

Wireless thermocouple logger

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Efento thermocouple loggers are designed to monitor a wide range of temperatures using external thermocouple probes. Users can connect their preferred thermocouple probe (supported types: B, E, J, K, N, R, S, T) to the logger and monitor temperatures within the chosen range. Measurement accuracy varies based on the probe selected.

Efento NB-IoT sensors send data directly over a cellular network (Narrowband IoT) without the need for additional devices like routers or gateways. These sensors are also equipped with Bluetooth Low Energy (BLE) for quick and easy configuration using a smartphone. Additionally, Efento NB-IoT sensors 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 5 years on battery. You can forget about changing the battery frequently or troublesome battery 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 whole configuration takes no more than 15 minutes.

Technical data

Temperature sensor

- Supported thermocouple types: B, E, J, K, N, R, S, T
- Range and accuracy: depends on the connected probe
- Resolution: 0.1°C
- Memory size: 40 000 measurements
- Measurement interval: 1 minute to 10 days (configurable by the user)

Bluetooth Low Energy interface

- Communication: Bluetooth Low Energy (BLE)
- Radio module frequency: 2,4 GHz
- Power: 2,5 mW (4 dBm)
- Range: up to 100 m (LOS)
- Communication standard: Bluetooth Smart (Bluetooth Low Energy, Bluetooth 4.0)
- Transmission period: 1 s

Communication

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

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

Mechanical

- Dimensions: 26 x 60 x 124 mm
- Weight: 0,15 kg (including batteries)
- Enclosure: plastic ABS, color white, IP30
- 1 m probe

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.

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.