

2018.12.26

| Prepared(작성) | Reviewed(검토) | Approved(승인) |
|--------------|--------------|--------------|
| Bae wonsik | | |

Revision History

| Rev. | 날짜 | 수정 내용 | 담당 |
|------|------------|---------------|------------|
| 1.0 | 2018.12.26 | First Release | Bae wonsik |
| | | | |
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1. Synopsis

This document is specifically-written manual for receiver and transmitter (SMART KEY FOB) of wireless communication, which is to confirm user identifications under engine-start limiting function in heavy equipments.

SMART KEY FOB is defined as following: it receives signals with RFID 133 kHz and wakes up. After then, it transmits password-secured information to SMART KEY CONTROLLER by using 433MHz wireless signals.



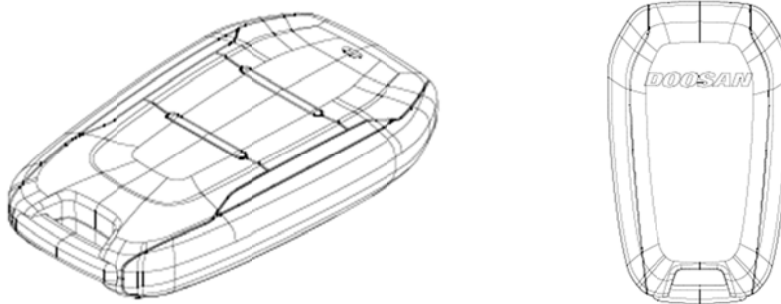
WARNNIG

Exchanging batteries in incorrect way, It may cause explosion

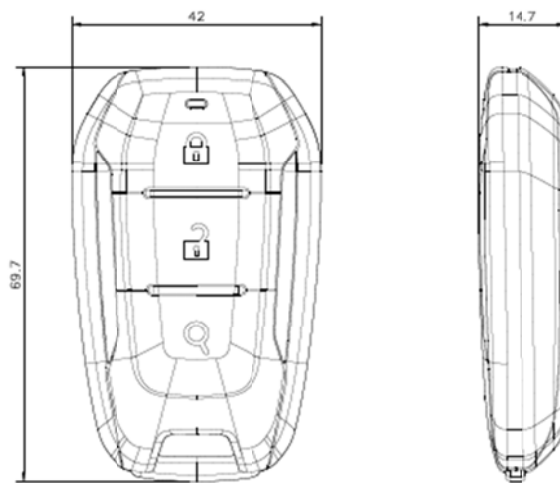
Discard used batteries according to manufacturer's instructions

2. Product Image

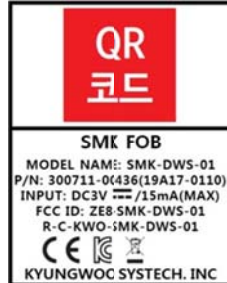
1) External Appearance



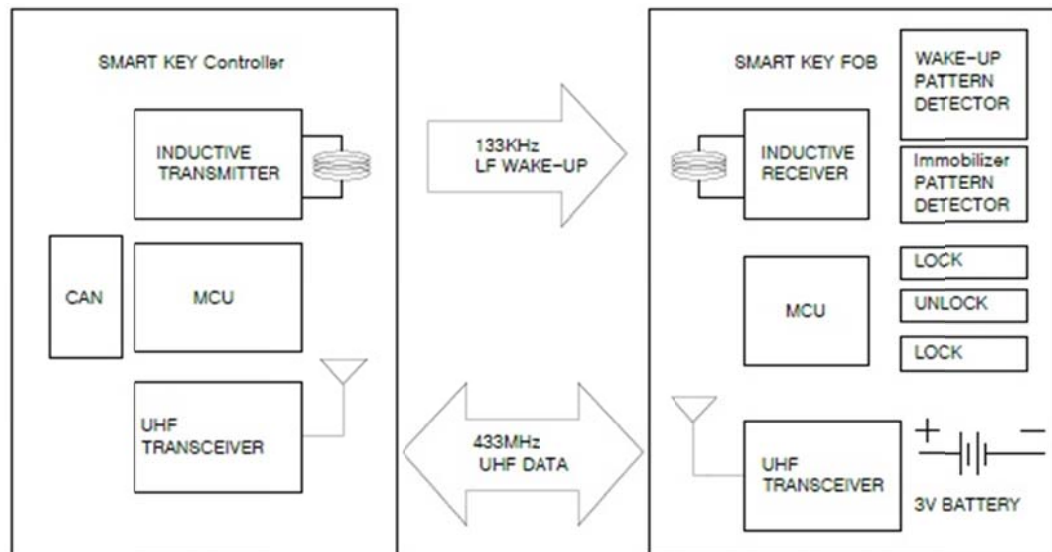
2) Dimension



3) Certification LABEL location



4) Block Diagram



4. Specification

4.1. Operating Specification

- Must wake up the remote control by providing electricity with RFID 133 kHz.
- Must be operating with CR2032 battery.
- Must be able to transfer password-secured signals.
- Must be able to use Single channels band of 433MHz.


4.2. Power Specification

- 3 V d.c. (CR 2032 Lithium Battery)
- Notice : Inserting opposite polarity of battery may cause explosion or damage to product

(Please match battery polarity with battery holder)

4.3. General Specification




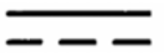
- Storage Temperature: -30℃ ~ 80℃
- Operating Temperature: -20℃ ~ 60℃
- Water-Proof Specification: IP54 (Living Water-Proof)
- Material of Device : PC (Material: 1220r, Flame Class : V2, Manufacturer : Lotte Chemical)
PC&ABS (Substance : LUPOY GN-5001RF BLACK, Flame Class : V0, Manufacturer : LG CHEMICAL)
TPE (Material: TC5MGA-S340)
ZNP (Material: 하급아연괴 DC2, Manufacturer : (주)영풍)
- PCB Material :

| object/part No. | manufacturer/ trademark | Layer /Thickness | Flame Class | standard | mark(s) of conformity ¹⁾ |
|--------------------|----------------------------|---------------------|-------------|----------|---|
| SMK TAG B/D PCB | JM ELECTRONICS CO LTD | 2Layer /0.8T | V-0 | UL 796 |  |

4.4 RF Specification

| Item | | Specification |
|--|---------------------|-----------------------------|
| Wireless Data Communication System | Frequency Range | 433.050 MHz ~ 434.790 MHz |
| | Operating Frequency | 433.92 MHz (Single Channel) |
| | RF Power | Under 1 mW |
| | Modulation Method | GFSK |
| Magnetic Induction System | Operating Frequency | 133 KHz (Single Channel) |
| | RF Power | Receive Only |
| | Modulation Method | ASK |

4.5. Product label Explanation of graphic symbols used

| Symbol | Description |
|---|--|
|  | Korea Certification Marking |
|  | Communaute Europeenne Marking |
|  | Electrical waste and electronics equipment |
|  | Direct current |

5. Postal address:

Kyungwoo Systech, Inc. Office: +82-2-985-8085

#401, Daeryung Post Tower 5, 68, Digital-ro 9, Geumcheon-gu, Seoul, South Korea

Zip Code: 08512, E-mail: Webmaster@kyungwoo.com

This equipment is not suitable for use in locations where children are likely to be present.

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.

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

RED Compliance Statement

This product is CE marked according to the provision of the RED (2014/53/EU). Hereby Kyungwoo Systech, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU