

Freelander 2 Fuel Tank System Diagnostic Aid

SSM is released to aid in achieving a right first time repair relating to fuel gauge/fuel system issues. The attached document collates known issues and assured VINS along with potential avenues for investigation and repair details.

Before any diagnostic work is carried out confirm all the relevant software updates have been applied to the vehicle prior to starting the investigation.

In markets that require the technician to manually select vehicle options, emission levels and market specification, confirm the options you are selecting are correct.

Petrol SI6 ECM DTC P0628 (Assured VIN H051069) LTB00094v2

If the DTC P0628 fuel pump circuit A failure is flagged confirm the ECM/DIM/CEM modules have up to date calibrations loaded. This fault code relates to the CEM cutting power to pump control module. The fault code is a result of security cross checking between modules failing and the CEM security shutting down the fuel pump. If all modules are loaded with up to date software and the fault still exists submit EPQR with session files. **DO NOT** replace fuel system components if this DTC is flagged.

(1) Fuel sender wiring connection under strain
(Assured VIN, Wiring under strain H060000)

OR

(2) Connector pin height too short
(Pin Height SSM37340 assured VIN H096931)

Cause - Erratic gauge/ loss of fuel pressure.



NOT OK

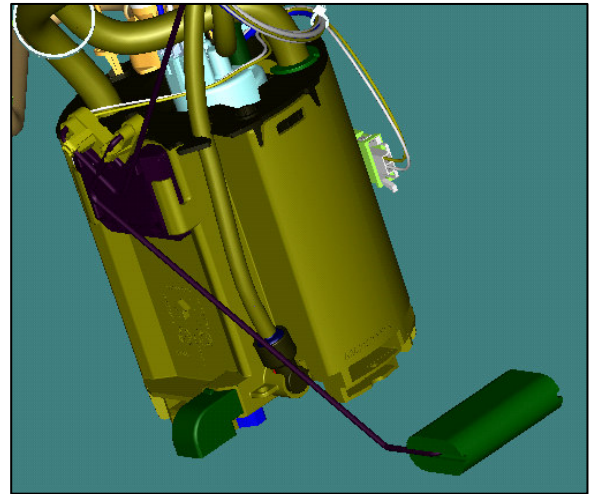
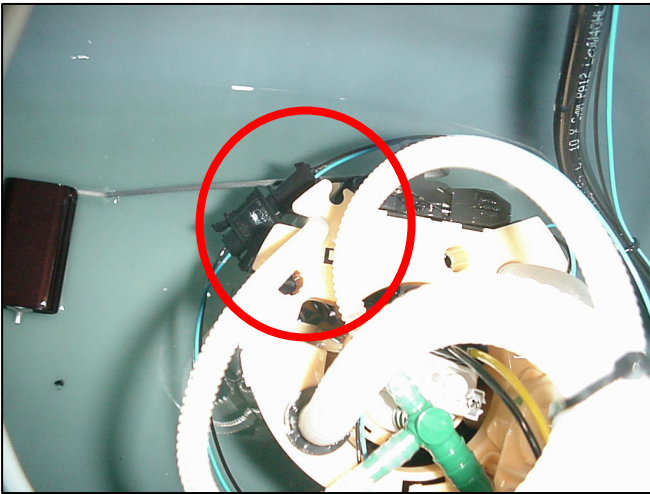


OK

1. Confirm wiring and connector are not under strain shown above. Later vehicles will have a dressed connector. Re routing earlier vehicles to the above condition will remove strain from the wiring.
2. Remove connector and confirm pin connectors are serviceable and retained in housing in correct position.
3. With ignition turned off and connector in place pull connector upwards to give worst case connection situation.
4. Turn on ignition , does the gauge drop to zero repeat several times.
5. If gauge reads incorrect/drops to zero carry out SSM 37340. Cycling the ignition will cause the gauge to update immediately with no damping delay.
6. IF no fault is found confirm connector is fitted and pushed fully home.

