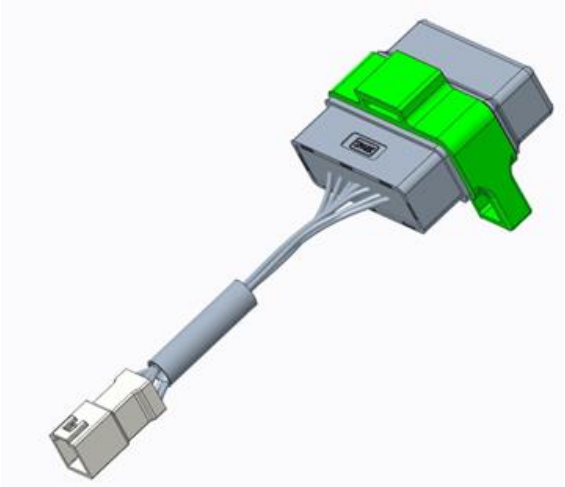
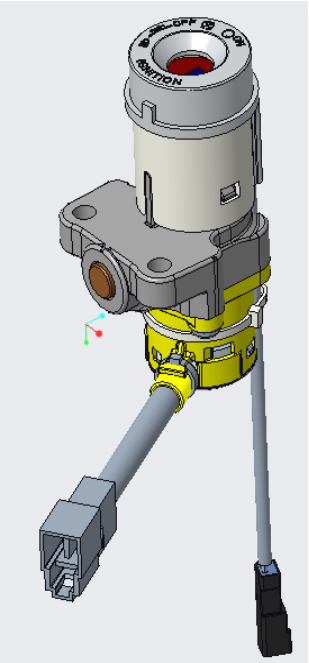
IMMOBILIZER MANUAL

