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
Real Time Acoustic Sand Monitor

Specifications

Functional Characteristics

Particle detection limit: 15-25μm varies with flow regime, velocity, viscosity etc
Output: grams/second (g/s)
Pipe Dimension: ≥2”

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: -40ºC to + 290ºC (with high temperature housing)
Ambient Temp. Range: -40ºC to + 80ºC
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 mm2 (power & data on single pair)

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)