

CONTROLLER-SMART KEY

User' Manual

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Revision History

Rev.	날짜	수정 내용	담당
1.0	2025.12.03	First Release	Ko Junyong

– Contents –

Revision History

- 1. Synopsis**
- 2. Product Image**
- 3. Block Diagram**
- 4. Specification**

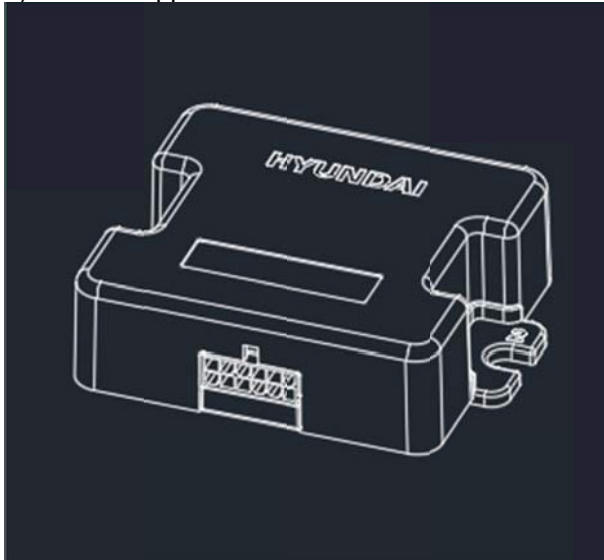
1. Synopsis

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

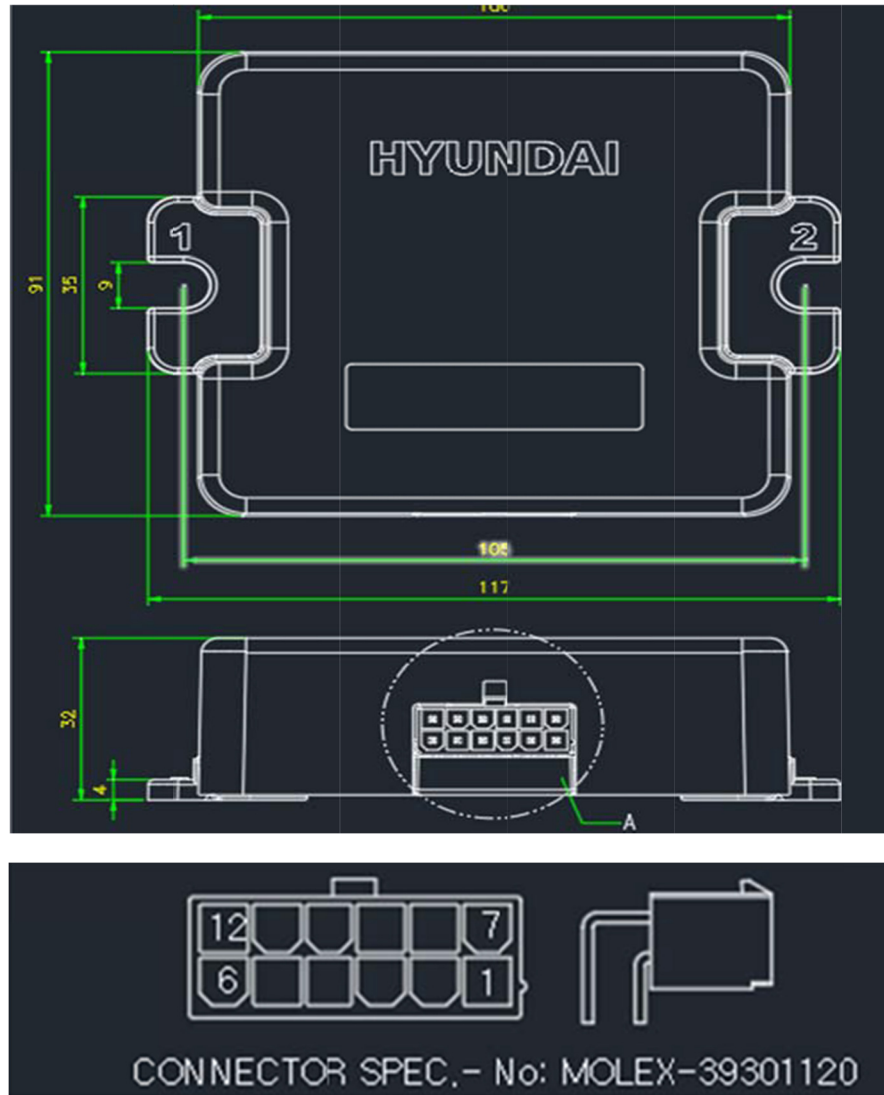
CONTROLLER-SMART KEY is defined as followings; CONTROLLER-SMART KEY transmits a signal pattern by RFID 125 KHz in order to wake up Flipkey Tag. And then CONTROLLER-SMART KEY communicates with Flipkey Tag by 433.95 MHz wireless signal. CONTROLLER-SMART KEY decodes password-secured signals and transfer identification information to certification device which has a function of engine-start limiting, such as Cluster, MCU or ECU, with using CAN protocol

