EC-DECLARATION OF CONFORMITY

The company:	**FLASHNET SA**
Address:	**4A, Fundatura Harmanului Street** **500240, Brasov, Romania**

Declares under sole responsibility that the product:

Type:	**inteliLIGHT®**
Model:	**FRCM**
Intended use:	**Lighting panel control and monitoring unit, with three phase monitoring of energy parameters and possibility to turn on/off street lighting segments**

If used for its intended use, complies with the essential requirements of the directives mentioned below and that the following standards have been applied:

DIRECTIVES:

Radio Equipment Directive (RED), 2014/53/EU

Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment Directive (RoHS) 2011/65/EU

STANDARDS:

EN 61000-3-3, EN 61000-3-2 (2014), EN 61000-6-1, EN 61000-6-3 EN 61547, EN 60068-2-1, EN 60068-2-2, EN 61010-1, EN 55024, ETSI EN 301 489-1, ETSI EN 300 220

Place and date of declaration:

Brasov, Romania
July, 2021

Name and Position:

CHISELITA IOAN,
CTO

SOCIETATEA J08/970/2007 FLASHNET SA CUI:RO18014742 BRASOV ROMÂNIA

Digitally signed by Eni Maria
Date: 2023.10.24 10:52:31 EEST
Reason: MoldSign Signature
Location: Moldova

Schréder
Experts in lightability™

Streetlight Cabinet Controller (CABCO)

Solution Overview

Table of Contents

1 Document history

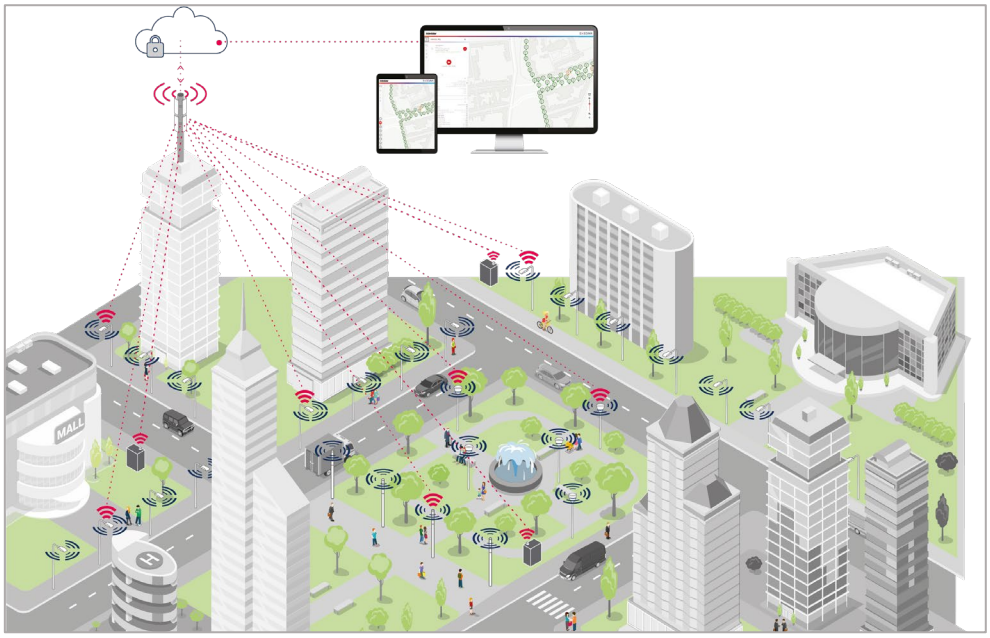
Date	Version	Change details
2023-04-11	1	First version

2 Introduction

This document describes an end-to-end smart lighting solution enabling customers to control streetlights from cabinets associated with streetlighting infrastructure. It provides an overview of the **Streetlight Cabinet Control** solution. This document is not intended to be legally binding. It was created for all interested parties, including customers and partners. The editor reserves the right to modify this document without prior notice.

3 Streetlight Cabinet Control description

The **Streetlight Cabinet Control** solution is part of Schréder's portfolio for smart streetlight control. It is based on a streetlight cabinet controller duly integrated with the Schréder EXEDRA IoT platform. Schréder's solution offers small/medium size electrical cabinets, specifically used to manage the electrical network for streetlight infrastructure. It is based on open standards/protocols to integrate 3rd-party hardware into the Schréder EXEDRA IoT platform.



