



ABB MEASUREMENT & ANALYTICS

The Energy Harvester

Enabling truly autonomous
temperature measurement



Serving your industry

Measurement made easy

Whether in oil and gas, chemical, power, water and wastewater or any other industry, temperature is one of the key parameters to control your process.

Increased plant efficiency often starts with close process temperature control.

Water and wastewater



Power and steam generation



Chemical and petrochemical industry



Oil and Gas



Paper and pulp industry



Mining



Metal



Food and beverage industry



Marine



The Energy Harvester

A fundamental innovation

ABB has got more than 130 years of experience in temperature measurement.

This sound knowledge built the strong basis for achieving a fundamental technological innovation in the field of temperature measurement:

WirelessHART temperature sensor TSP300-W with Energy Harvester.

Welcome to the world of truly autonomous temperature measurement.



Truly autonomous temperature measurement

ABB's engineers targeted to make temperature measurement easy for you. With this goal in mind, ABB has developed the WirelessHART temperature sensor TSP300-W with Energy Harvester.

It is the world's first self-powered temperature sensor and requires no wiring, no external power supply and ideally no battery replacement.



Overcoming barriers of the past

Traditionally in temperature measurement, cabling was needed for power supply and signal processing. This always involved costs and extremely high effort, especially where temperature measurement was installed after the original process set-up and commissioning.

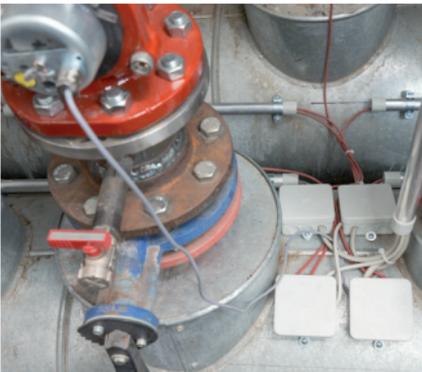
Cabling costs were also high where:

- there are long distances between the temperature sensor and transmitter
- suppression of parasitic induction needed to be implemented
- safety measures were taken

With the introduction of wireless signal processing, cabling costs were reduced but cabling was still necessary in order to secure a power supply. Batteries could be considered as an alternative but needed to be replaced, requiring strictly managed maintenance intervals.

These barriers belong to the past! The new Energy Harvester enables truly autonomous temperature measurement.

In the past, physical constraints to add wiring into existing installations made it difficult and expensive to optimize a process. This made process optimization very costly.



Truly autonomous measurement

The secret of the new freedom

How ABB provides you with new flexibility

The WirelessHART temperature sensor TSP300-W with Energy Harvester is powered by an on-board micro-thermo-electric generator (micro-TEG). It is driven by the temperature difference between the process and the ambient surroundings. The micro-TEGs used in ABB's WirelessHART temperature transmitters provide a robust and compact solution for energy harvesting from either hot or cold processes. With many industrial processes having an abundance of heat which is normally lost. This is enough for the TEG to generate sufficient power to operate wireless measuring equipment in a variety of locations.



Measurement made easy

Enjoying the new independence

The Energy Harvester enables you to:

Increase plant performance

- Drastically decrease installation costs

Improve plant efficiency

- Enable temperature measurement points in parts of the plant where it was too expensive or dangerous to run power lines
- No external energy power supply for the Energy Harvester

Increase plant safety

- Tremendously reduce complexity of safety measures

This technology for autonomous temperature measurement is exclusively available from ABB.

Now you can measure temperature in more locations with greater flexibility, increasing plant performance, safety and efficiency.

With the surface mount option of the SensyTemp Energy Harvester it is possible to add a new temperature measuring point to an existing installation within five minutes.

