

# FM442ir

Plug & Play IoT Sensor for  
Electricity Consumption Monitoring



# FM442ir

## Plug & Play IoT Sensor for Electricity Consumption Monitoring



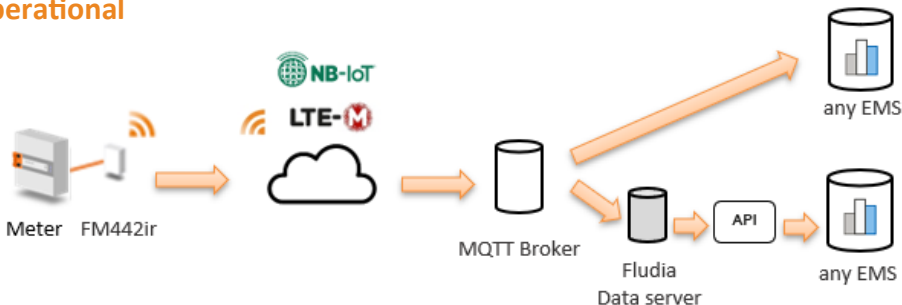
The **FM442ir** is a **plug-and-play IoT sensor designed for monitoring electricity consumption in all types of buildings**. It has been designed for Meters with infrared communication ports, but can also be used with old Ferraris meters. The optical head can be quickly attached to the main electricity meter or a submeter, and the NB-IoT/LTE-M modem connects through standard cellular networks. Measurement data is transmitted to an MQTT broker and can be retrieved by any EMS (Energy Management System).

### Benefits

- ⇒ **Universal**: compliant with most meters (Ferraris, mMe,...)
- ⇒ **Plug & Play**: Optical head installed in seconds without tools
- ⇒ **Reliable**: Adaptive detection and signal filtering built into the optical head
- ⇒ **Configurable**: Measurement and transmission intervals remotely adjustable
- ⇒ **Autonomous**: Battery-powered for multiple years of operation
- ⇒ **Made in France**: Designed and manufactured by Fludia, with full support and product evolution handled in-house



### Operational



## Use Cases

- ⇒ **Smart Home and customer engagement:** Enhanced customer interaction through rich insights, including energy disaggregation (NILM).
- ⇒ **Smart Monitoring for small buildings:** Real-time supervision of energy consumption to ensure efficiency and control.
- ⇒ **Solar Installations:** Analysis of energy production and self-consumption to optimize solar system performance.

## General and technical features

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Input	<ul style="list-style-type: none"><li>- Electromechanical meters (ex: Ferraris): Optical reading via disk rotation detection → Switch position: A</li><li>- Electronic meters (mMe): Optical reading via detection of infrared messages → Switch position: B</li></ul>
Output	<ul style="list-style-type: none"><li>- NB-IoT and LTE-M supported</li><li>- MQTTs protocol</li></ul>
Installation & Operation	<ul style="list-style-type: none"><li>- Optical head mounted on a plastic holder with specialized 3M adhesive</li><li>- Meter type selected via switch on the side of the optical head</li><li>- Red and green LEDs for commissioning and diagnostics</li></ul>
Data	<ul style="list-style-type: none"><li>- Energy index and power load curve every 5, 10, 15, 30, or 60 minutes (remotely adjustable)</li><li>- Default configuration: index increment every 15 minutes, data sent every 4 hours</li></ul>
Power supply	<ul style="list-style-type: none"><li>- Two replaceable A-size batteries: 3.6V Lithium-Thionyl Chloride (Li-SoCl<sub>2</sub>)</li></ul>
Size & Weight	<ul style="list-style-type: none"><li>- Optical reader: 19 g (with cable), 24 mm (height), 40 mm (width), 19 mm (depth)</li><li>- Cable length: 50 cm</li><li>- Radio box: 130 g, 95 mm (height), 75 mm (width), 30 mm (depth)</li></ul>

## FM442ir



## Reference

FM432ir\_ap\_15mn

IoT Sensor for Electricity Consumption Monitoring - data 15mn

### Contact:

Fludia - 37 avenue Edouard Vaillant - 92150 Suresnes - France  
Phone: +33 (0)1 83 64 13 90 - Mail: [contact@fludia.com](mailto:contact@fludia.com) - [www.fludia.com](http://www.fludia.com)