Fuji Electric

Innovating Energy Technology

Increase your energy performance and profitability with IIoT smart transmitters

Pressure measurement

Improve the energy efficiency and maintenance of your process installations with smart transmitters

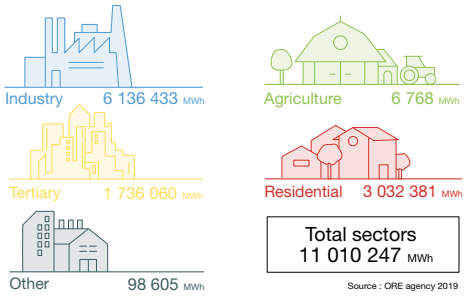
The industrial sector (led by pulp and paper and chemicals) is one of the most energy-intensive in the world, sometimes far ahead of the tertiary and residential sectors. According to the International Energy Agency (IEA), our industries alone consume 73% of the coal, 42% of the electricity and 37% of the natural gas produced on our planet.

In France, the industrial sector is the champion of gas consumption and the bronze medal holder for electricity consumption. In 2019, the industrial fabric of a city like Rouen absorbed 3.5 times more energy than the tertiary sector and twice as much as the residential sector.

In this context, improving energy efficiency is becoming essential. Because it will allow you to play a major role in the Climate Plan undertaken by many countries to achieve carbon neutrality by 2050, and at the same time, to meet the growing energy needs of your process installations.

> *France is at a crossroads. Indeed, essential decisions concerning its future energy system must be taken quickly if it is to achieve zero emissions by 2050.*
>
> ***Fatih Birol, IEA Executive Director***

Energy consumption by sector



So how do we meet this challenge?
The key... Smart data.

Industry 4.0 leverages smart data to increase energy performance and profitability in the industrial sector.

Numerical data, also known as numerical data, is at the heart of Industry 4.0 technologies and concepts: smart transmitters, the Internet of Things, digital twins and cyber-physical systems.

Digitalisation can have a huge impact on your industry.

Collected by smart transmitters, numerical data enables the implementation of predictive maintenance, which has the potential to reduce machine downtime by 30-50%, significantly increasing the reliability of your assets.

Effective maintenance has a huge impact on energy consumption and operating costs, as it helps you to optimise your system configurations, minimise breakdowns and reduce energy-intensive production restarts.

We estimate that predictive maintenance could reduce plant equipment maintenance costs by 10-40%.
In addition, better predictive maintenance using the Internet of Things (IoT) can reduce equipment downtime by up to 50%
and reduce capital investment in equipment by 3-5% by extending the useful life of machines.
In the industrial sector, these savings have a potential economic impact of nearly $630 billion per year.

Fatih Birol I IEA Executive Director

The key role of smart transmitters in the energy efficiency of your installations

Analogue transmitters have been used for decades to collect data to monitor your processes. But connected smart transmitters that can collect digital data have a wider range of applications and their use is steadily increasing.

Smart connected transmitters will collect more and better digital data about the energy consumption of your facilities.

Once analysed, this digital data can then be integrated into your production management and process optimisation practices, providing opportunities to improve energy efficiency.

The IEA says that the combined use of 4.0 technologies and the Industrial Internet of Things (IIoT) in industry can result in energy savings of up to 30% worldwide.

Do you use smart connected transmitters?

You certainly did not experience the Watt's steam engines of the 1st industrial revolution.
Nor the Taylorism and Fordism of the 2nd Industrial Revolution.

But you have seen the explosion of robotics and digital technologies of the 3rd industrial revolution.

And today, the digitisation of industry, and in particular the digitisation of data made possible by the development of connected objects, means that you are entering the 4th industrial revolution: Industry 4.0 and the IoT!

So, of course, the potential of smart connected transmitters is still under-exploited.

But just imagine being able to view the data from your instruments in detail and at any time without interrupting your processes and thus foresee an incident before it occurs in your installation.

No more running around the production site to take readings from an instrument before you can analyse them back in your control room.

You would then be able to optimise a process or correct a faulty instrument without having to travel.

Science fiction, you might say!

However, the technologies that ensure better life cycle management of your facilities and instruments and guarantee their optimal operation already exist and allow you to carry out a 4.0 revolution in your plants without prohibitive investments.

