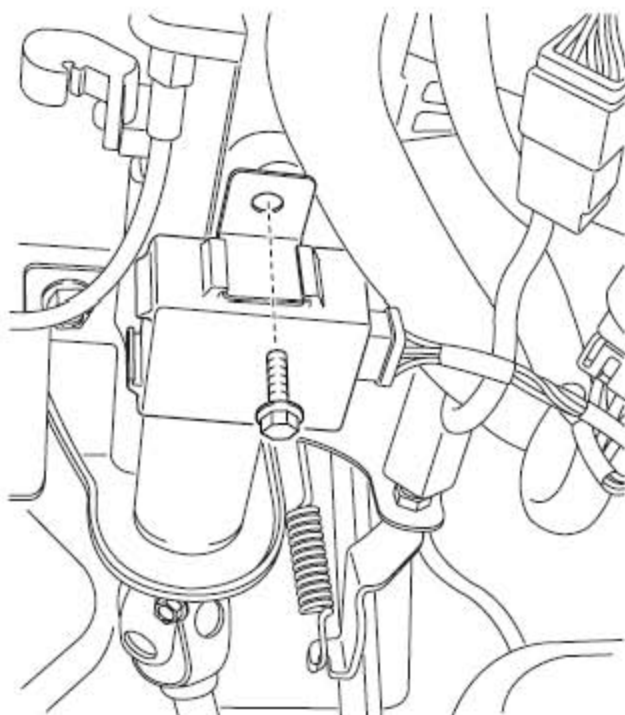


P1690 SMARTRA NO RESPONSE

COMPONENT LOCATION



GENERAL DESCRIPTION

The SMARTRA carries out communication with the built-in transponder of the ignition key. This wireless communication runs on RF (Radio frequency of 125 kHz). The SMARTRA is mounted at the ignition lock close to the antenna coil for RF transmission and receiving. The RF signal from the transponder received by the antenna coil is converted into messages for serial communication by the SMARTRA device. And the received messages from the ECM are converted into an RF signal, which is transmitted to the transponder by the antenna. The SMARTRA does not carry out the validity check of transponder or the calculation of encryption algorithm. This device is only an advanced interface, which converts the RF data flow of the transponder into serial communication to ECM and vice versa.

SMARTRA : SMART rAnsponder Antenna

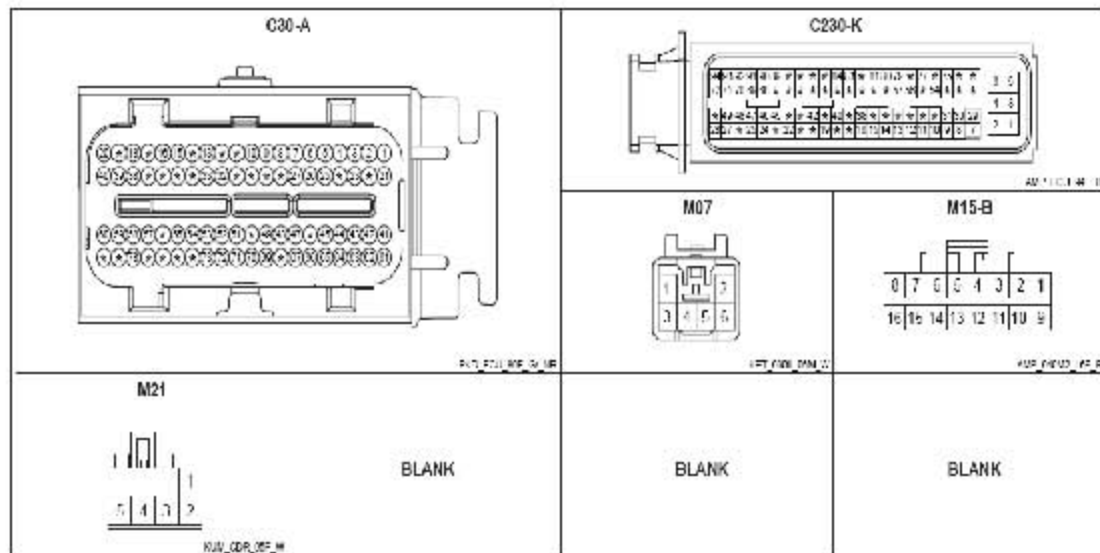
DTC DESCRIPTION

The ECM sets DTC P1690 if there's No Response from SMARTRA.

DTC DETECTING CONDITION

Item	Detecting Condition	Possible cause
DTC Strategy		<ul style="list-style-type: none"> • Open Circuit in signal harness • Short Circuit in signal harness • Faulty SMARTRA
Enable Conditions	• IG ON	
Threshold value		
Diagnostic Time		
Fail Safe		

SCHEMATIC DIAGRAM



1.1 CURRENT DATA	
01. NO. OF LEARNT KEY	1
02. ECU STATUS	LEARNT
03. KEY STATUS	LEARNT

Fig 1

Fig 1) The current data in abnormal state

4). Are "KEY STATUS" and "ECU STATUS" Parameter within specifications?

YES

Check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and then go to "Verification of Vehicle Repair" procedure.