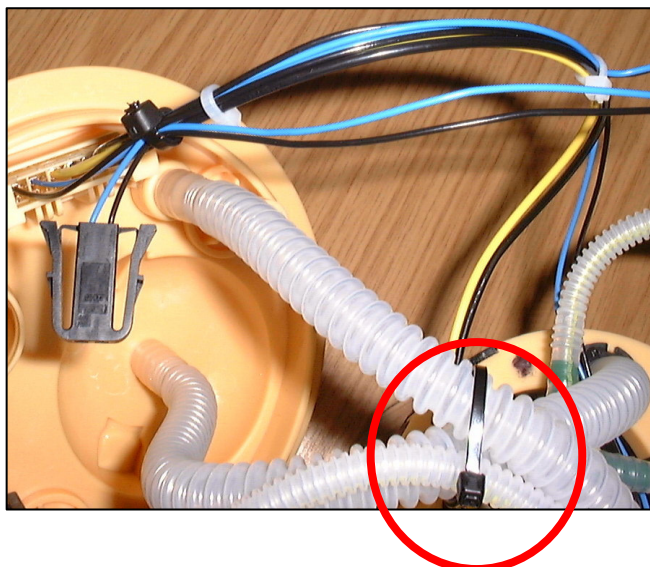
Erratic or incorrect reading fuel gauge (Fuel Sender Hang Up) (Assured VIN H045500)

1. If a customer reports an issue of incorrect fuel gauge reading or vehicle shows fuel on gauge but no fuel in tank. One potential cause can be the fuel sender has restricted movement due to touch condition with connector block as shown below.



Incorrect reading fuel gauge (Convolutated hose crushed) (Assured VIN H045000)

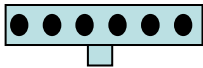
1. The tie wraps retaining the internal tank convoluted hoses are assembled too tight crushing the hose and preventing transfer of fuel from the passive to active side of the fuel tank.



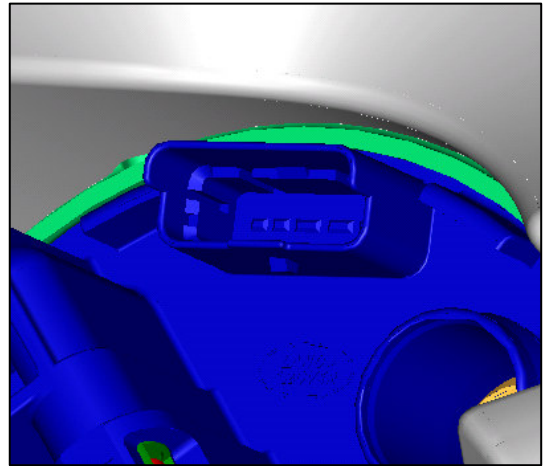
Checking Resistance of Fuel Senders

L359 Petrol Senders

6 5 4 3 2 1 = Pin numbers tank connector



1. Remote / Pump sender -ve
2. Pump sender +ve
3. Pump -ve
4. Pump +ve
5. Filter Earth
6. Remote Sender +ve



L359 Diesel Senders

1. Pump sender -ve
2. Pump sender +ve
3. Pump -ve
4. Pump +ve
5. Remote Sender -ve
6. Remote Sender +ve

Petrol

Test the remote sender by measuring resistance between pins 1 and 6.
Test pump side sender by measuring resistance between pins 1 and 2.

