

# VIBRATING WIRE NODE

## DATASHEET

**NexaWave VibraLink  
(Solo/Quint/Deca)**



## OVERVIEW

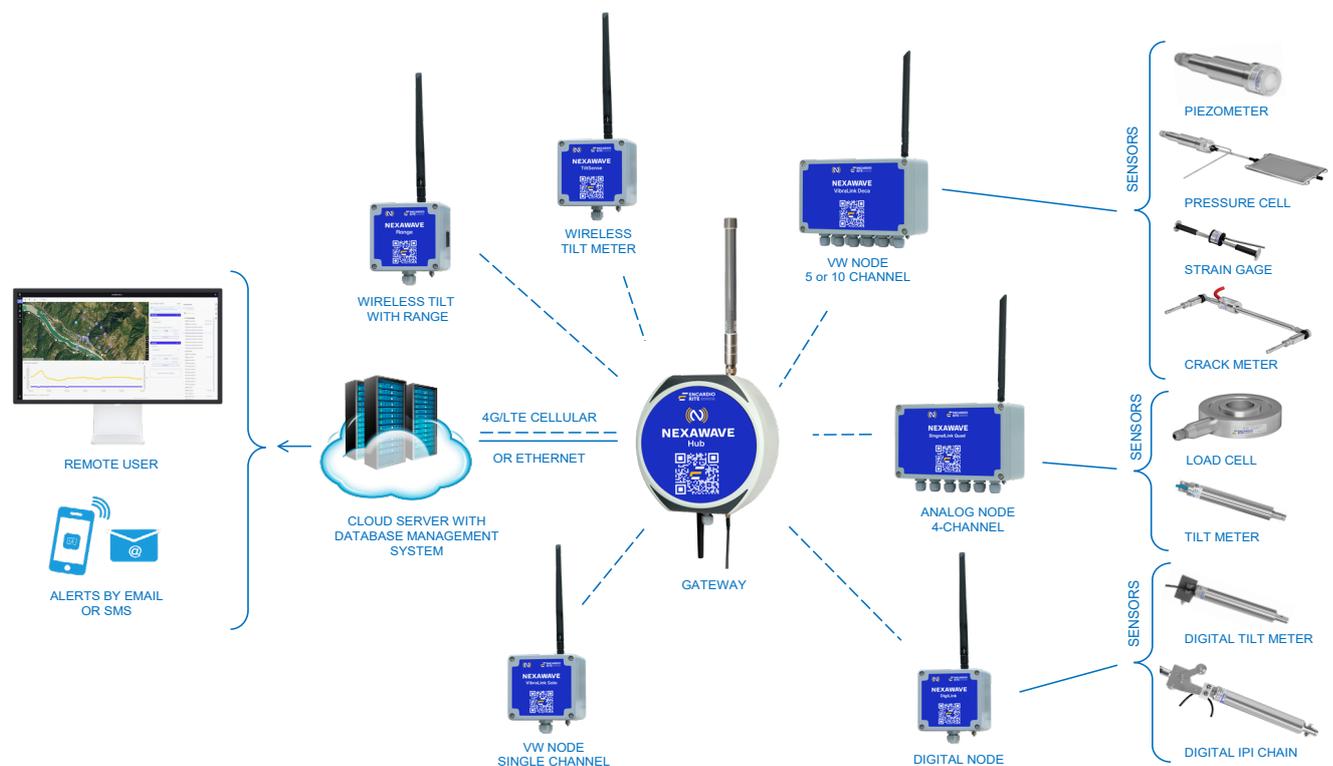
Encardio Rite's advanced wireless LoRa RF sensor solution is a comprehensive and dependable system for monitoring the health of geotechnical and infrastructure projects. With its easy setup, real-time data transfer, and an array of advanced features, it offers an efficient means of managing projects and making informed decisions.

The NexaWave VibraLink, available in Solo, Quint, Deca and Hex (compact) variants, are at the heart of this innovative solution. They eliminate the need for cumbersome cables and provide a reliable means of exciting and transmitting measurements from vibrating wire sensors to the Gateway. The system consists of various nodes and a gateway that operates in a MESH (presently only STAR) configuration. Site setup and configuration are intuitive and easy using an Android device.

This network is a game-changer for construction sites, dams, railways, and landslide areas, providing early warnings for enhanced safety, project efficiency, and cost-effectiveness.

