The function of the ECU (*SIS and SIS PLUS*) is:

  a. to regulate the amount of LPG required by the engine
  b. to cut off the petrol supply
  c. to automatically cut off the LPG supply to the solenoid valves in case the engine fails or when it is turned off.

Apart from the above functions, which can be defined as "**engine control**", the ECU:

  ✓ controls the process of changeover between different working modes which is signalled by the LED and the buzzer on the changeover switch situated in the driver's compartment ("**changeover control**").

  ✓ controls the changeover settings and interfaces with the PC or palmtop.

1. Changeover control

1.1 Normal conditions

A car equipped with a gas system has the following working modes available under <u>normal</u> <u>conditions</u>:

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1. *petrol as the selected fuel* (constant LED) = **the engine is running on petrol**
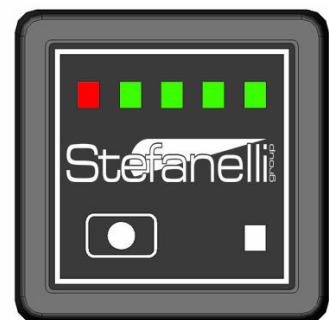
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2. *LPG as the selected fuel*:

A. **the engine is running on petrol** (flashing LED) **while getting ready to switch over to gas**

B. **the engine is running on LPG** (with the petrol LED off and the fuel level LED on)

1.1.1 Petrol/LPG & LPG/petrol changeover

The changeover from one mode to the other and vice versa is activated by simply pressing the switch on the driver's side and it is signalled by a sound impulse emitted by the buzzer.

➤ Fuel type selection: *from petrol to gas*

➤ Fuel type selection: *from gas to petrol*

The selected fuel remains memorized even when the ECU is not connected (when the car engine is turned off). At the moment of the ignition the engine switches to the previously memorized mode and **in any case it always starts on petrol in mode 1 or A**.
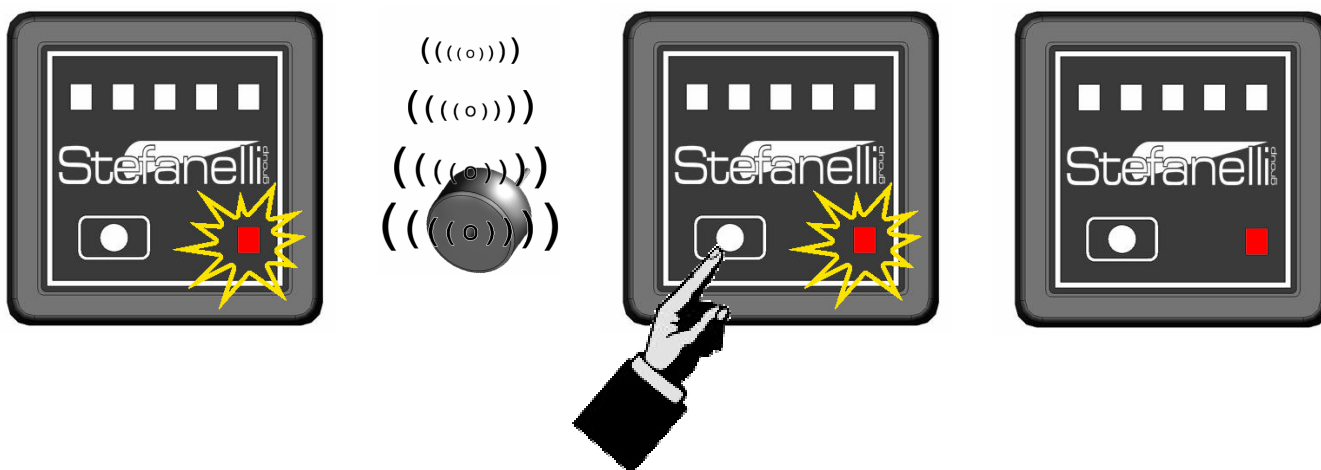
➢ **Petrol/LPG changeover**

The changeover from mode A to mode B is automatically controlled by the ECU and it is signalled by two sound impulses. Once LPG fuel has been selected, the ECU verifies the system status and when the system reaches the temperature and pressure values required, the ECU automatically activates the changeover from A to B.
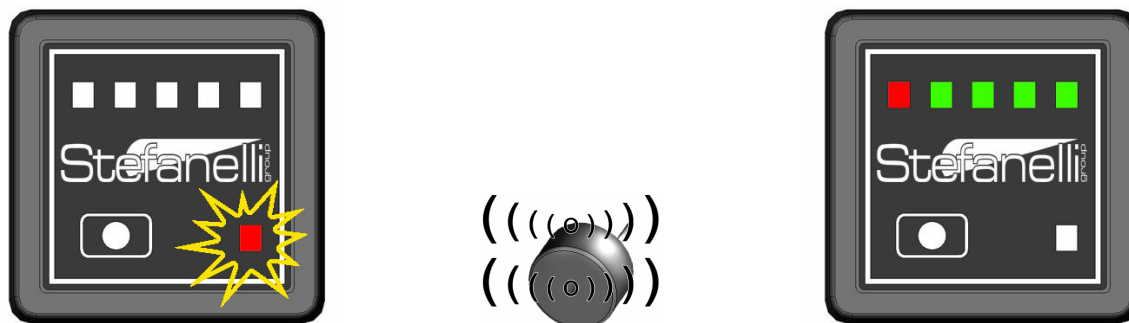
➢ **Pressure alarm**