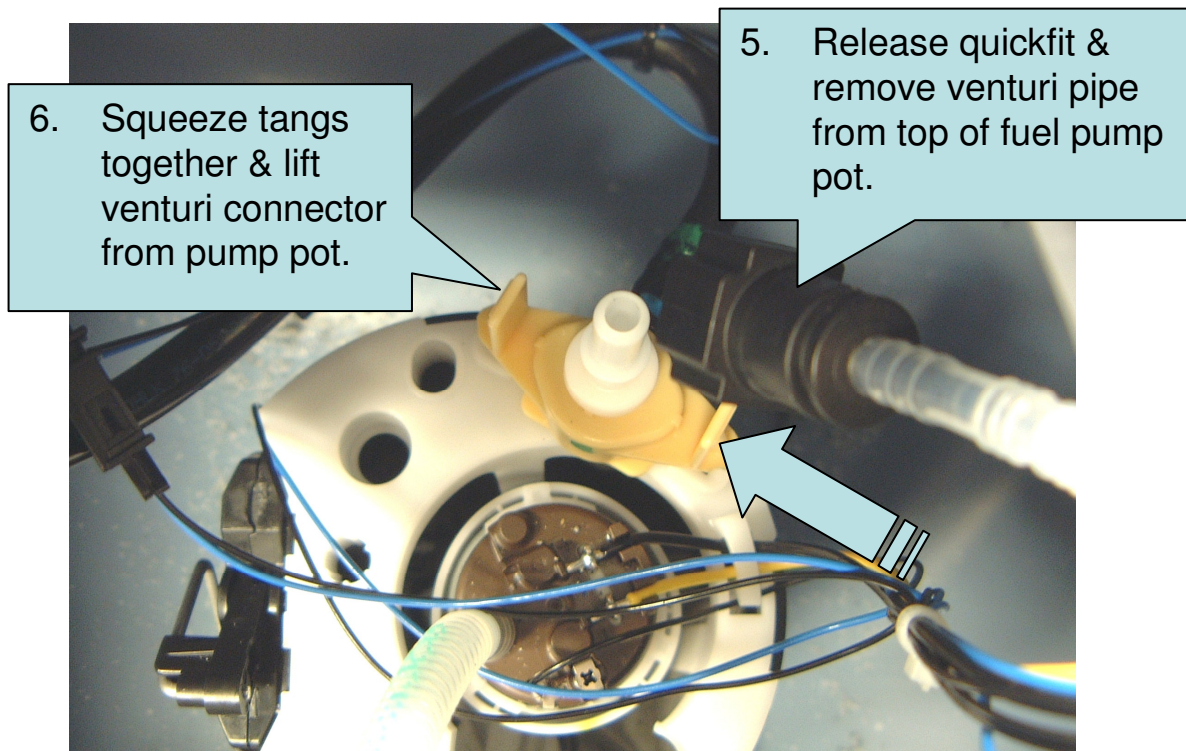
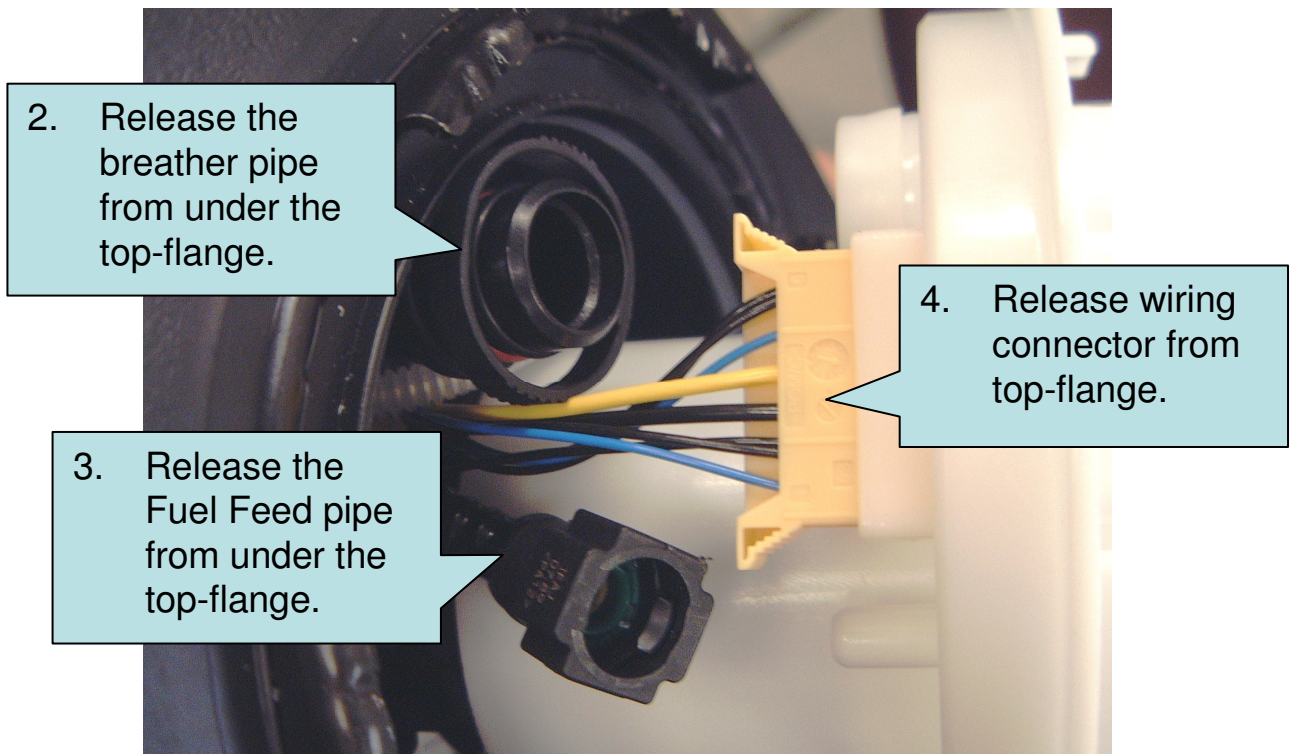
Diesel

Test the remote sender by measuring resistance between pins 5 and 6.
Test pump side sender by measuring resistance between pins 1 and 2.

