INSTALLATION INSTRUCTIONS AND OPERATING MANUAL

by

E30 Innovative Goods

For

E30 Temperature Warning Light

PACKAGE CONTENTS

1. TWL board 1x
2. Adapter board 1x
3. Jumper 2x (mounted on the TWL board)
4. 2-wire jumper cable 1x
5. LED with jumper cable 1x
6. LED holder 1x
7.  Sticker 1x

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OPERATING MANUAL

1. WHAT DOES YOUR TEMPERATURE WARNING LIGHT (TWL) BOARD DO?

   Once the TWL board is installed and configured it will alert you by turning on the LED when the engine temperature rises above the set value.

   During the installation process, you will define the engine coolant temperature threshold at which the LED will turn on. Don't worry everything is explained in the installation part of the manual.

ENJOY!

E30 INNOVATIVE GOODS

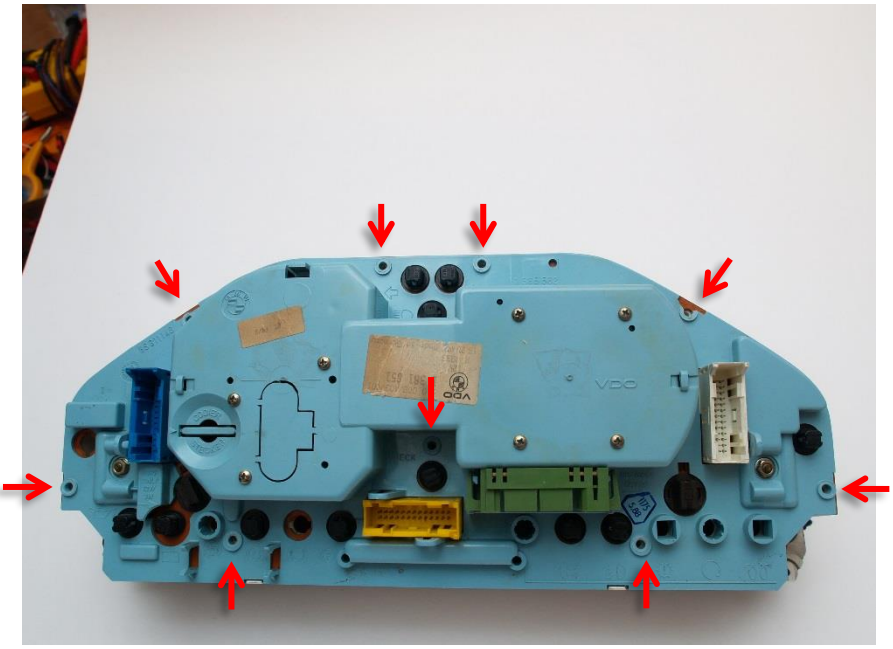
INSTALLATION INSTRUCTIONS

Make sure you have your phone turned off, kids and wife locked away in a safe place so nothing can distract you. ☺

Make sure you follow the instructions step by step.
***Do not skip** any steps otherwise you may have to restart the process and/or damage the module.*

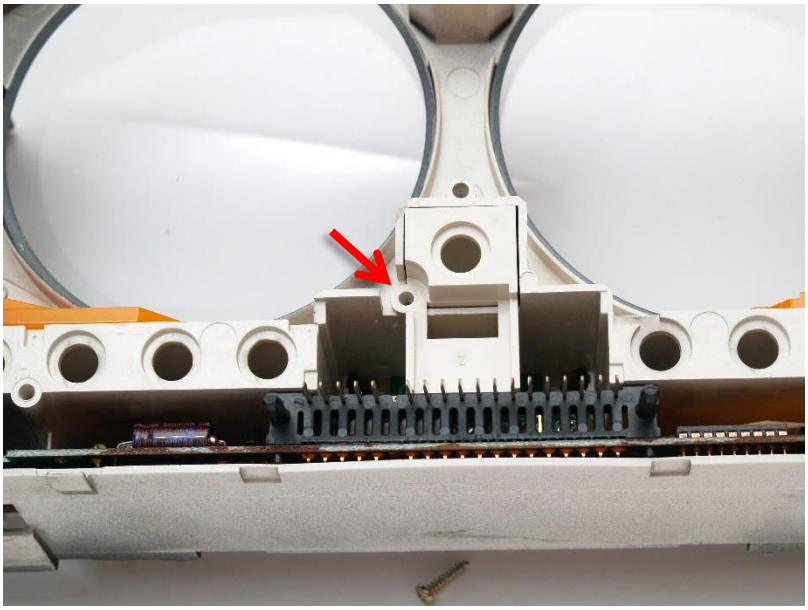
1. DISSASSEMBLE THE INSTRUMENT CLUSTER

    a. Turn off engine
    b. Disconnect the ACCU (to be on the safe side)
    c. Follow the instructions on https://www.youtube.com/watch?v=wBsuLwwLDeA to remove the instrument cluster from the dashboard (up to 3:55)
    d. Disconnect the GREEN plug from the back side of the cluster
    e. Disconnect the CODING plug from the front side of the cluster
    f. Remove 9 screws on the back side of the cluster



