

Real Time Acoustic Sand Monitoring

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

Operation Benefits

- Reduced risk and cost
- Ideal solution for HP/HT applications
- No pressure bearing seal failure risk
- Reduced manual handling

Service Applications

SMS Ltd are pioneers of applying sand monitoring technology to new fields. It's not only sand that our systems can detect, we can monitor any produced well solids to give clients confidence to execute safety critical operations with quality real time data.

Solids monitoring for:

- Well Testing
- Frac Operations
- Scale Milling
- UBD Operations
- Process Systems
- Integrity Management



Technical Benefits

- High sensitivity
- Best signal to noise ratio
- Instantaneous response to sand production
- Data storage from 9-90 days in flash memory
- Serial data link based on industry standard Modbus protocol
- Low power consumption
- Ease of installation
- Minimal maintenance
- No temperature dependency effects



For well service applications SMS Ltd supply either single or dual sensor instrumentation system options. Custom configurations are available on request.

SMS Ltd's 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.

Sand Monitoring Services Ltd

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ISO 9001: 2000
FS 504551



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No. 10050227

Specification for Standard Equipment & Options

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 + 115°C (or higher with high temperature fixture)
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

Field Cables

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

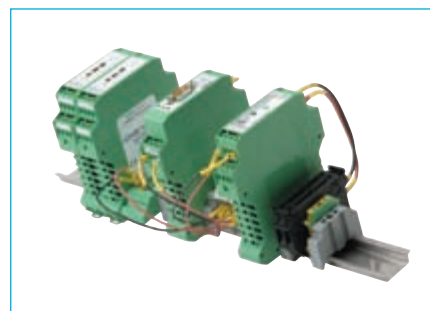
Installation:	CIU / PSU / Safety barrier supplied in complete Portable Interface Unit with field cable connections terminated with Harting connectors and an RS 232 serial interface provided for laptop communication.
Voltage:	Input 110 VAC – 240VAC Output 11-18 VDC (supplied with 24VDC via safety barrier)
Weight:	5 kg
Dimensions:	20cm x 10cm x 15 cm

Calculation Interface Unit (CIU)

Power Consumption:	2W
Supply Voltage:	24VDC +/- 5%
Process Bus (COM 2):	Two wire RS485, Modbus RTU, baud rate configurable, continuous, real time data transmission.
Service 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 Barrier

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



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