

# GSM Switch for Fuel Burning Heater and Cabin Heater

for Land Rover Discovery 3 and Range Rover Sport

MY2005 – MY2009



**This unit works only with High Line Air Conditioning!**



**This unit works only with factory fitted diesel Fuel Burning Heater!**



**Disclaimer - The manufacturer does not accept any responsibility or liability for damages incurred through use of this unit as this unit moves the vehicle beyond the original design parameters. This includes all damages to the vehicle itself, vehicle systems or property. This also includes injuries to the user or other persons.**

## Operation:

The unit contains a GSM switch and a microcontroller board, which drives the Fuel Burning Heater (FBH), the cabin blower and air distributor doors. The unit only works when the car is in „sleep”, it does not work when the ignition is ON.

When the master number (see installation guide) calls the unit the GSM switch will switch on and the unit hangs up (no cost call). The STA (Figure 1) light will be on for 2 seconds, at this point the unit checks that the doors are not open (if they are open it goes back to standby) and starts to communicate to the FBH. If the communication is not successful the unit goes back to standby. In case there is successful communication, the unit reads the temperature sensor and voltage sensor in the FBH. If the voltage sensor reads below 11.5V (i.e. battery voltage), the unit goes back to standby.

The temperature sensor data is used to calculate the duration of the FBH run. If the temperature reads above 5C the FBH runs for 25 minutes, if it is below -10C, it runs 40 minutes. If the temperature is between -10C and +5C, it runs between 40 and 25 minutes depending on the temperature. Please note the FBH temperature sensor not necessary shows the true outside temperature, it depends on when the car was switched off, how long ran and how long it is in sleep.

After reading the FBH temperature and voltage sensor, the unit clears all error in FBH and send a Power On command to FBH. The unit will monitor the FBH every 5 seconds for any error, if there is error message from the FBH, the unit goes back to standby. If no error, the FBH will run 10 minutes without the cabin heater being switched on.


After 10 minutes error free running of FBH, the cabin blower will switch on.



**This unit works only when the HVAC last position was in heating mode (Auto).**

Both the FBH and cabin heating will stay on until initial duration (time) will elapse. At this point the FBH will switch off and go into a “Cooling” cycle and the air and the blower will switch off. The unit will go back to standby.

The FBH/cabin heating can be stopped by calling the unit from the master number while the unit is in operation (i.e. FBH is on). In this case, the unit sends a Power Off command to FBH and moves the air and temperature blend doors to the standby position and switches off the blower (this can take 10 seconds). The unit stops the heating operation as soon as the cabin door is open. In this case, the unit sends a Power Off command to FBH and switches off the blower (this can take 10 seconds).

 **Do not put the key into the ignition still the blower is on. After opening the door it takes around 10 seconds to properly shut down the air and temperature blend doors and move them back to the standby position. If the ignition is switched on during this time, it can cause error in HVAC unit.**

 **Do not switch the unit on when the ignition is ON, this can cause error in HVAC.**

GSM FBH+ Cabin Heater Kit:



**Included:**

- 1 x GSM FHB Switch
- 1 x Wiring Harness
- 1 x Blank 9 pin Connector
- 1 x Fuse Tap + Round Connector
- 1 x 5A fuse
- 1 x FHB Pin (for pin 2)
- 1 x Grounding Lug

## Installation:



**Disclaimer - The manufacturer does not accept any responsibility or liability for damages incurred through use of this unit as this unit moves the vehicle beyond the original design parameters. This includes all damages to the vehicle itself, vehicle systems or property. This also includes injuries to the user or other persons.**



**Never insert or remove the SIM card from the unit when it is under power. It can damage the unit and/or the SIM card.**



**Make sure that the installation is done when the car is in “sleep”, and if necessary remove the battery cables.**

1, Install the SIM card in the unit, please do not force it. Maybe you have to jiggle it, but no need to force it (which can damage the unit and/or the SIM card). **SIM card PIN security must be turned off.**

2, The wiring harness is cut to provide the wiring for the unit if it is installed just above the pedals on the driver side (on or around the driver side closing trim panel).