3.1 Key features & capabilities

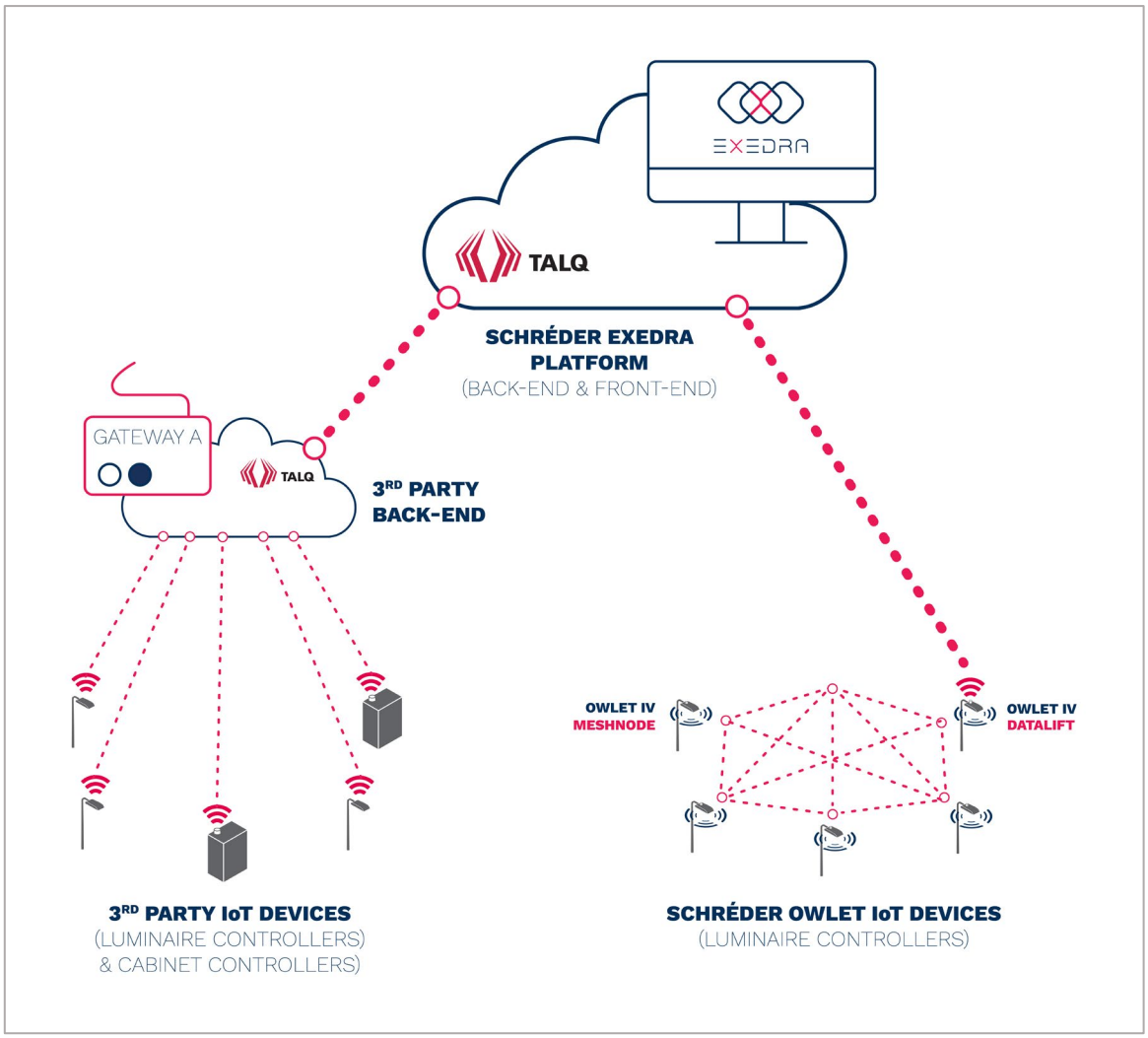
Schréder's **Streetlight Cabinet Control** solution offers the following key features and capabilities:

- Cabinet controller with built-in cellular based communication (to avoid dependency on other gateway/networks)
- Auto-commissioning, baselining built-in GPS
- Autonomous operation based on a preconfigured astronomical calendar/control program
- Energy measurement at grid level – periodical telemetry of electrical parameters (voltage, current, frequency, PF, active/reactive/apparent power, daily active/reactive energy consumption) properly captured on a single phase/3 phase grid
- Remote real-time ON/OFF control
- Help to identify circuit breaker issues, energy loss, potential cable theft, safety and other issues thanks to electrical metering and monitoring
- Alarms (power loss, cabinet door open, etc.)
- Seamless integration with the Schréder EXEDRA IoT platform

3.2 End-to-end architecture overview

The end-to-end architecture for Schréder's **Streetlight Cabinet Control** solution includes the following hardware and software components, described in the following chapters.

