

SMS Gateway™

Connecting sensors to the cloud



Technical Data Sheet

The SMS Gateway™ is used for configuration and management of the Smart Monitoring Sensors (SMS). It can also be used as a combined hub for collecting sensor data and as a vessel MRU. The unit allows for offshore configuration of all SMS sensors and for transferring data from SMS sensors to [DataReservoir.io™](https://DataReservoir.io). It can act as a data hub for collecting data from multiple data sources that are to interface with DataReservoir.io™. Time series data (1-10Hz) for storage, distribution and analysis is delivered via DataReservoir.io™, allowing for safe and seamless data access and sharing. Having immediate access to time series data, whether it is collected in the field or just simulation results, will give collaborating teams an important edge in this data driven era of engineering. SMS sensors are “plug and play” with SMS Gateway™ and can be set up with existing personnel on the FPSO or platform.

UPS Specification

Two battery-backup (UPS) devices are provided inside the cabinet to allow continuous operation across short power outages (typical < 1 hour).

Input **12V DC**

Output **12V DC**

Switching downtime for the output **< 50ms**

Li-Ion polymer battery **18Wh capacity**

Operating temperature **0°C to 40°C**

Storage temperature **-20°C to 45°C**

Processor

Type **AMD A10 Micro-6700T SoC**

Score **64-bit Quad Core**

Networking

LAN **22x GbE LAN ports (RJ-45) - LAN1: Intel I211**

GbE controller - LAN2: Intel I211 GbE controller

Wireless **WLAN 802.11ac (2.4/5GHz dual band Intel 7260HMW)**

Ports

USB **22x USB 3.0 - 4x USB 2.0**

Serial **1x Serial communication port - COM1: RS232 via mini serial connector**

SD **Micro-SD slot support SD/SDHC cards - transfer rates up to 25 MB/s**

Enclosure

Material **Aluminium & zinc (all-metal housing)**

Cooling **Passive Cooling Fanless Design**

Dimensions **10.8cm x 8.3cm x 2.4cm**

Weight **220 g**

Operation Conditions

Input voltage **Unregulated 10 - 15VDC input**

Power consumption **4.5W - 10.5W**

Operating temperature **0°C - 70°C**

Relative Humidity **10% to 90% (operation) - 5% to 95% (storage)**

MTTF **> 100,000 hours**

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 Gyro™**, **SMS Vibration™**, **SMS Strain™**, **SMS Magic Hand™**, **SMS Gateway™**, **SMS Pressure™**, and **SMS Satellite™**. Technology applications include monitoring of wellhead integrity, risers, mooring lines, subsea spools and manifolds, as well as monitoring of pipelines and subsea structures.

SMS Gyro™ Acceleration Sensor

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

Gyroscope Sensor

Range +/- 250°/s
Noise level, Gx, Gy, Gz 0.012°/s rms @ 5Hz bandwidth

Cabinet Specification

Dimensions 30x30x13 cm (wall mountable)
Weight 3.1 kg
Connectors LAN (RJ-45 Ethernet)
Power input PSU 12V DC 5A (External Power Supply Unit 100-240VAC with IEC-plug is provided)



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°

Optical Communication Port

Use Configuration, setup, data transfer via ROV
Optical modem SMS Magic Hand™
Range 0.5m to 1.0m in water (6m in air)
Baud rate 115200
Mode of operation Half duplex
Wavelength 890 nm
Eye safety Class 1 (IEC60825-1), i.e. eye-safe under all operating conditions

Downloading Speed

Raw data 15 min. for 24h of raw data sampled at 10 Hz

LED Indicator

Type Red LED heartbeat indicator

Environmental

Operating temperature 0° C to 30° C
Storage temperature -5° C to 50° C
Pressure rating 3000m water depth

1) Resolution is defined as 2σ where σ 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 σ is defined in 1) and ϵ is the total error over the entire angle- and temperature range.



4Subsea is a leading provider of technology and services that help operators maintain production from subsea oil and gas fields and offshore wind farms. By combining expert engineering competence, practical experience and a digital service, we ensure the integrity of assets all the way from reservoir to deck.

We deliver solutions on a unique digital platform, aiming to be in the forefront of digitising oil, gas and offshore wind operations worldwide. The company was established in 2007, and clients include all the major oil and gas operators as well as the large suppliers of subsea equipment.

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