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New Analyzer Makes Laser Speed And Accuracy Portable

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In the December 2004 issue of *Pipeline & Gas Journal* George Balogh, CEO of SpectraSensors, described the development of the NASA/JPL tunable diode laser (TDL) system for spectroscopic gas analysis and JPL's subsequent spin-off of the technology in 1999 to a new company, SpectraSensors, Inc. This high performance technology evolved over the span of 20 years and included successful operations in the harsh environments of high altitude aircraft flights in the earth's polar regions and planetary exploration missions on the surface of Mars.

Today, SpectraSensors markets its products and technology directly to end-use customers, both in branded and OEM versions. The company continues to expand its line of new laser-based process gas analyzers beyond the SS-2000 Single Channel and SS-3000 Dual Channel products.

Latest Instrument

There has been a third addition to the SpectraSensors line — a portable pipeline gas measuring instrument. Designated the SS-1000, the new analytical tool is compact and light weight, incorporating almost all of the benefits of permanent systems plus the added benefits of portability.

The SS-1000 utilizes the same patented and proven SS-2000 and SS-3000 technology. Designed for periodic and rapid sampling of water concentrations from individual wells, dehydration units or metering stations, the SS-1000 is intended to help optimize processing or flag tariff violations with laser speed and accuracy. For diagnostic purposes, the user can download captured spectra data via an RS232 into a laptop.

A single measurement takes five minutes or less—not an hour or more — and requires no wet-up or dry-down time as



with other sensors. The built-in 12-volt sealed lead acid battery provides 12-hour operation on a single charge, making the new portable unit a useful resource for fast and efficient measurements.

Speed is desirable in a portable gas analyzer, especially if there are numerous locations and wells to spot check. One significant advantage is that unlike many competitive analyzers, the last reading of the day can be counted on to be as accurate as the first. In addition, glycol, methanol or amines do not affect measurement accuracy. The presence of these contaminants requires recalibration and stabilization to restore accuracy in alternative analyzers. On the other hand, SpectraSensors non-contact sensors are virtually immune to these contaminants. The result is savings in both time and money. Specifications and benefits include:

- Measuring 8-inches H x 7-inches W x 18-inches D, including handle and feet, the aluminum-enclosed unit is compact, lightweight and specifically designed for reliable laser speed and accuracy in heavy field use conditions.
- Weight: 15-lbs. (toolbox included).
- Response time: 1.0 second continuous updates (software adjustable).
- Sample flow rate: 0.21 to 21 scfh (100-10,000 scc/min).
- Glycol sensitivity: None for gas phase glycols.

- RS232 Output: Moisture concentration.
- LCD display: Moisture concentration, cell pressure and cell temperature.
- Because of its non-contact sensor, the SS-1000 was designed to maintain its accuracy for years while alternative gas-contact based sensors eventually fail or provide inaccurate measurements due to contamination, drift or corrosion.
- There is neither a need to buy multiple replacement sensors nor a requirement to return probes to the factory for recalibration.
- The instrument's durable powder-coated aluminum top cover resists inevitable scratches and scrapes from heavy field use.
- Delivered in a rugged toolbox with a weather-resistant tongue-in-groove cover, the SS-1000 nestles securely within its fitted foam interior, protected during transport in the field.
- The center balanced SS-1000 handle folds down to allow easy access to SpectraSensors' standard keypad that is used throughout the SS-Series product line.
- Operationally, the unit will run for 12 hours off its built-in battery or continuously from AC power. A battery charger is included.

SS-1000 Connections Include:

- Battery charger and A/C power connector.
- RS232 serial port for downloading spectra data to a notebook computer.
- Membrane separator filter for gas inlet mounted on the outside, making it easy to service; 1) 1/8-inch quick-connect fitting for inlet connection; 2) Bypass valve.
- Sample cell outlet has a 1/4-inch quick-connect fitting for venting gas to a safe location.

For more information on the new SS-1000 portable process gas analyzer, contact the author at 800 619-2861 X224 or ghoffman@spectrasensors.com.