



## EG01-3

Single bolt-on Temp Sensor model & low oil pressure OR voltage alarm

The temperature shown on the Display Module is a guide only and should not be considered an absolute indication of overheating.

As the manufacturers of the system, we do not take any responsibility for damage that may arise or occur as a result of overheating or any other mechanical defect or failure.

### Display Installation:

Locate Display on flat surface using tape supplied.  
The display location should be:

- Out of direct sunlight
- In a dry, protected area (some moisture is OK)
- Easily seen by the operator
- Within 5m of the sensor
- Clean and free of silicone/Armor All

Secure loom & cable to the vehicle at regular intervals.

**Connect BLACK wire to ground/negative.**

**Connect RED wire to a 12v-24v DC supply that powers ON/OFF with ignition (preferred) or accessories.**

**Use a 5-amp fuse (not supplied).** A 'piggyback fuse holder' is suggested. This is an accessory that plugs into the factory fuse box and adds a second fuse to an existing circuit. These feature a red 'fly lead' that can be run to the positive (red cable) on the Display.

The buzzer is external and can be disconnected to allow for remote installation by extending the cables. The buzzer output can also be used to trigger a relay (See full Owner's Manual on website for wiring diagram).

The buzzer can be mounted behind the dashboard or nearer to the operator if it is being used in a noisy environment or is some distance from the Display.

**Finally, remove the plastic film protecting the silver**



**overlay.**

### Sensor Installation:

Sensor 1 connects to the 2 x white cables marked **SENSOR 1**.

**NOTE: There is no polarity of the temperature sensor cables.**

The sensor is located under the head of a bolt like a washer.



The Sensors can be located at any point where a temperature measurement is required but should not be subjected to more than 130c/266f. Do not locate the sensor or cable near the exhaust manifold, exhaust downpipes or turbo. The Sensor should also be located to avoid impact from stones or other debris if being used on driveline components such as the transmission or transfer case.

The ideal location varies depending on the application. **Generally, the best location for sensor 1 is on the cylinder head casting, on the inlet manifold side or rear.** Other locations (such as on the cooling system, radiator, hoses, etc) can be misleading if the coolant is not circulating or if not present due to leakage.

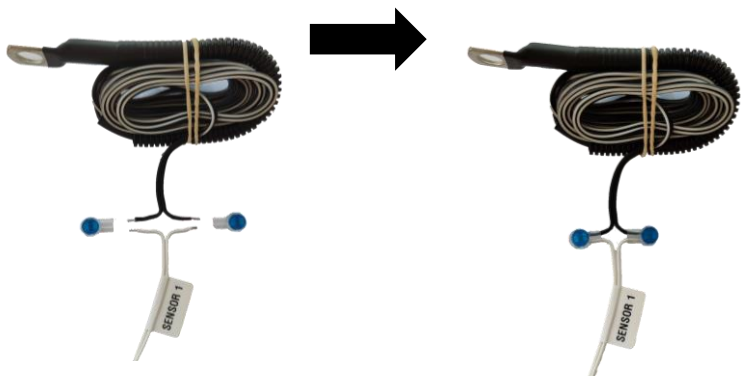
**Important:** Always re-torque the bolts back to the manufacturers' specifications. If the bolt is torqued to a high specification, a flat washer should be placed on top of the ring section of the sensor to prevent damage.

### Running Sensor Cable to Display:

**VERY IMPORTANT:** A cable tie should be used within the first 80mm section of corrugated tube on the Sensor cable to secure to a mounting point on the engine or transmission. Then run the cable back to the firewall parallel to the factory engine loom securing with cable ties. **Don't run cable straight onto the body.** Avoid running the cable near any source of extreme heat or near the ignition system.

Run cable through the firewall being careful not to damage the outer PVC sheath. We suggest that you use the existing wiring loom grommets as an entry point into the cabin. A new hole and grommet can be added to the firewall if necessary. Re-seal around any points of entry into the cabin with an appropriate sealant. **Cable can be cut to length** or wound neatly and tied behind the dash.

Each sensor connection requires 2 x crimp connectors (supplied). **Use solder/heat shrink if preferred.** To begin, separate the "Figure 8" sensor cable into 2 individual cables. Slide the first sensor cable into a connector entry holes, then slide in a single white INPUT cable. Use a pair of pliers to firmly press in the plunger to secure. Repeat this for the second sensor wire and second white INPUT cable.



## Voltage Interface Connection:

The Voltage Interface ('V.I') has 2 cables at one end (marked as 'Sensor 2') and this end connects to the Sensor 2 cables on the Display.