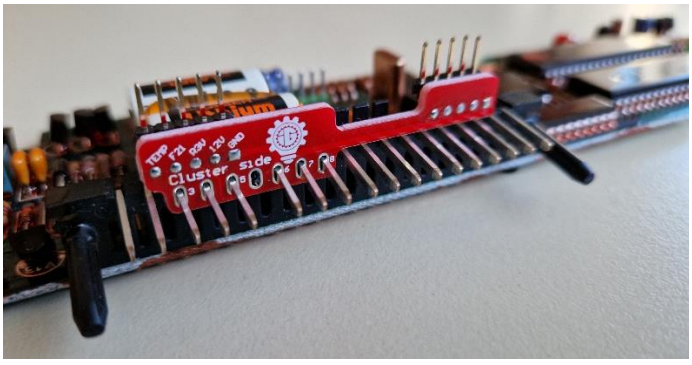
    g. Separate the two halves of the cluster

h. Remove the locking plate (one screw, a little smaller than the other 9 screws you already removed)



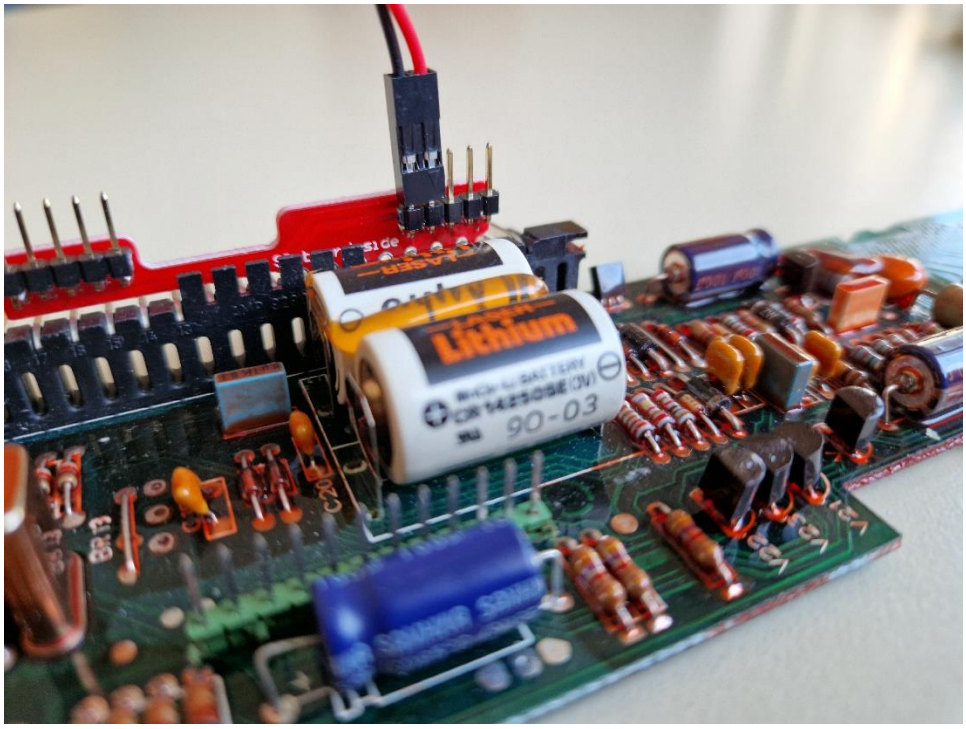
i. Carefully remove the SI board by grabbing it by the black guide pins
j. Remove the LED board from the SI board by lifting it straight up

2. MOUNTING THE NEW TEMPERATURE WARNING LIGHT (TWL) BOARD
   a. Open the package
   b. Take out the ADAPTER board and mount it on the SI board pins
      i. If you already have an adapter board from the Shift Lights module, you must replace it with this new adapter board
      ii. Make sure you align it on the proper pins
      iii. Make sure the board is oriented correctly – "SI board side" should face the SI board
      iv. Note it is a tight fit to get a good contact. Push the board in all the way. Pins may bend just a little during the process.

