Wilcoxon
SENSING TECHNOLOGIES

an Amphenol Company

NPI training

VDS130 Vibration Data Source

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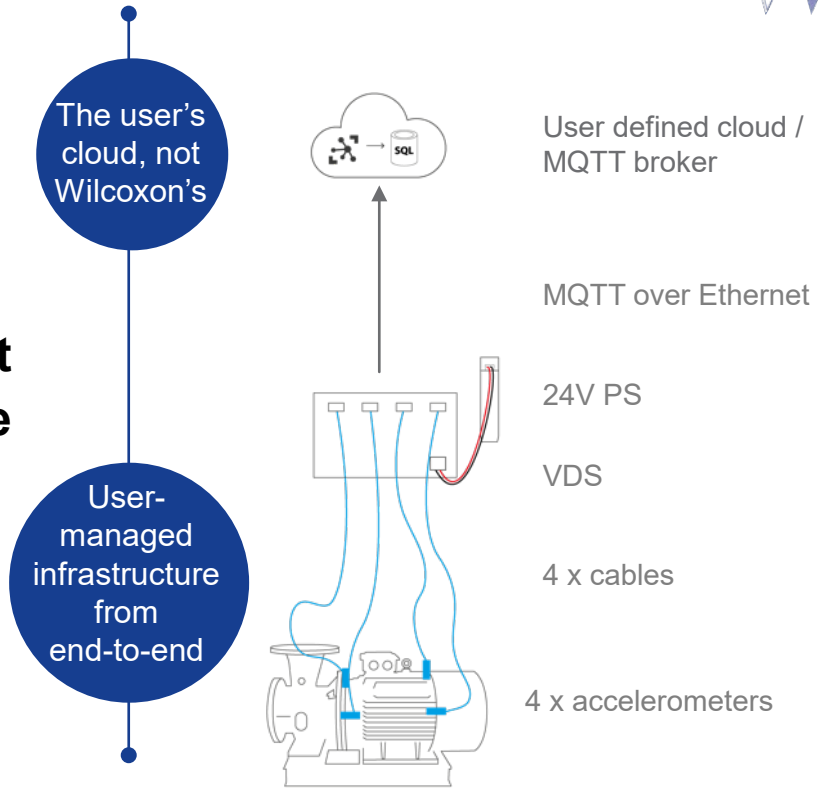
Overview

Vibration data source

- Acquire and digitize waveforms from vibration sensors, 4 channels
- Share data via standard web/IoT protocols over Ethernet
  - Cellular or WIFI compatibility through third party devices
- Accepts signals from a wide range of industrial vibration sensors covering general purpose, high speed, low speed, high temperature, high EMI, high vibration, submersible, and hazardous area applications.

Deployment architecture



Third-party apps

Asset performance management

EMERSON
aspentech
Schneider Electric
AVEVA
GE VERNOVA
SmartSignal
ABB
APM
HONEYWELL FORGE
Baker Hughes
Cordant

Analytics & business intelligence

Sisense
Microsoft Power BI
Qlik
Google Charts
Domo
Looker
Zoho Corporation
Oracle
Tableau Desktop
MicroStrategy
GoodData
Dundas Data Visualization

Cloud-based vibration analysis examples

VIKING ANALYTICS
VibroAI
Nanoprecise
Limble

Vibration data source
Key features

- Digitization of broad analog sensor offering for **integration** into enterprise- and cloud-level data systems
  - Converting data from specialty sensors opens digitization to measurements that are not currently available as digital sensors: 500 mV/g, low frequency, high temp, voltage isolation, hazardous locations, etc.
- Initial release of **MQTT** model (VDS130), **OPC UA** model (VDS120) coming soon
- **4 channels of IEPE vibration and 1 RPM** (tachometer)
- Output of **vibration spectrum**, **time waveform**, and **calculated vibration metrics** for each channel
  - Selectable acceleration, velocity, and displacement frequency bands (peak or RMS), plus true peak, crest factor, and standard deviation
  - Frequency bands align with ISO 10816-3 and 20816-3 guidelines for mechanical vibration and ISO 17243 guidelines for machine tool spindles
- **DIN-rail mountable** with optional adapter