3, Connect the 9 pin connector single wires (see Figure 3):

1, **White wire** goes to the car grounding point. The wire is cut to reach passenger side grounding point at the bottom of A pillar (side panel has to be removed), or can be grounded on the driver side. Use the grounding lug provided in the kit.

2, **Red/Yellow wire** goes to the Central Junction Box Fuse1 or Fuse12 (permanent +12V), by using the Fuse Tap included in the kit. Please note that, due to the LR fuse box design you have to install the Fuse Tap upside down (i.e. the wire goes upwards, not downwards), otherwise, the inline fuse will not work. The 5A fuse should be installed in the upper fuse holder of the fuse tap, you have to put in the original fuse too in the lower fuse holder of the fuse tap.

3, **Blue wire** goes to the footwell lamp connector and the Purple wire which goes to this connector (C076) has to be tapped and the blue wire should be joined with the purple wire (door opening signal).

4, Connect the 9 pin connector 5 wire harness (see Figure 4). All of the wires go to the Automatic Temperature Control Module:

1, **Green wire** goes to connector C1629 pin7 wire (light green/white). This wire has to be tapped and joined with **green** wire. Figure 4 (A).

2, **Yellow wire** goes to C1630 pin20 wire (light green/black). The car original wire has to be cut and the wire which goes to inside the car has to be joined with **yellow wire**. Figure 4 (B).

3, **Grey wire** goes to C1630 pin20 wire (see above). The cut wire, which goes to the connector, has to be joined with **grey wire**. Figure 4 (C).

Note: The cable metal shield is not connected to any wire, should be just cut away.

5, The unit 9 pin connector should be connected the wiring harness 9 pin connector. The unit SIG led (Figure 1) should flash 1 per second, and when the unit is connected to the GSM network the SIG led will flash only once every 4 seconds (it can take 30 seconds to connect to the network). At this stage the unit is in standby.

6, To teach the unit the master number(s), the SET button (Figure 1) should be pressed and released, the SIG light will rapidly flashes for 90 second. During this time the unit should be called from the master number (**caller ID must be turned on**). The unit will answer with a busy signal and the SIG led will stop flashing. The unit now remember the master number (5 master numbers can be programmed). The GSM unit can be reset by pressing the SW and SET buttons together and holding them for 8-10 seconds. After realizing the buttons, the STA light will flash twice slowly and all master numbers will be erased.

7, To try the unit wiring and master number setup, the 9 pin connector single black wire should be grounded.



**Do not ground the single black wire for more than 1 minute continuously!**

After grounding the black wire, the unit should be called from the master number. The call goes though and the unit answers it with a busy signal, the STA led should light up for 2 seconds and the cabin blower should come on and the air distribution doors will be “Face on” position. The blower will operate around 30 seconds. The blower strength can be adjusted with the potentiometer on the left hand side of the unit. To adjust the blower strength, use a small flat screwdriver and turn slowly clockwise to increase the blower strength, turn anti-clockwise to decrease it. It is recommended to set the blower to a gentle breeze, not to a full blast.

The “door opening stop” can be tried, by calling the unit again and when the blower is on, and the door gets opened (interior light should be on this point), the blower should stop. Please note the blower will not stop immediately, it goes through a shut down process which takes around 10 seconds (see operation instruction).

8, Now attach the **Black wire** to FBH. The Black wire goes to the Fuel Burning Heater (FBH) connector pin2 (see Figure 2). The wire should go through the car firewall (there is a grommet where the clutch piston gets the brake fluid from the brake reservoir, on automatic car this is just a grommet). On some car the pin2 is already inserted and wired (mainly on MY2005), in this case this wire (red) can be cut and joined with the black wire. If there is no pin in the connector, you have to insert it. The pin is attached in the kit.

9, After all wiring is connected, you can try to call the unit. The unit should operate as per operation guide. You can tie or stick the unit on or around the driver side closing trim panel securely.

10, When the unit is removed from the wiring harness, the car HVAC system will not work properly (some wire was cut!). If you remove the unit you have to connect the blank 9 pin plug (included in the kit) to the wiring harness, and the car HVAC will work.