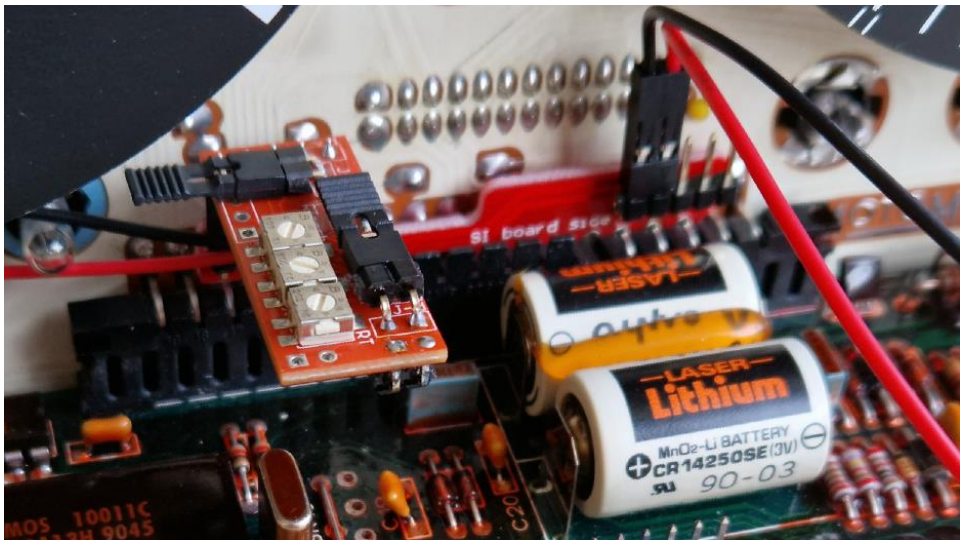


      v. If so, make sure you align them back to the original position.

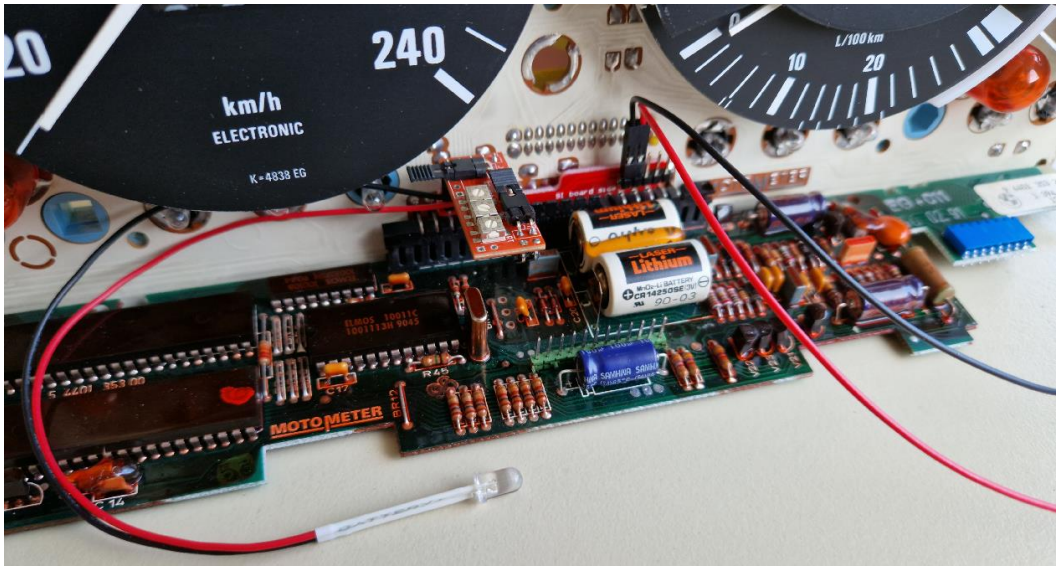
c. Take the jumper cable and connect it to the adapter board. Make sure it is mounted on the correct pins (GND and 12V) AND that the jumper connector is correctly turned according to the picture below (GND to black wire and 12V to red wire):



d. Take the TWL board
e. Mount the TWL board onto the pins on the adapter board. Make sure all 5 pins align.

