

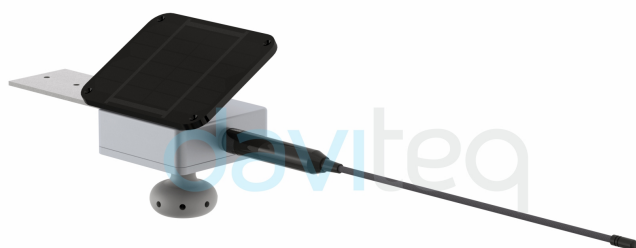
Sub-GHz Tower Vibration Sensor



Smart Facility, Smart City, Smart Building

SKU: WS433-TVS

SUB-GHz TOWER VIBRATION SENSOR WS433-TVS



WS433-TVS-H1.JPG



Safe Zone



Hazardous Zones

WS433-TVS is a special vibration sensor to monitor the vibration of telecommunication towers, electrical towers, and lighting poles... With advanced vibration sensor and digital processing, it delivers accurate vibration parameters like displacement, frequency, and tilt angles... With a built-in Wind speed and wind direction sensor, it can deliver the vibration parameters associated with the wind speed and wind direction at the same time.

The wireless portion is Sub-GHz technology from Texas Instruments allows long-range transmission at ultra-low power consumption. It will connect 2-way wirelessly to the wireless coordinator WS433-CL to send data and receive the configuration. It can be configured with the operation parameters like data sending interval, and health check cycle... remotely from the Globiots platform, or via ModbusRTU software (thru the WS433-CL).

Applications

Vibration Monitoring, Tilt Monitoring, Facility Monitoring, Safety Monitoring

Notes For Applications

- This TVS sensor measures the static tilt angle of the static object vs. the Gravity direction. Please do not use it for other angle measurements.
- It measures the static tilt angle, frequency and displacement of stationary objects or slow-moving objects such as Pole, Tower...
- It does not measure the tilt angle, frequency and displacement of a quick-moving object like construction equipment...



High Accuracy & Stable Vibration Measurement

Advanced vibration sensor with high sensitivity



Maintenance free

No-moving wind sensor allows long life operation without maintenance



Integrated with Solar

Integrated Solar for Autonomous operation



Long life design

10+ years life design without maintenance

TELECOM TOWER VIBRATION MONITORING



WS433-TVS-H2.JPG

DAVITEQ TECHNOLOGIES INC

Ho Chi Minh City, VN | Koblenz, DE | Melbourne, AU | Zurich, CH

+84.28.6268.2523 / 6268.2524

info@daviteq.com

www.iot.daviteq.com

Created date: Feb-02-2023

Updated date: Aug-28-2024

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Specification

Sensor technology	Ultra-precision Dual-axis vibration sensor and Solid-state wind sensor
Measurement	Displacement, Frequency, static Tilt angles, Wind speed, and Wind direction
Displacement range, Resolution	±1200mm, 1mm
Displacement accuracy	±5% RD for Range 50-1200mm, ±0.5% RD for Range < 50mm
Frequency range, Resolution	0.15~20Hz, 0.1Hz
Frequency accuracy	±0.1Hz
Tilt angle range, Resolution	0~90°, 0.01°
Tilt angle accuracy	±0.01°
Wind speed range, Resolution, Accuracy	0~50 m/s, 0.1, ±3% of Reading
Wind direction range, Resolution, Accuracy	0-360°, 1°, ±1°
Working temperature	-40~85°C
Working humidity	0~100% RH, non-condensing
COMMUNICATION	
Data speed	Up to 50kbps
Transmission distance, LOS	1000m
Antenna	External Antenna 0 dbi
Functions	Sending data in interval or when alarms occur
Power	Solar Panel with Rechargeable batteries 4 x AA Panasonic® Eneloop™ Standard (batteries are not included)
Frequency Band	ISM 433MHz, Sub-GHz technology from Texas Instrument, USA
International Compliance	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Vietnam Type Approval Certification	QCVN 73:2013/BTTTT, QCVN 96:2015/BTTTT (DAVITEQ B00122019)
Security Standard	AES-128
Operating temperature of PCB	-40~85°C (with Lithium Ultimate AA battery)
Housing/Protection	Aluminum & PC plastic
Mounting	Wall mount, c/w mounting bracket
Dimension, weight	H80xW80xD120, <250g

