



FEED & BIOFUEL

# METRIS VIBE CONDITION MONITORING

A HEALTH CHECK FOR YOUR PLANT



**ANDRITZ**

ENGINEERED SUCCESS

# Condition monitoring

## Avoid unplanned downtime



Knowing at an early stage when production critical, high precision, or long lead time components need to be replaced or maintained is crucial to avoid unplanned and costly plant shutdowns. Metris Vibe condition monitoring enables operators to proactively improve machine availability and plant reliability with reduced maintenance costs and increased safety.



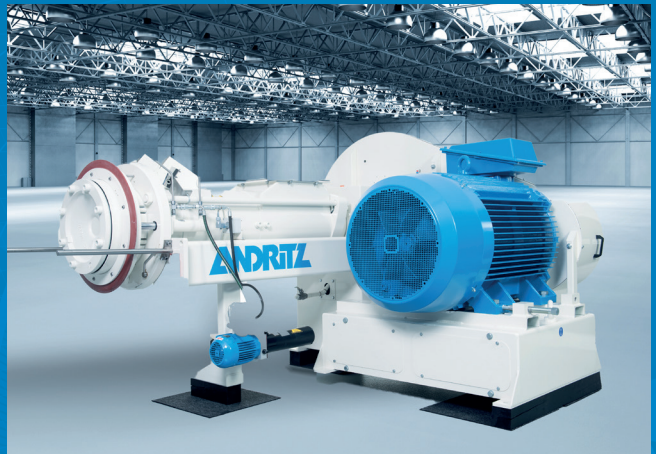
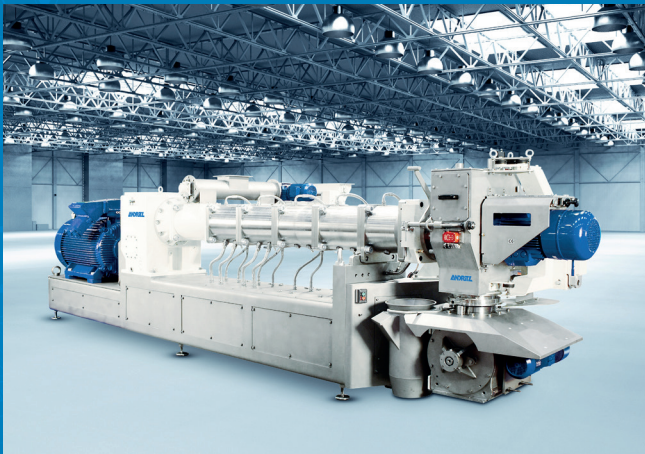
## A CONTINUOUS HEALTH CHECK FOR YOUR PLANT

Today's technology provides us with a lot of insights about us humans – where we are, what we might be doing, how long we have been asleep, and what we are watching and listening to. This data combined with digital assistance offers us a range of helpful functions and tips designed to make our lives easier, more efficient or healthier. The same concept is revolutionizing the industry through condition monitoring. Tracking devices monitor and control a company's assets and plants, helping to improve performance with cyber secure processes.

Condition monitoring being comparable to a preventive medical check for human beings, is the way forward to proactive maintenance. Acting as a stethoscope, sensors are used to feel and hear your machines' vital signs. With the diagnoses from the sensors' processed data, the condition of the machinery can be assessed. This provides important input for the maintenance planning, ensuring the continuation of the plant's health and peak performance.

## PREVENT UNPLANNED DOWNTIME

Asset failure often results in a substantial or total loss of production. Our Metris Vibe sensors continuously measure vibrations and temperatures to detect anomalies for the prediction of future-failure.



The constant monitoring of critical components enables effective and timely fault detection for rotating parts of extruders, expanders, pellet presses, and hammer mills, for both ANDRITZ AND non-ANDRITZ equipment. These machines have high precision and costly inner work. Based on alarms and recommendations, Metris Vibe enables proactive planning and actions for predictive maintenance of your plant, keeping it consistently healthy and high performing.

