



# iSensys SANDALERT PORTABLE MONITOR

Robust, dependable measurement of solids within production streams.

## Fixed & Portable Sand Monitoring

Oil and gas well operators know how important it is to maintain production at optimum levels, and an important part of that optimization is a clear and accurate measurement of solids production. The iSensys SandAlert range provides robust, dependable measurement of solids within the production stream so plant operators can be confident they are operating as efficiently as possible.

The SandAlert Monitor consists of two parts, The PulsarGuard 2001 sensor, a small robust clamp-on acoustic monitor, and the SandAlert controller.

SandAlert is ideal wherever you need to keep wells producing efficiently at the highest rate possible; whenever you need a quantitative, real-time, and accurate measurement of produced solids/sand particles.

For years, the market has demanded the capability of measuring particles without needing flow data. The unique PulsarGuard sensor is installed after a suitable pipe bend where the turbulent flow profile is fully developed. The sensor measures solids production directly, without the need for an external or additional flow measurement.



## THE RIGHT METER FOR

- Oil & Gas
- Sand Monitoring
- Maximize Well Productivity
- Pipe Monitoring
- Asset Management
- Well Efficiency
- Valve Protection

## Solids & Sand Management

Solids/sand production in oil and gas wells is a growing problem for oil and gas producers. As well as the ages, there is a tendency to produce more solids through reservoir degradation. The challenge is not only to avoid solids/sand production but also the optimize well productivity, as even small quantities of solids particles in the well flow can cause significant pipe or valve damage.

When solids or sand are produced from a reservoir, the production rate is reduced and maintenance costs go up. It also represents an environmental risk in the disposal of the solids. Produced solids/sand can never be ignored, and any well producing from an unconsolidated reservoir needs to have some sort of sand monitoring system in place, preferably monitoring in real-time.

### Sand Handling

Produced sand enters the processing system and the operator needs to make sure that it is capable of handling the solids safely. An important aspect of sand management is reviewing erosion rates and removal issues.

### Measurement

When the prediction and handling issues have been carefully considered, including an understanding of erosion risk and sand removal challenges.



iSensys SandAlert Portable Monitor Complete Toolkit

## iSensys SandAlert Portable Monitor

The SandAlert Portable is a complete kit, including sensor, mounting strap, and 50 m (164 ft) extension lead, fitted in a rugged pelican case. A graphics display gives real-time sand data and trend information up to 90 days at 1-minute intervals. A PC interface allows data download and graphical analysis. SandAlert Portable is perfect for short-term well evaluation and to determine methods of control.

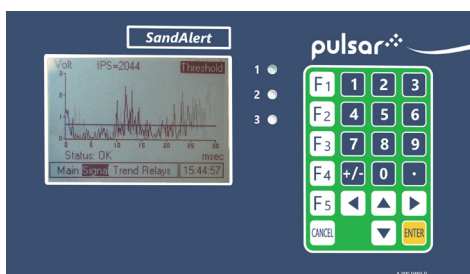
The high-frequency structure-borne acoustic signal generated by a sand impact on the internal wall of the pipe travels through the pipe wall and is detected by the acoustic sensor. The acoustic signal is then converted to an electrical signal by the sensor.

The electrical signal or sensor output is processed by the electronics in the SandAlert Portable control unit to provide a sand impact rate (SIR) in impacts per second (IPS) - this figure is then used by the calibration algorithm to give sand mass.

The 192 x 168 pixel illuminated graphical display shows a general overview of current signal information, a real-time sand impact trace graph, a trend graph showing a trend of sand impact rates for up to 91 days, and an overview of relay settings. There is also a totalizer that will provide the total weight of sand produced.

The SandAlert portable can be programmed either by the built-in keypad or by PC via the RS232 Serial Interface. All parameters are stored in non-volatile memory, so are retained in the event of a power interruption.

The SandAlert Portable ultrasonic sand monitor has been designed to provide a maintenance-free fit and forget performance.



iSensys Sand Alert Trend Screen and Graphical Display

## PC Software

The iSensys SandAlert system measures sand production completely independently of flow regime, giving you cost-effective real-time presentation of sand and trending information. All the data gathered by SandAlert can be saved and logged for further analysis and long term records.

The software lets you keep long-term log records of sand production to track well performance, as well as allowing programming and fine-tuning of all SandAlert installations.