The other end has only 1 x 5m cable and this input connects to the vehicle supply (for voltage) or oil pressure switch (or cable to the switch) for the low oil pressure warning light circuit.

### Important: The V.I is polarity sensitive.

- Connect the short yellow/black cable on the V.I to the yellow/black on input 2 (marked as 'Sensor 2')
- connect the short yellow cable on the V.I to yellow on Input 2.

For Voltage Measurement & Alarm: Connect the 5m long single yellow/black V.I cable to the supply (positive) to be monitored. For example, this can be used to show vehicle alternator charge voltage, auxiliary battery charge in a dual battery set up, etc. Voltage range between 0vDC and 33vDC are shown as 0 – 330 (no decimal point- for example, 12vDC

is shown as 120). An audible alarm can for set for either low or high voltage.

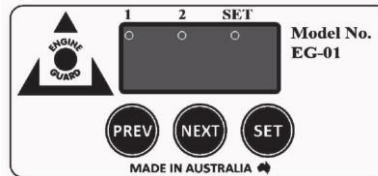
For Low Oil Pressure Alarm: the single yellow/black V.I cable can be connected to the cable that leads to the factory oil pressure switch or to the single pin on the switch itself. This applies to single connector type oil pressure switches. These are the most common type and are found on most vehicles.

The low oil pressure alarm is triggered when the 'line voltage' in the oil pressure warning light circuit is less than the default setting of 6v (adjustable- see below). Most low oil pressure warning systems use a 'normally closed' switch. When the oil pressure is low, the switch is closed (ground) and this completes the circuit to the oil pressure warning light. This drops the line voltage to below 6v and triggers the alarm ("oil" is displayed and the Display flashes). When oil pressure is sufficient, the switch opens, and the line voltage increases above 6v and this disables the alarm ("PrE" or pressure is displayed)

If installing with multiple pin/connector oil pressure switches, please seek advice from a qualified auto electrician or mechanic.

## OPERATION

The Display is controlled by three press buttons: show the MODE



The three dots above the digits

(They are NOT decimal points)

On start up '888' is displayed, the software version 1.03, then the Engine Guard cycles through the following:

- The input *type* being displayed on Input 1 - 'deg' (degrees C). See full Owner's Manual on [www.engineguard.com.au](http://www.engineguard.com.au) to change to F.
- The input *type* being displayed on Input 2 - 'inL' (voltage / low voltage alarm) *This is the factory default setting and can be changed.* The input *type* on 2 can also display: 'oil' (oil pressure), 'inH' (voltage / high voltage alarm) or 'OFF'. See below to change Input 2 type.
- The current temp alarm Set Point on Input 1 (if no setting has been made, '---' is displayed)
- The current voltage Set Point on Input 2 (if no setting has been made. '---' is displayed)
- The Display then returns to the current temperature on Input 1 (dot under 1)

### Setting Input 1 using the high temperature memory (suggested method):

**Do not adjust the set point until you have driven the vehicle for some time.** This will allow the ENGINE GUARD to store the highest temp in the memory. Make sure the driving includes typical conditions such as highway speeds followed by idling in traffic, towing if that is normal, etc.

- Power up the system and wait until Temp 1 is displayed (dot under 1).
- Press NEXT twice to enter Set Point 1 ('---' will be displayed, dot under 1 and dot under SET).
- Press SET and hold for 10 seconds until the highest recorded temp is displayed (after 5 seconds the current temp will be displayed so don't take your finger off early!!). The dot under 'SET' should be flashing during this process.
- Press NEXT to increase and PREV to decrease the temp. **We suggest that the initial set point should be around 5 degrees above the previous highest temp.**
- Press SET to store the temp in the memory (dot under 'SET' will stop flashing).
- To return to temp 1 press NEXT twice or PREV twice.

### Adjusting Input 1 temp set point WITHOUT using the memory:

- Power up the system and wait until Temp 1 is displayed (dot under 1).
- Press NEXT to enter set point 1 ('---' is displayed, dot under 1 and SET).
- Press SET for 2 seconds until the dot under SET is flashing.
- Press NEXT to increase and PREV to decrease the temp.

- Press SET to store the temp in the memory (dot under SET will stop flashing).
- To return to temp 1 press NEXT or press PREV.