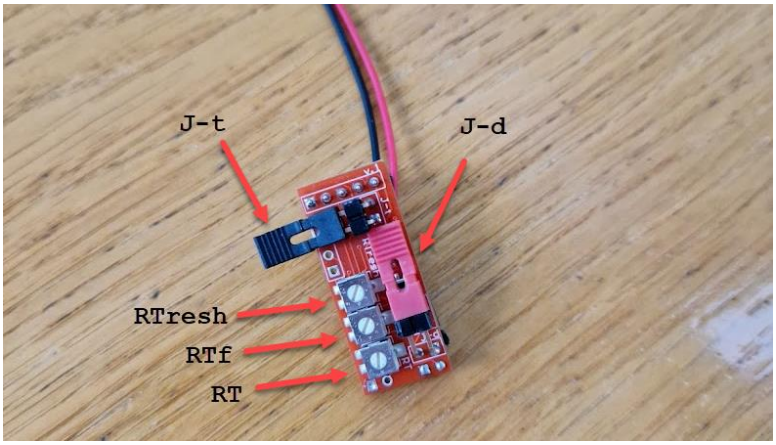


f. Connect the SI board back with the cluster



g. Powering the TWL board
   i. Connect the wires to a 12V power supply (black croc clip to GND, red croc clip to +12V). Make sure you adjust the output to 12V **before** you connect the Shiftlights board.
   ii. If you do not have 12V power supply, you can use the ACCU in the car.

h. Test the setup:
   (NOTE: turn the trimmers slowly to avoid over-turning the temp gauge)
   i. By turning the "RT" trimmer clockwise on the TWL board you should see the temperature needle rise on the temp gauge. Turning it counterclockwise causes the needle to drop.
   (Note: if you do not see any needle movement check whether the SI board has good connection to the cluster)
   ii. If ok, you should see the LED light up, when the needle passes the center mark on the gauge. This is the default setting.



Now it is time to set the threshold to your liking.

3. SET THE TEMPERATURE THRESHOLD
   In the following steps, you will set the TWL temperature threshold

   a. Turn the "RTresh" trimmer counterclockwise all the way. The LED should turn off.
   b. Using "RT" and "RTf" trimmers (they are one-turn trimmers, so don't overturn them) on TWL board set the temperature to the value at which you would like the LED to turn on. You can see the set temperature on the temp gauge on the Instrument cluster.
      i. "RT" trimmer is for coarse adjustments
      ii. "RTf" trimmer is for fine adjustments

   c. Slowly turn the "RTresh" trimmer clockwise <u>until the LED turns ON and stop</u>.

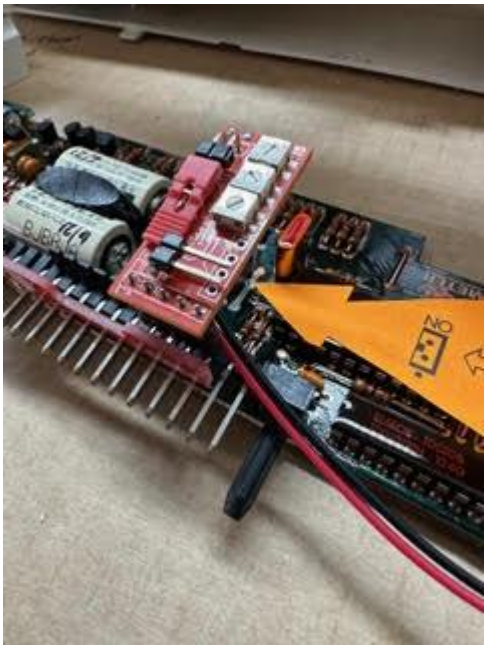
4. TEST THE SET THRESHOLDS
   a. By turning the "RT" and "RTf" trimmers you can change the engine coolant temp
   b. Observe if the LED lights up as set
   c. Watch the magic happen! ☺

5. SET LED MODE
   a. Using jumper "J-d" you can choose between two different LED warning modes:
      i. Jumper on → LED continuously ON
      ii. Jumper OFF → LED flashing

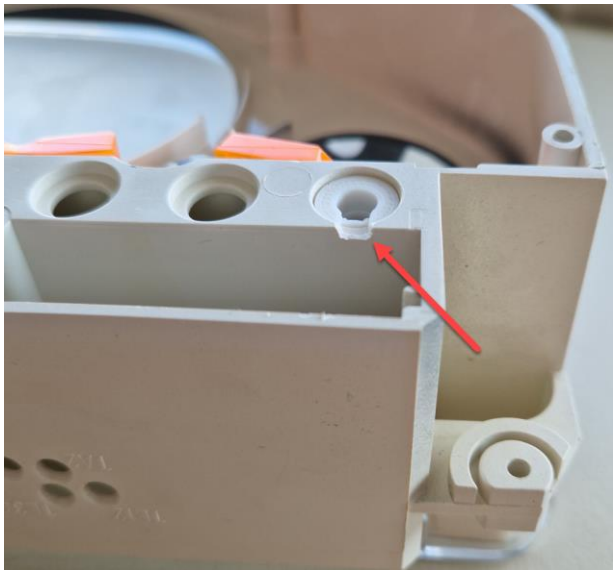
   Note that you can change this setting as many times as you wish.