2. Product Image

1) External Appearance

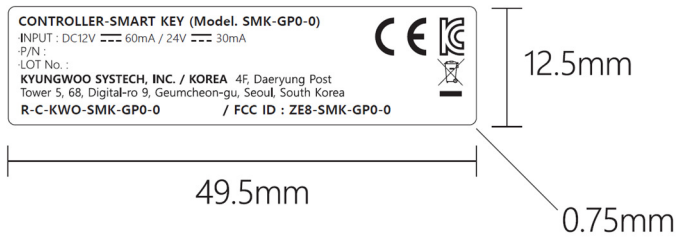


2) Dimension

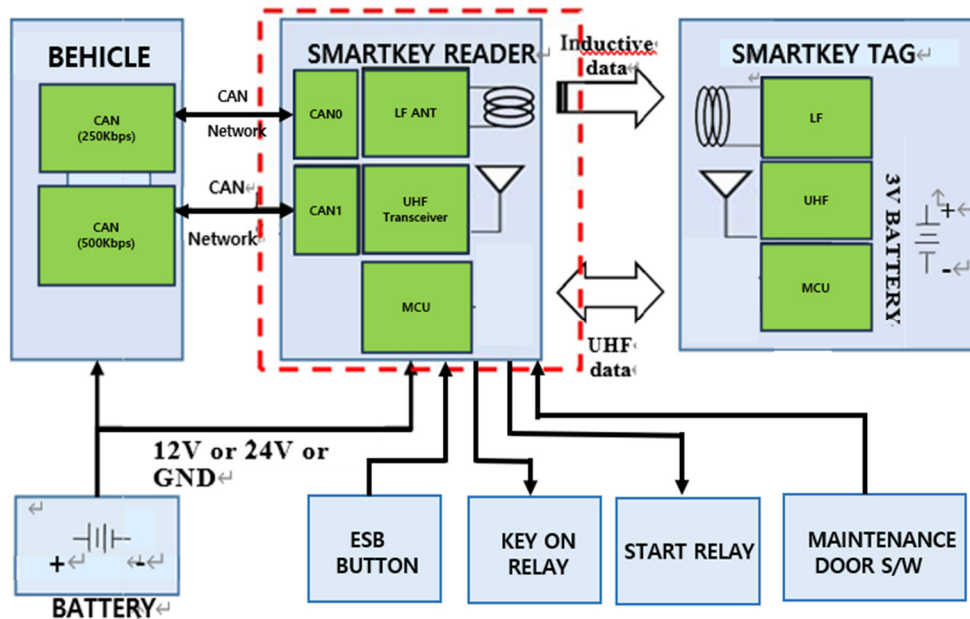


구분	No.	NAME	신호	No.	NAME	신호
CN1	1	12/24V	-	7	ESB BUTTON SIGNAL	-
	2	GND	-	8	ESB ILLUMINATION(5V)	-
	3	CAN (250K)	HIGH	9	GND	-
	4	CAN (250K)	LOW	10	KEY ON RELAY	OUTPUT
	5	CAN (500K)	HIGH	11	START RELAY	OUTPUT
	6	CAN (500K)	LOW	12	MAINTENANCE DOOR S/W	INPUT

3) Certification LABEL location



3. Block Diagram



4. Specification

4.1. Operating Specification

- Must transmit a signal of RFID 125 KHz as a wake up pattern signal.
- Must be activated from 12 Vdc/24 Vdc external voltage supply.
- Must be able to analyze the password-secured signal.
- Must be able to use Single channels with band of 433.95MHz.

4.2. Power Specification

- Rated Voltage: 12V --- (Max 30mA) / 24V --- (Max 15mA) both available

4.3. General Specification

- Storage Temperature: -40°C ~ 85°C
- Operating Temperature: -30°C ~ 75°C
- Communication with equipment: CAN 250Kbps/500Kbps
 (*It is recommended to use twist shield cable and should be connected through a short distance as possible.)

- . Material of Device: PC
(Substance: 3025N1, Flame Class: V0, Manufacturer: SAMYANG)
- . PCB Material

Object/part No.	Manufacturer/trademark	Type/model	Technical data	UL No.	Mark(s) of conformity ¹⁾
CONTROLLER-SMART KEY B/D PCB	JM ELECTRONICS CO LTD	D	V-0 ; 105°C	E117655	JM 

4.4 RF Specification

Item		Specification
Wireless Data Communication System	Frequency	433.95MHz (Single Channel)
	RF Power	Under 1mW
	Modulation Method	GFSK
	Tested Temperature	-30 ~ +75°C
Magnetic Induction System	Frequency	125KHz (Single Channel)
	RF Power	Under 105 dBμv/m @ 3 meter
	Modulation Method	ASK

4.5. Product label E planation of graphic symbols used

Symbol	escription
	Korea Certification Marking
	Communaute Europeenne Marking
	Electrical waste and electronics equipment
	Federal Communication Commision Marking
	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
 E-mail: Webmaster@kyungwoo.com

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.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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