



User Manual FRWD0803

## LED Light Controller



- Page 2 General Description
- Page 3 Specification
- Page 4 Connection
- Page 5 Operation
- Page 6 Battery charging — Battery charging curves

Please read carefully the instructions in order to get all the benefits of this device.

LED Lighting  
Controller

FRWD0803

[www.pelekis.eu](http://www.pelekis.eu)

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## General Description:

The device is specifically designed for elevator cabin LED lighting applications, providing reliable and high-quality constant illumination for both primary and backup lighting needs.

## Key Features:

### 1) Robust LED Driver:

Employs a powerful LED driver utilizing offline switch mode power supply (SMPS) technology for efficient performance.

### 2) Comprehensive Protection:

Incorporates various protection circuits to enhance the overall durability and safety of the device.

### 3) Fast Backup Switch-over:

Features a rapid main/battery switch-over mechanism ensuring uninterrupted lighting in critical situations.

### 4) Microcontroller-Based Charger:

Utilizes a sophisticated microcontroller-based charger for optimized charging cycles and battery management.

### 5) 12V SLA Type Battery:

Compatible with a 12V Sealed Lead-Acid (SLA) type battery, ensuring a reliable power source for prolonged use.

### 7) Remote Input and Battery Monitoring:

Equipped with a separate remote input for convenient control and continuous monitoring of the battery status.

## Applications:

Ideal for elevator cabin LED lighting applications where high-quality, constant illumination and reliable backup lighting are crucial.



## Specifications:

	Counts	Unit	Tolerance
Mains AC Input Voltage	230	V AC	85-265
Mains AC Input Frequency	50	Hz	50 to 60
Led Light Output Voltage <sup>1</sup>	12	V DC	+/- 1%
Led Light Output Current <sup>1</sup>	1,60	A	-
DC Output Ripple <sup>1</sup>	33	mV	Typical
Battery charging voltage <sup>1</sup>	13.7	V DC	+/-1%
Efficiency	85	%	At full load
Fuse rating	1	A	Fast blow
Standby duration <sup>2</sup>	1.5	Hours	-
DC Output Overvoltage protection threshold	15	V	Typical
DC Output short circuit protection threshold	3	A	Typical
Mains AC Input over voltage protection	267	V AC	Typical
Mains AC Input under voltage protection	83	V AC	Typical
Enclosure	ABS	IP65	-
Dimensions (mm)	W135	L170	H87
Weight	1100	gr	-

### Performance & Compliance with EN 81-20

The emergency lighting system is designed to exceed the requirements of the **EN 81-20** standard (clause 5.4.10.4). When the battery is fully charged (100%), the system delivers the following performance:

- **Emergency Duration:** The system provides **3 hours** of continuous, high-intensity illumination using **two PELEKIS LED spots** connected to the EMERGENCY connector.
- **Light Output:** Throughout the 3-hour duration, the system maintains sufficient lux levels (exceeding the 5 lux minimum requirement) at the car floor and control panel, ensuring maximum passenger safety.
- **Charging Specifications:** During the Constant Current (CC) stage, the charging rate is maintained at approximately **0.1C** (approx. 130mA), ensuring battery longevity and readiness.

**Note:** The system's performance was validated under standard operating conditions. While EN 81-20 requires a minimum of **1 hour** of emergency lighting, this device provides an extended safety margin of **3 hours** to account for prolonged power outages.

## Connections:

The FRWD0803 device is engineered for versatile operation, accommodating various connection setups and load combinations utilizing PELEKIS LED Lights. A typical configuration includes:

### 1. Main Light Sources:

4x INTELCO LED Lights configured as "MAIN" light sources.

### 2. Main/Emergency Light Sources:

2x PELEKIS LED Lights configured as "MAIN/EMERGENCY" light sources.

### 3. Emergency Light Sources:

2x PELEKIS LED Lights configured as "EMERGENCY" light sources.

### 4. Additional Components:

- A battery to ensure a reliable power supply.
- Integration of a DC siren for enhanced alert capabilities.