- **Cabinet control hardware** (connected to the Schréder EXEDRA IoT Platform via TALQ)
- **Schréder EXEDRA IoT Platform**



4 Hardware portfolio

4.1 CABCO-FRCMM1

The **Streetlight Cabinet Controller** is illustrated in the image below.

4.1.1 Contents of the kit – list of components

The following images and table describe the contents of the cabinet control hardware kit, together with the list and quantity of components.

Component name & quantity	Image
1 panel control and monitoring unit (prepared for DIN rail mounting)	
1 COMBO-ANT601 antenna	
4 ENT-A30 current transformers (supplied with clips for mounting)	

Component name & quantity	Image
Current transformer fixation kit: **2 M3 screws** **2 square nuts** **2 screw "caps"** **2 support tabs**	

Note: For detailed information, ask for the **Streetlight Cabinet Control Datasheets** and **Installation Instructions** from your Schréder representative.

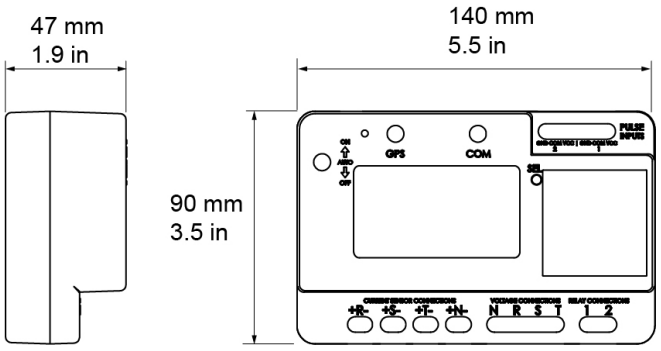
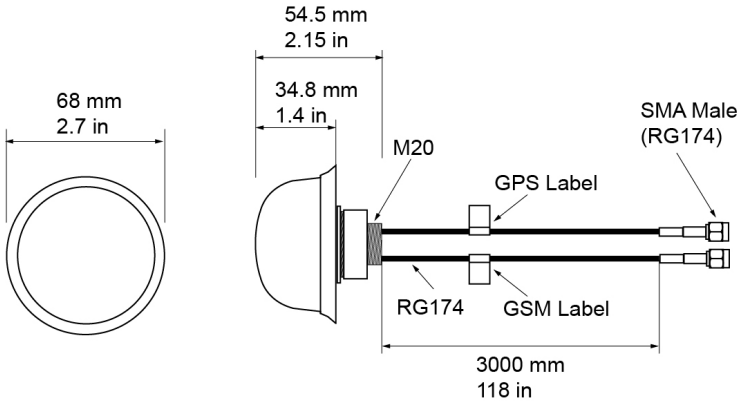
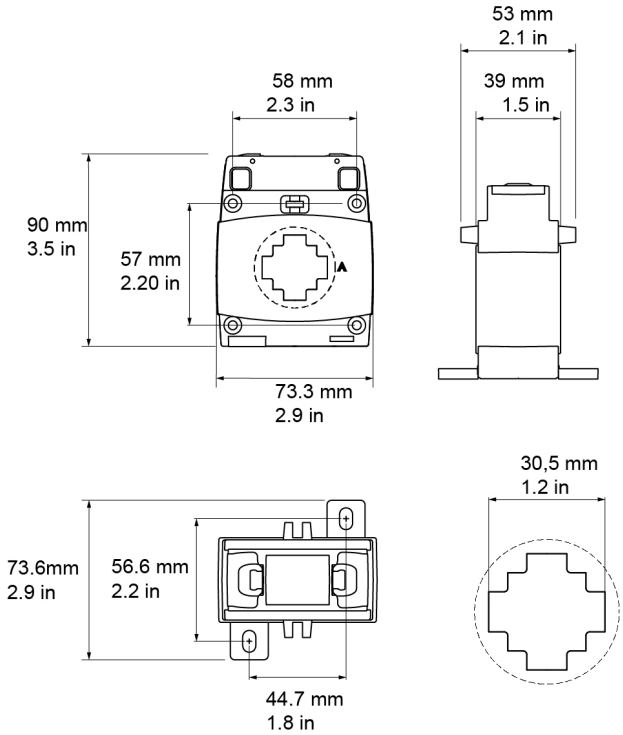
4.1.2 Technical specifications

The following table lists the technical specifications of the CABCO-FRCMM1.

