

Application

Pounds of Sand Added Systems Using Safe and Simple Coriolis Technology

Daniel Measurement and Control, a world leader in oil and gas measurement technology, has released a new system for Oil Field Service companies engaged in hydraulic formation fracturing. During the frac operation operators typically add sand to the fracturing fluid to act as a proppant. The proppant serves to keep the formation cracks propped open so that oil and gas can more easily flow to the well bore after the fracture pressure is released.

Problem:

The problem for operators is how to measure the amount of sand added to the fracturing fluid. Up until now this has been measured by nuclear densitometers. Nuclear technology does have its drawbacks, such as safety handling, transportation concerns and certification of personnel. They must also be licensed by one or more nuclear regulation agencies, and the interstate and international transport of these sources is intensive with paperwork and bureaucratic red tape...not to mention expensive and slow.

Solution:

The Daniel PSA (Pounds of Sand Added) System uses safe and simple Coriolis technology to measure the density of the frac fluid to determine the amount of sand added to the liquid. Also utilizing the Daniel/Fisher FloBoss 407 as the operator interface, the Daniel PSA System is easy to operate and uses oil-field-proven components.

Typical operation involves the operator entering the proppant density into the FloBoss 407 keypad interface. This is followed by flowing a slipstream of the base fluid to and from the mixing tub through the Coriolis meter. When the flow is established and the temperature is stable, the operator presses a button on the FloBoss 407 keypad to capture the base fluid density.

Then as sand is added to the fluid, the LCD on the FloBoss displays the pounds per gallon of sand added to the base fluid. A 4-20mA analog signal is also available to output to another host device. Typical accuracies are about ± 0.02 pounds per gallon.

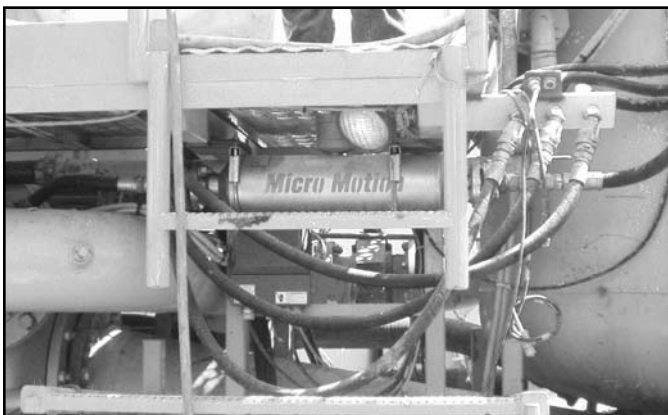
Key Benefits and Features:

- No radioactive sources or instruments to handle and transport
- Simple operator interface-reduced set up time and easy operation
- Oil-field-proven components will stand up to the oil patch environment
- Easy interchangeability of Coriolis sensor-all digital technology

The Micro Motion Coriolis sensor uses the new MVD Solo technology for superior flow and density measurement. This Multi-Variable Digital transmitter provides a digital interface between the Coriolis sensor and the FloBoss 407 so that the connection is with just two wires. With all of the calibration and configuration data stored in the MVD Solo at the factory, the two devices will automatically start communicating upon startup, and are available to do immediate measurement.

No programming or configuration of the Coriolis meter via hand-held or laptop is required...truly plug and play interchangeability.

The Daniel PSA System can save Oil Field Service operators time and money by removing the hassles associated with nuclear sources and gamma ray densitometers. By simplifying the measurement set up, rig up and rig down time are also reduced. Call your Daniel representative today so we can show you how our PSA System can reduce your costs and simplify your business.



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