

Roxar Sand monitor

Non-intrusive acoustic sensor

Data Sheet



Real time sand monitoring for water, oil, gas or multiphase pipelines

Roxar Sand monitors are non-intrusive devices that utilize the acoustic noise generated by sand particles impacting the inner surface of the production pipework to identify and calculate real-time sand production in any water, oil, gas or multiphase pipeline flows. The units are compact, designed for easy installation, minimal maintenance and do not require a PC or laptop for daily use*.

The Roxar Sand monitor offers a cost effective means for operators to optimize production by enabling determination of maximum sand-free rates or maximum acceptable sand production rates.

As an option, Roxar also offers portable Sand monitor systems providing flexibility for well testing and other applications where it is a benefit to move the monitor to different locations in the field.

*PC/Laptop required for setup & configuration purposes only unless software option 2 is supplied.



INTERPRETATION



MODELING



SIMULATION



WELL & COMPLETION



PRODUCTION & PROCESS

Specifications

General Specifications

Model:

- Roxar Sand monitor

Uncertainty:

- +/- 5% (with sand injection calibration)

Repeatability:

- Better than 1%

Flow Velocity:

- Minimum 1 m/s

Particle detection limit:

- Depends on process conditions
- Typically 15 µm (gas) to 25 µm (liquid)

Detector Specifications

Detector Housing Material:

- 316 Stainless Steel

Dimensions / Weight:

- 88 mm (OD) x 100 mm / 3.0 Kg

Installation:

- Fixed onto outside of pipe (non-intrusive)

Ingress Protection:

- IP 67

Hazardous Area Classification / Location:

- EEx ia / Zone 0, 1 or 2

Hazardous Area Certification:

- CSA: Class I Division 1 Groups C, D T6/T5
- ATEX: Ex II 1 G EEx ia IIB T6/T5

Pipe Surface Temperature:

- -40°C to 115°C
- Higher range available on request

Ambient Temperature Range:

- -40°C to 80°C

Communication:

- Serial SW protocol overlain on power cable
- Field Cable Type (Roxar optional supply or by 'others'):

- Screened twisted pair (0.75 mm²)
- Common pair for power and signal

Maximum Field Cable Length:

- Up to 1500 m depending on L/R ratio

Calculation & Interface Unit (CIU)

Power Consumption:

- 2 W (including sensor and safety barrier)

Supply Voltage:

- 24 V DC

Modbus RTU Input / Output:

- 1 off process bus: 2 wire RS485
- 1 off service bus: 2 wire RS485 or 3 wire RS232
- Up to 32 units on the same bus with RS485

Analogue Input / Output:

- 1 off 4-20 mA passive output for sand rate or raw data
- 1 off 4-20 mA passive input for velocity or choke %

Voltage-free Contact:

- Configurable to represent sand or technical alarm

Data Storage:

- Up to 90 days based on 10 s averaging interval

Installation:

- DIN-rail mountable

Dimensions / Weight:

- 23 mm + 6 mm x 99 mm x 113 mm (WxLxH) / 0.2 Kg

Location:

- Safe area or optional field enclosure

Safety Barrier

Type / Hazardous Area Classification:

- MTL 7787+ / EEx ia IIC

Installation:

- DIN-rail mountable

Dimensions / Weight:

- 12.6 mm x 105 mm x 90 mm (WxLxH) / 0.14 Kg

Location:

- Safe area or optional field enclosure

Power Supply (Optional)

Input Voltage:

- 100-240 V AC, 50/60 Hz

Output Voltage:

- 24 V DC

Installation:

- DIN-rail mountable

Location:

- Safe area or optional field enclosure

Software

Option 1:

- SAM CIU service software

Option 2:

- SAM server and client software

Roxar Sand monitor



www.roxar.com

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