Fimeko-Plus

FIMTEK Fimeko-Plus is a centralized field control unit developed for fuel stations and fleet fuel management applications. It manages refueling processes digitally by integrating with pump, tank, and vehicle identification systems. Its onboard screen and keypad provide local operator control while all operations are transmitted to the central cloud infrastructure in real time

The device communicates directly with fuel dispensers through RS232/RS485 ports and performs vehicle/personnel verification with MIFARE/RFID technology. With its built-in 4G LTE communication module, it securely transfers data and executes authorization, limit control, and sales approval processes through the cloud system. This structure minimizes manual intervention and keeps fuel transactions under control.

Fimeko-Plus is a key component for real-time sales monitoring, user and vehicle-based limit management, detailed reporting, and centralized supervision. The system provides uninterrupted data flow between field and center, creating a real-time, secure, and traceable fuel management infrastructure. It offers a scalable solution especially for fleet management, corporate fuel control, and automation projects.

Contents

1. Introduction

Fimeko-Plus is a centralized field automation and control unit developed for fuel stations and fleet fuel management operations. It combines pump, tank, and vehicle identification systems at one point to make refueling processes digital, secure, and traceable. Integrated with cloud infrastructure, the system transmits field operations to the center in real time and manages authorization, limit control, and reporting end-to-end.

2. Product Purpose and Scope

Fimeko-Plus is an all-in-one field automation unit developed for distribution companies and field operations, integrated with cloud-based pump automation systems.

It includes pump control, user verification (Mifare card), touch user interface, 4G communication, and multi-serial-port connectivity in one compact device.

Its minimal hardware architecture provides cost advantage and rapid installation.

3. Safety Notices

Critical Warning

- During installation, power must be disconnected on both the unit itself and all devices to be connected.
- The inside of the device must not be opened by the user.

Warning

- Installation must be performed by authorized technical personnel.

Caution

- The product must not be exposed to direct sunlight.

3.1 Normative References

Reference	Description
Directive 2014/30/EU	Electromagnetic Compatibility (EMC) Directive
EN 61000-6-2	Immunity standard for industrial environments
EN 61000-6-4	Emission standard for industrial environments
EN 61326-1	EMC requirements for measurement, control and laboratory equipment
Directive 2014/35/EU	Low Voltage Directive (LVD)
EN 62368-1	Safety requirements for audio/video, ICT equipment
EN 60204-1	Electrical equipment of machines - General requirements
Directive 2014/53/EU	Radio Equipment Directive (RED)
EN 301 511	Harmonized standard for GSM equipment
EN 301 908-1	IMT cellular networks - General requirements
EN 301 908-13	Specific requirements for LTE user equipment
EN 301 489-1	EMC for radio equipment - General requirements
EN 301 489-52	EMC requirements for cellular communication equipment
ISO/IEC 14443	Contactless cards - Proximity card standard (MIFARE)
ISO/IEC 15693	Contactless cards - Vicinity card standard
EN 60529	IP protection classes
EN 60068-2-1	Cold tests
EN 60068-2-2	Dry heat tests
EN 60068-2-6	Vibration tests
Directive 2011/65/EU	RoHS - Restriction of hazardous substances
Regulation (EC) No 1907/2006	REACH - Registration and evaluation of chemicals
IEC 82079-1	Preparation of instructions for use - General principles

4. Technical Specifications

Input Voltage	9-36V DC
Power Consumption	10W
Reverse Polarity Protection	Available
IP Protection	None
Cellular Connection	4G LTE
SIM Card	Micro SIM
Ethernet	None
WiFi / Bluetooth	None
Number of Serial Ports	3
Port Type	RS232 / RS485 (configurable per order)
Display	TFT 320 x 240
Touch	Capacitive
Card Reader	Mifare
Update	OTA (Over-The-Air) / Comport
Offline Operation	Not supported - continuous connection required
Dimensions	140mm x 100mm x 33mm
Operating Temperature	-20C / +50C
Sunlight Exposure	Must not be exposed to direct sunlight
Mounting	Fixing on sheet surface with dedicated mounting bracket
Connection	Special connector cable
Language	English

