

## NB-IoT

# Wireless pulse counter - electricity

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Electricity pulse counter is used to remotely monitor electricity consumption in order to control related expenses and quickly detect anomalies. You can connect it to any meter equipped with Standard output (SO). The solution is dedicated for both enterprises and households. The sensor can simultaneously work with up to three electricity meters. By default, each counted pulse represents one watt-hour (Wh). Data is presented in the form of power consumed by devices (W) in addition it is possible to generate a report with total consumption (Wh / kWh) in a selected period.

Efento NB-IoT pulse counters transmit the data over cellular network (Narrowband IoT) and do not require any additional devices (router, gateway, etc.). Pulse counters are also equipped with Bluetooth Low Energy interface, which allows quick and easy configuration with a smartphone. Efento NB-IoT pulse counters can be integrated with any cloud platform.

## KEY FEATURES

- **Long battery life**  
Loggers have been designed to work for up to 10 years on batteries. You do not have to remember about changing the batteries frequently or troublesome batteries charging.
- **Lower costs**  
Choosing wireless sensors and a cloud platform reduces the installation and maintenance costs.
- **Wide range of sensors**  
Efento sensors can measure various physical and chemical values. If you decide on one sensor today, you can expand your sensors fleet to another types anytime you want.
- **Any cloud platform**  
Standard communication protocols allow integration with any cloud platform or mobile application. Logger works with Efento Cloud out of the box.
- **Easy set up**  
All you need to set up a logger is a smartphone with a free mobile application. The whole configuration takes no more than 15 minutes.
- **Remote configuration and updates**  
All logger settings can be configured remotely from the cloud platform. Moreover, logger's software can be updated remotely.

## TECHNICAL DATA

### Versatility

- The counter can cooperate with any device equipped with a pulse output

### Up to 3 channels

- Simultaneous operation with up to 3 devices
- Supported counters: NO (Pull-up 3.6V)

### NB-IoT

- NB-IoT band: 8, 20
- 3GPP: Release 13
- Power: 23 dBm  $\pm$ 2 dB

### Bluetooth Low Energy interface

- Radio module frequency: 2,4 GHz
- Power: 2,5 mW (4 dBm)
- Range: up to 100 m (LOS)
- Transmission period: 1 s

### Communication

- Protocol: CoAP;
- Transmission interval: 5 minutes – 10 days, configurable

### Minimum pulse duration

- 5 millisecond

### Maximum pulse duration

- 500 millisecond

### Power supply

- Replaceable AA batteries 2 x AA, 4200 mAh or 3 x AA, 6300 mAh. Battery operating time: up to 10 years
- USB 5V with 1000 mAh rechargeable battery

### Mechanical

- Dimensions: 28 x 60 x 124 mm
- Weight: 140 g (including batteries)
- Enclosure: plastic ABS, color white, IP30

### Environmental

- Operating
  - ◆ Temperature: -35° to 70°C
  - ◆ Humidity: 0 to 99% non-condensing
- Storage and transportation
  - ◆ Temperature: -40° to 70°C

## ADDITIONAL INFORMATION

### Universal pulse counter for electricity meters

Efento wireless pulse counter can work with any electricity meter equipped with standard output (SO). The pulse counter has three channels and can count pulses from up to three meters simultaneously.

### Edge analytics

Devices analyse the data and send it to cloud platform when needed. This allows to decrease the number of cellular transmissions and increase the battery lifetime. There are several types of analyses that can be performed by the sensor: from a simple comparison of the measured value to the threshold to more complex mathematical operations.

### Software over the air update (SOTA)

The sensors are equipped with over the air software update mechanism, thanks to which, your fleet of sensors will always have the latest version of software. Moreover, SOTA is based on delta mechanism and only the difference between the current and the new version of the software is sent to the device. This saves both the battery and data transfer.

### Full remote configuration

All the settings of the NB-IoT sensors can be changed remotely in a secure way. This allows you to easily reconfigure thousands of the deployed devices, no matter how far they are located.

### Integration

We believe that the Internet of Things is about integrating data sources, analysing the data and drawing conclusions based on it. If you want to integrate Efento loggers with your software, cloud platform or mobile application, we will provide you with the necessary documentation, libraries, SDKs and we will gladly assist you.

### Sensor's passport

Sensor's passport documents the entire lifecycle of a device. By accessing the data on Efento Cloud platform, the user can check all information about the sensor: date of sale, warranty status, date of calibration, information on all service activities. In addition, the user can download all documents regarding the device – a duplicate of calibration certificate or service protocols.