

# MOVE SOLUTIONS

## DATASHEET OF SINGLE CHANNEL NODE

### SMART MONITORING SYSTEM

Move Solutions™ is a leading company in **Smart Structural Health Monitoring** thanks to our world-class service in both dynamic and static structural analysis. We offer unique **wireless SHM systems** for all civil infrastructures. Our sensors are wireless, cost-effective, non-destructive, robust and small. Easy to install and to configure, they are perfect for structures with difficult access, where wired systems would involve complex and expensive installations, or for historic buildings that require special attention and non-invasive technology. By combining the latest **IoT technology** with deep industry knowledge, Move Solutions™ is disrupting the world on Structural Health Monitoring. By using the **Single Channel Node** it is possible to monitor cracks, strain, temperature and more using a great variety of geotechnical probes..

### KEY PARAMETERS

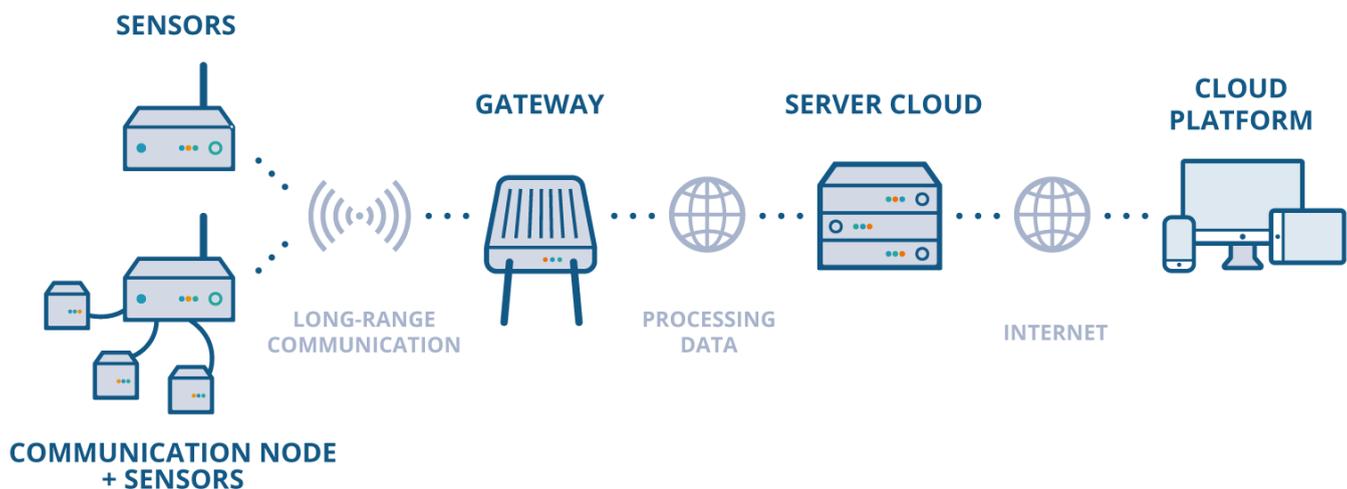
- No wiring
- Easy installation on the structure
- Built-in long-life battery
- High autonomy
- Minimum maintenance required
- Long-range communication
- Fully remote management and customization
- Data analysis with advanced algorithms
- Modular system
- High precision
- Waterproof rating IP67
- LoRaWAN wireless communication for wired geotechnical sensors
- Acquisition cadence to be set remotely
- Two types of acquisition methods: programmed and triggered by unusual events
- Auxiliary NTC reading features (except DECKSCN-PT1 and DECKSCN-NTC nodes)
- Small package (130×171.2×62 mm)
- Deeply integrated with Move Solutions Cloud Platform
- Internal antenna
- Improved accuracy

## HOW IT WORKS

Move Solutions™ offers a complete package of dynamic and static wireless monitoring devices and a **Cloud Platform** for data visualization and sensor management. Once the sensors and system gateways are properly installed on site, they are ready to receive, store and send data. You can view all this data in real time through a Web interface that allows users to remotely monitor the site or infrastructure. The user can set different parameters for each individual sensor, including sampling rates, resolution, alarm thresholds, activation and much more. The Move Solutions™ monitoring system guarantees accuracy, safety and reliability and a significant reduction in overall monitoring costs.

### LOGISTICAL-ECONOMIC ADVANTAGES

- Remote monitoring of difficult to access structures
- Ease of installation and use of the system
- Data processing to optimize operations
- Easy addition of sensors to extend the monitored area
- Cost reduction through easy maintenance
- No wiring, saving on installation materials
- Consequent labor savings
- Risk reduction and high reliability



## SINGLE CHANNEL NODE



The Single Channel Node is a wireless data logger that makes geotechnical probes suited for LoRaWAN wireless communication. Each node supports one geotechnical probe, and can accommodate an extra NTC thermistor. The Single Channel Node can be configured on our Move Cloud Platform: you can set different parameters remotely and monitor the data collected at any time. This new Node comes with increased battery life, a wider range of supported probes and a new accelerometer-triggered acquisition mode.

