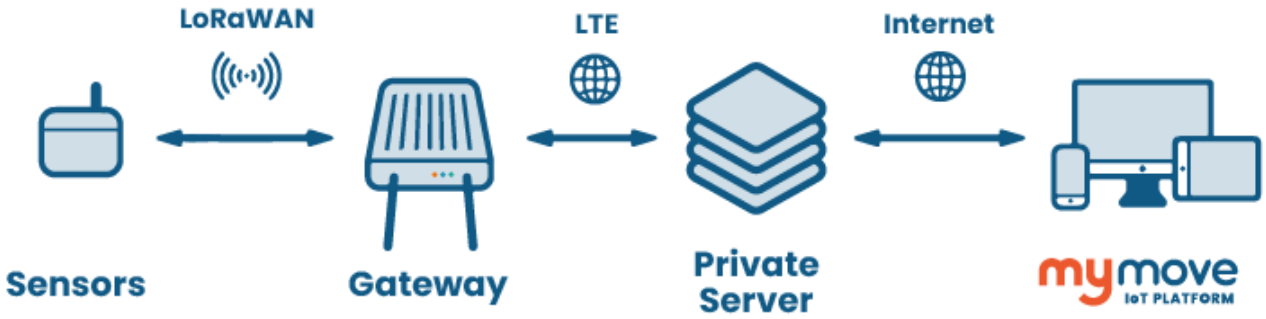
DYNAMIC DISPLACEMENT SENSOR DATASHEET

THE SYSTEM: SMART SHM

Move Solutions is a trusted leader in **Smart Structural Health Monitoring (Smart SHM)**. Our wireless system offers a remote, continuous and comprehensive analysis of the health of the structures. By integrating cutting-edge **Internet of Things (IoT)** technology with Structural Health Monitoring practices we promote more sustainable and resilient infrastructure.

KEY PARAMETERS

- Easy installation on the structure
- Minimum maintenance required
- Long-range communication
- Fully remote management and customization
- Data analysis with advanced algorithms
- Modular system
- High precision
- Waterproof rating IP67
- Long-life battery
- Integrated temperature sensor



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HOW IT WORKS

Move Solutions offers a wireless monitoring system for *static, dynamic, geotechnical and environmental analysis* of all civil infrastructures: bridges, construction sites, rails, and more. Small **battery-powered sensors** combined with **MyMove IoT Platform** and highly **advanced algorithms** provide a comprehensive monitoring solution aimed at simplifying asset management. The data recorded by the sensors can be viewed on Move Solutions MyMove IoT Platform, which allows users to remotely monitor and manage structures in real time. They can set different operating parameters of each sensor, such as sampling rates, resolution and full scale, alarm and activation thresholds, and much more. That allows users to detect structural damage in time to implement preventive maintenance and reduce costs. Move Solutions system empowers infrastructure owners with insights to promote a proactive monitoring approach for safer, more sustainable, and resilient infrastructures.

ADVANTAGES

- Reduction of manual and on-site measurements
- Reduced downtime and disruptions to regular operations
- Real-time, remote and continuous data visualization
- Short-term and long-term data analysis
- Easy addition of sensors to extend the monitored area
- Cost reduction thanks to easy installation and maintenance
- Risk reduction and high reliability
- Preventive maintenance

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THE DEVICE: DYNAMIC DISPLACEMENT SENSOR (DDS)

The Dynamic Displacement Sensor (DDS) is a wireless device that remotely monitors the dynamic displacement and the frequencies of infrastructures.
Dynamic displacement measures the displacement of a structure from its initial position due to dynamic forces, and it is typically represented as a distance in millimetres (mm). **Frequencies** measure the rate or speed at which a structure vibrates or oscillates when subjected to dynamic forces, and they are expressed in Hertz (Hz).
The data collected can be viewed and managed via **MyMove IoT Platform**.

TECHNICAL SPECIFICATIONS	
Operation	
Operating temperature range	-40 °C to +80 °C
IP rating	IP67
Batteries	2 LiSOCl2 batteries (suggested: EVE ER34615PHR4)
Battery Connector	JST PHR-4
Radio Coverage	1 km in line of sight with gateway[1]
Maximum radiated power	< +16 dBm
Transmission Frequency	868 MHz in EU and UK, 902 MHZ in US and Canada

[1] This information is strictly dependent on environmental parameters such as humidity, presence of other radio devices, presence of obstacles and others.

Operation parameters	
Orientation	▪ Horizontal (code DECK002-H) ▪ Vertical (code DECK002-V)
Displacement range	± 1.5 mm, ± 3mm
Displacement resolution	0.012 mm (range ± 1.5 mm), 0.024 mm (range ± 3mm)
Sampling frequency	50 Hz
Number of samples for each acquisition	1600
Acquisition duration	32 seconds per event (12 seconds before trigger and 20 seconds after trigger)
Bandwidth (-3dB)	0.7 – 15 Hz
Temperature accuracy	0,5°C
Temperature Resolution	0,125°C
Battery life	2 years with 5 events acquired every hour[1]
Mechanical	
Installation options	Wall mount, ceiling mount, floor mount
Installation mode	2x mounting screw and anchors
Dimensions (with plate and antenna)	165 x 97 x 145 mm
Weight	1.7 Kg

REVISION HISTORY

Version v1.

Version	Changelog
v1	MyMove update (June 24)

Note: Specifications are subject to review and change without notice.

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