Parameters	Values
Voltage input range	85-260VAC / 50-60Hz
Network interface	LTE-M (LTE-Cat-M1 fallback NB-IoT, 2G)
Display	LCD
GPS	Location and time
Security	AES128-bit encryption and key rotation per session
Surge protection	6kA
Precision Real Time Clock (RTC)	Battery operated
Battery operation time	Up to 2 hours
Input	R, S, T voltage inputs R, S, T, N current inputs 2 x digital input
Power network type	Three phase electric network and neutral
Output	1 x dry contact relay (230V, max 3A)
IP rating	IP 20
Dimensions (L x W x H)	138 x 90 x 47mm
Mounting	DIN RAIL

4.1.3 Dimensions

The following images show the dimensions of the CABCO-FRCMM1's components.

Component	Dimensions
Panel control and monitoring unit	
COMBO-ANT601 antenna	
Current transformers	

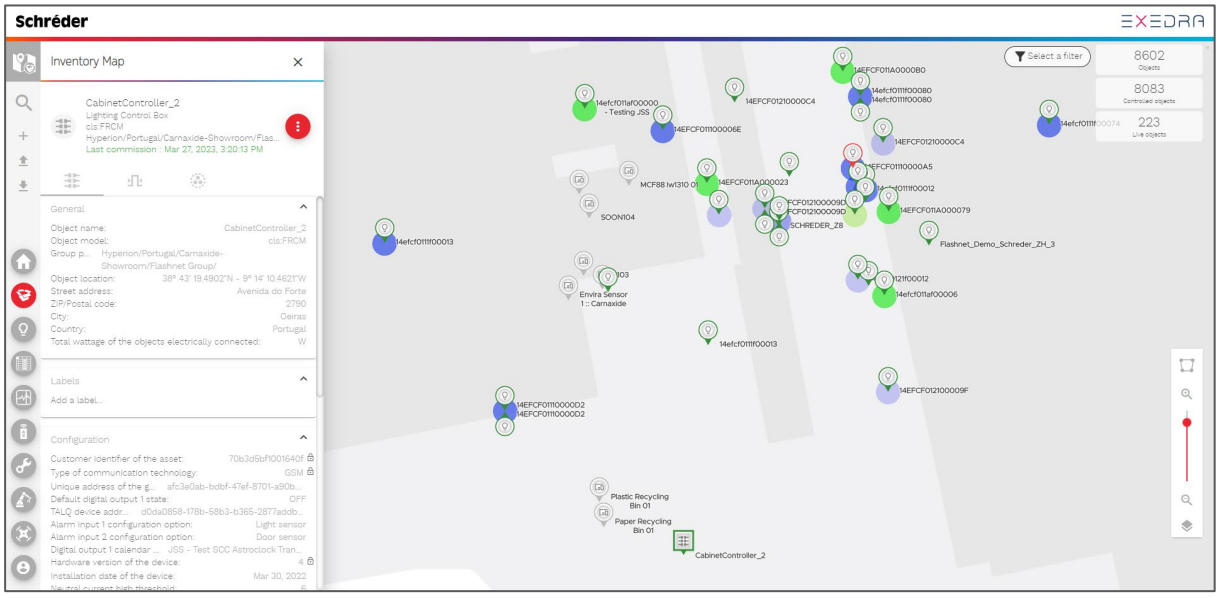
5 Schréder EXEDRA IoT Platform

Schréder's **Streetlight Cabinet Control** solution relies on open standards/protocols, allowing the integration of 3rd party devices via TALQ within the Schréder EXEDRA IoT Platform. The following chapters give an overview of how to manage cabinet controllers via the Schréder EXEDRA User Interface.

Note: For detailed information, ask for the **Schréder EXEDRA User Interface Manual** from your Schréder representative.