## Technical Specifications

### SANDALERT CONTROLLERS - PORTABLE UNITS

**Electrical Supply:** 90/260 V AC. Power consumption 20 W

**Extension Cable:** 50 m (164 ft)

**Environmental:** IP65 with lid closed, IP50 with lid open

**Dimensions:** 406 mm x 330 mm x 174 mm (15.98 in x 12.99 in x 6.85 in)

### SANDALERT LITE PORTABLE

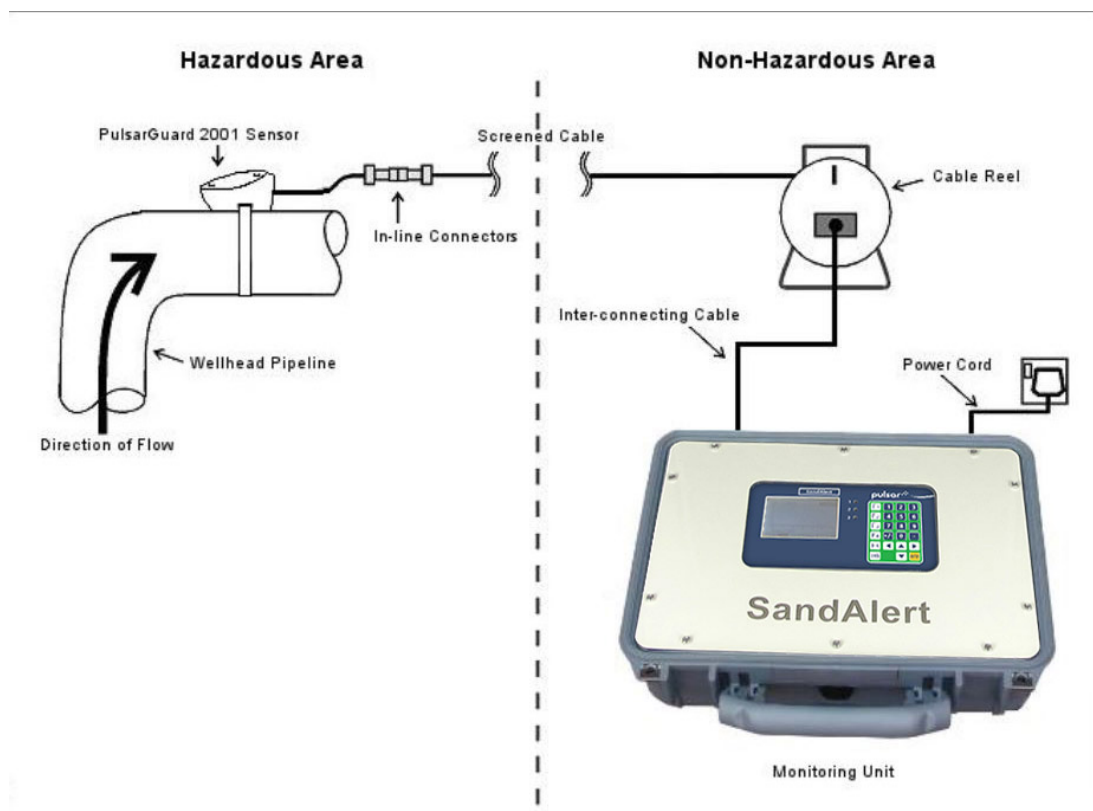
**Dimensions:** 150 mm x 400 mm x 300 mm (5.9 in x 15.75 in x 11.8 in)

**Weight:** Nominal 10 kg (22 lb)

**Electrical Supply:** 85/240 V AC 50/60Hz Switched Mode Power Supply. Internal power provides DC power to the computer hardware and sensor

**Computer Hardware:** Powered by Intel® Atom™ processor. SandAlert software loaded onto an internal flash drive. RS232 communications port, A/D with 100Hz sampling rate, 12 bit resolution

**Construction:** Epoxy coated steel case with hinged lid



## Service & Installation

Our award-winning products are favored worldwide due to their reliability and easy menu-driven setup. All products from Pulsar Measurement are designed to be easily installed and set up, but if you are unsure of your installation, our service engineers are ready to assist you. From telephone and web support to onsite commissioning and on/off-site product training, we will ensure that you get the most out of your product and sales experience with Pulsar Measurement.

If you are unsure of your application requirements or which product is right for you, our technical teams can advise you on the best solution to your application and technology requirements, making sure that you get the most accurate and reliable readings every time.

For more information on our service offerings, please visit the website or contact one of our head offices.



PulsarGuard 2001 on a pipe



PulsarGuard 2001 sensor receiving a signal from a pipe.



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