NO

Go to "Inspection & Repair" procedure.

TERMINAL AND CONNECTOR INSPECTION

- 1). Many malfunctions in the electrical system are caused by poor harness and terminals. Faults can also be caused by interference from other electrical systems, and mechanical or chemical damage.
- 2). Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage.
- 3). Has a problem been found?

YES

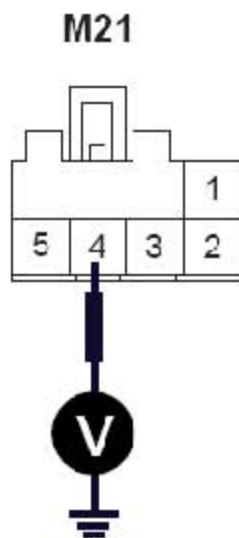
Repair as necessary and go to "Verification Vehicle Repair" procedure.

NO

Go to "W/Harness Inspection" procedure .

POWER SUPPLY CIRCUIT INSPECTION

- 1). Check for open in harness
 - A) Ignition "OFF"
 - B) Disconnect SMARTRA.
 - C) Ignition "ON" & Engine "OFF"
 - D) Measure voltage value between terminal "4" of SMARTRA and chassis ground.



1. Coil antenna
2. Coil antenna
3. Ground
4. **Power**
5. Signal

- E) Is the measured voltage within specifications?

YES

Go to "Signal circuit Inspection" procedure

NO

Check for open or short in harness. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

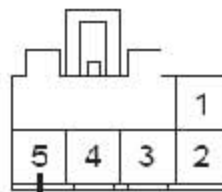
SIGNAL CIRCUIT INSPECTION

- 1). Check for open in harness
 - A) Ignition "OFF"
 - B) Disconnect SMARTRA.
 - C) Measure resistance between terminal "5" of SMARTRA and terminal C30-A-45(Gasoline) or C230-K-47(Diesel)

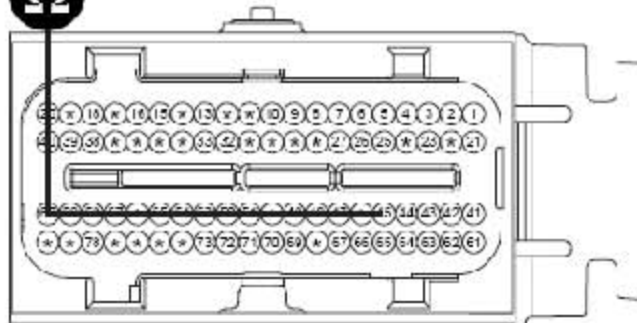
Specification : 1 Ω or less

[Gasoline]

M21



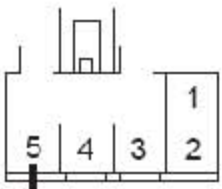
1. Coil antenna
2. Coil antenna
3. Ground
4. Power
5. Signal



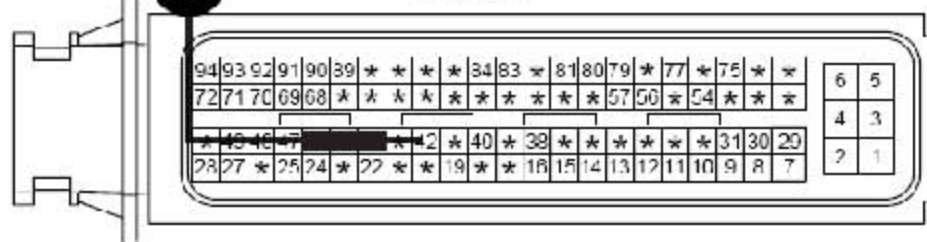
C30-A

[Diesel]

M21



1. Coil antenna
2. Coil antenna
3. Ground
4. Power
5. Signal



C230-K

D) Is the measured resistance within specifications?

YES

Go to "Check for short in harness" procedure.

NO

Check for open in harness. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

- 2). Check for short in harness
 - A) Ignition "OFF"
 - B) Disconnect SMARTRA.
 - C) Ignition "ON" & Engine "OFF"
 - D) Measure voltage value between terminal "5" of SMARTRA and chassis ground.

Specification :Approx. 5.48V



- E) Is the measured voltage within specifications?

YES

Go to "Signal circuit Inspection" procedure

NO

Check for short in harness. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

GROUND CIRCUIT INSPECTION

- 1). Check for open in ground harness
 - A) Ignition "OFF"
 - B) Disconnect SMARTRA.
 - C) Measure resistance between terminal "3" of SMARTRA and chassis ground.



D) Is the measured resistance within specifications?

YES

Check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and then go to "Verification of Vehicle Repair" procedure.

NO

Check for open in harness. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

VERIFICATION OF VEHICLE REPAIR

After a repair, it is essential to verify that the fault has been corrected.

- 1). Connect scantool and select "Diagnostic Trouble Codes(DTCs)" mode and then clear DTC.
- 2). Operate the vehicle and monitor the DTC on the scantool.
- 3). Are any DTCs present?

YES

Go to the applicable troubleshooting procedure.

NO

System is performing to specification at this time.