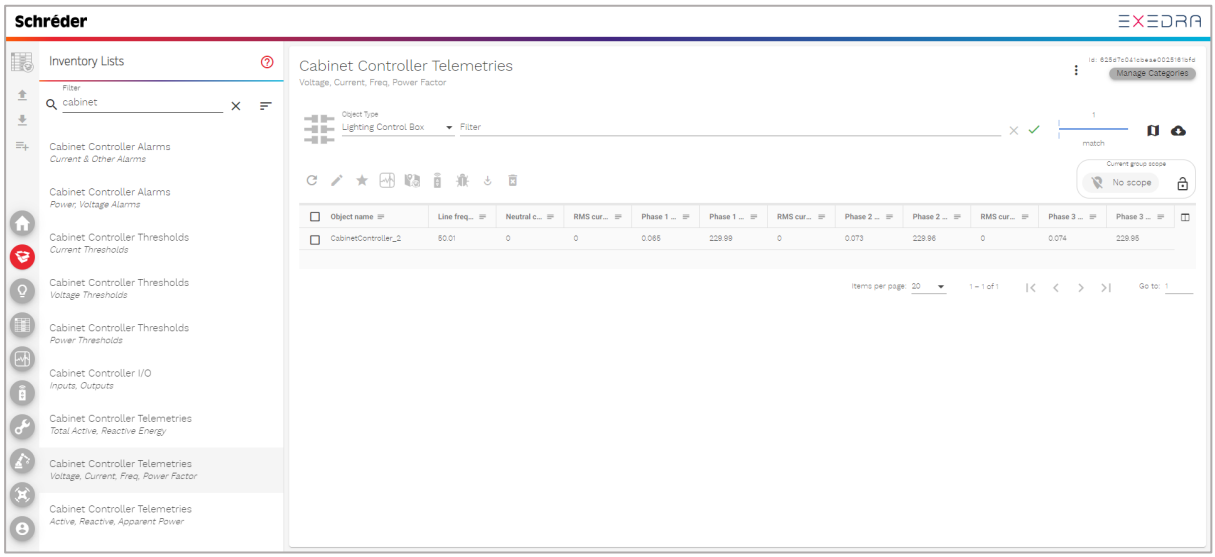
5.1 Inventory map

In **Inventory map**, you can create a new cabinet control object, see detailed information (such as object name, model, location, installation date, telemetry data, etc.), configure thresholds, define door sensor alarms, commission devices, etc.



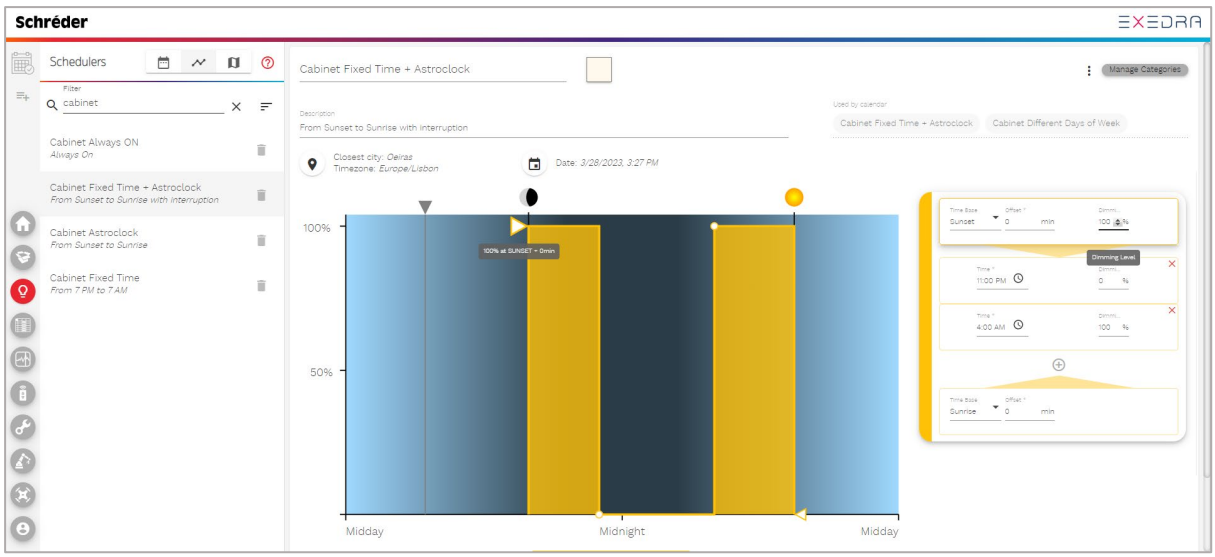
5.2 Inventory lists

In **Inventory lists**, you can create dedicated lists of cabinet controllers for specific needs by filtering and querying certain parameters. You can also bulk edit several devices at once.



