

FALCON

PORTABLE INTELLIGENCE
FOR ASSET RELIABILITY





Smarter diagnostics, wherever you need them



Industrial maintenance rarely happens in ideal conditions. It takes place under pressure, around complex assets, in confined spaces, and often with technicians of varying experience levels.

Falcon is engineered to meet these realities—and to help every user grow

Whether in the hands of an inexperienced technician or a CAT IV expert, Falcon delivers guidance, clarity, and advanced capability in a single portable platform.

It bridges skill gaps, accelerates learning, and enables teams to perform consistent, confident predictive maintenance from day one.



Faster measurements



Smarter diagnostics



More accurate, repeatable results



A safer, cable-free workflow



A complete field toolkit

Falcon is not just a data collector – it is a true field companion, helping teams save time and make reliable, actionable decisions at the moments they matter most.



Bringing expert level diagnostics to every technician



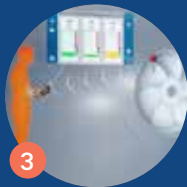
Easy point identification

Visual guides ensure correct point and sensor placement, reducing errors.



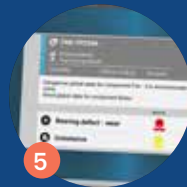
Quick sensor mounting

One-click wireless mounting. No cables, no delays.



Fast tri-axial measurement

Complete X-Y-Z vibration captured in 10 seconds.



Instant on-device diagnostics

Edge intelligence detects faults, location, and severity instantly.



Built-in verification tools

Strobe confirms speed; laser checks abnormal temperatures.



Clear, actionable insight

Accurex™ delivers health status and clear corrective actions.

Act, verify & document

Take an additional measurement



AI output



User interaction



Verification



Documentation

- Verify that the corrective action resolved the issue
- Add notes and photos for complete on-site documentation.

Reliable by design, driven by intelligence

High-performance acquisition

- <10 seconds per bearing for high-quality synchronous tri-axial data
- 4 channels at 40 kHz + tachometer; 2 channels at 80 kHz
- Real-time processing for instant feedback
- Long waveform recording up to 80 s at 51.2 kHz (4M samples)
- Bearing Defect Factor™ and ShockView™ Envelope for early bearing fault detection.

Rugged design

- ATEX Zone 2
- IP65
- Withstands 1.2 m drop.



Wireless tri-axial sensor

- Full 3-axis measurement from a single placement
- Lowers maintenance effort by removing cable wear, failures, and related measurement errors
- Enables safer, distance-based measurements with wireless operation up to 25 m.

Field intelligence

- Built-in Accurex™ AI diagnostics from the first measurement—no cloud required
- Automatic measurement-point recognition.

Industrial touchscreen interface

- High-definition 7" display
- Sunlight-readable
- Glove-friendly, intuitive layout.

Communication

- USB, Wi-Fi, Ethernet
- NESTi4.0: All-in-one platform for portable, wireless, continuous, and multi-tech data.

Integrated field tools

- Stroboscope for RPM, interactive from FFT display
- Laser pyrometer for temperature
- Camera for documentation and traceability.



Smarter diagnostics that make machine health clear



Powered by Accurex™ AI

Where human expertise meets artificial intelligence

99% of assets in critical condition are accurately detected.



Scan and read the Patent story

Machine health – global advice

Falcon provides an instant colour-coded assessment:

Green No action required

Orange Monitoring required

Red Action needed

Each fault includes

Falcon automatically identifies vibration patterns and justifies its diagnosis using tri-axial data and fault frequency markers.



Severity level + Confidence level + Recommendation

Managed fault types include:

Bearing or lubrication issues

Unbalance

Misalignment

Structural resonance

Pump cavitation

Suspicious machine

Gear geometric & localised defects

Soft foot, belt wear, nearby disturbance

Looseness, shocks, electrical defects

First-level maintenance recommendations

Falcon provides practical next steps immediately after detection.

Bearing defect: wear/lubrication

Bearing wear to be corrected: lubricate the component and measure again. If lubrication is not the cause, replace the bearing component pump as soon as possible.

Falcon transforms complex vibration data into clear, actionable guidance—right at the asset.



Intelligence at the edge, right next to the machine

Falcon brings Acoem's diagnostic intelligence directly into the field, helping technicians understand machine behaviour instantly and act with confidence.

Accurex™ embedded diagnostics



- Overall machine health assessment
- Automatic fault detection
- Fault location with Severity levels
- Fault Confidence level
- Recommended next steps
- Data validation
- Guided interpretation

Insights become immediate, consistent, and accessible.

Root-cause & advanced analysis tools



- For deeper troubleshooting
- Run-up / Coast-down
- Cross-channel phase analysis
- Modal Analysis
- Operating Deflection Shape (ODS)
- Field analyzer with built in graphical and analysis tools.

Bearing Defect Factor™ (DEF)



- Detects early, mid, and late-stage bearing faults
- Independent of machine type
- Minimal dependency on speed or load
- Simple 0-12 scale for quick assessment.

ShockView™ envelope



- An intelligent filter for early bearing defect detection.
- Designed to overcome limitations of classic envelope analysis—simpler, more robust, and ideal for critical and low speed machinery.



The fastest data collector of the market

- Automatically acquires the required waveform length
- All processing runs simultaneously
- Adding more parameters does not slow down measurement time.

Balancing – accessible to everyone

- Intuitive setup
- Step-by-step balancing wizard
- Smart weight-position guidance
- ISO 20816-3 & ISO 21940 compliant
- Complete reports generated directly from Falcon.



Simplicity meets intelligence

The Acoem reliability ecosystem

Acoem's connected reliability ecosystem brings together **portable tools, wireless sensors, online monitoring, alignment solutions, diagnostics, and AI**—uniting all machine information in one place.

50
years of
Innovation



NEST i4.0

Predictive maintenance made simple

NEST i4.0 turns complex machine data into clear, actionable insight for everyone involved in reliability.

- Fast, intuitive, and automatic machine setup
- Guided diagnostics with consistent workflows
- Advanced analysis tools for expert troubleshooting
- Automated, professional reporting
- Industry 4.0 connectivity (OPC UA, auto-export, APIs).

NEST Vision – eyes on every asset

- All your assets in one place (portable, wireless, continuous)
- Actionable information accessible to all plant personnel.



Reliability centres

**Australia • Brazil • Canada • France • Germany
India • Sweden • Thailand • UK • USA**

Acoem: Your partner in industrial reliability

At Acoem, we are committed to helping organisations and public authorities find the right balance between progress and preservation. We empower industries with smarter, data-driven reliability solutions to safeguard assets, optimise performance, and ensure operational excellence. Our AI-powered monitoring systems and expertise help organisations predict, prevent, and resolve reliability challenges with confidence.

With a global presence in 50 countries and dedicated reliability centres in strategic locations worldwide, we provide localised expertise and support to keep industries running efficiently.



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