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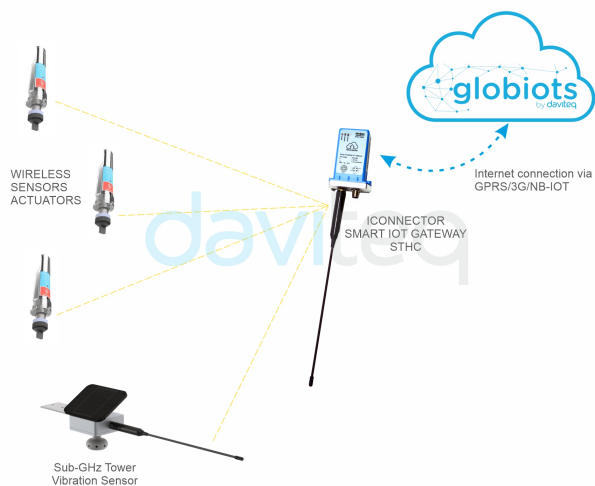
✉ info@daviteq.com

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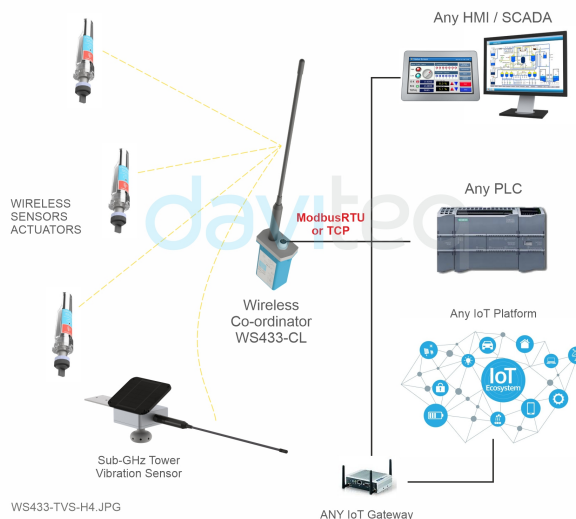
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CONNECT SUB-GHz SENSORS TO GLOBIOTS Platform



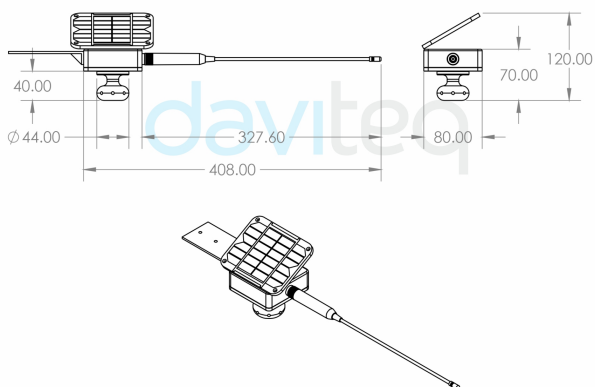
WS433-TVS-H3.JPG

CONNECT SUB-GHz SENSORS TO any PLC, HMI, SCADA or IoT Platform



WS433-TVS-H4.JPG

DIMENSION DRAWING OF SUB-GHz SENSOR (Unit: mm)



WS433-TVS-H5.JPG

RECOMMENDED BATTERIES FOR LoRaWAN SENSOR

E91 AA Alkaline battery



-18 .. + 60 oC working temperature
10-year shelf life
3000 mAH Capacity
Price: 1X

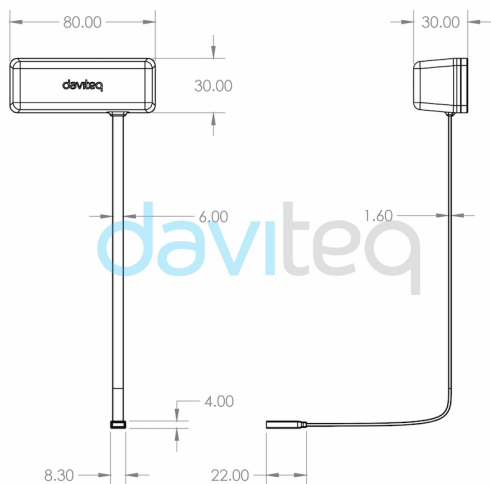
L91 AA Lithium battery



-40 .. + 60 oC working temperature
20-year shelf life
3500 mAH Capacity
Price: 3.5X

WSLRW-AG-H8.JPG

DIMENSION DRAWING OF SENSOR NODE



WSLRW-S-ATE-H7.PNG

RECOMMENDED BATTERIES FOR LoRaWAN SENSOR

LS 14500 Lithium battery



-60°C..+85°C working temperature
Low self-discharge rate
2.6 Ah Capacity

WSLRW-S-ATE-H8.PNG

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Ordering Information

ITEM CODE	DESCRIPTIONS
WS433-TVS-01	Sub-GHz Tower Vibration Sensor, 2W solar panel, XY Vibration, XY Tilt, Wind speed and direction
WS433-TVS-02	Sub-GHz Tower Vibration Sensor, 2W solar panel, XY Vibration, XY Tilt