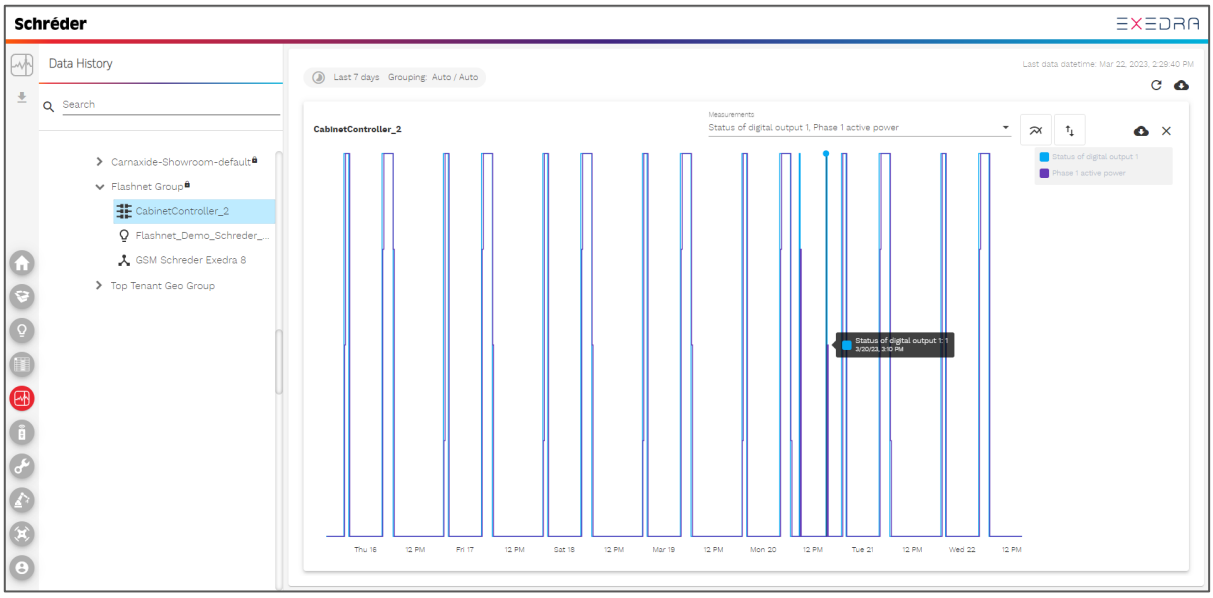
5.3 Streetlight schedulers

In **Streetlight schedulers**, you can define different control programs (dimming profiles) to configure the cabinet controllers and associate them with different calendars.



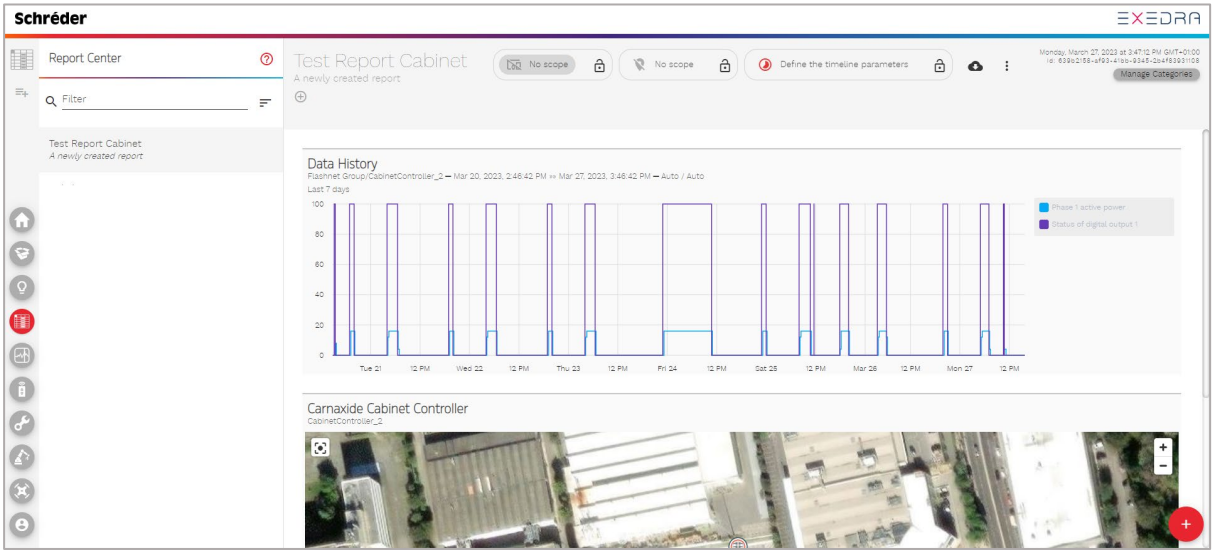
5.4 Data history

In **Data history**, you can view telemetry data (such as RMS current, active power, status of digital input, total cumulative power and total reactive energy measured since installation date, etc.) reported by the cabinet controllers.