## TECHNICAL SPECIFICATIONS

### OPERATION

<b>Modes of Acquisition</b>	Scheduled, Scheduled + Accelerometer Trigger
<b>Cadence for Scheduled Acquisition</b>	2 min - 10 min - 20 min - 30 min - 1 hour - 6 hours - 12 hours
<b>Supply</b>	2 Lithium batteries 3.6V (Suggested: EVE ER34615EHR2)
<b>Absolute synchronization</b>	± 1 sec
<b>Integrated accelerometer</b>	± 2 g, 1 mg resolution, 0.7 - 25 Hz bandwidth

### RADIO

<b>Radio Protocol</b>	LoRaWAN
<b>Supported LoRaWAN bands</b>	EU868, US915, AU915
<b>Link Coverage</b>	1 km (line of sight with gateway)

### GENERAL DATA

<b>Waterproof class</b>	IP67
<b>Size</b>	130x171.2x62 mm
<b>Material</b>	Polycarbonate
<b>Operating temperature</b>	- 40°C / + 80°C
<b>Weight</b>	500 g

**INSTALLATION**

<b>Input cable section</b>	30 - 14 AWG terminal block, Ø 3 mm - Ø 8 mm PG9 cable gland
<b>Method</b>	Pole or wall mounting using special plates and screws
<b>Configuration</b>	<ul style="list-style-type: none"> <li>- Wall fixing</li> <li>- Ceiling fixing</li> <li>- Floor fixing</li> </ul>

**DECKSCN-MA0**

<b>Interface</b>	4 - 20 mA (2 or 3 wires)
<b>Sensor Supply</b>	12.3 VDC
<b>Minimum Accuracy</b>	± 0.1% of reading
<b>Measuring Span</b>	0 - 24 mA
<b>Auxiliary NTC channel</b>	Yes

**DECKSCN-MVV**

<b>Interface</b>	mV/V
<b>Sensor Supply</b>	5 VDC
<b>Minimum Accuracy</b>	± 0.2% of reading or ± 0.002 mV/V
<b>Measuring Span</b>	± 8 mV/V
<b>Auxiliary NTC channel</b>	Yes

**DECKSCN-V05**

<b>Interface</b>	Voltage Output
<b>Sensor Supply</b>	5 VDC
<b>Minimum Accuracy</b>	± 0.2% of reading
<b>Measuring Span</b>	0 - 5 V
<b>Auxiliary NTC channel</b>	Yes

**DECKSCN-V12**

<b>Interface</b>	Voltage Output
<b>Sensor Supply</b>	12.3 VDC
<b>Minimum Accuracy</b>	± 0.2% of reading
<b>Measuring Span</b>	0 - 12 V

Auxiliary NTC channel	Yes
<b>DECKSCN-POT</b>	
Interface	Potentiometer
Sensor Supply	2.7 VDC
Minimum Accuracy	± 0.02% of reading
Measuring Span	0 - 100 %
Auxiliary NTC channel	Yes
<b>DECKSCN-PTI</b>	
Interface	Pt100 - Pt1000 (4 wires)
Minimum Accuracy	± 0.03% of reading
Measuring Span	1500 Ω max
Auxiliary NTC channel	No
<b>DECKSCN-NTC</b>	
Interface	NTC
Minimum Accuracy	± 0.1% of reading
Measuring Span	1 MΩ max
Auxiliary NTC channel	No
<b>DECKSCN-VBW</b>	
Interface	Vibrating Wire
Measuring Span	400 - 10000 Hz
Auxiliary NTC channel	Yes

**BATTERY LIFE ESTIMATION (without accelerometer)\*\***

Interface	Conditions	Read Duration	Read Cadence	Estimated Battery Life
<b>4-20 mA, 2 wires</b>	The probe is reading half of its full scale (12 mA).	5 seconds	10 minutes	3.2 years
<b>4-20 mA, 3 wires</b>	Probe supply current of 50 mA.	8 seconds	30 minutes	2.3 years
<b>mV/V</b>	Probe load resistance = 350 Ω.	5 seconds	10 minutes	3.4 years
<b>Voltage (5 V)</b>	Probe supply current of 50 mA.	8 seconds	20 minutes	2.5 years
<b>Voltage (12 V)</b>	Probe supply current of 50 mA.	8 seconds	30 minutes	2.1 years
<b>Vibrating Wire</b>	—	2 seconds	10 minutes	4.1 years
<b>Pt100-Pt1000</b>	—	5 seconds	10 minutes	5.2 years
<b>NTC</b>	—	5 seconds	10 minutes	5.2 years
<b>Potentiometer</b>	Resistance of potentiometer = 1kΩ	5 seconds	10 minutes	5.2 years

**BATTERY LIFE ESTIMATION (with accelerometer)\*\***

Interface	Conditions	Read Duration	Daily Events	Estimated Battery Life
<b>4-20 mA, 2 wires</b>	The probe is reading half of its full scale (12 mA).	5 seconds	20 events/day	2.0 years
<b>4-20 mA, 3 wires</b>	Probe supply current of 50 mA.	8 seconds	20 events/day	2.5 years
<b>mV/V</b>	Probe load resistance = 350 Ω.	5 seconds	100 events/day	2.1 years
<b>Voltage (5 V)</b>	Probe supply current of 50 mA.	8 seconds	20 events/day	2.3 years
<b>Voltage (12 V)</b>	Probe supply current of 50 mA.	8 seconds	20 events/day	2.0 years
<b>Vibrating Wire</b>	—	2 seconds	100 events/day	2.2 years
<b>Pt100-Pt1000</b>	—	5 seconds	100 events/day	2.5 years
<b>NTC</b>	—	5 seconds	100 events/day	2.5 years
<b>Potentiometer</b>	Resistance of potentiometer = 1kΩ	5 seconds	100 events/day	2.5 years

\* Wireless coverage of the device may vary depending on the scenario

\* Battery life may shorten when operating in extreme temperatures.

\*\* Battery life may vary considerably depending on the probe.

## Summary of Product Codes

Interface	Product Code
4-20 mA	DECKSCN-MA0
mV/V	DECKSCN-MVW
Voltage (5 V)	DECKSCN-V05
Voltage (12 V)	DECKSCN-V12
Vibrating Wire	DECKSCN-VBW
Pt100-Pt1000	DECKSCN-PT1
NTC	DECKSCN-NTC
Potentiometer	DECKSCN-POT

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