

# SMS Gateway™

## Connecting sensors to the cloud



### Technical Data Sheet

The SMS Gateway™ is an IoT sensor for motion monitoring as well as a hub for data collection and streaming to the cloud. The sensor is easily installed and only requires external power and internet access through LAN or WiFi. Once connected, the sensor automatically starts streaming data to the cloud, where the data is made available through an open API.

The unit also allows for offshore configuration of all SMS sensors and for transferring data from SMS sensors to DataReservoir.io™. Time series data (1-10Hz) for storage, distribution and analysis are delivered via DataReservoir.io™, allowing for safe and seamless data access and sharing.

#### UPS Specification (optional)

Two battery-backup (UPS) devices can be provided inside the cabinet to allow continuous operation across short power outages (configurable between 5 and 20 minutes)  
Input **230V AC**  
Output **12V DC**  
Lithium polymer battery **2 x 26Wh capacity**  
Operating temperature **0°C to 40°C**  
Storage temperature **-20°C to 45°C**  
Relative humidity **≤ 95% (operation)**

#### Cabinet Specification

Wall mountable  
Protection category **IP66**  
Dimensions **38x40x21 cm (exclusive mounting)**  
Weight **12 kg**  
Connectors **2 x Ethernet (RJ-45)**  
**2 x USB (USB type A)**  
**2 x Wi-Fi Antenna (RP-SMA)**  
Power input **230 V AC including 3 m cable with Schuko plug (CEE 7/7)**

#### Computer Specification

CPU type **AMD A10 Micro-6700T SoC**  
CPU cores **64-bit Quad Core**  
Clock speed **1.2GHz (boost up to 2.2GHz)**  
Memory **8GB**  
Storage **120 GB SSD**  
LAN **Gigabit Ethernet**  
Wireless **WLAN 802.11ac (2.4/5GHz)**  
**Bluetooth 4.0**  
Operating temperature **-20°C to 70°C**  
Relative Humidity **10% to 90% (operation)**  
MTTF **> 100,000 hours**

#### External Sensor Support

SMS Sensors **Proprietary protocol over RS 485 (USB)**  
Modbus Devices **Modbus TCP (Ethernet)**  
GPS Receiver **NMEA 0183 over RS422 (USB)**

4Subsea helps operators reduce cost of operations and maximise life of assets using autonomous sensors in combination with data analytics and specialist engineering competence. Products in the Smart Monitoring Sensors (SMS) range are **SMS Motion™**, **SMS Strain™**, **SMS Magic Hand™**, **SMS Gateway™**, **SMS ComCentral™**, and **SMS Guard™**. Technology applications include monitoring of wellhead integrity, risers, mooring lines, subsea spools and manifolds, as well as monitoring of pipelines and subsea structures for oil & gas and offshore wind sub-structures.

### Motion Sensor Specification

Accel range +/-2g (optional +/-4, 8 or 16)  
Noise level, Ax, Ay 0.00052g rms @ 5Hz bandwidth  
Noise level, Az (vertical) 0.00087g rms @ 5Hz bandwidth  
Gyro range +/- 250°/s  
Noise level, Gx, Gy, Gz 0.012°/s rms @ 5Hz bandwidth  
Logged data Ax, Ay, Az (acceleration), Gx, Gy, Gz (gyroscope), Roll, Pitch, Temperature  
Logging mode Continuous (no inactive periods)  
Sampling/logging frequency 10 Hz -125 Hz  
Storage capacity 32 GB  
Typical logging time 68 months of continuous logging of 6 DOF @ 10Hz frequency  
Operating temperature 0° C to 30° C  
Storage temperature -5° C to 50° C



### Used as Pitch and Roll Inclinometer

Angular orientation range +/- 90°  
Calibrated range +/- 5°  
Frequency range 0Hz (stationary) to 0.5Hz  
Pitch and Roll noise level 0.012° rms (fs=10Hz)  
Resolution (1) 0.024° (fs=10Hz)  
Static accuracy (2) 0.072°

1) Resolution is defined as  $2\sigma$  where  $\sigma$  is the standard deviation or rms value of the sensor noise level (which depends on the bandwidth).  
2) Accuracy is defined as  $2\sigma + \epsilon$  where  $\sigma$  is defined in 1) and  $\epsilon$  is the total error over the entire angle- and temperature range.



4Subsea is a leading provider of technology and services that help operators optimise energy production from subsea oil & gas fields and offshore wind farms. We combine domain expertise with data analytics and digital services to maximise lifetime of assets, reduce operational cost and optimise future projects through data-driven design.

The company was established in 2007 and clients include the major energy operators as well as the large suppliers of sub-sea equipment. 4Subsea is headquartered in Asker, Norway with additional offices in Bergen, Kristiansand, Stavanger, Rio de Janeiro, and Aberdeen. 4Subsea is a company in the Subsea 7 Group. More info at [www.4subsea.com](http://www.4subsea.com).

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