SMS Gateway EX™
Connecting sensors to the cloud

Technical Data Sheet

The SMS Gateway EX™ 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 ethernet or DSL. 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 for storage, distribution and analysis are delivered via DataReservoir.io™, allowing for safe and seamless data access and sharing.

SPECIFICATION
Input Power 100-240 V AC
Ambient Operating Temperature -20°C to 60°C
Storage Temperature -20°C to 50°C
Explosive Area Code Ex db eb IIIB, T5, Gb
Explosive Zone Zone 1
Connectivity to Internet DSL with two wires or ethernet
Fanless Edge Computer

CABINET SPECIFICATION
WALL MOUNTABLE
Protection Category IP66
Dimensions 65x34 cm
Weight 31 kg
Gland Interface 1 x M25 / 5 x M20
Material:
EX-D Marine grade copper-free alminium, epoxy powder coated.
EX-E Stainless Steel

EXTERNAL SENSOR SUPPORT
Power Outlet 24 V DC (1 A)
3x Serial Lines RS-485, RS-422, RS-232
1x Ethernet

TYPICAL INTERGRATION OF SERIAL LINE DEVICES
SMS Sensors Proprietary protocol over RS 485
Modbus Devices Modbus TCP
Vessel instruments (NMEA 0183, EM3000)

MOTION SENSOR PERFORMANCE
GYROSCOPE:
Measurement ranges: +/- 15 °/s to +/- 2000 °/s
Calibrated range: +/- 6 °/s

ACCELEROMETER:
Measurement ranges: +/- 2g to +/- 16g
Calibrated ranges: +/- 0.26g (Ax, Ay), 0.96g to 1g (Az)

NOISE
GYROSCOPE:
Angle Random Walk ((°/s)/$\sqrt{Hz}$): < 0.0028
Bias Instability (°/s): < 0.002[1]
Bias Drift (°/s* $\sqrt{Hz}$): =~ 0.00002
Linearity (+/- %): < 0.1

ACCELEROMETER:
Velocity Random Walk (µg/$\sqrt{Hz}$): < 65 (Ax, Ay), < 70 (Az)
Bias Instability (µg): < 20 (Ax, Ay), < 50 (Az)
Bias Drift (µg* $\sqrt{Hz}$): =~ 0.03[2] (Ax, Ay), 0.06 (Az)
Linearity (+/- %): < 0.1
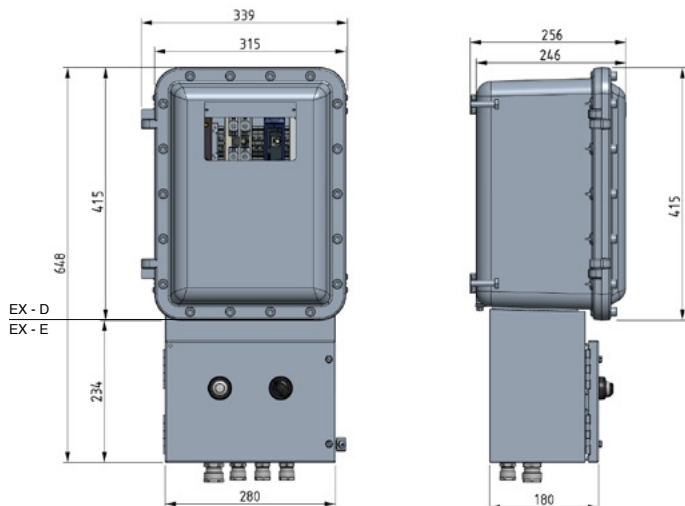
STATIC PERFORMANCE
ACCELEROMETER (+/- 15° vertical angle):
Max angle deviation (+/- °): < 0.03
Quadratic Sum deviation (1g +/- %): < 0.15
Turn-on bias (g stddev): < 0.00005 (Ax, Ay), < 0.0003 (Az)

GYROSCOPE:
Turn-on bias (deg/s, stddev): < 0.008

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 substructures.

[1] 0.002 °/s = 7.2 °/h
[2] Translates to approx. 0.17 mg/year, which alone would give 0.01 °/year inclinometer drift

More product information $\longrightarrow$