



Via C. Marx, 138 41012 Carpi (Mo)
Tel. +39 059 6232111
Fax. +39 059 6323298
P. I.V.A. 00172950362

USER MANUAL

MOD07XX06

Project Ref.:

P1311

Product:

E-Lock

Redacted by:

Geremia De Sarno

Approved by:

Emanuele Belpanno

Date:

28/02/2018

Revision:

01

E-Lock System

User Manual

Models: EL0340

EL0343

EL0349



Via C. Marx, 138 41012 Carpi (Mo)
Tel. +39 059 6232111
Fax. +39 059 6323298
P. I.V.A. 00172950362

USER MANUAL

MOD07XX06

Date	Rev.	Changes description	Points modified	Sign
28.02.2018	01	First Release		GeDS



Via C. Marx, 138 41012 Carpi (Mo)
Tel. +39 059 6232111
Fax. +39 059 6323298
P. I.V.A. 00172950362

USER MANUAL

MOD07XX06

Index

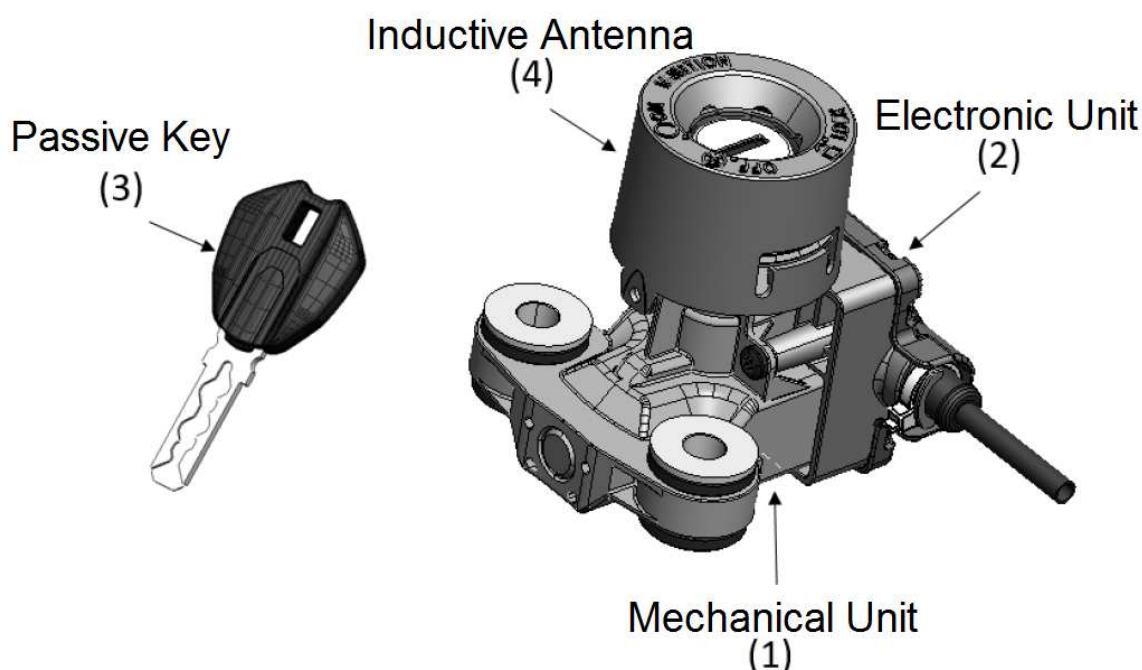
1	PRODUCT DESCRIPTION.....	4
1.1	IGNITION.....	4
1.2	POWER OFF.....	4
1.3	LOCK.....	5
1.4	PIN CODE FUNCTION	5
1.5	DATE AND TIME FUNCTION.....	5
2	MAINTENANCE	6
3	TECHNICAL SPECIFICATIONS	7
3.1	GENERAL SPECIFICATIONS	7
3.2	ELECTRICAL SPECIFICATIONS.....	7
3.3	MECHANICAL SPECIFICATIONS	7
4	USA CERTIFICATION.....	8
4.1	WARNINGS.....	8

1 Product description

The E-Lock steering lock system is a mechatronic device in which there is the steering lock function, carried out mechanically by means of the rotation of a key lock cylinder, together with the immobilizer function realized electronically by a special integrated unit.

The system can be divided into 3 functional blocks:

- A mechatronic unit (to be fixed near the steering plate) consisting of:
 - Main unit:
 - a. Mechanical unit with ON / OFF / steering lock (LOCK) functions;
 - b. Electronic control unit of the switch.
 - One or more passive keys
 - Inductive antenna for LF communication between the Main Unit and the key.



