

BONFIGLIOLI IOT SOLUTIONS:

Powering Your Future



BONFIGLIOLI IOT SOLUTIONS

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WE KNOW WHAT HURTS YOUR BUSINESS

Downtime, sudden failures, high maintenance costs, reduced lifespans and collateral asset damage are painful to deal with. Not only do they dent confidence and hit your bottom line, they also make it harder to prioritise and plan equipment maintenance. Having no way to measure and evaluate KPIs, manage efficiency and analyse performance makes the future uncertain.

- > DOWNTIME
- > SUDDEN FAILURES
- > HIGH MAINTENANCE COSTS
- > REDUCED LIFESPANS
- > COLLATERAL ASSET DAMAGE

WE CAN HELP...

Imagine you had access to asset health indicators that told you when equipment required maintenance. Imagine you had at your disposal a constantly updated pool of data on your machinery, driving KPIs, analysis and output. And imagine if all of this could proactively tell you when and how to re-engineer your applications, **taking guesswork out of the equation.**

- > UPDATE POOL OF DATA ON YOUR MACHINERY
- > DRIVING KPIs
- > ANALYSIS AND OUTPUT

...WITH BONFIGLIOLI'S IOT SOLUTION

We offer the Bonfiglioli IoT Solution as a complete, all-round experience, including IoT platform technology, Predictive Maintenance and Condition Monitoring services, as well as after-sales support. And we want to be your technology partner too, providing a tailor-made solution through a proof-of-concept project.

All this is combined with our product expertise to provide a **truly seamless experience.**

OUR IOT SOLUTIONS DRIVE BETTER OUTCOMES

Today's marketplace is increasingly competitive. In this environment, complete control and visibility over your machinery is no longer an optional extra, it's a must.

ONE IOT SOLUTION FOR TWO SERVICE LEVELS

CONDITION MONITORING

Customers need to know the overall status of their equipment, including machine uptime, real-time performance, the duty cycle and energy consumption. Why? Because it drives increased uptime, eliminates unplanned failures and decreases maintenance costs. Our IoT solution delivers this via industry-standard protocols, all wrapped up in our comprehensive **Condition Monitoring** service.

PREDICTIVE MAINTENANCE

We also help boost efficiency in maintenance practices and management with our **Predictive Maintenance** service which provides you with key information, like when you need to change the oil, when gearmotors need checking and when a machine is about to break down – all before it's too late.





BONFIGLIOLI CONDITION MONITORING

Our Condition Monitoring service utilises Bonfiglioli IoT sensors to collect continuous real-time data and identify significant changes in parameters, such as vibrations and temperature, which are indicative of developing faults in gearmotors or other parts.

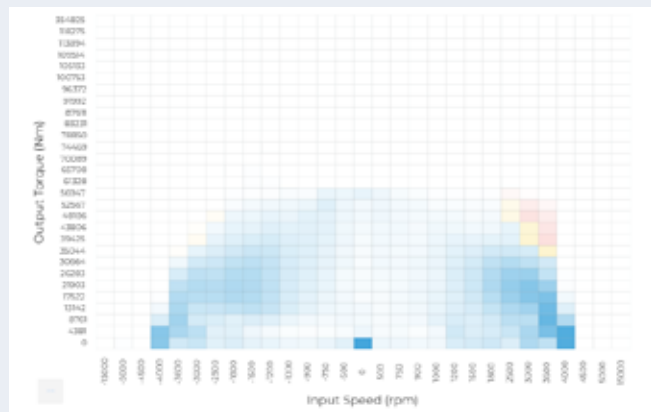
WATCH OVER YOUR MACHINERY

Monitor a wide range of parameters simply and all in one place.

VALUES & METRICS VIEW

WORKING HOURS	925 h
TORQUE	758 Nm
SPEED	2364 rpm
GEARBOX TEMPERATURE	75 °C
OIL TEMPERATURE	82.3 °C
VIBRATION	0.64 gRMS

DUTY CYCLE ANALYSIS





BONFIGLIOLI PREDICTIVE MAINTENANCE

Our Predictive Maintenance service takes Condition Monitoring to the next level. It is underpinned by a broad set of inputs and deep engineering understanding of the component in question to estimate the optimum date for maintenance, saving you money and preserving performance.

TAKE BACK CONTROL OF MAINTENANCE

Our data-driven approach tells users exactly when it's the right time to service their machines.