6. INSTALL THE LED INTO THE CLUSTER
   a. Remove the power supply from the TWL board
   b. Disconnect the SI board from the cluster
   c. Ensure that the leftmost control light position in your cluster is unoccupied
      (Note: usually this is the only free yellow/orange control light position. If it is not free you can use any other free yellow/orange control light position)

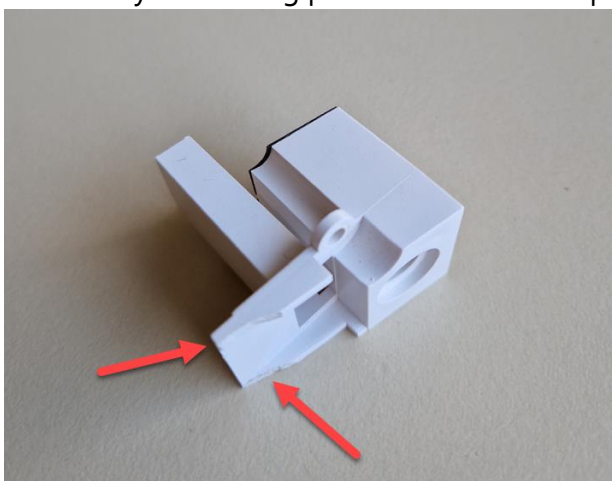
d. Make sure to route the wires behind the guide pin as shown bellow on the right



e. Insert the LED holder into the corresponding control light hole on the back side of the cluster and using a sharp knife create a wide cut that allows the LED wires to be routed into the interior of the corresponding control light hole

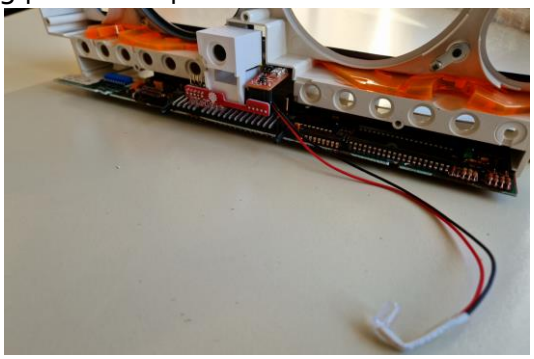


f. Using a sharp knife modify the locking plate as shown in the picture below:

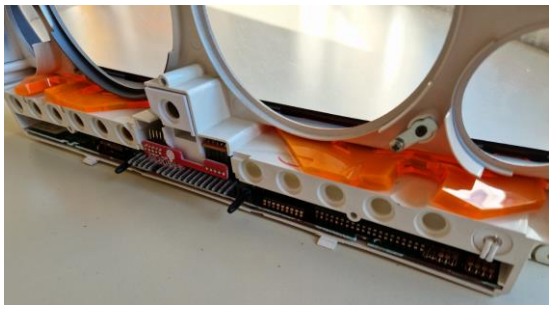


7. REASSEMBLE THE INSTRUMENT CLUSTER

a. Remove "J-t" jumper and power supply jumper wire
    i. If not removed, you will not be able to do the next step
    (Note: save the jumper and jumper wire for future tweaks)
b. Insert the SI board halfway into the front half of the cluster
c. Position the locking plate to its place



d. Slide the SI board together with the locking plate all the way into the front half of the cluster
e. Take the LED that is connected to the TWL board and insert it into the modified control light hole
f. Route the wires tightly down and inside the SI plate slot and above the SI board



g. Fix the locking plate in place using the smaller screw of the 10 you have on the table

h. Take the two halves of the instrument cluster and join them together. To make things easier first insert the plastic guide pins on SI board.
i. Use the 9 screws on the table to finish the assembly
j. Reconnect the CODING plug

8. PASTING THE STICKER

a. Using needle nose pliers remove the warning lights strip from the left side of the cluster

b. Find the left-most control light (or the one you intend to use)
c. Clean the surface with an alcohol wipe tissue
d. Take the supplied sticker and paste it onto the surface
e. Reinstall the strip into the cluster

9. MOUNTING THE INSTRUMENT CLUSTER
   a. Mount the instrument cluster back into the car

10. THE INSTALLATION IS NOW COMPLETE! ☺
    a. Reconnect the ACCU
    b. You can now do a test drive with your E30.

Before that, make sure you release your wife and kids and turn on your phone.