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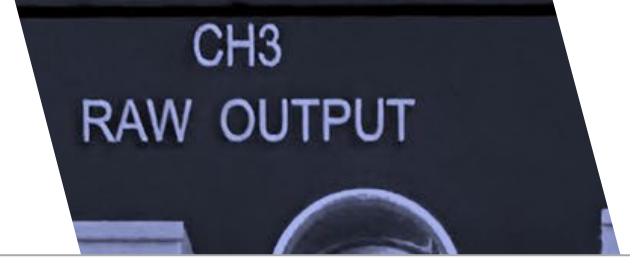
VDS130
Specifications



Vibration data source
MQTT protocol

VDS130

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SPECIFICATIONS

SENSOR INPUT	
Channels	
IEPE vibration	4
RPM	1
Connector	screw terminal
VIBRATION CHANNELS	
Input sensitivity	10, 25, 50, 100, 500, or 1000 mV/g
Frequency response	40 kHz (±5%)
Power	IEPE (20 V min, 3 mA)
Input range	±5 V / ±20 V selectable
Coupling	AC/DC selectable
Input impedance	320 kΩ
Max sampling rate	102.4 kHz
RPM CHANNEL	
Input range	5 V TTL (±20 V peak)
Measurement range	0.5 Hz - 5 kHz
Power	5 V (max. 100 mA)
VIBRATION OUTPUT	
Acceleration frequency band, selectable	RMS: 2 Hz - 1 kHz, 10 Hz - 10 kHz, 2 kHz - 10 kHz[1] peak: 2 Hz - 1 kHz, 10 Hz - 10 kHz, 2 kHz - 10 kHz
Velocity frequency band, selectable	RMS: 2 Hz - 1 kHz[1], 10 Hz - 1 kHz[1], 10 Hz - 5 kHz[1] peak: 2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 5 kHz
Displacement frequency band, selectable	RMS: 2 Hz - 1 kHz[1], 10 Hz - 1 kHz[1] peak: 2 Hz - 1 kHz, 10 Hz - 1 kHz
True peak	Fs @ 102.4 kHz
Power spectrum, selectable	1 kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz, 40 kHz
Window	rectangular, hanning, flat top
Lines	6400
Time waveform length	1 sec
Other features	crest factor, standard deviation
COMMUNICATION	
Protocol	MQTT
Digital output connector	RJ45 Ethernet port
Data transmission interval	
Overall value	min. 1 minute
Time waveform	min. 1 minute
Power spectrum	min. 1 minute

Notes: [1] Frequency bands align with ISO 17243 guidelines to assess the severity of machine tool spindle vibrations measured on the spindle housing or ISO 10816-3 and 20816-3 guidelines to assess the vibration of industrial machines

Key features

- Compatible with IEPE accelerometers
- MQTT digital output
- Frequency bands align with ISO 10816-3, 20816-3 and 17243 guidelines
- Multi functionality LED status indicators for VDS and sensors

Sensor Input connections	
Connection	*Function*
Channels 1-4	
SHLD	shield
-	common
+	power/signal
RPM input	
SHLD	shield
RPM IN	signal
RPM GND	ground
+5 V	power

Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

CE

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99494 Rev.A1 01/26

Vibration data source
MQTT protocol

VDS130

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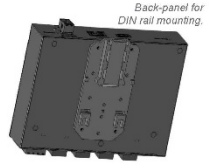
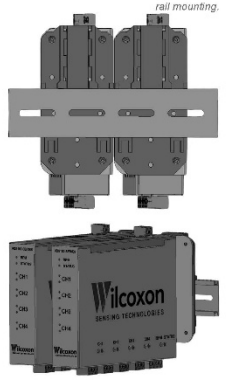
SPECIFICATIONS

PHYSICAL & ENVIRONMENTAL	
Power requirement	24 VDC
Power consumption	10 W max.
Exterior material	aluminum (painted)
Reset, restore	push button
Self-test status	LED indicator
Operating temperature	–10 to +80 °C
Dimensions	120mm x 155mm x 34mm
Weight	420 grams
Mounting	optional back or side panel for DIN rail mounting
USB	3.0 Type-A

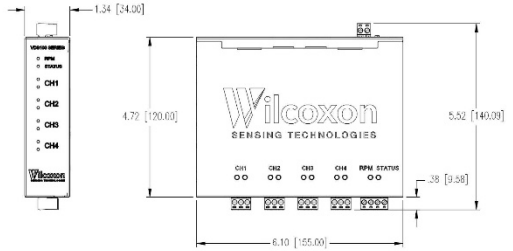
Back-panel for DIN rail mounting.