Figure 1

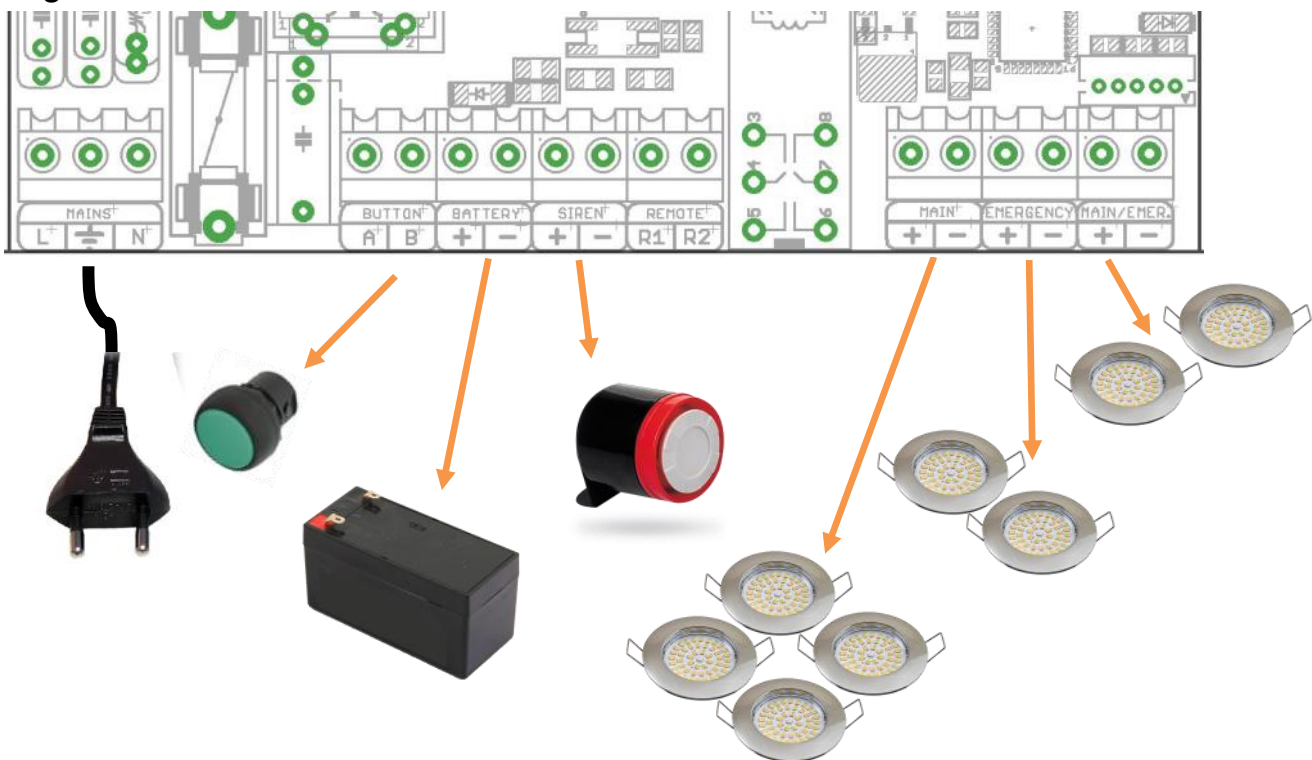






Table1. FRWD0803 Operating modes truth table

FRWD0803 Operating modes			
MODE	PELEKIS LED Light connected to "MAIN"	PELEKIS LED Lights connected to "EMERGENCY"	PELEKIS LED Lights connected to "MAIN/EMERG."
NORMAL		OFF	
EMERGENCY	OFF		



## Operation:

### Normal Mode:

During regular AC 230V mains operation, the FRWD0803 device efficiently powers the connected PELEKIS LED Lights in the following manner:

#### 1) Main and Main/Emergency Groups:

The 2 groups of PELEKIS LED Lights connected to "MAIN" and/or "MAIN/EMERGENCY" connectors remain illuminated and operational.

#### 2) Emergency Group:

The 3rd group of PELEKIS LED Lights connected to the "EMERGENCY" connector remains in an off state during normal operation.

#### 3) Battery Charging:

Simultaneously, the device actively charges the battery, ensuring a consistent power supply and preparedness for any potential AC mains interruptions.

This mode of operation optimizes energy efficiency, maintaining the necessary illumination for primary and supplementary lighting sources while sustaining the battery for backup purposes.

### Emergency Mode Activation:

In the event of a failure in the AC 230V mains power supply, the FRWD0803 device seamlessly transitions into Emergency Mode. During this mode:

- The "MAIN" group of PELEKIS LED lights is turned off.
- The "MAIN/EMERGENCY" and "EMERGENCY" groups of lights are activated and operate at 100% brightness with no dimming.

### Operational Details:

- The "REMOTE" connector input is disregarded in Emergency Mode, ensuring that the lights function independently without remote control intervention.

### Automatic Return to Normal Mode:

Once the AC 230V mains voltage is restored, the FRWD0803 device automatically reverts to Normal Mode. In Normal Mode, the device resumes its standard operating configuration, allowing for regular control and dimming functionalities.

This automated transition ensures a seamless and reliable response to power fluctuations, providing uninterrupted illumination during emergency situations and restoring normal operation when mains power is stabilized.

**Note:** For detailed information on the FRWD0803 device's modes, behaviour, and control mechanisms, please refer to the user manual.

## Battery Charging:

- Use only 12V - 1,3Ah SLA Battery type.
- **Never** connect the battery terminals in reverse order.
- This device uses an LED to indicate Battery status (see Table 4).

Table 4

LED Activity	Battery status
ON	Battery charging progress >90%
BLINKING Rate: 0.5s on 0.5s off	Battery charging progress 75%>BAT>50%
OFF	Battery failure Or Battery disconnected

## Battery Charging Curves:

