the 1Gauge controller.

Providing your warranty claim meets this criteria, a replacement unit will be dispatched upon receipt of your faulty unit.

What is covered?

- Electronic failure

What is not covered?

- Failure caused by incorrect wiring
- Water damage
- Damaged caused by extreme heat
- Damage caused by impact/shock
- Screen damage

Out of Warranty service is available please see the contact section.

Please contact 1Gauge support to open a warranty claim.

Note: It is the responsibility of the customer to return the faulty unit. The replacement unit will be sent at no cost.

### Updates

1Gauge is completely customizable, additional inputs and custom gauges can be purchased. The upgrade process requires a firmware upgrade and can only be installed by an authorized 1Gauge technician.

Please contact the 1Gauge technical team if you would like to customise your unit.

## Troubleshooting

**Problem: Temperature or pressure values do not change or are unstable**

Solution: Ensure all senders are connected and have a strong connection to earth

**Problem: 1Gauge display is pixelated or is displaying broken characters**

Solution 1: Ensure the display cable is not faulty/broken and is secured correctly

Solution 2: Ensure no interference between the display/controller/associated cabling. You must ensure 1Gauge is a minimum of 10cm away from cable carrying high current (EG. Ignition circuitry/ Battery cables)

Solution 3: Another device is finding an earth through a sender connected to 1Gauge. Ensure all other equipment has a strong connection to earth.

**Problem: 1Gauge is not turning on**

Solution 1. Ensure the controller is receiving power. Does the green power indicator illuminate? Check your fuse.

**Problem: I have reversed the polarity of 1Gauge**

Solution: Under most circumstances, this will not do any damage. Reconnect 1Gauge with correct polarity and ensure the power light illuminates.

**Problem: I have connected a 12v source to a temperature or pressure sensor**

Solution: It is likely the sensor is now damaged and inaccurate, you will need to source a replacement.

**Problem: I have connected my secondary voltage input to the wrong pin**

Solution: There is a high chance you have damaged this input. Damage can be confirmed by reconnecting the appropriate sender and monitoring for fluctuation. If your gauge does not appear stable, please contact 1Gauge support. Unfortunately, in most instances this can not be repaired.

**Problem: Data logging has stopped**

Solution: 1Gauge is capable of storing up to 32000 individual log files. If you have hit this limit, logging will stop. To clear the log files, delete all .log files from the SD card. Open LLF.ini and change the value to 0.

**Problem: My display has overheated and has become dark or hard to read**

Solution: Just like a mobile phone the display is heat sensitive. If the display is left in the sun it may become dark and hard to read, this will fade back to normal when the temperature decreases. Long term exposure may damage the display and will not be covered by warranty. In a similar manner, if the screen becomes too cold you may observe a 'ghosting' effect.

**Problem: My display appears laggy or is ghosting**

Solution 1. Ensure no interference between the display/controller/associated cabling. You must ensure 1Gauge is a minimum of 10cm away from cable carrying high current (EG. Ignition circuitry/ Battery cables)

Solution 2. You may be using a non genuine display cable. Please purchase a genuine replacement.

Solution 3. The display is operating below recommended operating temperature.

## Troubleshooting Cont.

**Problem: The display illuminates, but nothing is displayed**

Solution 1: Ensure the display cable is not faulty/broken and is secured correctly.

Solution 2: Ensure no interference between the display/controller/associated cabling. You must ensure 1Gauge is a minimum of 10cm away from cable carrying high current (EG. Ignition circuitry/Battery cables)

Solution 3. Adjust the contrast trimpot located on the back of the display

Solution 4. The SD card may have become corrupt. Follow these instructions to reformat your SD card:

- A. Connect the SD card to a windows computer
- B. If you can read the contents of your SD card, copy Settings.txt and LLF.ini to a location on your computer. If you would like to keep existing log files, take a copy of these too.
- C. Open 'File Explorer', right click your SD card and select format
- D. Copy Settings.txt and LLF.ini back to the SD card.
- E. Reconnect the SD card to 1Gauge and power on.