Side-panel for DIN rail mounting.



DIMENSIONS



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Output data
Per vibration channel

Dynamic data

- Spectrum, selectable: 1 kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz, or 40 kHz, 6400 lines
- Time waveform length: 102,400 samples, 1 second

Calculated vibration metrics

- Acceleration frequency band, selectable:

  RMS: 2 Hz - 1 kHz, 10 Hz - 10 kHz, 2 kHz - 10 kHz*

  peak: 2 Hz - 1 kHz, 10 Hz - 10 kHz, 2 kHz - 10 kHz
- Velocity frequency band, selectable:

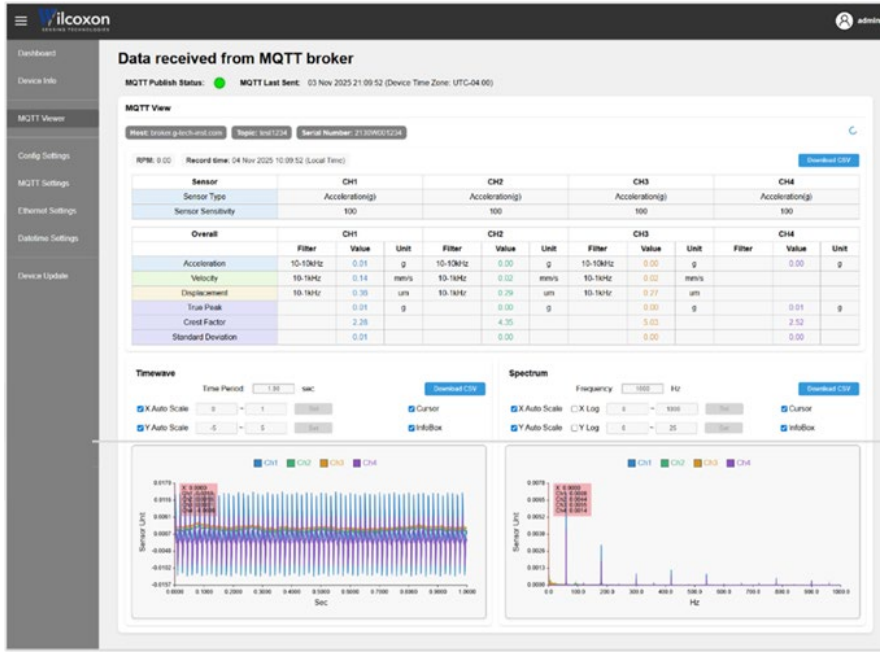
  RMS: 2 Hz - 1 kHz *, 10 Hz - 1 kHz *, 10 Hz - 5 kHz *

  peak: 2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 5 kHz
- Displacement frequency band, selectable:

  RMS: 2 Hz - 1 kHz *, 10 Hz - 1kHz*

  peak: 2 Hz - 1 kHz, 10 Hz - 1 kHz

  * Frequency band aligns with ISO 10816-3 and ISO 20816-3 guidelines
- True peak: Fs @ 25.6 kHz
- Crest factor
- Standard deviation



