TECHNICAL DATA

Watchman AIR™

High resolution wireless vibration solution

AZIMA | DLI

A Fluke Reliability Company

ADVANCED ACQUISITION

The most advanced acquisition technology available to capture high resolution vibration data capable of detecting early component-level faults on machines as slow as 350 RPM and to frequencies detectable to 10kHz. Combined with Azima DLI's proprietary Impact Demod algorithms, analysis is on-par with portable collection systems.

AUTOMATION AND AI

The most advanced, trained automated diagnostic engine on the market provides rapid time to setup and time to achieve accurate results. Over 67 trillion individual vibration data points from 2.25 million machine tests, Azima DLI, a Fluke Reliability company, has diagnostic models for over 128,000 specific component faults.

ACTIONABLE RESULTS

Early detection of emergent faults and root cause to prioritized repair recommendations with specific actions, all decision makers can be alerted and involved in decisions that effect plant operations and minimize downtime. Health score, business metrics and other KPIs can be delivered through the web portal or direct to your mobile.

ANALYSIS SERVICES

Azima DLI's team of over 40 ISO certified vibration analysts, Level 2-4, are available to provide domain expertise and remote condition monitoring of assets with a 24-hour turn-around of serious and extreme faults or urgent requests.

High resolution for prediction and prescription

Watchman AIR™

Accel 360 wireless sensors
Mesh network

- Self-healing and adaptive
- More reliable than many Wi-Fi sensors

Accel Gateway
Cloud-ready

- Wi-Fi, LAN, ethernet
- Cellular LTE
- Standard or industrial IP-66/67

Alert 5 diagnostic software
Automated diagnostic engine

- Fully automated fault detection
- 6,000+ diagnostic rules
- 1,200+ component fault types

PredictivePortal™
User portal

- Alerts and notifications
- Asset, plant, corporate health score
- Cloud-based fault diagnosis, fault severity
- Prioritized repair actions

Accel 310™ – Triaxial vibration sensor

Wireless vibration with actionable diagnostics

High resolution data allows for the detection of more machine faults, giving users better insights to emerging problems and root causes.

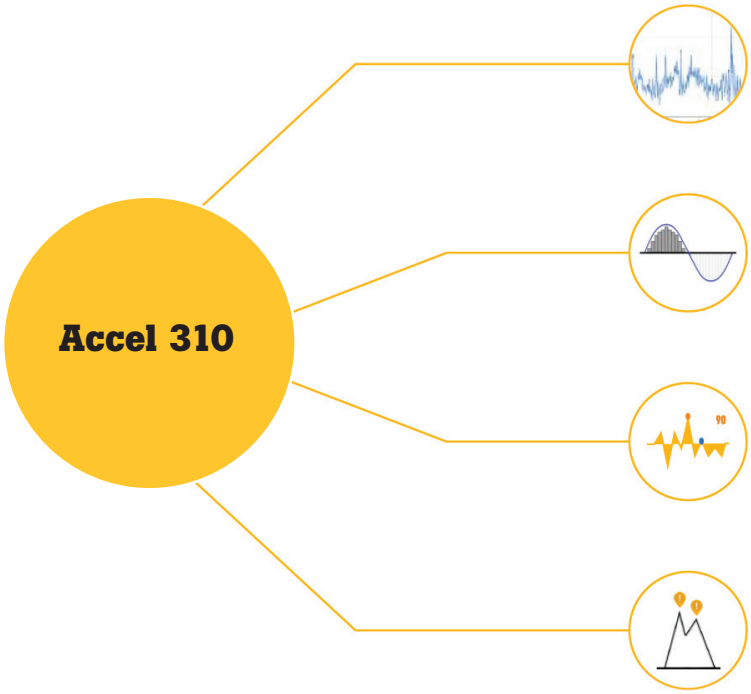
The Expert Automated Diagnostic System can identify 1,200+ unique fault types on 50+ common machine components using over 6000 diagnostic rules, providing prioritized recommended repair actions.

Getting the right alert at the right time starts with having a well trained AI platform to leverage from the moment you first turn on the sensor, and learns as it keeps all users informed with actionable alerts and notifications.

High-resolution vibration

Long battery life

Mesh network



Wireless vibration

Frequency range: 10Hz to 10kHz

High range, with FFT to 10KHz provides most common component and fault feature identification.

Sample rate: 26.7 kHz

Best sample rate to support proprietary Impact Demod early bearing fault detection.

Max input range: +/-16 G

Capture higher quality data from more assets with a wide dynamic input range.

Max FFT resolution: 0.24 Hz

Resolve spectra down to 0.24 Hz with Fmax of 386 Hz at 1600 lines to best identify frequencies of interest.

