NB-IoT

Wireless temperature and humidity logger

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

NB-IoT temperature and humidity loggers are used to measure both temperature and humidity in places which require constant monitoring of the prevailing conditions – museums, archives or churches to monitor atmospheric conditions affecting exhibits.

KEY FEATURES

➔ **Long battery life**
Loggers have been designed to work for up to 5 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

Temperature & humidity sensor
➔ Temperature range: -15° to 70°C
➔ Accuracy up to 0.4°C
➔ Resolution: 0.1°C, drift: 0.1°C / year
➔ Humidity range: 0 to 99% RH
➔ Accuracy: 4% in 0 to 80% RH
➔ Hysteresis: +/- 1 %RH
➔ Resolution: 1%, drift: <0.25% / year
➔ Memory size: 40 000 measurements
➔ Measurement interval: 1 minute to 10 days (configurable by the user)

Bluetooth Low Energy interface
➔ Radio module frequency: 2,4 GHz
➔ Power: 2,5 mW (4 dBm)
➔ Range: up to 100 m (LOS)
➔ Transmision period: 1 s

NB-IoT
➔ NB-IoT bands - default: B8 and B20 On request: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26/B28/B66
➔ 3GPP: Release 13
➔ Power: 23 dBm ±2 dB

Communication
➔ Protocol: CoAP
➔ Transmission interval: 5 minutes – 10 days, configurable

Power supply
➔ Package of 3 x AA, 6300 mAh (replaceable) Battery operating time: up to 5 years
➔ USB 5V with 1000 mAh rechargeable battery

Mechanical
➔ Dimensions: 26 x 60 x 124 mm
➔ Weight: 0,13 kg (including batteries)
➔ Enclosure: plastic ABS, color white, IP30

Environmental
➔ Operating
   ◆ Temperature: -15° to 70°C
   ◆ Humidity: 0 to 99% non-condensing
➔ Storage and transportation
   ◆ Temperature: -40° to 70°C

ADDITIONAL INFORMATION

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.

Calibration certificate
At the customer's request, each Efento sensor can be supplied with a calibration certificate in accordance with ISO / IEC 17025. The test is performed in an external, ILAC certified laboratory. The calibration date is saved in the logger memory and it notifies the user about the suggested date of the next calibration.

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.