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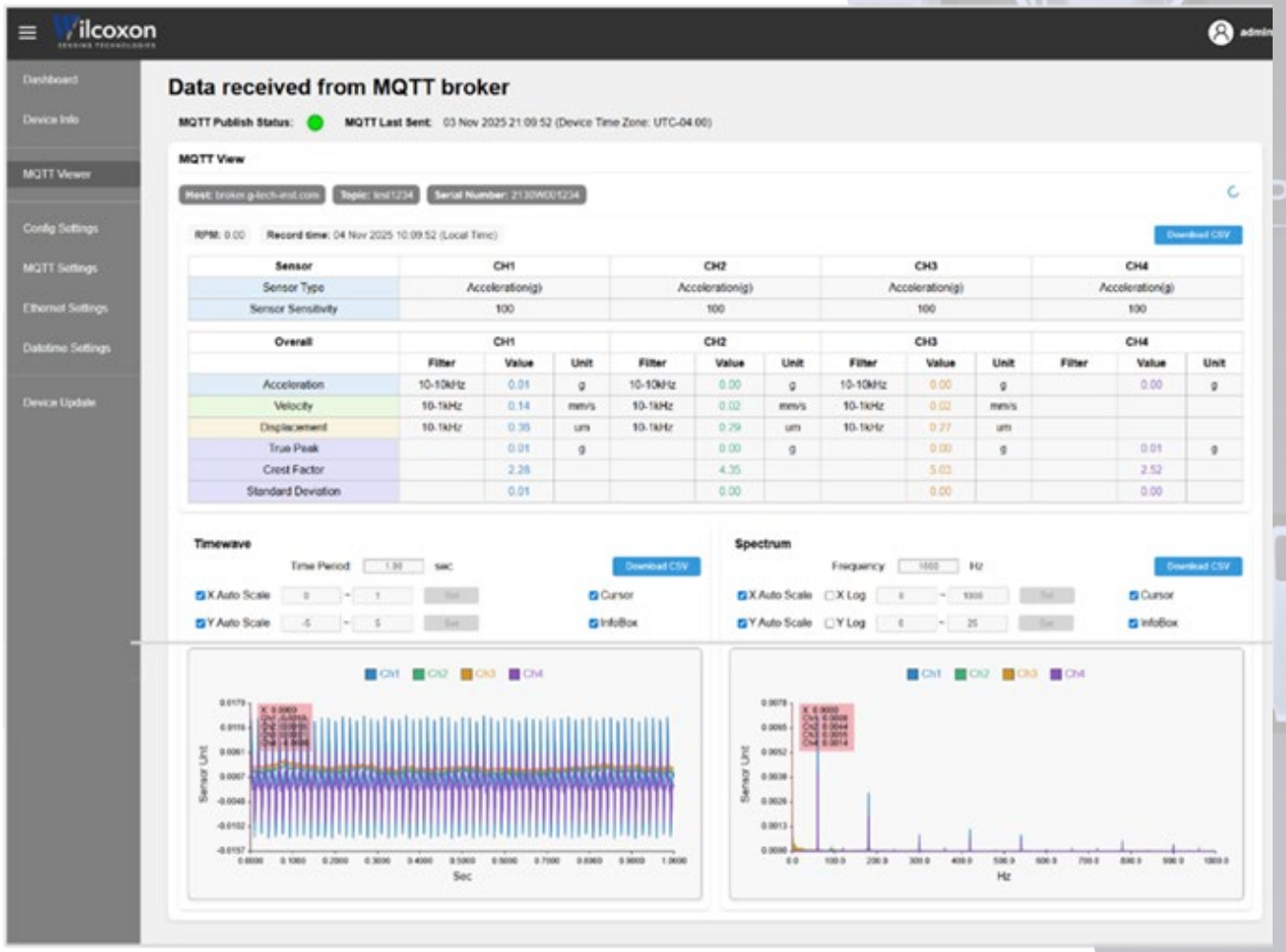
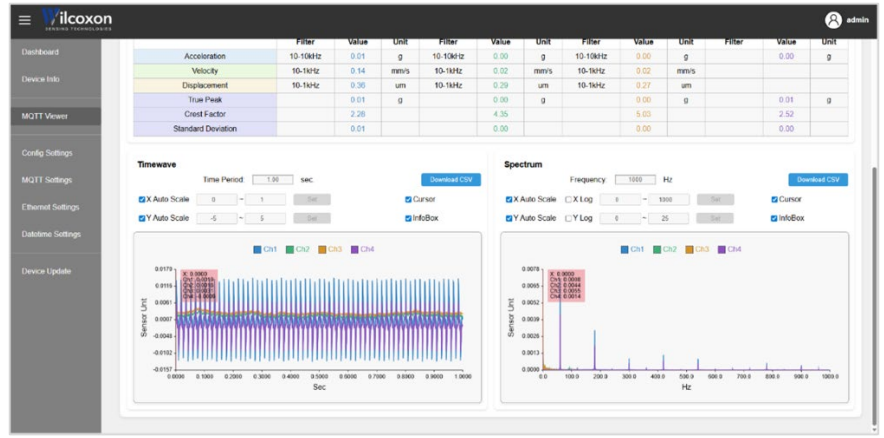
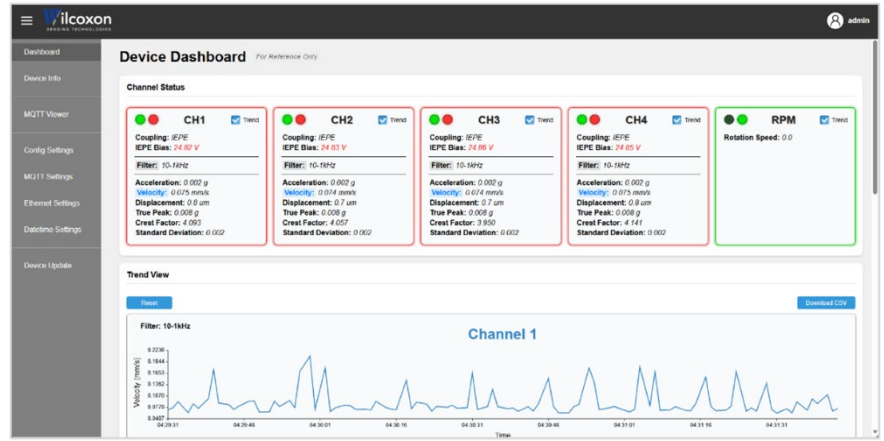
Output example



