CTC ConnectSens™ Wireless Sensors for Cranes

Revolutionizing Condition Monitoring

CTC CONNECT

Introduction

Cranes play a crucial role in industries such as construction, shipping, and manufacturing, where uptime and safety are paramount. Ensuring cranes are well-maintained and operating at peak performance can be challenging, but condition monitoring is key to preventing costly breakdowns and accidents.

CTC ConnectSens wireless vibration sensors offer a cutting-edge solution designed to overcome the challenges associated with conventional monitoring on cranes. With CTC Connect, reliable data collection on non-stationary equipment is made simple, providing accurate insights into crane health.

Key Components Monitored by CTC Connect

Motors
Monitoring of hoist, trolley, and bridge motors for vibration anomalies which can indicate misalignment, imbalance, or bearing wear.

Gearboxes
Gear mesh issues and wear can be detected in gearboxes that control crane movements.

Hoist Mechanisms
Critical for lifting and lowering loads, the hoist mechanism can be monitored for any mechanical wear or misalignment.

Bearings (Trolley and Bridge)
Ensures smooth movement of the crane across its tracks, detecting lubrication issues or bearing faults early.

Slewing Drives (Tower Cranes)
For cranes with rotational components, slewing drives can be monitored to detect wear or operational abnormalities.

Wire Rope Drums
Detects any misalignment or issues with load distribution during crane operation.

How it Works

The CTC Connect ecosystem offers you the highest quality wireless hardware system on the market, with industry-leading sensor line-of-sight range, and is designed for integration into 3rd-party vibration analysis software. Our complimentary ConnectView™ Web Application comes preloaded on the ConnectBridge™ Gateway and provides basic vibration monitoring management tools and device management options like sensor configuration, battery level information, and more. When used with 3rd-party vibration analysis software, our wireless sensors and gateway can be harnessed for advanced data analysis that meets your specific needs.

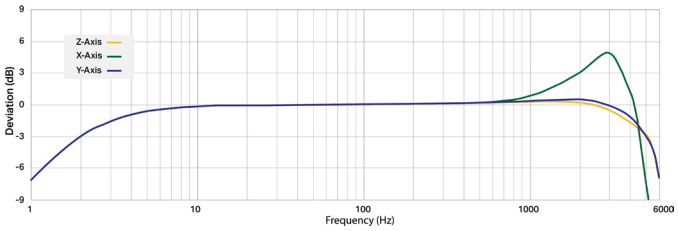
Select the Right Sensor for Each Bearing You Wish to Monitor

Process Control Monitoring

Overall vibration sensor with temperature output that advertises periodic overall vibration levels (RMS, Peak, or Pk-Pk) over **Bluetooth®** Low Energy 5.2 which can be picked up by a ConnectBridge Gateway:

WS100 Series

ConnectSens Wireless Sensor - Triaxial Overall Vibration Signal with Temperature Output



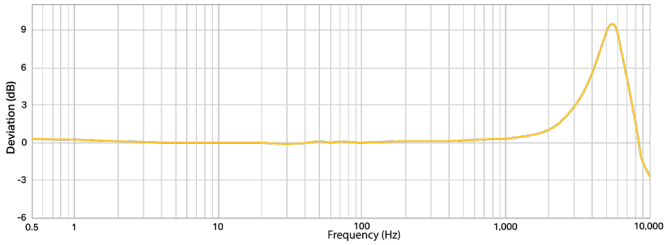
High frequency 2 Hz - 5 kHz only; not reflective of results on other frequency ranges

Dynamic Data Capture

All-in-one wireless vibration sensors with built-in temperature outputs:

WS200 Series

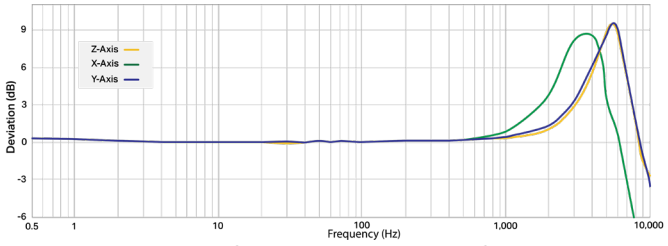
ConnectSens Wireless Sensor - Single Axis Dynamic Vibration Signal Capture with Temperature Output



