

**LTE-M / NB-IoT**

# Wireless pulse counter - water

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Efento pulse counter is used to remotely monitor water flow through a water meter in order to control the water consumption and related expenses. You can connect it to any water meter equipped with Standard output (SO) or pulse generator. The solution is dedicated for dispersed facilities, in which control of the water consumption is impossible or expensive. Analysis of meter's data allows you to decrease water bills and quickly detect anomalies and minimize the effects of flooding. The sensor can simultaneously work with up to three water meters. By default, each counted pulse represents one liter of flowing water (l). Data is presented in the form of water flow (in liters per minute) or in the form of water consumption over a selected period of time (in m<sup>3</sup>).

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

## Key features

- **Works with Efento Cloud**  
Together with Efento Cloud, the sensors enable constant monitoring, alerting about exceeding safe limits, generating reports and analyzes.
- **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.
- **Integration**  
Standard communication protocols allow integration with any cloud platform or mobile application.
- **Easy set up**  
All you need to set up a logger is a smartphone with a free mobile application. The

## 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)

### LTE band (FDD)

- LTE band (FDD): 8, 20, devices working on other bands available on request
- 3GPP: Release 13 (LTE-Cat M1)
- Power: 23 dBm (LTE-M NB-IoT)

### 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

### Minimum pulse duration

- 5 millisecond

### Maximum pulse duration

- 500 millisecond

### Communication

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

### Battery

- Battery: 4,2 V, size AA, capacity 4 200 mAh
- Battery operating time: at least 10 years

### Mechanical

- Dimensions: 27 x 71 x 71 mm
- Weight: 100 g (including batteries)
- Enclosure: plastic ABS, color white
- Enclosure IP rating: 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 water meters

Efento wireless pulse counter can work with any water 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.