Immobilizer | KIT Configuration

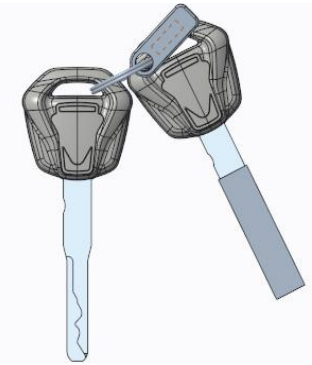
Immobilizer



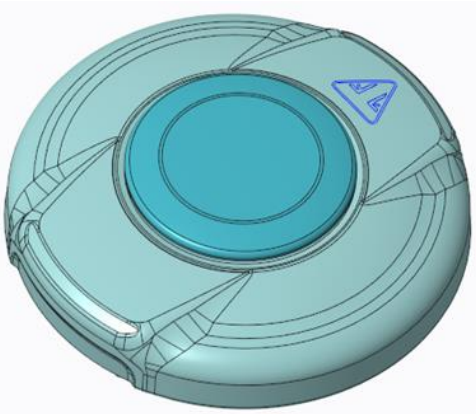
Lockset with Antenna



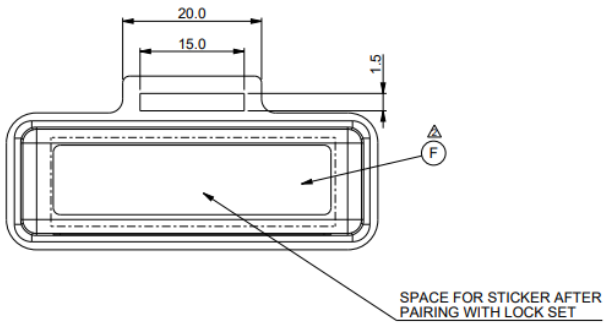
Transponder Keys

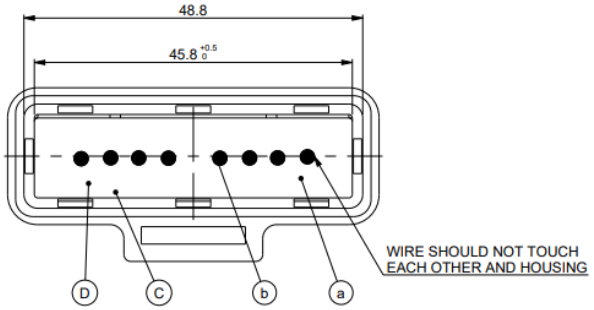


Fuel Tank Cap

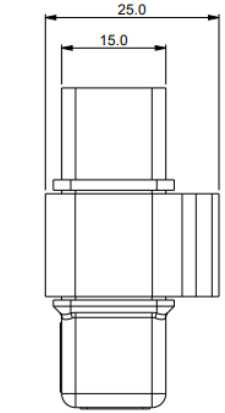


Immobilizer | Immobilizer Dimensions

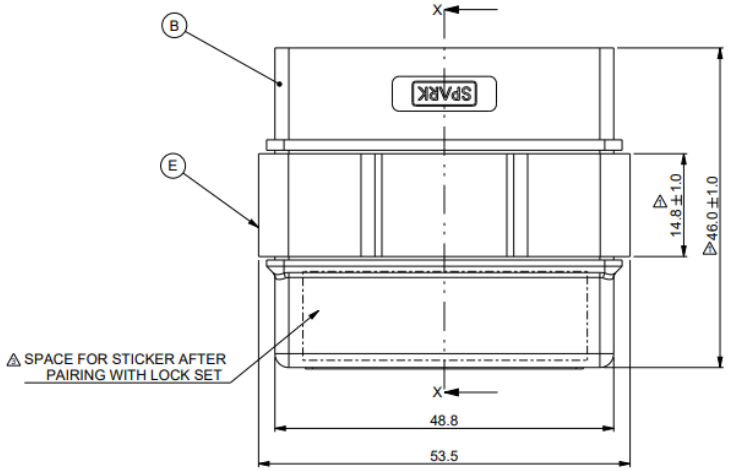




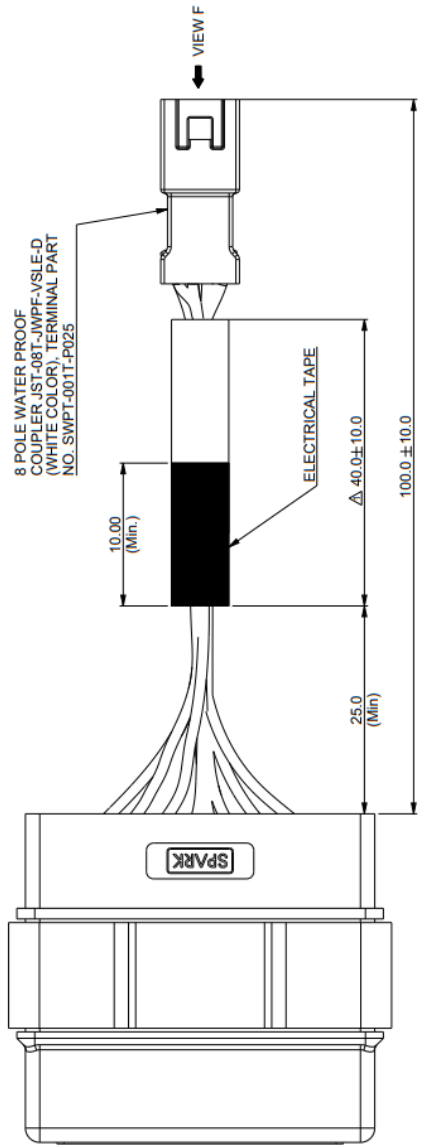
VIEW WITHOUT WIRING HARNESS



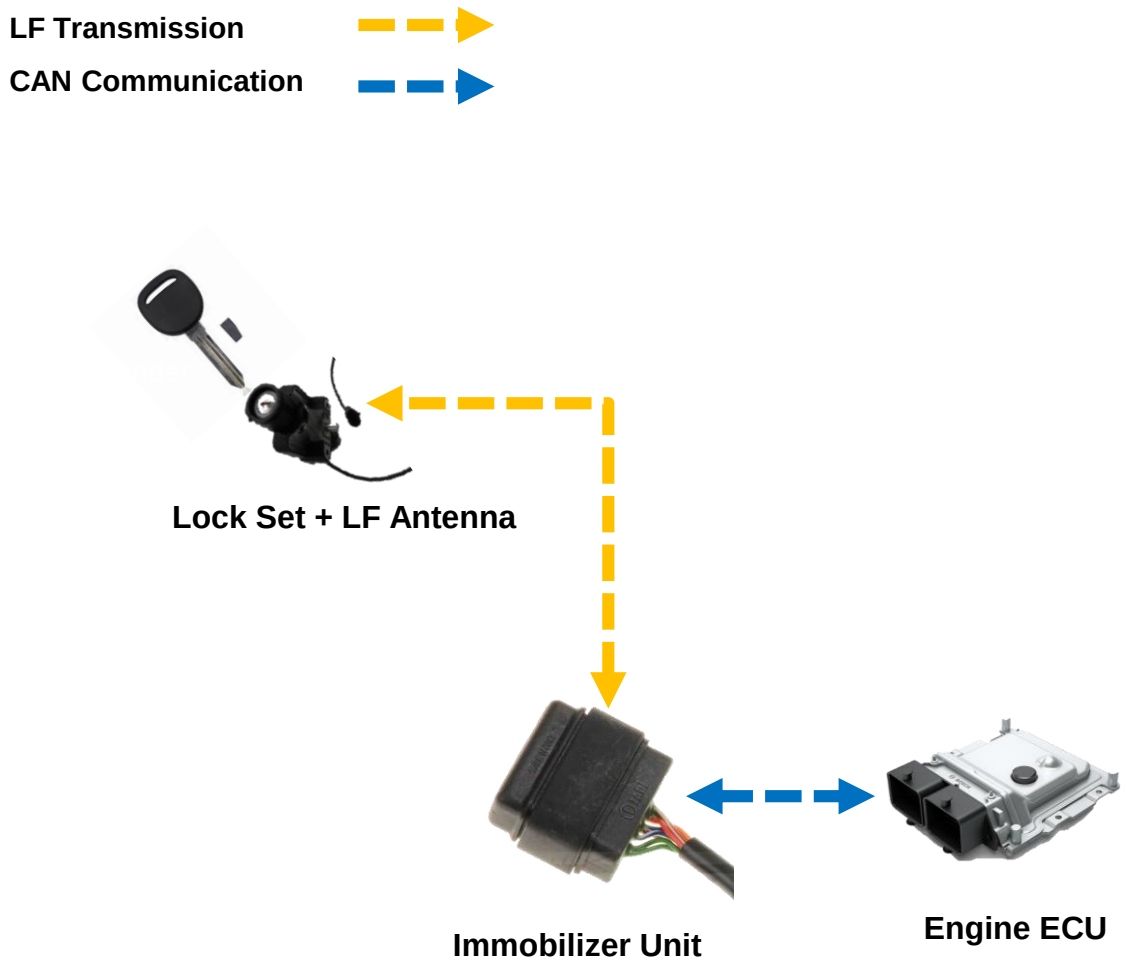
VIEW WITHOUT WIRING HARNESS



VIEW WITHOUT WIRING HARNESS



Immobilizer | System Block Diagram



Immobilizer system is used to provide additional security above a mechanical lock. It incorporates a transponder which is embedded in the Key of the vehicle lock. It has a unique ID. This ID is communicated to Engine ECU by Immobilizer Unit. If the ID matches only then the Engine ECU allows the vehicle to Start.

This product is belong to category : Inductive communication equipment at distance from the line λ At a distance 2 **π** (denoted by m for high frequency wavelengths), the electric field intensity is less or equal to 15u V/m devices.

Specification - Immobilizer

1. Environment	: IP67 Protected
2. Rated Voltage	: 12V DC
3. Operating Voltage	: 6.0V-16VDC
4. Operating Temp.	: -20°C - +80°C
5. Storage Temp.	: -40°C - +85°C
6. Combined Unit	: Switch Assy. Lock with Antenna. Transponder Key. Immobilizer.
7. Operating Current	: Less than 200mA (IGN ON)
8. Quiescent Current	: Less than 150µA (IGN OFF)
9. LF carrier frequency	: 125 KHz
10. Communication with Engine ECU	: CAN with 500kbps
11. Coupler	: 8-Pole Connector

Specification – Transponder and LF Antenna

Transponder

1. Make	: NXP
2. Part number	: PCF7938XA (Passive device, no external battery required for powering up)
3. Secret Key	: 96-Bit
4. Encryption algorithm	: HITAG-III
5. Unique ID	: 32-Bit

LF Antenna

1. Description	: LF antenna is design based on mechanical lockset requirement, transponder key distance from the antenna should not more than 30mm because antenna magnetic field range is 30mm. Immobilizer should energize the antenna so antenna inductance & resistance tuned based on 125KHz resonance frequency.
2. Make	: Minda
3. Inductance	: 500uH ± 5% @125KHz (On Lock)
4. Resistance at 26°C	: 7.5 Ohm ± 5%

CE Statement :