25.6 kHz sampling frequency is required to utilize full bandwidth shown

WS300 Series

ConnectSens Wireless Sensor - Triaxial Dynamic Vibration Signal Capture with Temperature Output



25.6 kHz sampling frequency is required to utilize full bandwidth shown

Sensor Specification Highlights*

Specification	WS100 Series	WS200 Series	WS300 Series
Line-of-Sight Range	2,100 ft. (640 m)	1,200 ft. (366 m)	1,200 ft. (366 m)
Number of Axes Measured	Triaxial Measurement	Single-Axis Measurement	Triaxial Measurement
Resonant Frequency	5.5 kHz	5.5 kHz	5.5 kHz
Reading Duration	500 ms	Dependent on Number of Samples & Sensor Configuration Settings	Dependent on Number of Samples & Sensor Configuration Settings
Reading Interval	Factory-Configurable in Hours From 1 - 24	User-Configurable in Hours From 0 - 24**	User-Configurable in Hours From 0 - 24**
Battery Life	1 - 4 years***	1 - 4 years***	1 - 4 years***
Output Format	Overall Vibration in Peak, RMS, and Pk-Pk	Dynamic Vibration Waveform Samples	Dynamic Vibration Waveform Samples
Temperature Range	-40 - 80 °C	-40 - 80 °C	-40 - 80 °C

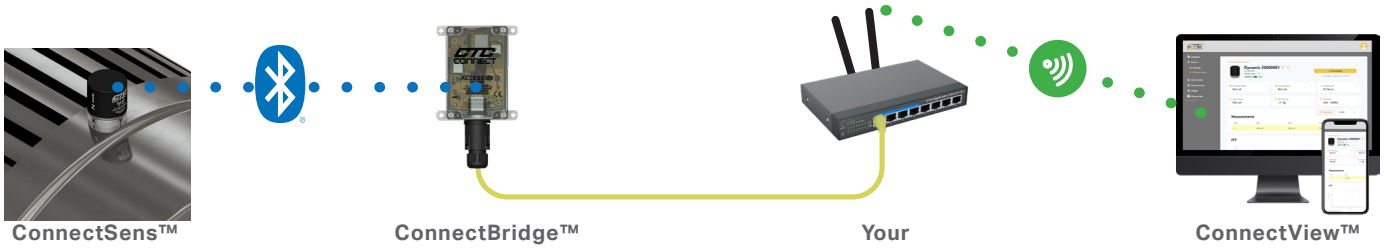
* Specifications are only accurate when used with a CTC ConnectBridge Gateway. If using an alternative method to receive your sensor signal, differences may occur in your actual line of sight range, battery life, and other specifications.

** With a value of 0, the sensor will take a reading triggered through the ConnectBridge Gateway (manual reading or user-configured intervals under 1 hour). If a new hourly rate is desired, this can also be configured through the gateway.

*** Achievable battery life depends on environmental conditions, configuration options, and sensor use. CTC recommends replacing the battery every four years, regardless of remaining battery life reported by the Web App, due to effects of battery degradation over time. If operating above 50 °C, replace the battery in half that time.

ConnectBridge Gateway

All CTC Connect wireless sensors are compatible with our ConnectBridge Gateway. The gateway serves as the connection between CTC Connect hardware and the ConnectView Web App and 3rd-party software. If your crane is in a remote application where there is not access to a local network, it can be powered by a PoE Injector. All gateways come with an SD card, which can store data for review at a later time.



ConnectSens™ Wireless Sensor | ConnectBridge™ Wireless Gateway | Your Network Switch | ConnectView™ Web App or Your Own OEM Software

For crane monitoring, it is particularly important to take readings upon request while the crane is in operation. While all CTC Connect sensors can be programmed to take readings at set, time-based intervals, WS200 and WS300 Series dynamic data capture sensors also allow for readings upon request.

Conclusion

CTC Connect wireless vibration sensors offer a comprehensive solution for the challenges of condition monitoring in cranes. CTC Connect allows for easy installation, reliable data collection, and immediate fault detection - revolutionizing how cranes are maintained and operated in today's demanding industrial environments.

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