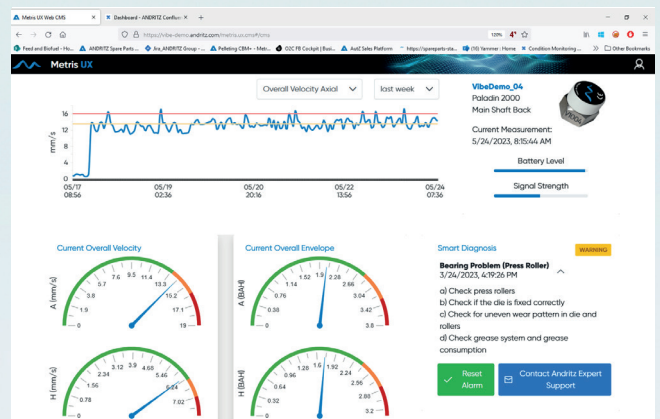
# Improve productivity, efficiency, and safety

By efficiently planning maintenance activities, you can maximize uptime and minimize disruptions to your machine line. Proactive maintenance reduces the risk of critical component failures, increasing the service life of plant components. This reduces overall investment and increasing production time, saving the extra costs of larger damage to the component itself or other equipment parts. Additionally, avoidance of breaking machine parts enhances the safety of personnel, machinery, and product. It prevents broken component parts from getting stuck in or between equipment or polluting the product stream.

## Clear insights for your maintenance team

Combining ANDRITZ's extensive equipment knowledge and vibration expertise with machine learning provides highly reliable intuitive information for everyone.

Metris Vibe condition monitoring automatically generates alarms, diagnoses, and recommendations to support your local maintenance team with independently critical issue solving. The user-friendly Metris Vibe interface presents all necessary asset information in a clear overview, facilitating important maintenance decisions.



### Benefits

#### CONDITION MONITORING

- Improves productivity and maintenance efficiency
- Increases availability and reliability
- Reduces maintenance costs
- Improves safety level for work, machine line, and products

The screenshot shows the 'Condition Monitoring' dashboard with a table of equipment. The table has columns for Equipment ID, Sensor Status, Alarm State, and 24h Vibration Level. The equipment listed are FeedMax G9, Poladin 2000, FE3 34, and Optimal 900. Each row includes a status indicator (online or operational) and a corresponding vibration level graph.

Equipment ID	Sensor Status	Alarm State	24h Vibration Level
FeedMax G9	3/3 online	OK	[Graph]
Poladin 2000	3/3 online	OK	[Graph]
FE3 34	2/2 online	OPERATIONAL	[Graph]
Optimal 900	2/2 online	OPERATIONAL	[Graph]



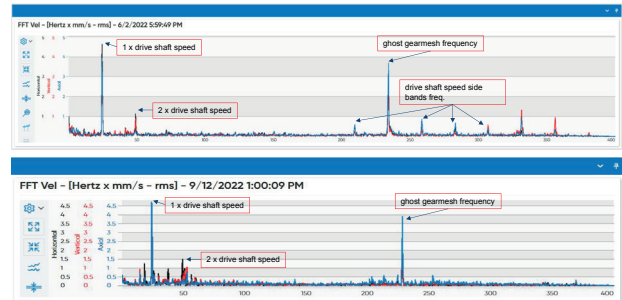
# A team of experts at your service

When an issue is more complex or support for enhanced predicted maintenance is desired, our maintenance and vibration experts can conduct comprehensive and thorough vibration analyses to identify further in-depth root causes and provide detailed recommendations.

ANDRITZ Field Service is at your disposal to provide all the specific equipment knowledge and the right machine parts for a professional execution of the required maintenance.