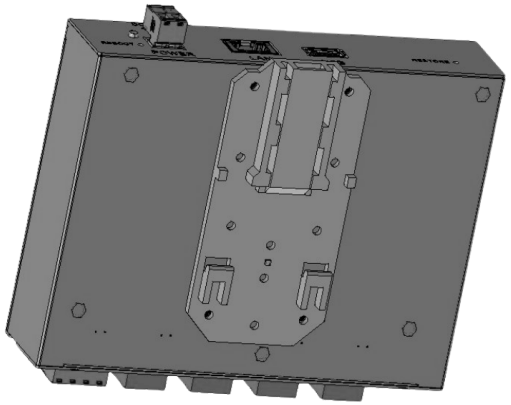
Device Center
Configure, monitor, and maintain the VDS130

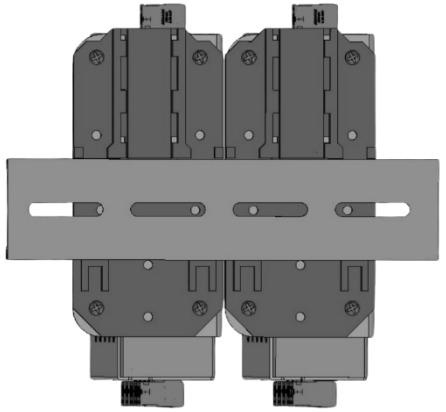
- Set network and MQTT parameters
- Configure per-channel measurement settings
- Manage user access
- MQTT Viewer shows exactly what data the device is publishing
- Live status indicators for each sensor and input channel
  - Device and signal functionality
  - NOT asset health monitoring, trending, alarming, or diagnostic analysis
- Software, firmware, and system updates





Mounting
Optional adapter on side or back for DIN rail mounting





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Target markets and applications

Applications

- Factory automation, process monitoring, machine health trending
- Rotating production assets, including motors, pumps, fans, and gearboxes
- Training AI models to optimize efficiency
- Creating digital twins to optimize monitoring and maintenance
- Bypassing an installed CMS
- Compatible with sensors in hazardous locations and extremely harsh environments
  - VDS devices must be placed outside hazardous locations and harsh environments

Industries

- Cement
- Food and beverage
- Machine tool
- Metals processing
- Mining
- Oil and gas
- Pharmaceutical
- Power generation (balance of plant)
- Water and wastewater
- Wind power

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Read more about the VDS and digital converters

Available on our website

- Data sheet
- New product page
- VDS130 product page
- VDS100 series page
- Digital products brochure

Available on CBM Connect

- Digital Accelerometers vs. Digital Adapters: Selecting the Right Sensor for Your Application
- From the Plant Floor to the Cloud: Digital Vibration Sensors and Adapters Explained
- Bridging the Gap with Digital Vibration Monitoring 2.0
- Making Vibration Data Digital: From Waveforms to Cloud Analytics – *coming soon*

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