



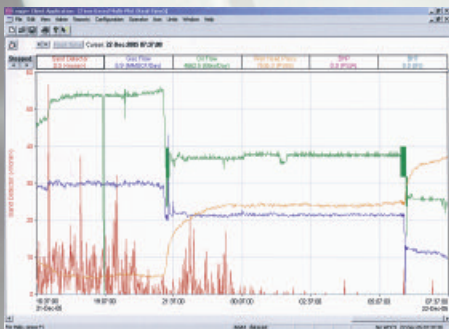
SandSnoop

Sand Monitoring System

The SandSnoop sand monitoring system has been designed to fully integrate with other products in the Fardux range.

The system is based around an acoustic probe that is coupled via an interface electronics module, with either the IDEA *Enterprise* or *Lite* Data Logger and software suits.

The acoustic sensor is clamped onto pipe work of any diameter and connected back via the SandSnoop hardware either directly to host Fardux software, or via the Fardux data loggers according to the signal output configuration. SandSnoop can be used as a stand alone sand monitoring system or in conjunction with Fardux data acquisition systems.



SandSnoop

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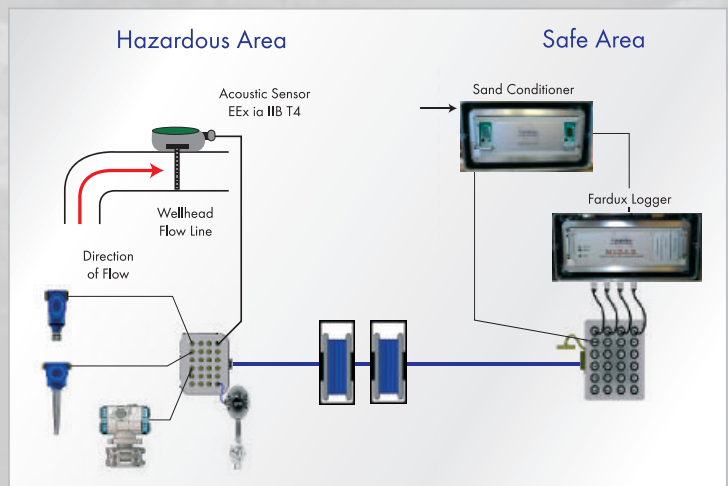
Sand Monitoring System



For produced sand or fracturing sand monitoring during flow backs the SandSnoop will measure and count sand impingements on the pipe wall and deliver this information in a variety of selectable units to the host software application.

The system module has three data outputs, 4 to 20 mA, ASCII and MODBUS. The 4 to 20 mA output must be routed via the Fardux Data Logger hardware while the ASCII and MODBUS outputs can be directly connected with Fardux software suits. There are occasions when both of these connection methods have their advantages, although in our experience most sand monitoring jobs also require other pressure, temperature and flow measurements to be taken at the same time.

The non-invasive ultrasonic sensor is designed to detect process change by listening to variations in the ultrasonic activity produced by high frequency structure borne acoustic signals, generated by sand impingements. The operating principle of the SandSnoop is the use of a piezo ceramic crystal that emits an electrical output depending on the minute vibrations caused by the ultrasonic activity. A sensitive amplifier increases the signal from the crystal and this is then smoothed and compensated for background noise before being exported to the host software.



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