

# PROPANE/LPG INJECTION ELECTRONICS KIT FOR DIESEL POWERED VEHICLES AND ENGINES

**MODEL NO:  
CP-DLPG-Ai V1**



## ELECTRONIC INSTALLATION INSTRUCTIONS

Software: CRAIL-M-2-5L-SD

Suitable For: Common Rail Diesel 2L – 5L Capacity  
**Single or Double Pulse Injection**

Designed, Engineered and Manufactured in Australia

Phone: +61 (0)3 5975 6700  
Fax: +61 (0)3 5975 6788  
Email: [support@peelectronics.com.au](mailto:support@peelectronics.com.au)

## Display descriptions

### **SENSOR OK**

Led will flash when a signal is first detected (ie. Injector pulse, RPM Sensor or Tacho Input)  
Once locked onto signal, the blue led will be flashing at the true tacho speed.

### **REGULATOR TEMP.**

From a cold start the led will flash constantly until the thermocouple test is initiated .  
Led will stay on for the duration of the thermocouple test and after 2 beeps will return to flashing until the engine has reached the set water temp. (eg.40 degrees C)

If the engine water temp is above the set 40 degrees the blue led will be illuminated constantly.

### **LPG PRESSURE OK**

If pressure is within 'limits' the blue led will be illuminated constantly ( ideal 19 psi )  
If pressure is outside 'limits' the blue led will be flashing with 2 beeps for low and 5 beeps for high.

### **EXHAUST TEMP.**

Only the red led is illuminated if the exhaust temperature rises above the preset max. safe operating temperature. ( eg 550 degrees ) LPG injection is turned off.  
Normal operation resumes automatically once exhaust temperature decreases.

### **TUNE - INJECTION - LPG (set of 3 leds)**

At idle the set of 3 leds indicate the manual set level of LPG injection.  
The manual adjustment of the LPG TUNE trimmer corresponds to one of three combustion levels: emissions / economy / power

If the TUNE (1<sup>st</sup> Led) is on, the engine is running with base LPG Injection. (emissions)  
An increase in injection volume is indicated by 2<sup>nd</sup> or 3<sup>rd</sup> led. (economy or power)

All 3 leds are on during normal LPG Injection.

## Adjustment descriptions

### **LINK**

Connect / Insert the link to turn the buzzer on for audible indication of LPG Injection or diagnostics.  
Remove the link to switch the buzzer off.

### **SENSOR LOCK**

**Single Pulse-** Adjust fully **Clockwise** (1 Beep on power up)  
**Double Pulse-** Adjust fully **AntiClockwise** (2 Beeps on power up)  
Beeps/Chirps on power up will be before the Led & System Test

**Note:** Factory Set to Double Pulse.  
With START RPM fully Anticlockwise.

If Vehicle starts injecting at approx. 1800rpm or above, change SENSOR LOCK to **Single Pulse** (See above).  
Power OFF & ON again then fine tune START RPM to desired starting point of injection.

### **REG. TEMP**

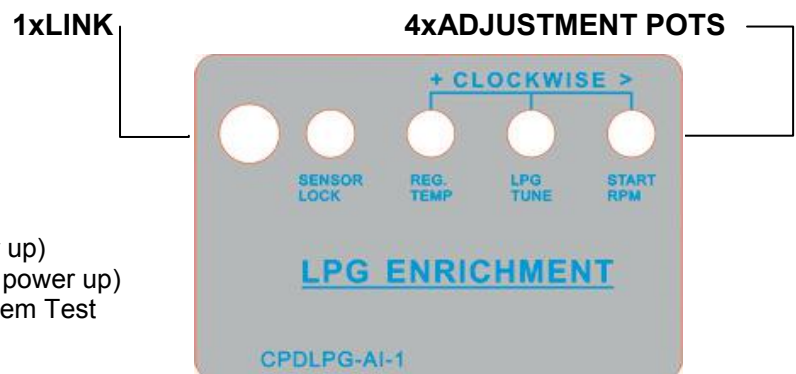
Adjust clockwise/anticlockwise to change the LPG regulator starting temperature.  
Anti-Clockwise = increase the starting temperature for LPG injection.

### **LPG TUNE**

Adjust clockwise/anticlockwise to increase or decrease the amount of LPG injected.  
Observe one of 3 leds to be on at idle. (LPG - INJECTION - TUNE)  
Clockwise = Increase milliseconds injection time.