Hereby, Minda Corporation Ltd. declares that the radio equipment Immobilizer is in compliance with Directive 2014/53/EU. The full test of the EU declaration of conformity is available at the following internet address: https://sparkminda.com/

This radio equipment operates with the following frequency bands and maximum power：
RFID 125KHz: 12.93 dBµA /m@3m Distance

A minimum separation distance of 20cm must be maintained between the user’s body and the device, including the antenna during body-worn operation to comply with the RF exposure requirements in Europe.

CE

WARNING

Do not ingest the battery, Chemical Burn Hazard

(The remote control supplied with) This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

Keep new and used batteries away from children.

If the battery compartment does not close securely, stop using the product and keep it away from children.

If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

WARNING

1. Replacement of a battery with an incorrect type that can defeat a safeguard;

Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas

A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas

2.  clamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

3.  CAUTION For coin/button battery used, please refer for further information to the user manual

FCC Regulations:

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

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

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ISED Notice

❶ This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1) this device may not cause interference, and

2) this device must accept any interference, including interference that may cause undesired operation of the device.

❶ Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1) l'appareil ne doit pas produire de brouillage, et

2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Immobilizer – FCC IC Statement

- ❷ This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter, except tested built-in radios.
- ❷ Cet appareil et son antenne ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, exception faites des radios intégrées qui ont été testées.
- ❸ The County Code Selection feature is disabled for products marketed in the US/ Canada.
- ❸ La fonction de sélection de l'indicatif du pays est désactivée pour les produits commercialisés aux États-Unis et au Canada.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.