## FEATURES

- **Reliable data transmission:** High-resolution readings with long-term stability and uninterrupted data transmission.
- **Seamless connectivity:** 200 nodes to 1 Gateway over large distances in MESH (presently only STAR) configuration.
- **Easy configuration:** Plug and Play sensor installation. Intuitive set up and configuration on your mobile.
- **Node scan rate:** The nodes can be configured to scan and transmit data at customizable frequencies, ranging from 3 minutes to 24 hours.
- **Cost-effective Solution:** It eliminates the need for lengthy cables and reduces installation and maintenance costs.
- **Wide range of sensor compatibility:** The range of sensors include digital sensors, vibrating wire sensors, analog sensors, and more.
- **Automatic alerts and reports:** Real-time alerts via SMS or email for data that crosses pre-defined alert levels allowing timely response to critical events or changes in the monitored parameters.
- **Cloud-hosted data management:** The collected sensor data is uploaded to a central/cloud server to be processed to provide 24/7 access to the data allowing advanced data analysis and visualization on our platform Proqio.
- **Privacy:** AES-128 encryption, maximizing the security of the sensor data collected.
- **High battery life:** 6 – 60 months depending upon the application and data transmission rate.  
In gateway, batteries are only for emergency (as a short time back-up in case of power failure).
- **Versatile power options:** Choose from battery, mains, or optional solar power (model ESP-12V1A). For remote sites, mains or solar power is advised.



TYPICAL SCHEME

## PRODUCT OFFERINGS

At the core of this groundbreaking solution are the versatile NEXAWAVE VIBRALINK wireless nodes, available in Solo, Quint, Deca and Hex variations, complemented by the NEXAWAVE HUB, serving as the gateway. These are designed for standalone monitoring and data collection from a vibrating wire sensors.

- **NEXAWAVE VIBRALINK SOLO** (EWN-01V) is a single-channel wireless node, suitable to collect data from single VW sensor
- **NEXAWAVE VIBRALINK QUINT** (EWN-05V) is a 5-channel wireless node, suitable to collect data from up to five VW sensors.
- **NEXAWAVE VIBRALINK DECA** (EWN-10V) is a powerful 10-channel node, suitable to collect data from up to ten VW sensors.
- **NEXAWAVE VIBRALINK HEX** (EWN-06V) is a compact 6-channel wireless node, designed for tunnel lining applications. It can connect up to six VW sensors. Due to its compact size, it contains only one battery and does not support an external power supply.
- **NEXAWAVE HUB** (EWG-01) serves as the central gateway in Encardio Rite's wireless sensor network. It collects and manages data from NexaWave VibraLink Nodes, ensuring seamless communication and control.



Solo

Quint

Deca



Hex

Gateway

## NODE COMPATIBILITIES

The complete range of vibrating wire sensors can be connected to Nexawave vibralink include:

- Piezometers, water level sensors
- Strain gages
- Pressure cells
- Displacement sensors
- Extensometers
- Crack/joint meters
- Temperature meter
- Settlement monitoring sensor



VibraLink Solo connected to piezometer



# SPECIFICATIONS

## VibraLink Solo/Qunit/Deca/Hex Vibrating wire node (EWN-01V/05V/10V/06V)

Sensor type	Vibrating wire, 3K thermistor
Accuracy	± 0.1% fs (VW), 0.1°C (temp.)
Sensor excitation frequency	400-6000 Hz
Excitation voltage	5 V
Operating Temp.	-40°C to +70°C
Storage	3 million data points

## Hub (EWG-01) Gateway

Nodes per Gateway	Up to 200
Storage	SD card 16 GB expandable up to 32 GB
Typical current drain	200 mA typical operating current
Internet connectivity	In-built 4G modem
Radio Frequency	EU: 863-870 MHz; US& ROA: 902-928 MHz
Antenna (Cellular)	Stub Antenna (3 dBi) External Whip Antenna (5 dBi)
Antenna (LoRa) (node and gateway)	Fiber Glass Antenna Omni directional (3 dBi)

## Power supply for nodes and gateway

Internal non-rechargeable batteries	2 D-Cell Lithium Thionyl Chloride 3.6 V Nominal Voltage, 14 Ah batteries <i>Provision for extra 2 batteries provided in EWN-05V/10V VW node for extended battery life.</i> <i>Hex VW node has only 1 battery</i>
Power supply	9-30 VDC @ 1 A nominal <i>(Hex VW node does not support an external power supply)</i>
Solar power supply	Model ESP-12V1A solar power supply 12 VDC @ 1A, available on order



ESP-12V1A Solar power supply, 12 VDC, 1 A

\*All specifications are subject to change without prior notice

DATASHEET | 1912-24 R3



Dams



Mining



Tunnels



Transportation



Construction



Bridges



Landslides



Energy



Environmental Monitoring



Pipelines



Structural Health Monitoring



Smart Cities