



## Vibration Sensor Node (SD-VSN-1)

The SmartDiagnostics® family of innovative wireless sensor products enables the cost effective implementation of advanced predictive maintenance processes for any company. The system provides continuous remote monitoring of vibration and temperature to track the operating health of the monitored equipment.

Optimized for low-power usage, SmartDiagnostics® Vibration Sensor Nodes use KCF Technologies' proprietary wireless protocol that transmits the full dynamic vibration spectrum over the air on a nearly continuous basis. Primary Receiver Nodes collect the information from the sensors and relay them to the Collection Server and to MCM software to provide you with reliable and accurate data.



Give Your Machines **a Voice**

### RELIABLE MONITORING

Vibration Sensor Nodes provide vibration monitoring in the most hard-to-reach, rugged locations. Each node communicates directly with a receiver, which stores the data on a Collection Server. The data is transmitted wirelessly and imported into the Machine Condition Monitoring system, where machine health can be quickly and accurately monitored.

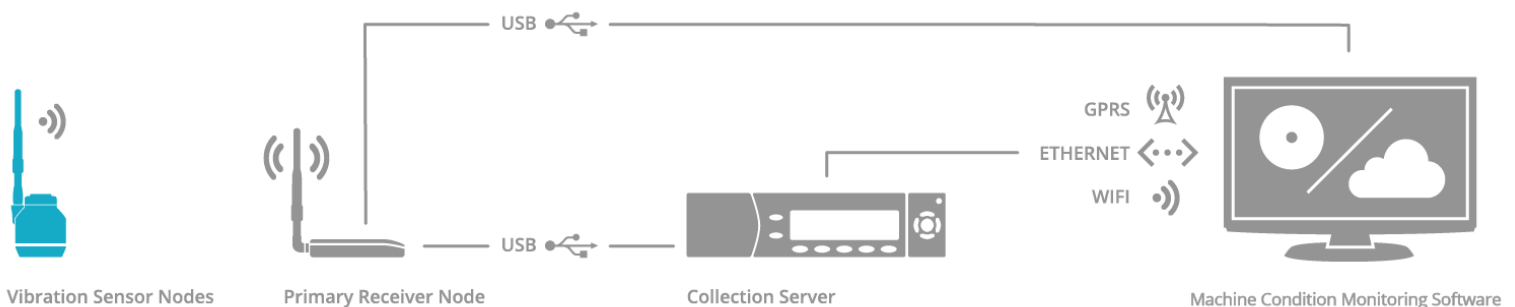
### FLEXIBLE CONFIGURATION

The system is highly configurable. Up to 24 sensor nodes can send vibration to each receiver. The sensors can be configured to transmit data on a user-selected frequency, and different monitoring bands can be implemented to caution or warn users when a frequency of interest reaches a specified level.

### COST EFFECTIVE

SmartDiagnostics® can predict failure before it occurs, saving money spent on unnecessary replacements and extending machine life. At the same time, energy costs are reduced, as cleaner running machines are more efficient. Skip the downtime, expense, and labor costs of old-fashioned, hard-wired sensors. Simply place the sensors where you need them and within minutes they'll transmit data.

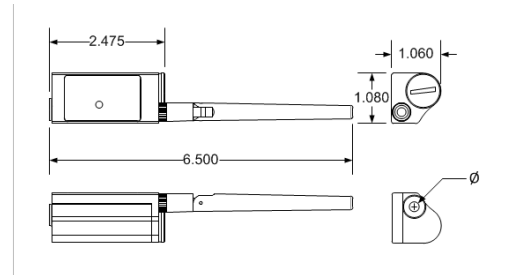
### The SmartDiagnostics® System





## Vibration Sensor Node Specifications

|                               |  |
|-------------------------------|--|
| Dimensions                    | 1.08in x 1.06in x 2.44in (27.5mm x 27mm x 62mm)<br>Excluding antenna   |
| Weight                        | 3.1oz (88.8g)  |
| Wireless                      | <ul style="list-style-type: none"> <li>2.4GHz to 2.835GHz ISM band radio</li> <li>Very low power, low overhead proprietary air protocol</li> </ul>   |
| Antenna                       | <ul style="list-style-type: none"> <li>Standard 2dB antenna (4.125" long, swivel and hinge)</li> <li>Optional 41" &amp; 125" magnetic mount antennal extension</li> </ul>  |
| Power Source                  | <ul style="list-style-type: none"> <li>3.6 Volt lithium thionyl chloride, AA battery, or</li> <li>One of KCF's line of energy harvesters</li> </ul>  |
| Power Consumption             | For a heartbeat ping rate of 4 seconds and a vibration data collection rate of once per hour the 3.6 Volt battery should last for 8 years, equates to 123uW power consumption (See "Battery Life" below for more information). |
| Enclosure Material            | Aluminum   |
| Measurement Range             | +/- 16 g   |
| Measurement Resolution        | 0.0078 g (1σ FS)   |
| Frequency Range               | 0-1600 Hz  |
| Spectral Resolution           | 944 spectral lines   |
| Temperature Measurement Range | -40 to 80°C  |
| Temperature Resolution        | +/- 0.5°C with proper calibration  |
| Mounting Options              | <ul style="list-style-type: none"> <li>Screw mount #1/4in-28 threaded hole in base.</li> <li>Magnetic adapter that fits into the threaded hole</li> <li>Bondable adapter that fits into the threaded hole</li> </ul>           |
| Environmental Testing         | -40 to 85°C storage & operating, IP65 enclosure, 5ft drop on concrete surface  |
| FCC ID                        | Z5IVSN1  |
| Model Numbers                 | SD-VSN-1 (Regular) and SD-VSN-1-N (Class I, Division II Nonincindive Certified)  |



## Industry Applications

- Industrial HVAC/R
- Oil & Gas
- Power Generation
- Pulp & Paper
- Food & Beverage

## Features & Benefits

- Accurately monitors vibration and temperature in a variety of locations.
- Wireless communication allows for instant results and efficient operation.
- Robust industrial strength design allows vibration sensor nodes to be reliably used in harsh industrial environments.
- Very easy installation – no wires, no tools – locate, place, and go.
- Extremely low power operation enables very long battery life or use with energy harvesters.