GH, BH, HM FOB HOLDER Manual

Continental Automotive
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Contents list

1   ABBREVIATIONS AND DEFINITIONS

Abbreviations	Description
FH	Fob-Holder
HF	High Frequency
IC	Integrated Circuit
IPM	Instrument Panel Module
LF	Low Frequency
PCB	Printed Circuit Board
PDM	Power Device Module
PIC	Personal Identification Card

2   GENERAL DESCRIPTION

The Fob Holder is a part of the locking system. It is the interface towards the user to start/stop the vehicle. It consists of the Fob-Holder (FH) incl. the transponder for the Limp Home Mode communication.

For starting the engine two operation modes are available:

1) PIC-Mode
   The Fob Key has not to be inserted into the Fob-Holder, the authentitication is done directly by request of the IPM to the Fob Key via LF-signal and response of the Fob Key to the IPM via RF-communication.

2) Limp Home Mode
   If the Fob battery is low the car can only be started by identifying the Fob transponder, therefore the Fob Key has to be inserted into the Fob-Holder.

The Fob Holder has the following basic functions:

Fob-Holder:
- Communication to the Fob Key transponder (only for Limp Home Mode)
- Hold the Fob and keep it in locked position
- Illumination of the Fob-Holder
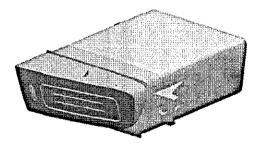- Rotational damper for better comfort behaviour when releasing the FOB

Figure 1   Fob-Holder

3 FUNCTIONAL DESCRIPTION

The Fob-Holder is the interface between driver and other body electronic modules.

The Fob-Holder has an integrated coil and the driver to communicate with the transponder by a 125 kHz LF electromagnetic field. The coil is placed in such a manner as to achieve sufficient coupling with the transponder coil in the Fob Key (coupling factor $\geq$ 1.0% in locked position).The PDM authenticates the Fob Key transponder through the Fob-Holder. The communication between Fob-Holder and PDM is via one wire Interface to the PCF Base station IC.

3.1 FOB-HOLDER OPERATION PROCEDURE

User action	Technical response
The Fob Key has to be inserted into the Fob-Holder; it will be kept in position removable	No response it this position
The Fob Key has to be pushed in (nominal 5mm stroke) against a spring force until stop and released with a linear spring force of xx N (tbd.)	Fob Key-In-switch is closed; Fob is in locked position
The Fob Key has to be pushed again against a spring force until stop	Fob Key gets unlocked
The Fob Key gets pushed back smoothly by spring tension together with an additional rotational damper with a speed of xx mm/min. (tbd.)	

When the Fob Key is in locked position the locking mechanism of the Fob Holder must withstand a force of min. 100 N when the force is applied to the key ring of the Fob Key.

The Fob Key is locked inside the Fob-Holder mechanically, so it can be removed even if the battery power is low. An extraction of the Fob Key while driving is possible.

3.2 TRANSPONDER AUTHENTICATION

The Fob-Holder has an integrated coil to communicate with the transponder. On the Assy PCB the Base station IC PCF7991 is placed. This IC demodulates the 125 kHz signal from the transponder. The 킬 is located in the IPM and communicates with the Base station via the SPI Interface of the PCF 7991.

Continental Automotive systems Corp.

FCC Compliance Statement.

> **This device complies with part 15 of the FCC Rules.**
> **Operation is subject to the following two conditions :**
> **(1) This device may not cause harmful interference, and**
> **(2) This device must accept any interference received, including interference**
> **that may cause undesired operation.**

Do Not.

Any changes or modifications to the equipment not expressly approved by the party
responsible for compliance could void user's authority to operate the equipment.