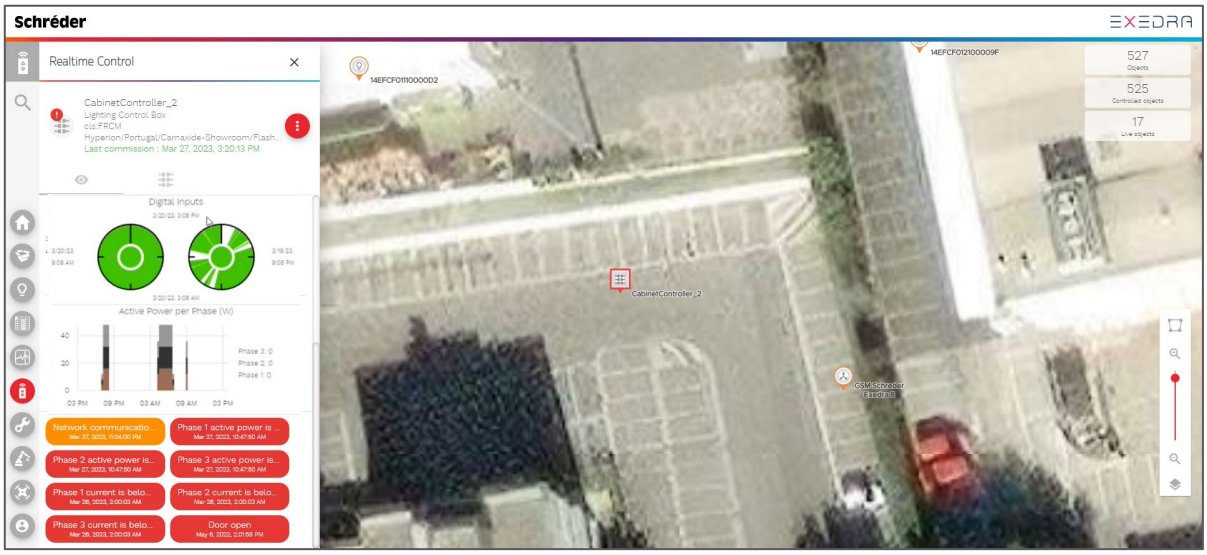
5.5 Reports

In the **Report Center**, you can create reports using the data retrieved from the cabinet controllers.



5.6 Real time control

In **Real time control**, you can control a single cabinet controller or a group of cabinet controllers in manual mode. All manual commands are password activated to make sure that nothing can compromise the city's security.

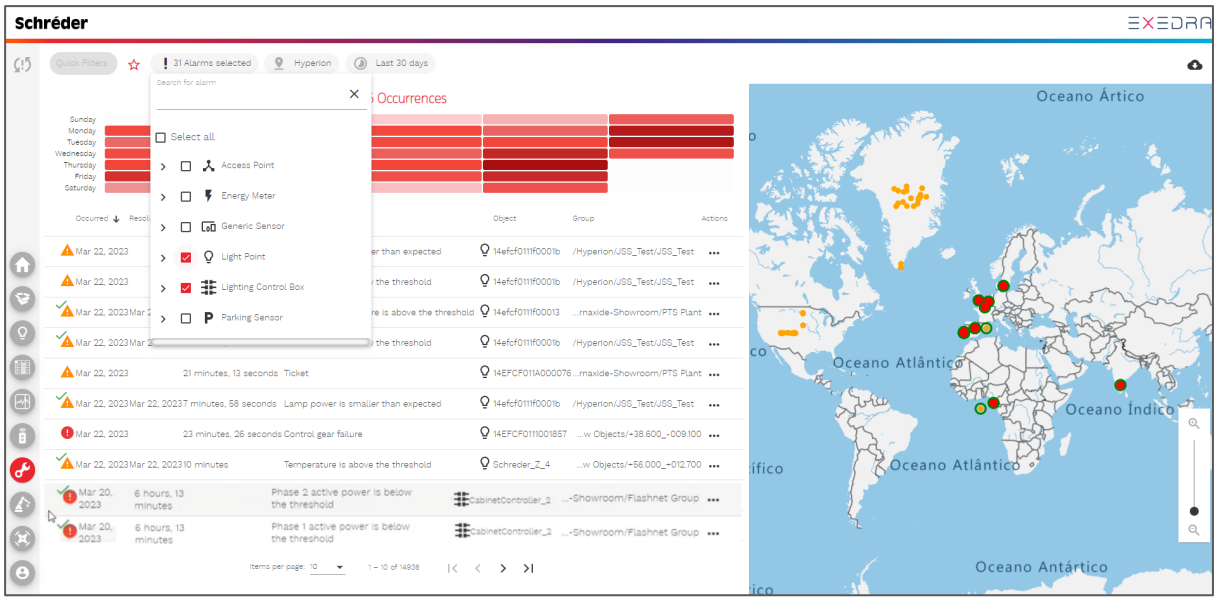


5.7 Streetlight maintenance

In **Streetlight maintenance**, you can view lists and types of alarms of cabinet controllers.

5.8 Alarms history

In **Alarms history**, you can view a history of the alarms of cabinet controllers, as well as their date of occurrence, type of error, etc.



FRCM-M1 - LTE-M compatible, lighting panel control and monitoring unit

Installed inside the feeder pillar, it is designed to provide autonomous operation for street lighting installations and to carry out three phase measurements and analysis of electrical parameters in street lighting grids.