**Make sure that the installation of the unit around the pedals and steering column will not hinder their operation and it is securely and safely installed!**

### **Specification:**

Operation voltage: 11-15 V

Standby current: 31mA

LxWxH: 10x6.5x3.5 cm

LxWxH with SIM card and wiring connector harness: 16.5x6.5x3.5 cm

GSM unit does not support with 3G or CDMA SIM cards.



Figure 1

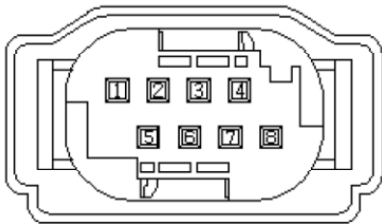
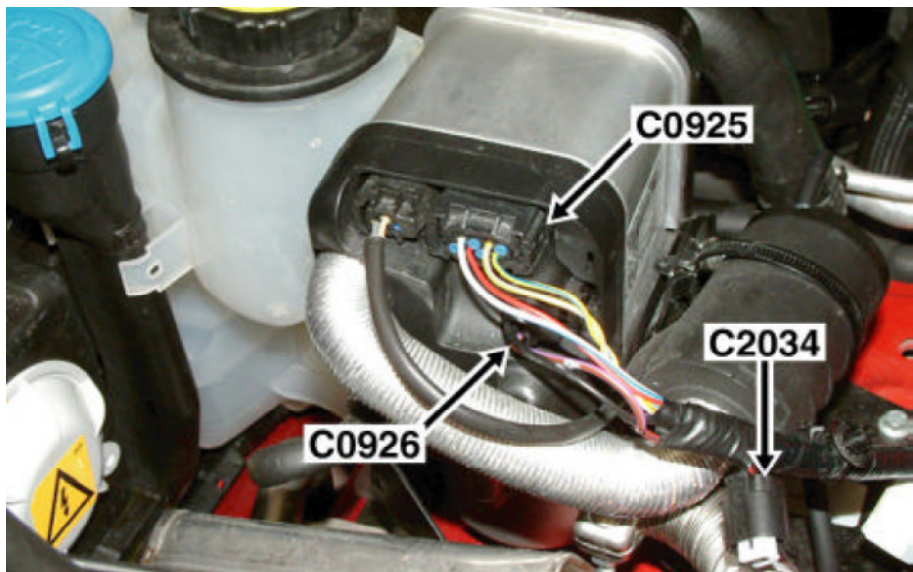


Figure 2

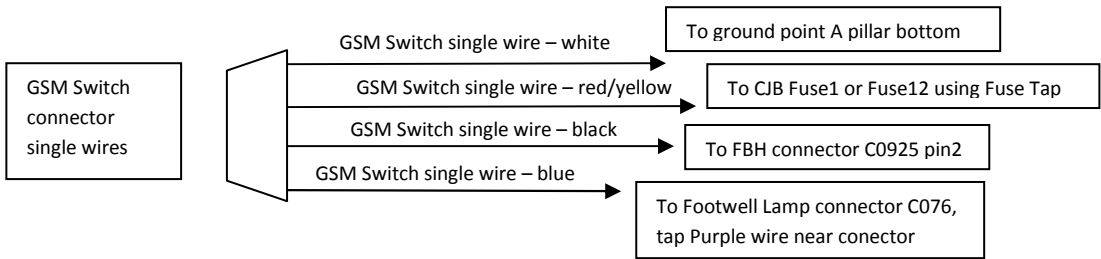
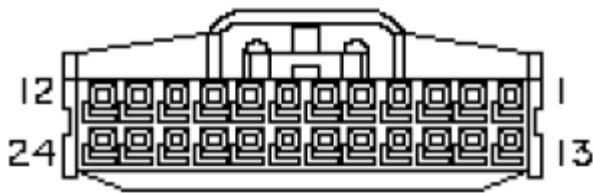
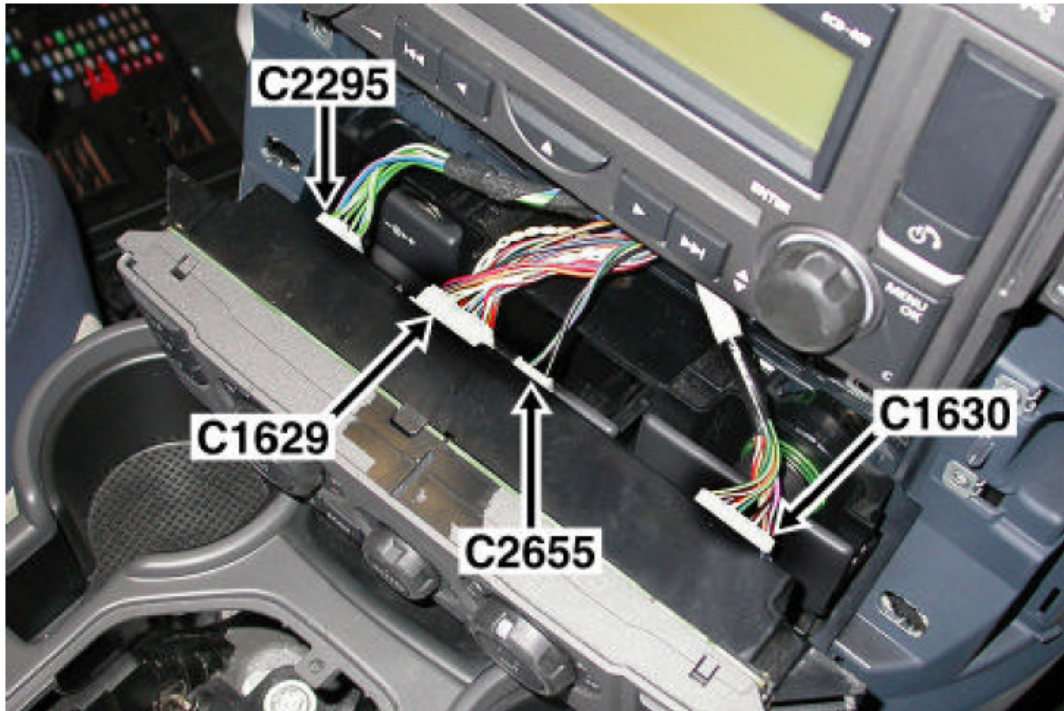
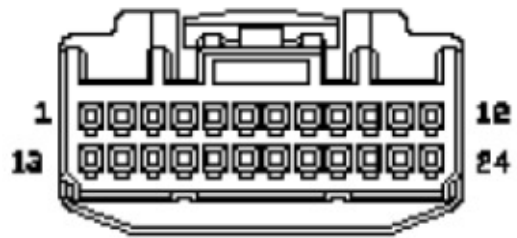


Figure 3



C1629



C1630

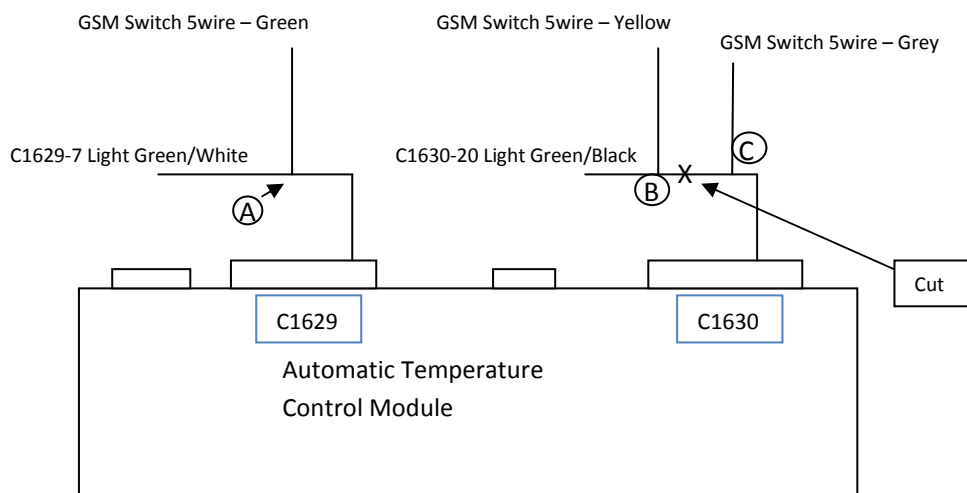


Figure 4