USER MANUAL

Card Reader



Product Description:	OptaFleet Card Reader
Model Number (HVIN):	FM 3012 2001
Model Name (PMN):	FM RFID Card Reader CAN Optafleet
FCC ID:	2BMQG-FM30122001
Manufacturer:	Econtrols Europe bv
Date of Issue:	April 20, 2026
Document number:	UIFM 3012 2001
Version document:	0.1

1. Product Overview

The OptaFleet Card Reader is a Dual-frequency RFID card reader that operates on radio frequency to provide access control to the vehicle. Each driver will be provided with an electronic card. This card contains a chip (Tag) with a unique code for each driver which can be read contactless.
The reader on the vehicle reads the code from the card and transmits this code to the ECU. The vehicle ECU judges if the driver with this specific driver code can operate with the vehicle.
The reader is equipped with LED and Buzzer to inform the driver about the status of the access request.
The antennas are integrated on the readers.

Technical Specifications:

- Read frequency: 125kHz & 13.56MHz
- Temperature range : -40°C to +85°C
- Voltage : 5 V (from ECU)
- Max current.: 25 mA
- Protection class: IP67
- Communication: Proprietary CAN
- 2 RGB LEDs + Buzzer
- Robust & industrial design

2. Package Contents

- 1 × Card Reader FM 3012 2001
- 1 × User Manual (this document)

3. Installation & Setup

Note: The installation has to be performed according to the information in this document by trained and competent technicians.

Mounting of the Card Reader:

a. Mount the card reader in an accessible position on the dashboard. Ensure that the reader is protected from the elements.
b. Drill diameter: 35 mm
c. Depth of Card Reader: 70 mm
d. Connect the gray 4-pin connector to the OptaFleet wiring loom.

Note: Electrical connections, wires, and looms must be correctly attached and protected to prevent any form of friction with moving parts and contact with heat sources. Make use of protective aids, such as heat shrink tubes, corrugated conduits, and waterproof connectors.

Attention: Only power up the ECU after connecting the Card Reader to the wiring loom!

3.1 Powering the Device

The Card Reader is powered directly by the ECU. Power supply is 5 V.

Attention: Only power up the ECU after connecting the Card Reader to the wiring loom!

3.2 Basic Operation

The card reader is equipped with a buzzer and red and green LEDs.
Turn on the ignition and hold the card against the reader.
If the card is recognized, the system is unlocked for further use and the green LED lights up.
If the card is not recognized, a beep sounds and the red LED lights up. The system remains locked.

4. Wireless Operation

This product operates using 125kHz & 13.56MHz radio communication. Radio operation is automatic and managed by the internal firmware. Users cannot modify transmission parameters such as power level, frequency, or modulation.

5. Regulatory Notices

5.1 FCC Compliance Statement

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.

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

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

5.2 FCC RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an **uncontrolled environment**. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, this equipment should be installed and operated with minimum distance **20 cm (7.9 inches)** between the antenna and your body during normal operation. Users must follow the specific operating instructions for satisfying RF exposure compliance.

6. Certifications and Approvals

- FCC ID: 2BMQG-FM30122001
- Complies with applicable FCC Part 15.

7. Safety and Maintenance

- Do not disassemble or modify the product.
- Do not expose the device to water, fire, or excessive heat.
- Only use supplied or certified accessories.
- Clean with a soft dry cloth only.

8. Support & Contact Information

For product support, warranty information, or replacement parts, please contact:

Econtrols Europe bv
Distributieweg 9
2645 EG Delfgauw
Phone: +31 (0) 15 274 25 50
Email: info@econtrols-europe.com
Website: www.optafleet.com