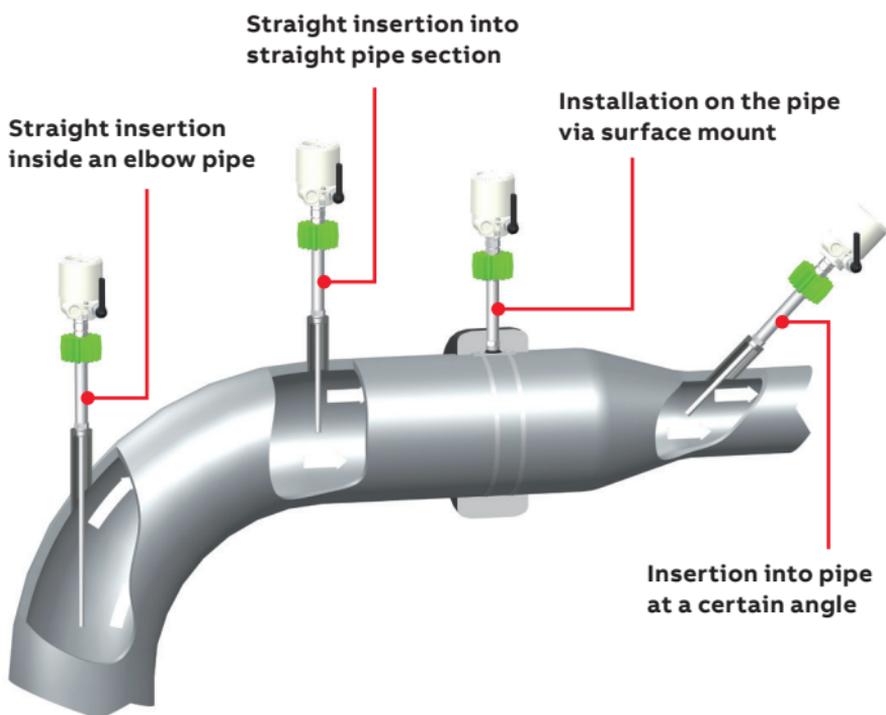


Flexibility to add anywhere

Installation options

The ABB Energy Harvester is used in various applications and all industries.

Several installation options are possible to integrate the Energy Harvester into your process.



Installation at the pipe surface just takes you a couple of minutes.



Everything you need

All benefits at a glance

ABB's Energy Harvester helps to increase plant performance, safety and efficiency by enabling temperature measurement in more locations with greater flexibility.

- Powered by process temperature
- Long-life standard battery back-up
- Fast and easy set-up
- Ideally no battery replacement needed
- Intuitive and intelligent HMI
- Configurable directly at the device through HMI without using external power source
- Configurable via handheld or control system with EDD or DTM
- Extremely robust heavy duty edition available
- WirelessHART
- ATEX, IECEx approvals

Temperature sensors powered by temperature – Measurement made easy!



Increased plant performance

Safety, efficiency, flexibility

Find out how the Energy Harvester convinced our customers:

The challenge: Monitor process temperature without control system connectivity nearby.

The solution with the Energy Harvester:

The temperature sensors were installed and visible on the plant control network within one hour.

“The Energy Harvester is a complete out of the box solution that can be installed and commissioned in a very short time. At present, this type of product is only available from ABB.”
(Chemical company)

“ABB’s Energy Harvester has enabled us to cope with critical process parameters. This instrument provides for a higher level of automation and process optimization at relatively low costs.”
(Chemical company)

The challenge: Temperature monitoring for waste water of cooling system for coking plant.

The solution with the Energy Harvester:

Installation of surface mount temperature transmitters communicating values to central office of maintenance engineering team.

“With the Energy Harvester from ABB we can check easily, and at very low capital expenditure, where a process can be optimized without requiring any wiring efforts”
(Steel company).

The challenge: Get temperature information out of rotary furnace without a contact ring.

The solution: Installation of a Energy Harvester to rotary furnace.

“In the past, we have frequently encountered problems with signal transmission via slip rings, due to deposits. ABB’s Energy Harvester allows for trouble-free signal transmission while reducing maintenance costs.”

(Food producer)

Please contact us for further information on how the Energy Harvester helps to increase the performance of your plant. We look forward to hearing from you!



Contact

ABB Measurement & Analytics

For your local ABB contact, visit:

www.abb.com/contacts

For more product information, visit:

www.abb.com/measurement

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