

# INDU-EYE TERMO

## BATTERYLESS IOT TEMPERATURE MONITORING

INDU-EYE TERMO is a *batteryless* solution for temperature monitoring. Our device uses long-range wireless protocols and is particularly designed to be used in hard-to-reach and cost prohibitive environments.

A robust, reliable and easy-to-install *Predictive Maintenance* system allows you to remotely monitor the health of your machinery and predict the most optimal time for maintenance.

### Keep your plant up

Detect proactively performance issues to reduce unplanned downtime.

### Waste Heat powered

Batteryless means forgetting expensive battery maintenance and become eco-friendly.

### Easy installation

*Plug&Play* installation without the need for cables. Long-range wireless protocols (>10 km) require very simple infrastructure compared to low-range protocols, commonly used by competitors, that need gateways or repeaters every few meters.

### Monitoring dashboard

Use our DAEVIS monitoring dashboard tool or any other cloud-based system: Always choose the best settings to make your decisions.

### Fully adaptable

Adaptable to any type of surface, whether flat or circular.

### Flexible and scalable

It does not matter how many Indu-Eye devices you want to install and where, changing and growing your network is very easy!

### Cost and environmental savings

Compared to competitors' wireless solutions (battery-powered), our products reduce the cost of devices, infrastructure, and other recurrent expenses up to 70% and more than 98% of reduction in GHG, energy, heat and water during its lifetime.

### Improve your maintenance tasks

Automate routine operations keep maintenance professionals performing high-value tasks.



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## Wireless and Batteryless IoT Temperature Monitoring

INDU-EYE TERMO is a system consisting of four main components:

1. The industrial temperature sensor.
2. The wireless IoT device with edge computing and long-range network capabilities.
3. A thermoelectric generator, capable of powering the entire system using heat.
4. 3<sup>rd</sup> Party LoRaWAN gateway.



Economical, flexible, scalable and easy to maintain and install, which means that our product is the most competitive solution on the market.

### Use cases

Wireless monitoring system for early detection of faults. It permits to diagnose heating and rotating equipment, check the temperature in hazardous parts in a process and test electric motors in the following machines:

- Furnaces, Kilns and boilers.
- Pipeline, steam traps.
- Drum dryers, belt press, centrifuge decanters.
- Pumps, motors, fans, compressors, and turbines.
- Centrifugal separators, blowers, agitators, exponders, and heat exchangers.
- Thermostatic filters.

### Mean features

Temperature range	-60 °C to 650 °C
Temperature accuracy	± 0.1°C to ± 1°C
Sensor type	PT100 / PT1000
Ambient temperature	-20 °C to 50 °C
Exposure temperature	50 °C to 150 °C
Communication	LoRaWAN <sup>®</sup>
Data update cycle (sample/hour)	From 1 to 10
Certifications	CE;FCC and ATEX/IECEX ongoing
Mount	Plain or pipe
Degrees of protection	IP67

### Network scenario



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