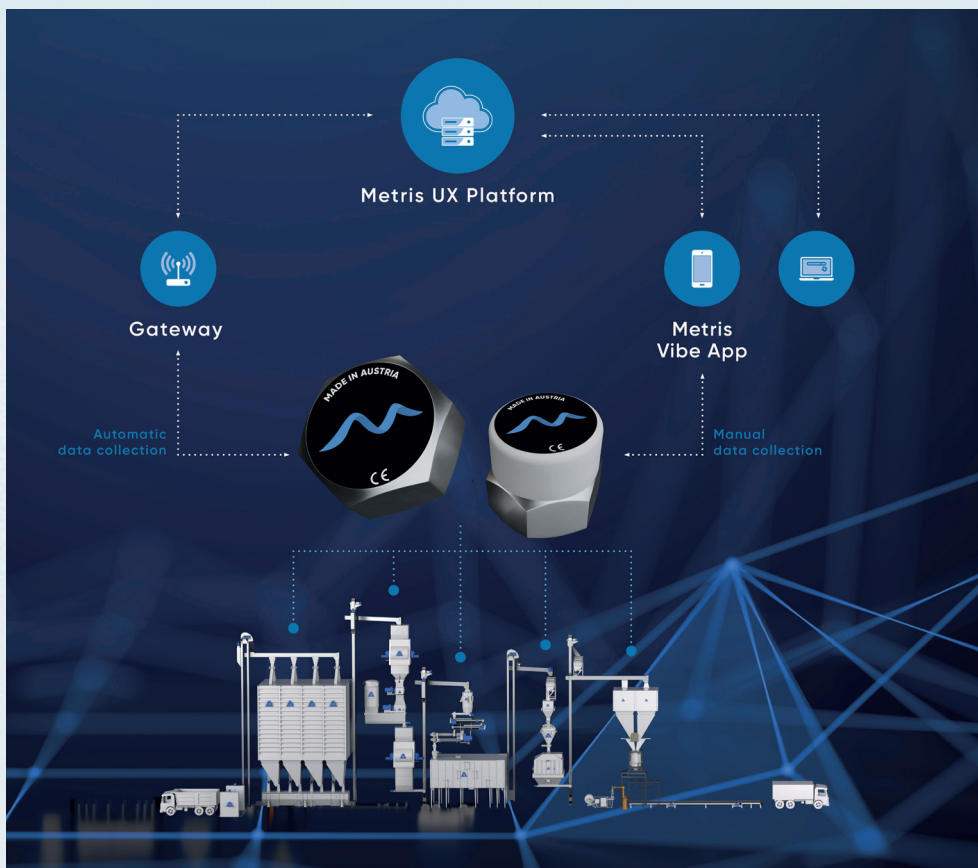
## VIBRATION ANALYSIS

Sensor MV17, FFT\_Vel and FFT\_Env



1 | ANDRITZ (AUTOMATION) | BESTOP VIBRATION ANALYSIS

# Smooth and reliable operation

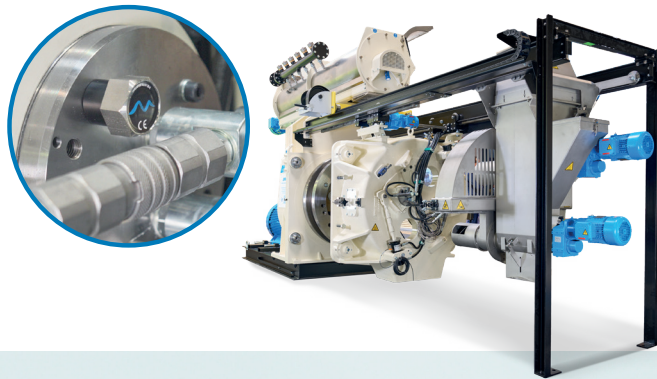


Metris Vibe sensors work wirelessly, communicating via their own secure system, without interfering with your IT systems.

Data is transmitted from the sensors on the machinery through low-energy Bluetooth technology to a gateway or the Metris Vibe mobile app.

The Condition Monitoring application of the Metris Vibe further analyzes and stores the data, providing the alarms and recommendations.

# Suitable for rough environments and difficult-to-access machine parts



The Metris Vibe sensors developed by ANDRITZ form the basis of effective and low-cost condition monitoring. Small, wireless, and energy self-sufficient, our Metris Vibe sensors can be easily installed in large numbers at all the relevant points, providing a continuous data stream on vibrations and temperature.

The sensors require only battery replacement to keep them going. With a battery lifetime of up to three years and simple self-replacement, these sensors hardly require any maintenance. The sturdiness and wireless capability of our sensors enable the capture of data under harsh and potentially hazardous conditions and at difficult-to-access machine parts without worrying about broken wires.