RUL (remaining useful life)

NEXT GEARBOX MAINTENANCE DATE

APRIL 2034

NEXT OIL CHANGE DATE

DECEMBER 2024

ANOMALY DETECTION

OIL LEVEL



OIL LUBRIFICATION QUALITY



GEARBOX VIBRO-ACUSTIC

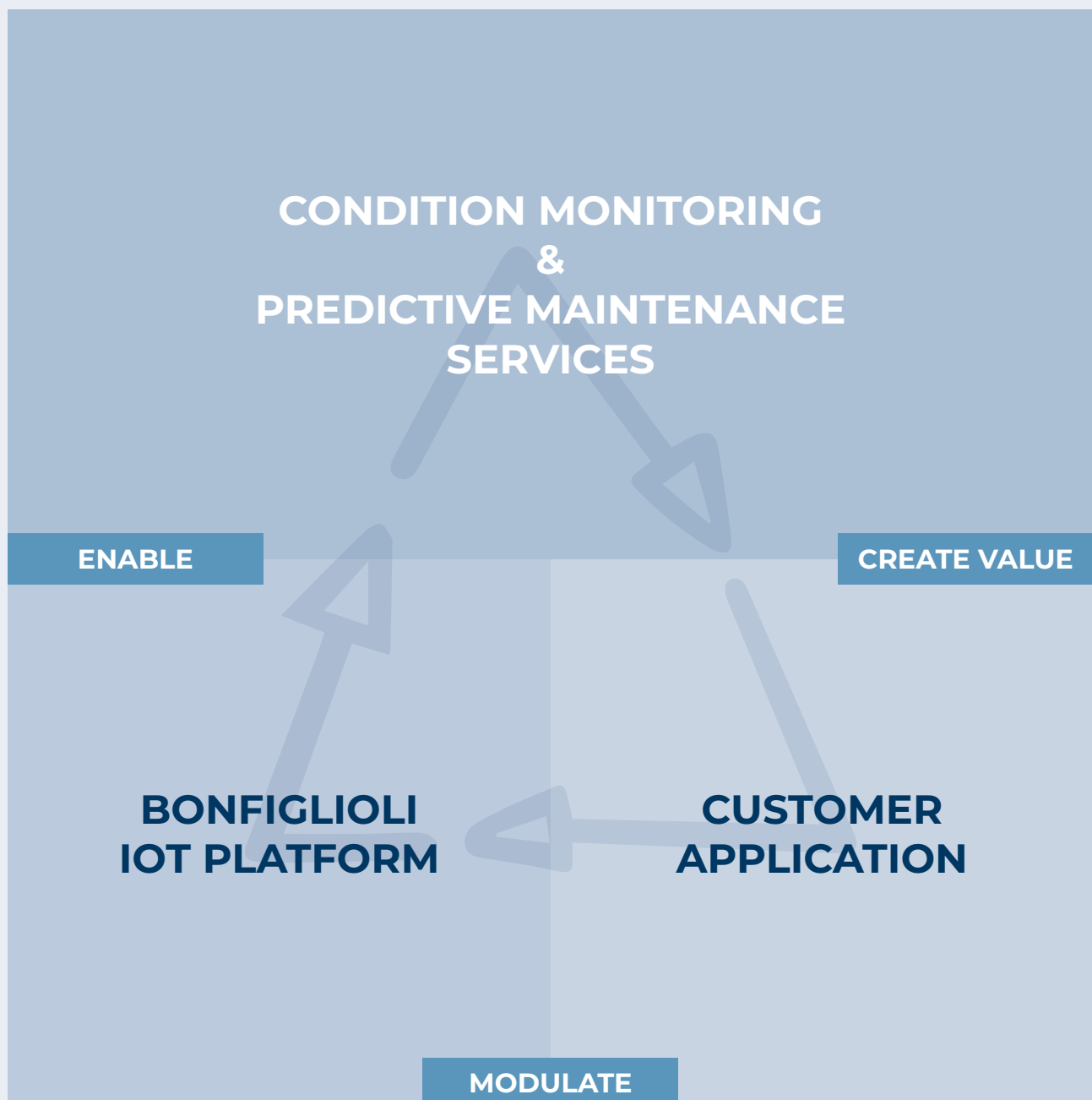


GEARBOX TEMPERATURE



IOT PLATFORM

OVERVIEW

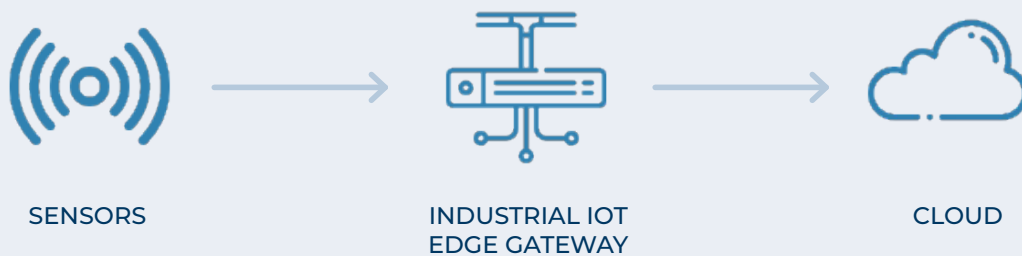


THE BONFIGLIOLI IOT PLATFORM

THE GATEWAY TO OUR IOT SOLUTIONS

Our IoT platform enables access to our **Condition Monitoring** and **Predictive Maintenance services**. Its benefits include:

- **Modular** components which can be added or removed to give a **fully customisable** solution
- A **mathematical core** based on statistical models drawing on our **deep product knowledge**
- **Carefully designed components** that meet all customer use cases
- The **flexibility** to adapt to different scenarios.



THE BONFIGLIOLI IOT PLATFORM

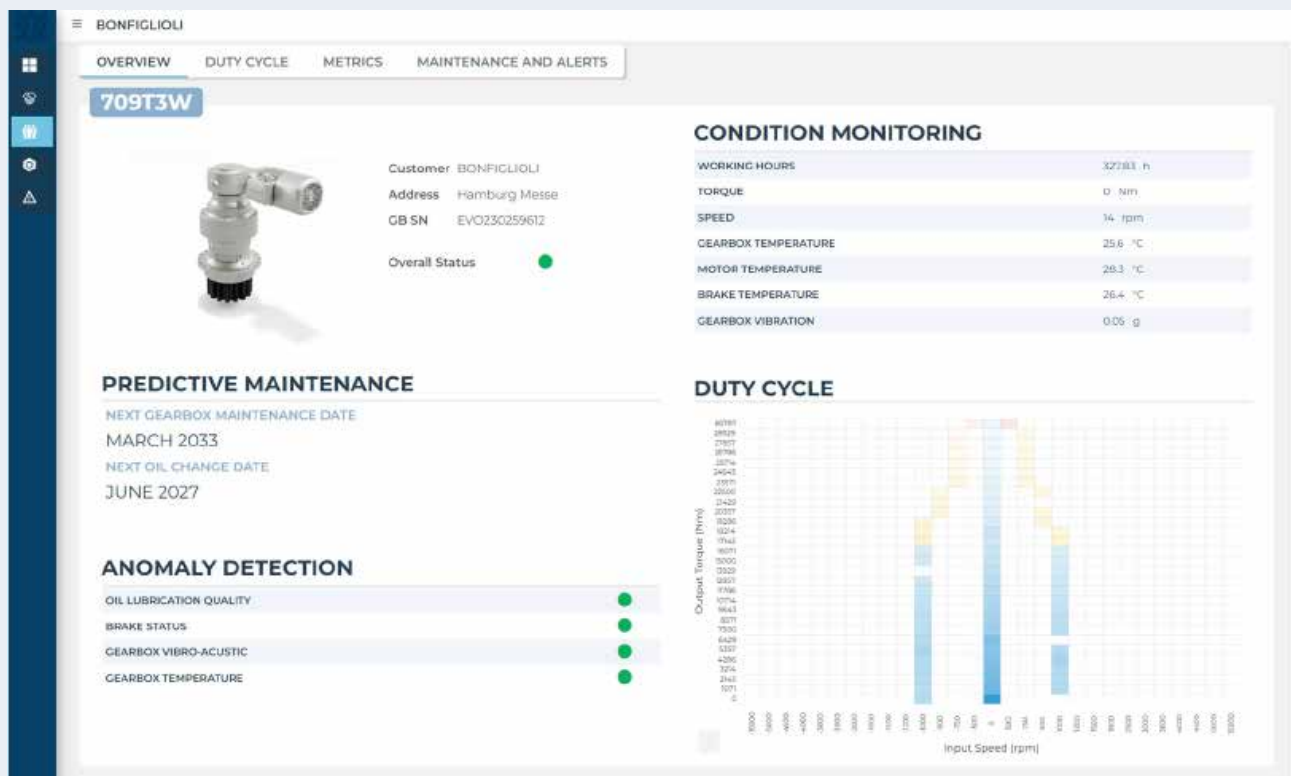
1. THE FUNCTIONAL PORTAL: PLACING OUR EXPERTISE AT YOUR SERVICE

The functional portal is a key element of the Bonfiglioli IoT platform, delivering significant added value through easily accessible connected services designed to deepen our relationship with you to better serve your needs.

