

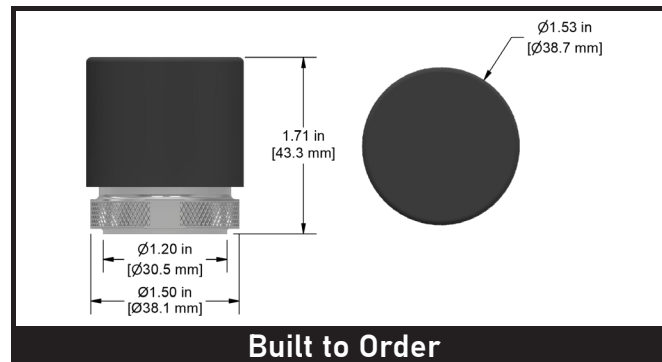
WS100 Series

ConnectSens™ Wireless Overall Triaxial
Vibration Sensor with Temperature Output



Product Features

User-selectable frequency response bands
Up to four years of autonomous operation
RMS, Peak, Peak-to-Peak in acceleration or velocity



Component Specifications

Specifications below reflect sensor use in conjunction with a CTC Connect Wireless Gateway. If a Connect Wireless Gateway is not used, specifications may vary. CTC does not provide technical support for direct integration of the sensor without a Connect Wireless Gateway.

Frequency Range	Factory configurable frequency bands	Operating Temperature Range	-40 °F to 176 °F (-40 °C to 80 °C)
Resonant Frequency	5.5 kHz	Maximum Shock Protection (Powered)	5,000 g, peak for 0.5 ms
Reading Duration (All Axes)	500 ms	Maximum Shock Protection (Unpowered)	10,000 g, peak for 0.2 ms
Automatic Reading Interval	Factory configurable in hours from 1-24	Sealing	Compressed Silicone O-ring
Dynamic Range	Factory configurable: ±8 g, ±16 g, ±32 g, ±64 g	Ingress Protection	IP67
Data Output Format	Overall vibration in Peak, RMS, & Peak-to-Peak	Wireless Protocol	Bluetooth® Low Energy 5.2
Output Unit	Factory Configurable: acceleration (g's) or velocity (IPS)	Sensing Structure	MEMS - triaxial
Sample Resolution	16 bits	Weight	4.6 oz (130 grams)
Temperature Measurement Range	-40 to 80 °C	Case Material	Stainless steel base with nylon cap
Temperature Output Measurement Unit	°C	Mounting Thread	1/4-28 blind tapped hole
Power Source	Field replaceable 3.6V 1 Ah lithium battery pack (.35 gram lithium)	Mounting Torque	Base: 2 - 5 ft/lbs Cap: 4 - 5 ft/lbs
Battery Life	4 years based on 2 readings taken per day with excellent signal strength* at 20 °C	Mounting Hardware Supplied	1/4-28, M6x1, or M8x1.25 stud
		EMC Compliance	FCC ID: 2BKLG-WSCONNECT ISED: 21201-WSCONNECT CE
		Calibration Certificate	CW10
		SIL Rating	SIL 2

*Approved signal strength ranges:

-30 dBm to -50 dBm: Excellent
-50 dBm to -60 dBm: Good
-60 dBm to -70 dBm: Fair

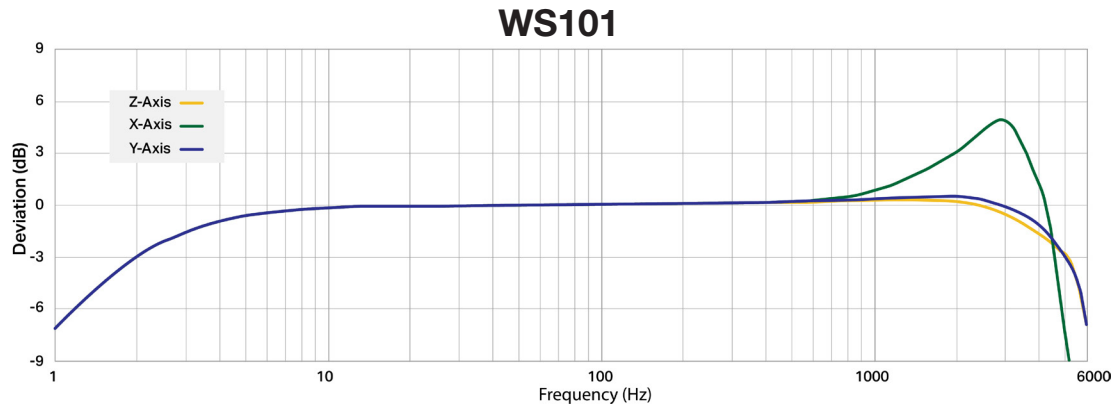
-70 dBm to -75 dBm: Weak
-75 dBm or Greater: Poor/Unusable

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Example Frequency Response at 2 Hz - 5 kHz Frequency Range