Vibration analysis

1. **Impact Demod Waveform** and **Impact Demod Peak** for early bearing fault detection and slow speed machines down to 350 RPM.
2. Automatically configured to capture best quality vibration data to support the **Expert Automated Diagnostic System** for simple installation and configuration.
3. Supports **most common machine assets** such as motors, pumps, fans, blowers, compressors, gearboxes, purifiers.
4. **Daily full diagnostic vibration data** for automated analysis with **hourly summary** vibration and temperature trends.

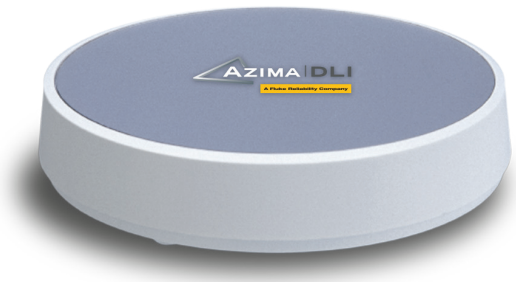
Accel Gateway

Accel Sensor Gateway forms a mesh network for any number of wireless sensors. Each gateway is pre-configured to support the PredictivePortal and is ready to deploy using a wide range of network connectivity options.

The gateway bridges the sensors to the PredictivePortal using multiple communication options, such as **Wi-Fi, ethernet, or cellular.**

Gateways are available in two options: **Standard** for **IP-20** rated environments and **Industrial** which is **IP66/IP67** rated.

Each gateway can communicate with **any number of meshed sensors**. Providing a very flexible deployment throughout a plant floor.



Ethernet, cellular, Wi-Fi

Standard or industrial rated

Technical specifications

Specifications are subject to change and represent hardware full capabilities, subject to asset types, analysis requirements and system configurations.

Accel 310 sensor

Signal processing	
Filtering: Butterworth high, low, band pass	Low pass cut off, max.: 13,335Hz High pass cut off, min.: 0.5Hz
Measurement	
Measurement Axis	Triaxial or in-line axis
Input range, max.	+/-16G
Flat frequency range	10-6300Hz (+/-3dB)
Detectable FFT	10.4kHz
Sample rate	26,667Hz
Effective resolution	16bit
Sample amount, max.	Single axis: 110,592 samples Triaxial: 36,864 samples/axis Up to 4 seconds of data at 26.7kHz
Bin width: as low as 0.24Hz @ 1600 lines	Averages, max: 9 Overlap: 0-100% Windowing: Hanning
Full diagnostic measurement types	High and low-range narrow band spectra Impact demod waveform Raw acceleration
Summary data measurement types	Impact demod peak Acceleration and velocity RMS, Pk-Pk, Pk Acceleration crest factor Surface temperature (mount tip)
Surface temperature	
Temperature measurement	-40 - 105C
Accuracy/resolution:	+/-0.3C / 0.1C
Physical	
Size	3.09" x 1.1" (78.5 x 28mm)
Weight	0.28lbs (129g)
Battery	3.6V lithium thionyl chloride
Expected battery life	greater than 3 years
Communication	2.4Ghz Wirepas Mesh
Mounting	Adhesive pad or stud mount
Environmental Ratings	
Temperature	-40 to +85C
Enclosure	IP68
Certifications	
CE, FCC, ISED, ATEX II 2 G Ex ib IIC T4 Zone 1 and 2 when -40°C ≤ Ta ≤ +60°C , US/Canada Class 1, Division 2, Groups A, B, C, D, T4 (-40 - 80C)	

Accel gateway

Communication	
Connectivity	2.4GHz Wirepas
Direct connection	14 nodes, unlimited meshed nodes
Number of channels	40
Radio bitrate:	1000kbs
Packet throughput	150pps
Routing	De-centralized and automatic
Channel selection	Adaptive
Device commissioning	Automatic
Network	WiFi, Ethernet, Cellular, external modem via USB
Cellular	LTE-M (AT&T), NB-IOT
Cloud	Pre-configured, Microsoft Azure integrated with Azima DLI platform and PredictivePortal
Standard gateway	
Size	3.74" x 0.72 (95 x 18mm)
Weight	2.9 oz (82g)
Power supply	5V, 3.6A DC Wall plug (incl.)
Input	100-240VAC, 50-60Hz, 0.6A
Environment rating	IP20
Industrial gateway	
Size	7.09" x 5.12" x 3.19" (180x130x81 mm)
Weight	1lb 6oz. (624g)
Ambient Temperature	-20 - 50C
Storage Temperature	-40 - 85C
Relative Humidity	20 - 90%
Flammability	UL 746C 5"
Impact Resistance (EN 62262)	IK08
Power	Worldwide AC/DC supply (5VDC, 6A), NEMA 1-15, Class II (customer to install)
Input	100-240VAC, 50-60Hz, 0.75A
Environmental	IP66/IP67
Cloud security	
Verified CA certificate and PKI, 128-bit, TLS 1.2	

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