If the pressure value required for the fuel changeover has not been reached, which indicates an alarm situation, the ECU forces mode 1. This type of changeover is signalled by the flashing LED and by a series of sound signals emitted by the buzzer until the driver pushes the switch to turn off the alarm.

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➤ **Automatic LPG/petrol changeover**

The changeover from mode B to mode 1, unless activated by the driver, is automatically operated by the ECU by means of temperature and alarm pressure value analysis (different from the previous ones) and it must be considered as an alarm situation (lack of gas or failed gasification). This type of changeover is signalled by the flashing LED and by a series of sound signals emitted by the buzzer until the driver pushes the switch to turn off the alarm.

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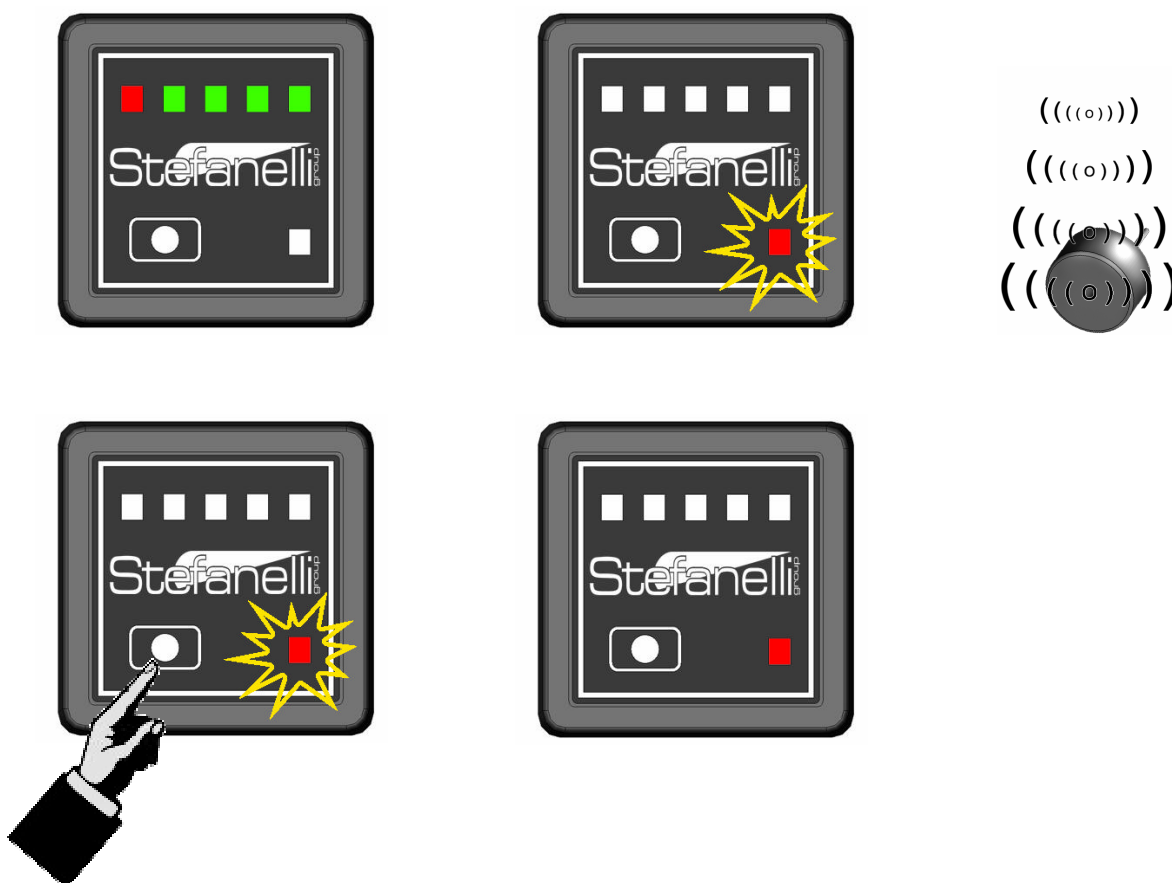
1.2 Emergency

This mode can be activated only by pushing the switch while starting the engine. It must be used only in case of emergency, for example, if the car has run out of petrol.

In such a situation the system status is not analyzed, that is to say, the changeover from the current mode to mode B is forced.

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