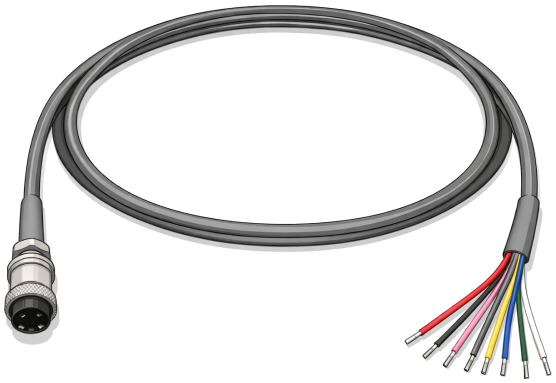
5. Package Contents

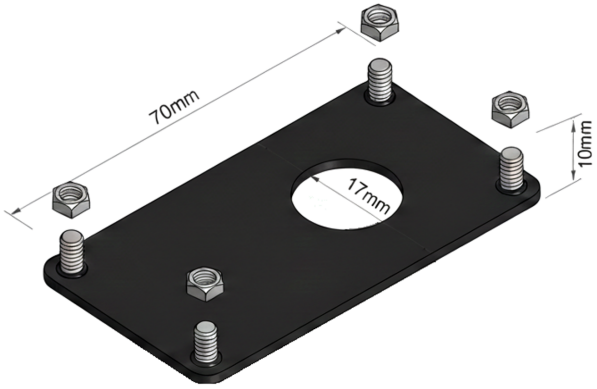
Item	Description
Fimeko-Plus device	Main unit with 3 RS485 ports
Mounting bracket	Intermediate bracket for fixing to sheet surface
M4 nut	4 pieces for fixing the bracket to sheet surface
Connection cable	1 socketed cable (8 colors)
User manual	Explains the connection method

6. Electrical Connections and Cable Colors

Cable color code	Function
RED	Vin 9-24VDC
BLACK	GND
PINK	RS485 A (A/+) Pump
GRAY	RS485 B (B/-) Pump
YELLOW	RS485 A (A/+) Probe
WHITE	RS485 B (B/-) Probe
GREEN	RS485 A (A/+) TTS / RS232 Printer TX
BLUE	RS485 B (B/-) TTS / RS232 Printer RX

7. Installation and Commissioning





Mechanical installation: The device is fixed to a sheet surface using its dedicated mounting bracket. Mark the target surface, drill proper holes, and place the unit with the mounting bracket. Position the device from the front and secure it from the rear with screws. It is recommended to avoid direct sunlight and highly humid environments.

Initial startup: Insert the Micro SIM card, power the device, establish 4G connection, and select pump type from the screen. The system becomes ready for operation. If wiring is ready, average installation time is approximately 10 minutes.

System requirements: 4G SIM card with active data line, a registered device on the central web platform, and server-side configuration. Server services are provided by Fimtek.

8. Integration and Calibration

Fimeko-Plus connects to the central web platform through 4G cellular communication. All user definitions, pump type settings, vehicle definitions, and commercial transactions are managed on the server side. The device only acts as control and interface in the field. Independent (offline) operation is not available.

9. Usage - Normal Operation

Operating together with the cloud system, it provides real-time sales tracking, user management, and operational control. The system becomes ready for operation after selecting pump type on the screen.

System Architecture

10. Maintenance, Cleaning and Troubleshooting

Issue: Device Does Not Power On

Check: First verify that supply voltage is present. Ensure polarity is connected correctly. Verify that connectors and connection points are firm, not loose, and properly seated.

Issue: 4G Connection Cannot Be Established

Check: Verify that the SIM card is inserted correctly and has an active data line. Check whether signal strength is sufficient at the installation location.

Issue: Card Is Not Read

Check: Confirm the card is MIFARE-compatible and inspect for physical damage. Verify that server connection is active. Since authorization is handled server-side, operation cannot start when connection is unavailable.

Cleaning and Safety Notice:

There is no user-serviceable part inside the device. Unauthorized personnel must never open the product. The outer surface and screen should be cleaned only with a soft dry cloth; if needed, use a slightly damp cloth. Do not use chemical solvents, alcohol-based cleaners, or abrasive materials. Do not clean with pressurized water. The product is not IP-protected and direct water contact must be avoided.

Maintenance and Troubleshooting - Summary

- Abrasive chemicals such as acetone, alcohol, thinner, or bleach can damage the device surface; follow manufacturer recommendations for cleaning.

11. Transport Conditions

During shipment, Fimeko-Plus must be transported in its original packaging protected against impact, vibration, and moisture. During transportation:

- The product must not be dropped.
- Do not place under heavy load.
- Protect from water and moisture.
- Use suitable packaging against static electricity.
- Protect connector and screen surfaces from physical impact.

For long-distance transport, shock-absorbing packaging is recommended.

12. Disposal

Fimeko-Plus is electronic equipment and must not be disposed of with household waste at end of life. The device contains electronic circuit boards, plastic, and metal components. Therefore it must be disposed of through appropriate recycling channels to prevent environmental harm. During disposal:

- Deliver the product to authorized e-waste collection centers.
- Comply with local waste management regulations.
- Remove SIM card and external components for separate handling.
- Do not burn or leave the product directly in nature.
- Improper disposal may cause environmental damage and legal penalties.

13. Warning

Important Reminder

- The inside of the device must not be opened by the user. The product must not be exposed to direct sunlight. Place the device in a location protected from water contact.

Additional Warning

- The product can operate only with server services provided by Fimtek.