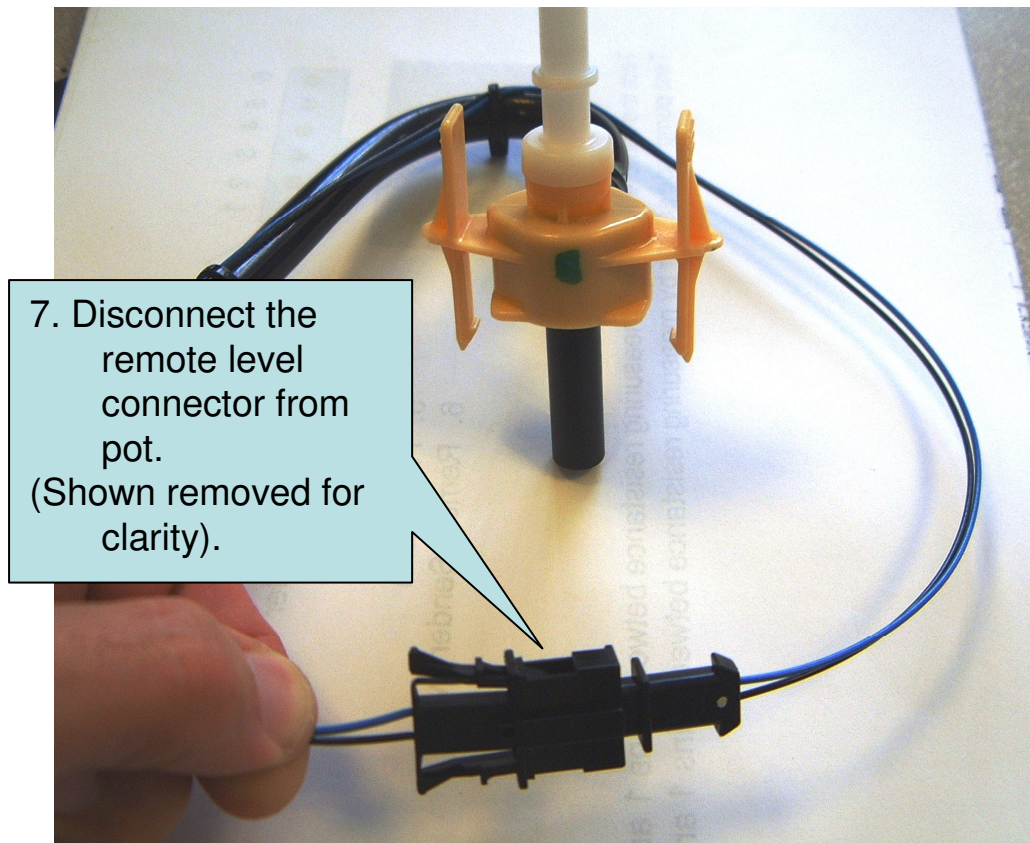
If measured resistances are between 50-1020 Ohms, the senders are within range. If not, remove the pump top flange & check the wiring inside the tank.

Petrol Pump & Sender Exchange

1. Remove locking ring and release the fuel pump top-flange.



Petrol Pump & Sender Exchange



8. Grasp pump pot and twist anti-clockwise to remove from tank.

Petrol Remote Sender Removal

9. See picture below. This task is easier using the left hand. The remote sender assy is retained by a tang (arrowed) under the pipe guide.
10. Reach into tank & locate the pipe guide attached to the centre bracket.
11. See arrow. Press the tang & rotate the arm down towards the pump pot. Then pull towards you to release the arm from the centre bracket.
12. Carefully withdraw and remove the arm out of the tank by sliding rearwards whilst turning through 180 degrees in an anti-clockwise direction.
13. Replacement is the reverse of the above. Care is essential to avoid bending the sender arms which can give false fuel level readings.
14. Further ensure that no pipes or wires obstruct free sender arm motion.

