P1693 TRANSPONDER NO RESPONSE ERROR / INVALID RESPONSE

COMPONENT LOCATION

GENERAL DESCRIPTION

1). During the key teaching procedure the transponder will be programmed with vehicle specific data. The vehicle specific data are written into the transponder memory. The write procedure is unique; therefore the content of transponder can never be modified or changed. The data are a string of 9 bytes defined by vehicle manufacturer. The transponder memory is split into two strings called authenticator and key password After this programming the transponder memory is locked and the data(PIN code) cannot be read or changed respectively. The transponder status changes from "virgin" to "learnt". Additionally every transponder includes a unique IDE (Identifier number) of 32 bit. Unique means that the IDE of all transponder is different from each other. The IDE is programmed by the transponder manufacturer and is a read-only value. The authenticator and the key password are not transferred from ECM to transponder or vice versa. Only the results from the encryption algorithm are transferred. It is almost impossible to calculate the vehicle specific data from the encryption result.

2). For teaching of keys and special purposes the ECM is connected to the tester device.

3). When IG is ON, the coil supplies energy to the transponder which in turn accumulates energy in the condenser. Once the energy supply from the coil has stopped, using the stored energy in the condenser, the transponder transmits the ID CODE (stored within the ASIC).
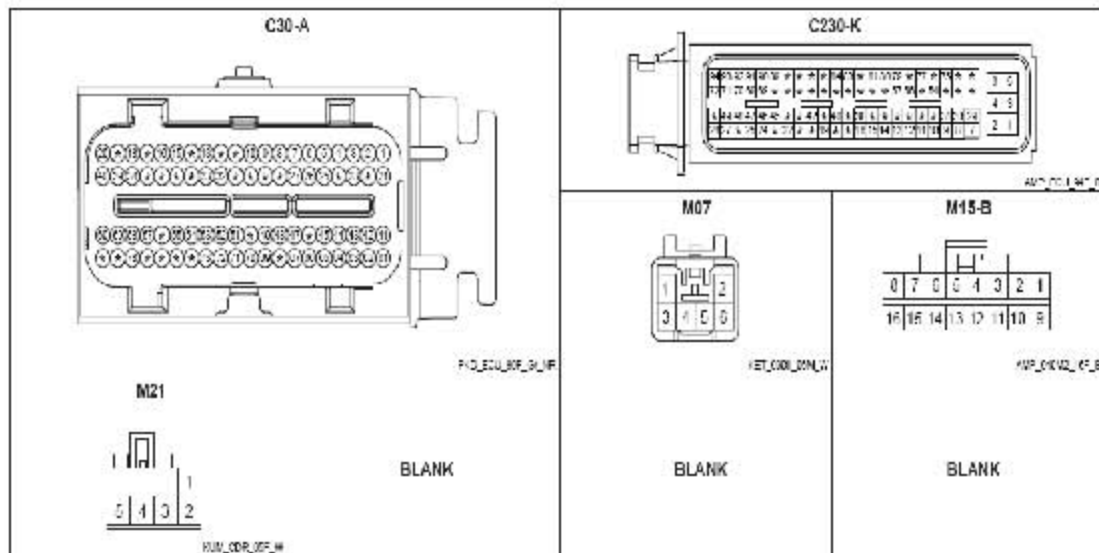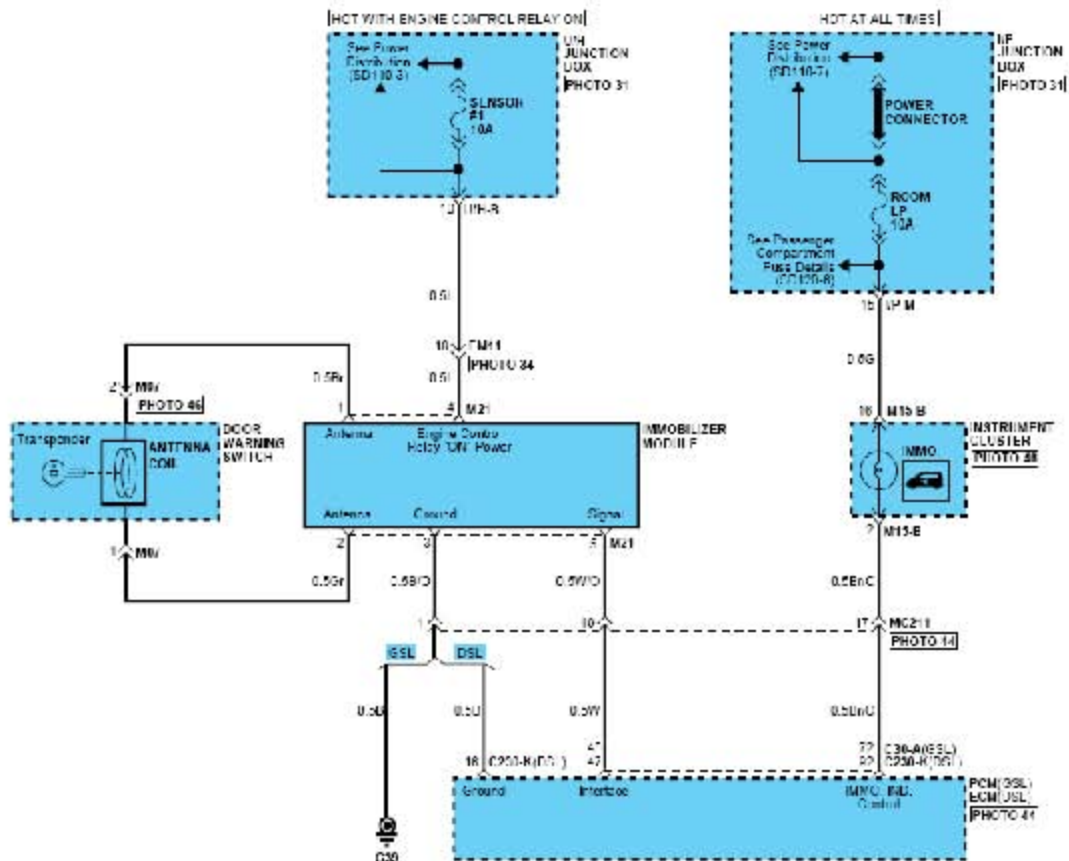
DTC DESCRIPTION