This is a rough guide to adjusting the set point, and it is suggested that the owner experiment with the setting over time. If operating under high load conditions or higher than normal ambient temperature, the alarm may be triggered despite the vehicle or machine not 'overheating'- creating false alarms. Equally, if the SETPOINT is adjusted far beyond normal operating temperature then the effectiveness of the alarm as a warning of impending damage is reduced. **IT IS NORMAL FOR THE ALARM TO TRIGGER AFTER A BRIEF SHUT DOWN SUCH AS FUELLING UP.**

**PLEASE NOTE: If the alarm is triggered, pressing the SET button will temporarily silence the alarm for 30 seconds.**

### **Adjusting Input 2 – adjusting Low Voltage Alarm:**

- Power up the system and wait until Temp 1 is displayed (dot under '1').
- Press NEXT three times- Set Point 2 will be displayed ('---' is displayed, dots under 2 and SET).
- Press SET for 2 seconds until dot under SET is flashing.
- Press NEXT to increase, PREV to decrease.
- Press SET to store this in the memory (dot under 'SET' will stop flashing).
- Press NEXT or PREV three times to return to Temp 1.

Voltage range between 0vDC and 33vDC are shown as 0 – 330 (no decimal point- for example, 12vDC is shown as 120).

### **Adjusting Input 2 - selecting High Voltage Alarm:**

- Power up the system and wait until Temp 1 is displayed (dot under 1).
- Press SET and hold for 10+ seconds until "SET" is displayed- this is entering PARAMETER mode. See full Owner's Manual on website for full details.
- Release the SET button- P1 then 'inL' will be displayed (dot steady under SET)
- Press SET once, and the dot under SET will start flashing.
- Press NEXT and 'inH' will be displayed (High Voltage Alarm)
- Press SET and the dot under SET will stop flashing.
- Press PREV and 'End' will be displayed.
- Press SET to re-boot the Display.

### **Adjusting Input 2 – adjusting High Voltage Alarm:**

- Power up the system and wait until Temp 1 is displayed (dot under 1).
- Press NEXT three times- Set Point 2 will be displayed (default is displayed '---' with dots under '2' and 'SET').
- Press SET for 2 seconds until dot under 'SET' is flashing.
- Press NEXT to increase, PREV to decrease.
- Press SET to store this in the memory (dot under 'SET' will stop flashing).
- Press NEXT or PREV three times to return to Temp 1.

### **Low Oil Pressure Alarm Settings – Suggestions and Testing:**

- EG01-3 systems are set to 'inL' as default. Do not change this setting until the following steps are completed. This allows the installer to complete and test the circuit to the factory low oil pressure warning light. If the parameter setting is changed and the circuit is faulty, the low oil pressure alarm will trigger making fault finding & setting difficult.
- Check that the factory low oil pressure light is functional. If there is no light (pressure gauge only) OR light does not operate, the Engine Guard alarm will not operate as it requires a light circuit to read voltage.

After completing the wiring:

- With ignition turned ON but engine not running (low oil pressure light ON) press NEXT to display Input 2. Voltage should be approx. 0v. This indicates that the low pressure switched is CLOSED.
- Start engine and while operating the oil pressure light should be OFF. Voltage on Input 2 will be approx. 12v or 24v (if applicable) – this is shown as 120 or 240. This indicates that the oil pressure switch is OPEN circuit.
- In some cases, the factory low oil pressure warning light circuit uses a feed from the ECU. In this case, it is possible to connect the V.I yellow/black cable between the ECU and the factory oil pressure light. However, please seek advice from a qualified auto electrician before using this circuit as it may affect other factory systems.

### **Adjusting Input 2 - selecting Low Oil Pressure Alarm**

- Power up the system and wait until Temp 1 is displayed (dot under 1).
- Press SET and hold for 10+ seconds until "SET" is displayed- this is PARAMETER mode.
- Release the SET button- P.1 then 'inL' will be displayed (dot steady under SET)
- Press SET once, and the dot under SET will start flashing.
- Press PREV and 'oil' will be displayed (Low Oil Pressure Alarm)
- Press SET and the dot under SET will stop flashing.
- Press PREV and 'End' will be displayed.
- Press SET to re-boot the Display.

- If the engine is not running, the alarm should trigger and 'oilL' will be displayed.
- If the engine is started, press NEXT to enter Input 2 (dot under 2). 'PrE' (oil pressure) should be displayed.

*\*Please note: The factory default trigger point for low oil pressure is 6v or below, and this is not normally displayed in oil pressure mode.*

*If 'PrE' is displayed, pressing SET for 2 seconds will change the display to show the current input voltage - normally the voltage of the factory oil pressure warning light circuit. This indicates the oil pressure switch is open. The voltage will drop below the set point (6v) when the switch is closed (earthed) indicating low oil pressure and this will trigger the audible alarm. To change the display back to 'PrE' press and hold SET again for 2 secs.*

## **Adjusting Input 2 - Low Oil Pressure Alarm voltage trigger point**

To change the factory default low oil pressure set point, the engine must be operating.