1.1 Ignition

The E-Lock switch is activated by turning the key from the OFF position to the ON position in the key cylinder:

- Output +15 is activated;
- The LED on the dashboard stops flashing if active;
- The electronic unit requires the radio frequency identification of the transponder key via the LF antenna;
- The CAN bus communication begins within 200 ms in which the result of the recognition of the key is communicated to the electronic control unit of the motorcycle.

1.2 Power OFF

To switch off the system, turn the key from the ON position to the OFF position:

- Output +15 remains active or is deactivated depending on the reception of the Parking / Hazard requests on CAN bus;
- The LED remains off if the +15 output remains active or starts flashing if the +15 output is deactivated for a maximum of 12h;
- CAN communication remains active for 60 seconds after output +15 has been deactivated.



Via C. Marx, 138 41012 Carpi (Mo)
Tel. +39 059 6232111
Fax. +39 059 6323298
P. I.V.A. 00172950362

USER MANUAL

MOD07XX06

1.3 Lock

To insert the steering lock, ie the bolt comes out, turn the key from the OFF position to the LOCK position.

1.4 Pin Code function

The PIN code function will allow the engine to start up if the key is not recognized or the immobilizer system is faulty. The electronic switch must store a four-digit code which will be received from the dashboard control unit via CAN bus communication. The user can modify the code without limits.

1.5 Date and time function

The electronic unit has a Real Time Clock that can be used for setting the date and time that will be shown on the dashboard of the bike by means of special CAN bus communication.

2 Maintenance

Zadi S.p.A. is not responsible for any damage caused by poor maintenance, tampering or use of the device without authorization and different from that for which it was prepared.

The following suggestions are to be taken into account for the correct functioning of the system over time:

- For cleaning, do not use solvents and / or aggressive agents and abrasive materials;
- Do not disassemble or attempt to power the device in any way outside the context of the vehicle for which it is prepared;
- If authorized technical personnel come into contact with the connector when using it on the vehicle, they must use devices of ESD individual protection;
- The connection of the counterparty must be carried out longitudinally and with a force not higher than that indicated on the reference ZADI technical drawing;
- If the device is dismantled by authorized technical personnel, the tightening torque of the screws must be checked;
- The correct operation of the LF antenna is influenced by the proximity of bodies and / or metal parts, consequently it is appropriate not to change what surrounds it in the final application.

3 Technical Specifications

3.1 General Specifications

- | | |
|--|--|
| ☐ Operating environmental temperature | -20°C ÷ +60°C |
| ☐ Storage temperature | -20°C ÷ +85°C |
| ☐ Operating life | 20.000 cycles (LOCK-OFF-ON and return) |

3.2 Electrical Specifications

- | | |
|--|--|
| ☐ Nominal voltage | 13.5 VDC (vehicle battery) |
| ☐ Operating voltage (DC) | 6 ÷ 16 V |
| ☐ Activation time of +15 by key OFF→ON | < 100 ms - typical |
| ☐ Current consumption by key OFF | < 120 µA - typical at Tamb = 25 °C |
| ☐ Maximum current on +15 | 2A typical RESISTIVE load Tamb = 25 °C |
| ☐ Operating frequency of the transponder reader | 134,2 kHz |
| ☐ Driving current of the LED output | 20 mA Max |
| ☐ LED flashing duty cycle | 2,5% Max |
| ☐ Operational band | 128.6 ÷ 135 kHz |
| ☐ Operating frequency | LF @134.2 kHz |
| ☐ RF power | < 66 dBµA/m @10m (128.6 – 135 kHz) |
| ☐ Modulation type | AM (Amplitude Modulation) |

3.3 Mechanical Specifications

- | | |
|---|--------------------------------------|
| ☐ 3-position steering lock switch | LOCK-OFF-ON |
| ☐ Positions for key extraction | LOCK e OFF |
| ☐ Number of safe lock combinations | > 3000 |
| ☐ Resistance to vibrations | 40g constant (100÷500 Hz - 8 h/axis) |
| ☐ Weight | about 350g (key pair excluded) |



Via C. Marx, 138 41012 Carpi (Mo)
Tel. +39 059 6232111
Fax. +39 059 6323298
P. I.V.A. 00172950362

USER MANUAL

MOD07XX06

4 USA Certification

Product name: E-Lock
FCC ID: VFZKLGZADI03

4.1 Warnings

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.

FCC§ 15.105 Information to the user statements

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 or more 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 § 15.21 - Information to user. “Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.”