- Specially designed and optimized for LPWA networks.
- VPN security with AES128-bit encryption and key rotation.
- Bandwidth efficient with minimal communication requirements.
- Autonomous operation based on predefined astronomic calendar and/or external light level sensor (digital INPUT).
- Remote real-time ON/OFF control.
- Remote monitoring of grid parameters in street lighting grids: per phase voltage, current, frequency, power factor, active/ reactive/ apparent power, daily active/ reactive energy consumption.
- Configuration options for: current transformer ratio, voltage/power thresholds and daytime/ nighttime consumption thresholds.
- LCD for displaying electrical parameters and device status.
- GPS for exact location and time.
- Maintenance switch for local manual override (AUTO/ON/OFF).
- Inputs: 2 x Digital INPUT.
- Output: 1 x Dry contact relay output (230V, max 3A).
- Designed lifetime: 10+ years.
- TALQv2 certified solution.

CE

FLASHNET, part of Lucy Group

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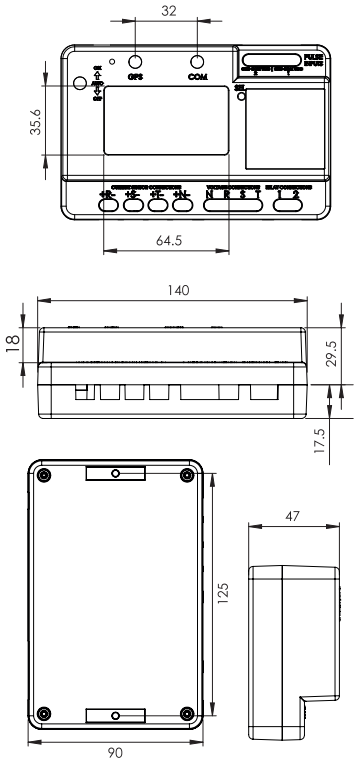
DIMENSIONS (mm):



CERTIFICATIONS:

CE

	FRCM-M1
Power supply	85- 260VAC / 50-60 Hz
Local interface	USB
Network interface	LTE-M (LTE-Cat-M1 fallback NB-IoT, 2G)
LTE supported frequencies	worldwide
Internet protocol version	IPv4/IPv6
Display	LCD
Firmware update	OTA (over the air)
GNSS	Geolocation and precision time (GPS, GLONASS, BeiDou, Galileo and QZSS)
Security	AES128-bit encryption and key rotation per session (AES256-bit optional)
Surge protection	max 6kA (IEC 61000-4-5)
Internal scheduling memory	16 events (daily / weekdays / weekends / fixed date / exceptions)
Measurement accuracy	MID grade (±1%)
Power consumption	Max. 10 W
Precision Real Time Clock (RTC)	Yes, battery operated
Battery operation time	up to 2 hours
Input	• R, S, T voltage inputs • R, S, T, N current inputs • 2 x Digital input
Power network type	Three phase electric network and Neutral
Current transformers	Standard X:5, where X is user definable
Digital input	2x Dry contact relays or active inputs 5-12V (any combination)
Output	1 x Dry contact relay (230V, 2-16A depending on load type)
Light sensor	Optional- externally connected
Connectors	• Voltage (R,S,T,N) • Current (R,S,T,N) • RF / GPS / USB
Grid connectors	2.5 mm² terminals
Antennas	2 x SMA
Ingress protection	IP20 (IEC 60529) (optional IP67 external housing)
Operating temperature	-25°C to + 70°C
Operating humidity	95% non-condensing
Weight	320 ± 5 g
Dimensions (L x W x H)	138 x 90 x 47 mm
Mounting	DIN RAIL
Compliant standards	• RED Directive: LVD Directive & protection of health (EN IEC 62368-1, EN IEC 62479), EMC Directive (ETSI EN 301 489-1, ETSI EN 301 489-52), Efficient use of radio spectrum (ETSI EN 301 908-1, ETSI EN 301 908-13, ETSI EN 303 413) • RoHS Directive • Environmental Testing: EN 60068-2-1, EN 60068-2-2
Certifications	CE

MEASURED PARAMETERS:

- voltage
- current
- active power
- reactive power
- apparent power
- active energy
- reactive energy
- power factor
- frequency

CONFIGURABLE PARAMETERS:

- current transformer ratio
- voltage/power / current thresholds
- daytime/ nighttime consumption threshold

ALARMS MONITORED:

- over/ under voltage detection
- over/ under power detection
- over/ under current detection
- unusual daytime/nighttime consumption
- phase failure
- cabinet door open sensor

ELECTRICAL CONNECTIONS: