



# iSensys SANDALERT 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 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.

## Solids & Sand Management

Solids/sand production in oil and gas wells is a growing problem for oil and gas producers. Over the ages, there is a tendency to produce more solids through reservoir degradation. The challenge is not only to avoid solids/sand



## THE RIGHT METER FOR

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

production but also to optimize well productivity, as even small quantities of solid 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.



iSensys SandAlert Wall Mount Monitor

## 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 Monitor

The SandAlert wall monitor is housed in a durable sealed carry case, which makes it easy to move from site to site. The case is rated to IP65 giving protection against dust and low-pressure water jets when the lid is closed (IP50 when open).

The SandAlert wall unit monitors the input signal and determines a value for the threshold. The unit eliminates the flow noise by automatically placing a threshold just above the flow-related noise signal (average). When the signal passes the threshold then it is due to sand impacts. 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, this requires calibration.

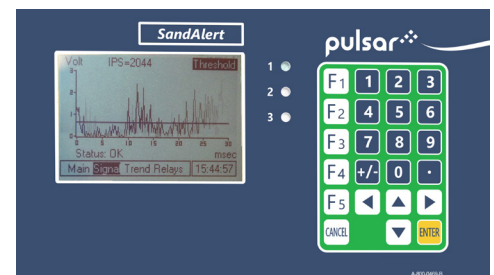
There are three relays that can be programmed to activate caution, alarm, and failsafe alarms. There is an isolated 4-20mA output that can be connected to a recorder or PLC to monitor the sand impacts independently from that shown on the display. There is an RS232 port so that the SandAlert Wall can be operated remotely by a laptop PC or other equipment to download/upload parameters, view real-time echo traces, or output regular run time data in ASCII format.

The controller 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 iSensys SandAlert ultrasonic monitor has been designed to provide a maintenance-free, fit and forget performance, like the rest of the Pulsar Measurement range.

## 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.



iSensys Sand Alert Trend Screen

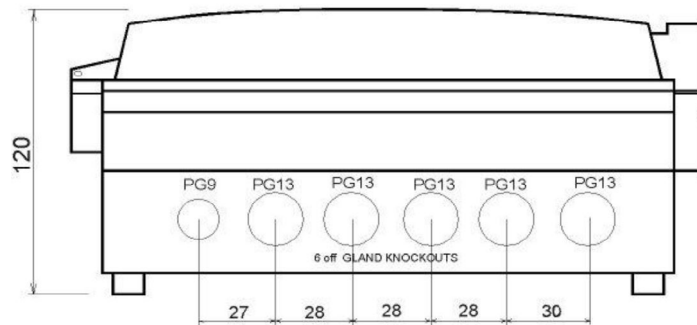
## Technical Specifications

### PHYSICAL: MOUNTING OPTION SPECIFIC

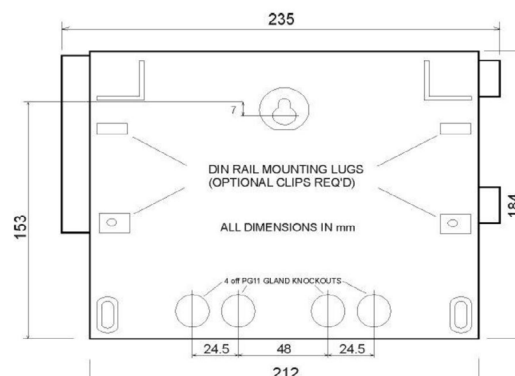
Mounting Option:	Standard Wall Mount:	Panel Mount:	Rack Mount:
<b>Dimensions:</b>	240 mm x 184 mm x 118 mm (9.44 in x 7.2 in x 4.64 mm)	72 mm x 144 mm x 176 mm (9.44 in x 5.66 in x 6.9 in) deep	3U high x 10 HP wide (128.5 mm x 50 mm x 160 mm (5.05 in x 1.9 in x 6.29 in) deep)
<b>Weight:</b>	1 kg (2.2 lb)	1 kg (2.2 lb)	1 kg (2.2 lb)
<b>Case Material:</b>	Polycarbonate, flame resistant to UL94 V2		
<b>Ingress Protection:</b>	IP65	Optional IP65	

### COMMON FEATURES

<b>Temp. Range (Electronics):</b>	-20 °C to +60 °C (-4 °F to 140 °F)
<b>Flammable Atmosphere:</b>	Safe area
<b>Analog Outputs:</b>	4-20mA / 0-20mA into 500 Ω (user programmable and adjustable), 0.1% resolution.
<b>Digital Outputs:</b>	RS232 via RJ11 port
<b>Relays:</b>	3 Form 'C' SPDT rated at 5 A at 240 V. Trip point from 0-100% of range
<b>Communications:</b>	RS485 Modbus RTU protocol
<b>Electrical Supply:</b>	110/240 V AC, 50/60 Hz or 24 V DC. Power consumption 10 W



SandAlert Monitor Wall Mount Cable Entry



SandAlert Monitor Wall Mount Back Drawing

## 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.



SandAlert Monitor Case and Extension Cable

## Delivering the Measure of Possibility

Pulsar Measurement offers worldwide professional support for all of our products, and our network of global partners all offer full support and training. Our facilities in Malvern, UK and Largo, USA are home to technical support teams who are always available to answer your call or attend your site when required. Our global presence, with direct offices in the UK, USA, Canada, and Malaysia allow us to create close relationships with our customers and provide service, support, training, and information throughout the lifetime of your product.

For more information, please visit our website:

[www.pulsarmeasurement.com](http://www.pulsarmeasurement.com)



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