NB-IoT

Wireless indoor air quality, temperature and humidity logger

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Wireless temperature, humidity and air quality logger is designed to monitor indoor climate conditions. The device measures air quality based on the concentration of volatile organic compounds (VOC) and calculates IAQ (Indoor Air Quality) representing air quality in the room based on the Bosch patented algorithm. Volatile organic compounds are substances derived from many indoor products, including from paints, cleaning agents, solvents, alcohol or glue.

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.

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 and air quality sensors
➔ Air quality: 0-500 IAQ
➔ Temperature: -15 to +70°C, accuracy up to 0.4°C
➔ Humidity: 0 to 99% RH, accuracy 4% in the range of 0 to 80%
➔ Hysteresis: +/- 1 %RH
➔ Measurement period: 1 minute – 10 days (configurable by the user)
➔ MEmory size 40,000 measurements

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

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: -15° 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.

Measures Indoor Air Quality
The device measures air quality based on the concentration of volatile organic compounds (VOC) and calculates IAQ (Indoor Air Quality) representing air quality in the room based on the Bosch patented algorithm.

IAQ index	Air quality
0-50	Good
51-100	Average
101-150	Little bad
151-200	Bad
301-500	Worse
500+	Very bad

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.