

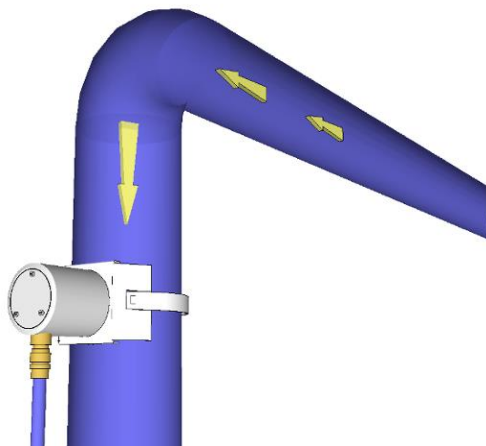


Real Time Acoustic Sand Monitoring

SMS Ltd provides sand monitoring using best in class, field proven technology. After extensive testing of acoustic monitoring systems, we identified the instrumentation to give our clients the edge they require.

System Overview

SMS supply single, dual, and quad sensor instrumentation system options. Custom configurations are available on request. SMS combination of unparalleled sand services field experience combined with our class leading acoustic detection system offers the best acoustic sand monitoring package on today's market.



Features

High sensitivity

- Instantaneous response to sand production

Ideal solution for HP/HT applications

- Provides early identification of sand productions

Ease of installation – non-intrusive

- Mounted externally on a pipework

Data Storage and Communication Standards

- Up to 9-90 days in flash memory
- Two wire RS485, Modbus RTU, baud rate configurable

Benefits

Increased safety

- Early identification of sanding events allowing informed decisions to be made

Reduced costs

- Minimal maintenance required

Repeatable and Reliable

- Reliable method of tracking sand production

Remote Monitoring

- SMS engineers are able to monitor equipment remotely when required



Sense



Understand



Perform

Aberdeen / Abu Dhabi / Kuala Lumpur

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Real Time Acoustic Sand Monitoring

Specifications

Functional Characteristics

Particle detection limit.....	15-25µm varies with flow regime, velocity, viscosity etc
Output.....	grams/second (g/s)
Pipe Dimension	≥2"
Uncertainty	Down to +/- 5%, depending on flow regimes and calibration level. Can be configured as a sand indicator, indicating whether there is no sand, some sand or excessive sand production or fully calibrated for accurate sand rate
Flow Velocity	Min. 1m/s for most flow regimes

Detector Unit

Power Consumption	Max. 0.6W
Supply Voltage	11-18VDC (supplied with 24VDC via safety barrier)
Ex Classification	EEx ia IIB T5
Location.....	Hazardous area, Zone 0, 1 or 2
ATEX Certification	NEMKO 02 ATEX 110
CSA US Ex. Certification	Certificate of Conformance 1299771
Pipe Surface Temp. Range	-40°C to + 290°C (with high temperature housing)
Ambient Temp. Range.....	-40°C to + 80°C
Weight	3.0kg
Dimensions.....	88mm x 100mm
Ingress Protection	IP67
Installation	Banded onto pipe
Material.....	Stainless Steel 316
Communication	Proprietary serial SW protocol overlaid on power cable
Power Consumption	Max. 0.6W

Field Cables

Cable Type	Screened twisted pair ≥ 0.75 mm ² (power & data on single pair)
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Portable Interface Unit

Installation	CIU / PSU / Safety barrier supplied in complete Portable Interface Unit with field cable connections terminated with Harting connectors and an RS 232 serial interface provided for laptop communication
Voltage	Input 110 VAC – 240VAC
.....	Output 11-18 VDC (supplied with 24VDC via safety barrier)
Weight	5 kg
Power Consumption	2W
Supply Voltage	24VDC +/- 5%
Process Bus (COM 2).....	Two wire RS485, Modbus RTU, baud rate configurable, continuous, real time data transmission
Process Bus (COM 1).....	Two wire RS485, or 3 wire RS232, Modbus RTU, baud rate configurable
Data Storage	Both data and configuration parameters are stored in Flash memory. No loss of data due to power loss. Data can be stored for up to 90 days with 10 second averaging. Data is uploaded via Modbus link
Location.....	Safe area (within Portable System CIU housing)

Safety Barriers

Type	MTL 7087+
Ex classification.....	EEx ia IIC T6
Ex Certification	BAS No. Ex 95C2261
Location.....	Safe area (within Portable Interface Unit)