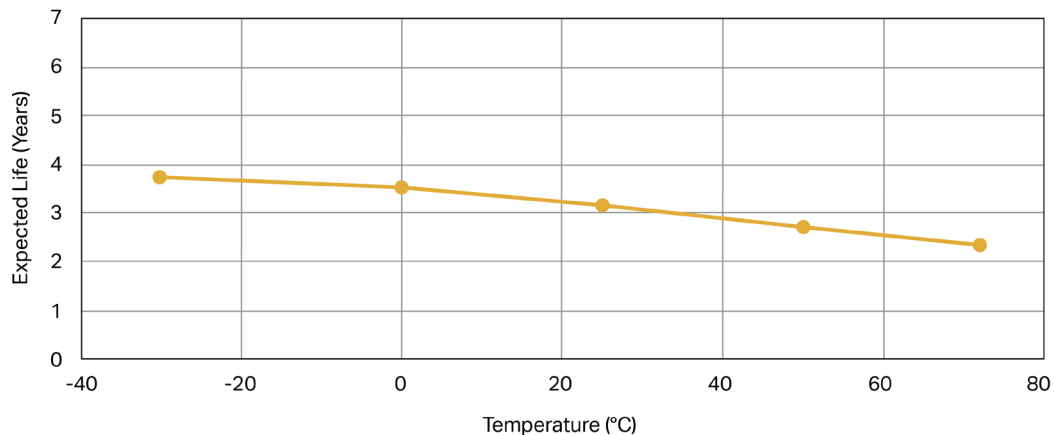
Battery Information

WS100 Series Expected Life

Battery life curve assumes excellent signal strength between sensors and gateway. Actual battery performance may vary based on environmental and sensor circumstances. Important factors include:

- Battery Age:** Cells degrade over time regardless of use.
- Wireless Conditions:** Poor signal strength environments will result in additional Bluetooth® transmissions which increases power consumption.
- Outdated Firmware:** Keep all sensors up to date with the latest available firmware for optimal performance.
- Temperature:** Extreme temperatures can reduce usable battery capacity and increase current consumption.

Wireless Process Control Sensor, 10 Hz - 1 kHz, Two Readings Per Day



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Ordering Information

/WS101-				
Stud Type Blank = ¼-28 M = M6x1 M8 = M8x1.25	Output Unit 0 = Acceleration 1 = Velocity*	Dynamic Range 1 = ±8 g 2 = ±16 g 3 = ±32 g 4 = ±64 g	Frequency Range 01 = 2 Hz - 1 kHz 02 = 2 Hz - 2.5 kHz 03 = 2 Hz - 5 kHz 04 = 10 Hz - 1 kHz 05 = 1 kHz - 5 kHz	Auto Read Rate† 01 = 1 Hour 02 = 2 Hours 03 = 3 Hours 04 = 4 Hours 05 = 5 Hours 06 = 6 Hours 07 = 7 Hours 08 = 8 Hours 09 = 9 Hours 10 = 10 Hours 11 = 11 Hours 12 = 12 Hours 13 = 13 Hours 14 = 14 Hours 15 = 15 Hours 16 = 16 Hours 17 = 17 Hours 18 = 18 Hours 19 = 19 Hours 20 = 20 Hours 21 = 21 Hours 22 = 22 Hours 23 = 23 Hours 24 = 24 Hours

Ordering Number	Frequency Range	Sampling Rate (Hz)	Reading Duration (s)
01	2 Hz - 1 kHz	6400	0.5
02	2 Hz - 2.5 kHz	12800	0.5
03	2 Hz - 5 kHz	25600	0.5
04	10 Hz - 1 kHz	6400	0.5
05	1 kHz - 5 kHz	25600	0.5

* Compatible with 2 Hz - 1 kHz and 10 Hz - 1 kHz frequency ranges only.

† Achievable battery life depends on environmental conditions, configuration options, and sensor use. CTC recommends replacing the battery every 4 years, regardless of remaining battery life reported by software, due to effects of battery degradation over time. If operating above 50 °C, replace the battery in half that time.

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Connectivity

Connectivity

CTC WS100 sensors broadcast readings over **Bluetooth®** Low Energy 5.2, which can be picked up by CTC Connect Wireless Gateways. Complete your data collection route from your desk when utilizing a WS100 with a gateway. Each gateway can be used with an unlimited number of CTC wireless sensors within range, and allow for 20 simultaneous connections. Connect Wireless Gateways connect to your plant's network via an ethernet connection to request a reading on demand.

ConnectView™ Web App

CTC offers an easy to use web app that is included with the purchase of any Connect Wireless Gateway.

Key features include:

- Nickname sensors & assign sensors to machine groups
- Easily view and export data:
 - Historical data & overall values for trending over time
- Set early warning and critical alert levels
- View battery life
- Web interface runs off of your local network - you own your data and control your security. This means no recurring data fees when utilizing your local network.

Our API also allows OEM customers to utilize their own software to communicate with CTC ConnectSens™ Wireless Sensors via a CTC Connect Wireless Gateway.