The portal makes it simple to **monitor and report** on the operating status of components such as gearboxes – and act on warnings and alarms. It provides **insights and advice** on when to schedule RUL-based maintenance, as well as usage, uptime and performance, while its **maintenance and alerting** capabilities allow you to receive custom notifications and manage maintenance.

And for deep integration into your end users' operations, we offer a fully customisable **white label solution** for OEMs. This allows you to create a monitoring portal for all connected machines used by your customers featuring your own logo, fonts and colours.

This is further enhanced by the option for customers to use API calls to integrate IoT data into their own systems, providing them with a simple and straightforward way of benefiting from an IoT solution while retaining control of their technology.



2. SENSORS:

THE FOUNDATION OF OUR SOLUTIONS

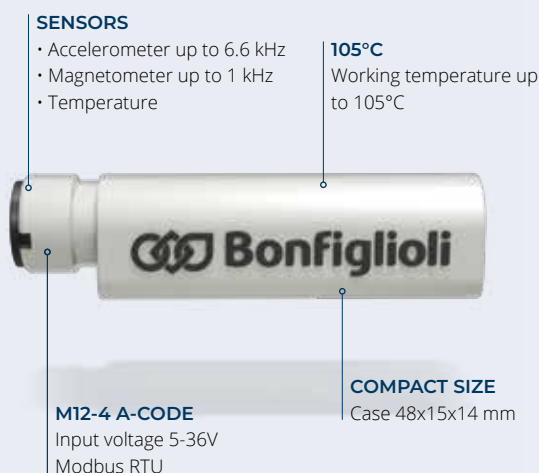
Our two IoT sensors are at the core of our solutions for you. They help us deliver added value by providing the data that underpins Condition Monitoring and Predictive Maintenance.

Z-SENSOR

A small, high-performance multi-sensory device, in particular providing accelerometer, magnetometer and temperature sensor functions.

We offer two different versions of data transmission, both on RS485. The first allows high-rate data communication from embedded sensors, the second uses the Modbus RTU protocol to transmit processed data to allow immediate analysis of the acquired signals.

At just 42mm-long, heat-resistant up to 105 degrees Celsius and featuring an IP67 rating, it can be either glued onto a gearbox or inserted into the flange.



W-SENSOR

A more advanced sensor expandable to third-party sensors and measuring just 100mm x 87mm x 37mm for simple installation on gearboxes and motors. In addition to measuring and processing the same variables as the Z-Sensor, it can also collect and digitise external sensor data and uses high-resolution analogue-to-digital convertors and inputs, reading and transmitting data through wireless technology using a range of standards. It also features LED lights to indicate its operational status.



WHY PARTNER WITH BONFIGLIOLI?

Constant innovation is part of Bonfiglioli's DNA. When you partner with Bonfiglioli, you partner with a company that has a long and successful history of developing new technologies and solutions for its customers.

We draw on more than 60 years of know-how in the automation sector to deliver new and advanced solutions for digitalisation, with our portfolio encompassing sensors and cloud-based devices for customers across a range of sectors.

 FOOD & BEVERAGE	 MATERIAL HANDLING	 WOOD WORKING	 WASTE TREATMENT
 WIND	 METAL PROCESSING	 CERAMICS	 BUILDINGS MATERIALS

*Ready to step into the future with us?
Contact us for more information.*



OUR STRIVING FOR THE FUTURE

MORE THAN 250 EMPLOYEES AROUND THE WORLD ARE INVOLVED IN THE GROUP'S R&D ACTIVITIES.

DESIGN SIMULATION

Bonfiglioli has the most advanced **virtual simulation techniques** to accelerate the validation process. This reduces time to market and provides customers with optimized, efficient solutions.



TEST LABORATORIES

In our R&D department we **research, develop, validate and certify** all the products and solutions which are engineered and manufactured in our plants across the world.



CO-ENGINEERING

At Bonfiglioli we **work close to our customers to satisfy all their needs** and requirements with a truly tailor-made solution.



OUR GLOBAL PRESENCE

Thanks to an international network of closely interconnected commercial and production sites, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. We know that our direct presence in local markets is the key to long-lasting success, so our family includes 18 production sites, 23 commercial sites and more than 550 distributors around the world.

Our organization is always close by, offering complete and efficient solutions and supporting our customers with dedicated services, co-engineering and after-sales assistance.


18

PRODUCTION SITES


23

COMMERCIAL SITES


80

COUNTRIES


550

DISTRIBUTORS


~4,700

PEOPLE

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We have a relentless commitment to excellence, innovation & sustainability. Our team creates, distributes and services world-class power transmission & drive solutions to keep the world in motion.

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