- Press NEXT and input 2 will be shown with 'PrE' displayed (Pressure) (dot under 2 steady)
- Press and hold the SET button for 2 secs until the current voltage input is displayed.
- Press the NEXT button twice and the default set point will be displayed as 60 (6V) (dot under '2' and 'SET').
- Press SET again for 2 secs. (Dot under 'SET' will flash).
- Press NEXT or PREV buttons to adjust Set Point.
- Press SET to store this Set Point (Dot under 'SET' will stop flashing)
- To return the Display to 'PrE', either reboot the Display, or with input 2 displayed (showing the current voltage) press and hold the SET button for 2 secs. The new alarm set point will not be displayed unless these steps are reversed.

## **Installing as an external alarm**

The output to the factory buzzer can be used to trigger an external alarm. Maximum output current is 200mA. If you plan to use a higher current device, use a relay triggered by the factory output cables.

- Undo the knot in the output cables to the buzzer and slide down the heat shrink covering the solder joints. Desolder.
- Connect pink cable (positive) and black (negative) to the coil side of the relay- black cable is switched to ground/earth when triggered.
- Use the contact side of a normally closed relay to supply 12v/24v or ground/earth the new external device. Please refer to full **Owner's Manual (see [www.engineguard.com.au/installation](http://www.engineguard.com.au/installation))** for a circuit diagram.

## **Installing as an engine shut-down (not to be used on road registered vehicles or machines- check applicable legislation!)**

The output to the factory buzzer can be used as a shut-down system. Please seek advice from a qualified auto electrician if required.

- Undo the knot in the output cables to the buzzer and slide down the heat shrink covering the solder joints. Desolder.
- Connect pink cable (positive) and black (negative) to the coil side of the relay- black cable is switched to ground/earth when triggered.
- Use the contact side of a normally closed OR open relay to supply or cut power to the ignition or fuel solenoid. Please refer to **Owner's Manual see [www.engineguard.com.au/installation](http://www.engineguard.com.au/installation)** for a circuit diagram.

Once the circuit is completed, changes are required to the Parameter settings to make buzzer output constant and turn off buzzer on start-up:

- Power up Display and press SET for 10+ seconds until 'Set' is displayed. Release the button.
- Press NEXT- 'P.2' then 'OFF' will be displayed- press SET (dot under SET will flash)
- Press PREV- 'On' will be displayed. Press SET (dot under SET will stop flashing).
- Press NEXT until 'P.11' then 'On' is displayed. Press SET (dot under SET will flash).
- Press NEXT- 'Off' will be displayed. Press SET (dot under SET will stop flashing).
- Press NEXT until 'End' is displayed. Press SET and Display will reboot.

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### **SAFETY ADVICE!**

- Please read the Owner's Manual before proceeding with the installation or operation of the system, and if you are unsure about installation, please contact the vehicle manufacturer, Dealer or a qualified trades person.
- Avoid operation of the Display whilst driving.
- Avoid installing the system on a vehicle that has been in operation to reduce the chance of burns.
- DO NOT attempt to install the sensor(s) on an operating engine- injury may occur.
- Always wear appropriate protective equipment and have fire safety in mind whilst installing the system.
- This device is only to be used for the purpose for which it is intended.
- This is an independent monitoring system and does not communicate with any other vehicle system(s).
- DO NOT connect the Display to any other temperature sensors other than those supplied by ENGINE GUARD.
- The Display must be mounted so as to NOT obstruct or interfere with the driver's vision and/or operation of the vehicle and adhere to any relevant legislation.
- A 5amp fuse(s) MUST be used when connecting to the power source, ie. batteries or ignition.
- Cleaning is recommended with a soft damp cloth only. No chemicals or abrasive cleaners are to be used.

### **WARRANTY**

The Engine Guard system is warranted by the manufacturers to the original retail purchaser, to be free from defects in material and workmanship under normal use. **Time period:** Warranty coverage on the Display Unit for a period of 12 months from the date of purchase, while owned by the original purchaser and is not transferable. Warranty coverage of the Sensor(s) assembly for a period of 30 days from purchase. During each of the respective limited warranty periods, all original parts subject to this limited warranty determined to be defective in materials or workmanship will be repaired or replaced by the manufacturers, at its option directly or through authorized resellers, free of charge except for shipping or other transportation charges. Reseller labour charges are not covered under this warranty.

**For Full Warranty see [www.engineguard.com.au](http://www.engineguard.com.au)**  
**[www.engineguard.com.au/installation](http://www.engineguard.com.au/installation)**

**For full Owner's Manual see**