## TECHNICAL CHARACTERISTICS

Analysis frequency bandwidth:	Up to 12.8 KHz
Sampling frequency:	Down to 100 Hz
Frequency resolution:	7 mHz
Acceleration ranges:	± 8g, ± 16g, ± 32g, ± 64g
RF communication:	2.4 GHz Bluetooth Low Energy (BLE)
MCU:	Ultra low power consumption Arm® Cortex®
Firmware:	Over-The-Air (OTA) Update
Accelerometer:	1 Axis (15000 points), 3 Axis (5000 points each)
Mounting orientation:	All orientations
Mounting/system connection:	M8 x 1.25 thread, adhesive and magnetic possible
Ambient temperature:	- 40 °C to 70 °C
Surface temperature*:	- 40 °C to 70 °C
*(-40 °C to 120 °C with thermal isolation stud)	

## METRIS VIBE

Dimensions:	Ø34.6 mm X 38 mm
Weight:	65 g
Battery:	Lithium 3V CR2477N Exchangeable
EN 60529 protection:	IP67
Further certification:	ATEX

## Benefits

### ANDRITZ METRIS VIBE

- Fully automatic generation of alarms and recommendations
- No specific vibration or temperature knowledge needed
- Better results due to equipment-specific knowledge
- No interference with other IT systems
- Sensors for rough environments and difficult-to-access machine parts





## GLOBAL SUPPLIER – LOCAL PRESENCE

ANDRITZ Feed & Biofuel is truly a global organization – with local presence. We are represented all over the world. The global market is served from five main locations: Denmark, China, Netherlands, USA, and Slovakia.

In addition, ANDRITZ Feed & Biofuel operates from several strategic regional sales, engineering, and service locations in Australia, Bangladesh, Brazil, Canada, Chile, Dubai, France, Germany, India, Italy, Mexico, Poland, South Africa, Thailand, Turkey, the UK and Vietnam – and is also represented locally by agents and distributors in many other markets.

### AUSTRALIA

ANDRITZ Feed & Biofuel  
p: +61 3 8773 4888  
andritz-fb.au@andritz.com

### CHINA

ANDRITZ Feed & Biofuel  
p: +86 21 5774 5781  
andritz-fb.cn@andritz.com

### ITALY

ANDRITZ Feed & Biofuel  
p: +39 025 743 01 30  
andritz-fb.it@andritz.com

### THAILAND

ANDRITZ Feed & Biofuel  
p: +66 2258 5528  
andritz-fb.dk@andritz.com

### BANGLADESH

ANDRITZ Feed & Biofuel  
p: +880 22 222 64 800  
andritz-fb.bd@andritz.com

### DUBAI

ANDRITZ Feed & Biofuel  
p: +971 4 214 6546  
andritz-fb.uae@andritz.com

### MEXICO

ANDRITZ Feed & Biofuel  
p: +52 229 178 38 45  
andritz-fb.mx@andritz.com

### TURKEY

ANDRITZ Feed & Biofuel  
p: +90 232 570 38 00  
andritz-fb.tr@andritz.com

### BRAZIL

ANDRITZ Feed & Biofuel  
p: +55 47 3387 9146  
andritz-fb.br@andritz.com

### FRANCE

ANDRITZ Feed & Biofuel  
p: +33 24 75 06 364  
andritz-fb.fr@andritz.com

### NETHERLANDS

ANDRITZ Feed & Biofuel  
p: +31 40 262 7777  
andritz-fb.nl@andritz.com

### UK

ANDRITZ Feed & Biofuel  
p: +44 1482 825 119  
andritz-fb.uk@andritz.com

### CANADA

ANDRITZ Feed & Biofuel  
p: +1 519 676 7057  
anbosales@andritz.com

### GERMANY

ANDRITZ Feed & Biofuel  
p: +49 2104 91970  
andritz-fb.de@andritz.com

### POLAND

ANDRITZ Feed & Biofuel  
p: +48 60 906 1037  
andritz-fb.pl@andritz.com

### USA

ANDRITZ Feed & Biofuel  
p: +1 570 546 1253  
andritz-fb.us@andritz.com

### CHILE

ANDRITZ Feed & Biofuel  
p: +56 2 2246 24 600  
andritz-fb.cl@andritz.com

### INDIA

ANDRITZ Feed & Biofuel  
p: +91 87544 15287  
andritz-fb.india@andritz.com

### SOUTH AFRICA

ANDRITZ Feed & Biofuel  
p: +27 82 781 0808  
andritz-fb.dk@andritz.com

### VIETNAM

ANDRITZ Feed & Biofuel  
p: +84 28 6253 9434  
andritz-fb.vi@andritz.com

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**ANDRITZ Feed & Biofuel A/S**

Glentevej 5–7  
6705 Esbjerg, Denmark  
p: +45 72 160 300  
andritz-fb.dk@andritz.com



1327 GB