### **START RPM**

Adjust clockwise/anticlockwise to set the starting RPM.  
Clockwise = Increase the start RPM for LPG injection.

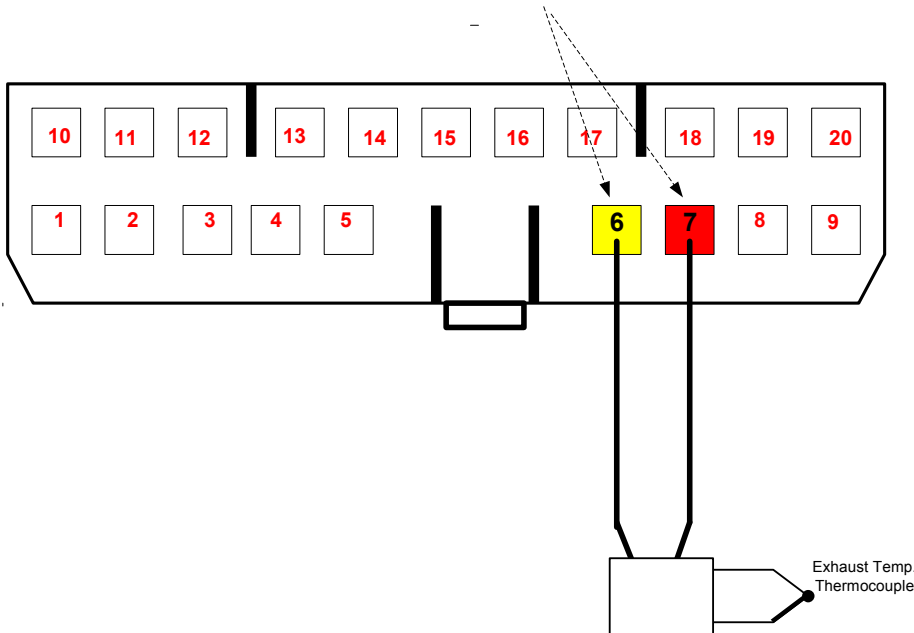


**THERMOCOUPLE installation**

**Insert wires**

Yellow Wire. PIN 6

Red Wire . PIN 7



- Mount Thermocouple in the manifold as close as possible to the engine for accurate Exhaust temperature Readings.  
Can also be mounted after Turbo, however take into account that EGT's can drop by some degrees.( Note \* )

Maintain a small amount of slack between the exhaust and the first chase fastening point in order to absorb vibrations. Confirm that the factory set spring loop is round and has an approximate diameter larger than 40 mm.

Please form the rest of the shielded pair gently avoiding sharp bends.

- Run the shielded pair of wires to the Loom connector and Insert terminals according to above diagram.

**THERMOCOUPLE Specification**

'K' Type Sensor max -1200 degrees Celsius  
Yellow is positive [ + ] Red is negative [ - ]  
Output in milivolts proportional to temperature  
(Certified Batch Calibration UKAS)  
Stainless Steel – Made In Australia

- Over-temp Limit is currently set at 530-580 degrees Celsius,
- The terminals can be used to monitor real time exhaust temperatures.

**Notes:**

( \* ) Take note that EGT's temperature can drop from engine Manifold to after the Turbo.  
eg. Patrol 4.2ltr 6cyl drops 50 degrees from manifold to after Turbo. This needs to be taken into account.

After the thermocouple mechanical installation it is recommended to check the diesel fuel exhaust temperatures under load and decide if 550 degrees is the correct limit to stop lpg injection.

## Signal Ground & Chassis Ground Testing

Please complete the following tests to confirm the signal ground is separate from all other grounds in the system.

1. Unplug the CPDLPG control box, take the signal ground terminal off the battery
2. Using a multi-meter test for continuity between the following:

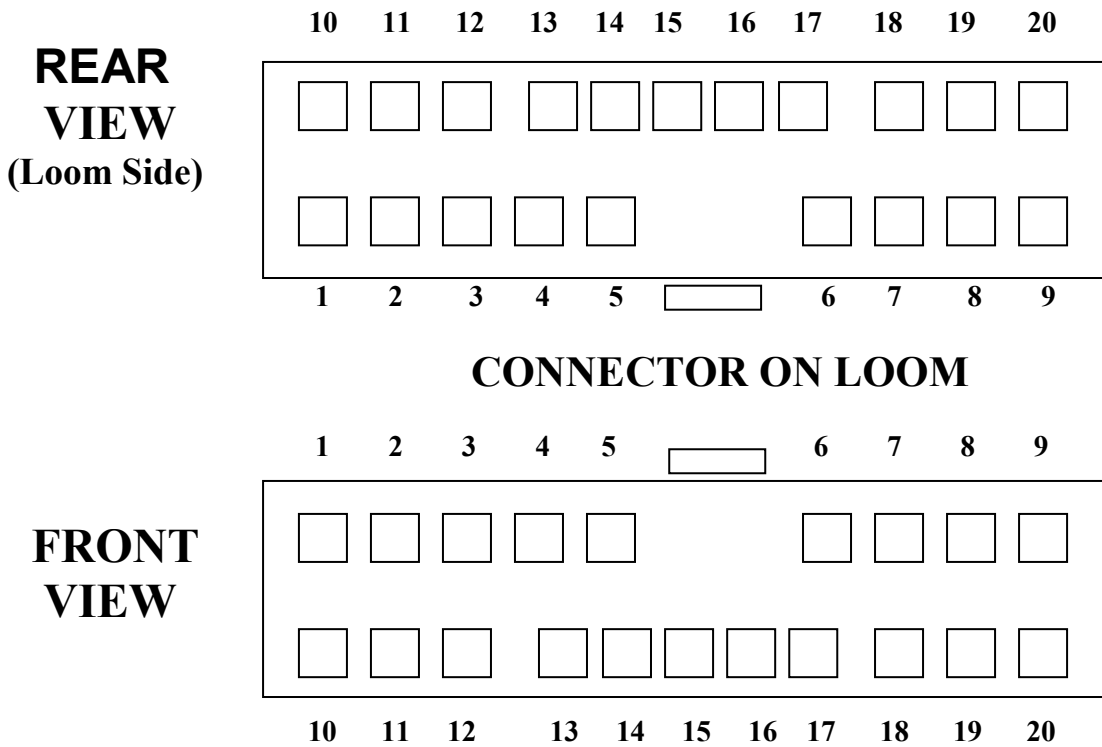
### Signal Ground Test

- a. Signal Ground terminal & Pins 4, 12, 19 on the DLPG loom plug
  - i. There should only be continuity on Pin 12

### Chassis Ground Test

- b. Chassis Ground & Pins 4, 12, 19 on the DLPG loom plug
  - i. There should only be continuity on Pin 19

3. If the above two tests are correct, connect the Signal Ground back to the Battery Negative Terminal & Continue Testing/Installation
4. If the above two tests are incorrect, the two ground circuits have been joined together somewhere in the wiring installation. Rectify the issues & complete the above test again.



**D LPG EVALUATION CHECKLIST AFTER INSTALLATION COMPLETE**

**DATE:** \_\_\_\_\_

**VEHICLE MAKE:** \_\_\_\_\_

**MODEL:** \_\_\_\_\_

**YEAR:** \_\_\_\_\_

**REG NO:** \_\_\_\_\_

**D LPG ECU Sno:** \_\_\_\_\_

**REGULATOR:** \_\_\_\_\_ ie. Dymco, Bosch etc.

**PRESSURE SENS:** \_\_\_\_\_ ie. Dymco, Bosch etc.

**SIGNAL GND CONTINUITY TEST**

**DONE:** \_\_\_\_\_

**LPG START RPM SET:** \_\_\_\_\_ **RPM**

**PRESSURE VOLTAGE AT IDLE:** \_\_\_\_\_ **V**

**PRESSURE VOLTAGE AT 2000RPM:** \_\_\_\_\_ **V**

**1. LPG OFF- HOLD FREE REV AT 1200RPM**

**2. TURN LPG ON -** **RPM INCREASE:** \_\_\_\_\_ **RPM**

**CHECK FOLLOWING FOR CONSISTANCY ON TEST DRIVE:**

**START/STOP RPM**

**BUZZER AUDIO PATTERN ACROSS RPM RANGE**

**POWER INCREASE AT CONSTANT SPEED WHEN SWITCH LPG ON**

**NO ALARMS OR WARNINGS AT IDLE**

**COMPANY/INSTALLER:** \_\_\_\_\_

**SIGN/INITIAL:** \_\_\_\_\_

**FOR FUTURE TECHNICAL SUPPORT**

**PLEASE FAX/EMAIL A COPY TO PEEL ELECTRONICS**

**FAX: 03 5975 6788**

**support@peelectronics.com.au**