The ECM sets DTC P1693 if there's abnormal response from transponder.

DTC DETECTING CONDITION

Item	Detecting Condition	Possible cause
DTC Strategy		• Corrupted data from Transponder
Enable Conditions	• IG ON	
Threshold value		• More than one TP in the magnetic field
Diagnostic Time		
Fail Safe		• No TP(Key without TP) in the magnetic field

SCHEMATIC DIAGRAM

COMPONENT INSPECTION

1). Check transponder and ECU status

    A) IGN "ON" & Engine "OFF".

    B) Monitor the "KEY STATUS" and "ECU STATUS" Parameter on the
       Scantool.

Specification :'LEARNT'

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┌─────────────────────────────────────────┐
│            1.1 CURRENT DATA              │
│  ┌────────────────────────────────┐  ▲  │
│  │ 01. NO. OF LEARNT KEY    1      │     │
│  │ 02. ECU STATUS          LEARNT  │     │
│  │ ███████████████████████████████ │     │
│  │ 03. KEY STATUS          LEARNT  │     │
│  │                                 │     │
│  │                                 │     │
│  │                                 │     │
│  │                                 │  ▼  │
│  └────────────────────────────────┘     │
│   FIX   SCRN   FULL   PART  GRPH  HELP   │
└─────────────────────────────────────────┘
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Fig 1

Fig 1) The current data in abnormal state

    C) 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 "Check transponder" procedure.

2). Check transponder
    A) IGN "ON" & Engine "OFF"
    B) Neutralize ECM and Register transponder key by scantool.

NOTE
Pin code is requied to Neutralize ECM and to Register transponder key.

    C) Are Neutralizing and Registering completed normally?

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

Substitute with a known-good transponder and check for proper operation. If the problem is corrected, replace transponder and then 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 selet "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.