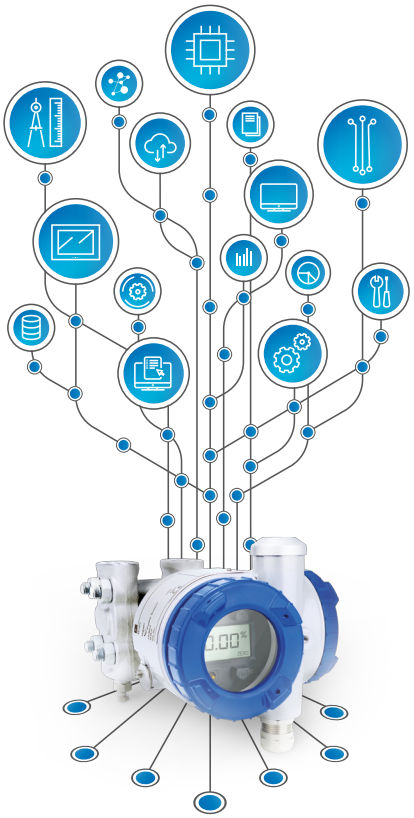
It was in the early 1990s that, under the leadership of the FieldComm Group, HART® became an IEC standard (61784-1 CPF9): a 30-year history in which Fuji Electric has participated as a member of the FieldComm Group.

Today, with over 40 million measuring instruments installed, HART® is by far the most widely used communication protocol in the process industries. In fact, as you will see below, HART® is much more than just a communication protocol that supports the exchange of data between an instrument and its terminal.

HART® COMMUNICATION PROTOCOL

Mots Clés

- Pressure transmitter
- Hart® pressure transmitter
- FUJI SmartHealth™
- Industry 4.0
- IoT
- Energy efficiency
- Predictive Maintenance



SMART HEALTH™
SELF-DIAGNOSIS TECHNOLOGY

Unlock the true potential of FCX pressure transmitters to improve energy of your facilities

Equipped as standard with HART® V7 technology, the FCX-AII pressure transmitter can be connected to an IOT gateway, allowing it to collect a very large amount of data, format it for easier viewing and analysis, and thus contribute to improving the energy efficiency of your production units.

Simple and easy to use,

the FCX-AII is a versatile device that not only measures the absolute, relative or differential pressure of your equipment, but also provides information about the surrounding environment: level, density, flow and temperature measurements.

Many other data, such as instrument status, diagnostics and additional values (measured or calculated), can be exchanged over two-wire 4-20 mA analogue current loops. This makes the FCX-AII compatible with your existing installations.

The FCX-AII pressure transmitter's extensive features and benefits,

allow you to use the instrument's specific information to perform special tasks such as partial stroke testing (on high integrity pressure protection systems, for example), data logging and plant asset management. These predictive maintenance operations increase plant uptime by reducing unplanned downtime and thus operating costs.

FUJI SmartHealth™,

the self-diagnostic technology developed by FUJI, provides maintenance and diagnostic functions that allow you to detect the smallest irregularities in your process. The FCX-AII communicates diagnostic information directly to the control room, reducing the time needed to determine the cause of the problem and quickly take appropriate corrective action on your equipment.

This reduces or eliminates the need to travel to the site or hazardous area. You can also minimise maintenance with remote calibration and the ability to view, verify and test your transmitter parameters from a PC equipped with the universal PACTware™ configuration, operation and diagnostic software.

Easy configuration of the FCX-AII smart transmitter,

equipped with the latest HART® version 7 communication interface, can also be quickly set up using an MFC5150x HART® handheld terminal.

Increased reliability and safety,

in explosive environments thanks to its ATEX, IECEx and cCSAus certificates. The FCX-AII achieves SIL2 and SIL3 integrity. It complies with IEC 61508 and IEC 61511. Its 97% safe failure rate gives it the best SFF available in the pressure transmitter market.

Your advantages

Improved maintenance and process safety

With HART® technology and SIL3 certification.

Increased productivity of your installations

By reducing downtime due to breakdowns or maintenance.

Reduced operating losses

By quickly identifying malfunctions thanks to FUJI SmartHealth™ technology.

MADE IN FRANCE

FCX Smart pressure transmitter

Maximum flexibility and wide range of applications

Differential, relative, absolute pressure from 1 mbar to 500 bar, dynamic 1:100

Increased durability and availability of your equipment

Best reliability on the market (SFF > 97%) and high robustness (lifetime > 25 years)

Optimisation of your processes thanks to reliable and relevant measurements

Excellent zero stability +/-0.1 % over 5 years, high accuracy ± 0.04 %

Immediate data monitoring and corrective action

Extremely fast measurement cycle (< 40 ms)

Enhanced safety of your installations

SIL2/3 IEC 61508 compliance, ATEX, IECEx, cCSAus certification

IoT smart transmitter

Integrates HART® and FOUNDATION™ Fieldbus communication protocols

Self-diagnosis with FUJI SmartHealth™

FUJI SmartHealth™ diagnostic features in accordance with NAMUR NE43 recommendations

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