

## Greetings From ETA Associates

This month we're featuring products used to remove and add moisture (Perma Pure), measure absolute humidity/ moisture (Kahn), and measure

moisture from ppm to ppb levels (Delta F). Contact us with your moisture application and we'll work with you to find a solution.



## Gas Sample Conditioning Systems by Perma Pure LLC - New

Perma Pure® is the world's leading manufacturer of gas sample conditioning systems. Applications include treating sample gas for environmental monitoring (CEMS), process monitoring and safety monitoring. Stack gases require conditioning to convert hot, wet, and dirty samples into cool, dry, and clean gases that are required by analyzers. Ambient monitors must also be protected from an influx of condensing water. Perma Pure offers complete systems for sample gas treatment as well as individual components for incorporation



into analyzers.

Perma Pure membrane dryers incorporate proprietary technology using Nafion®, an ionomeric polymer closely related to Teflon® which is corrosion resistant and selectively permeable to water. Perma Pure extrudes Nafion® into tubing under exclusive license from DuPont®. Nafion® tube dryers are ideally suited for drying (or humidification) of gas samples because water vapor can be removed (or added) without otherwise changing the sample composition. Nafion® dryers are available as components or can be manufactured into complete sample conditioning systems which filter and scrub out particulate

and unwanted chemicals such as ammonia.

In 2006, Perma Pure acquired the line of gas sampling coolers and probes from Baldwin Environmental. Now Perma Pure offers a cost effective solution for almost any sample conditioning application, including more than a dozen cooler models for flow rates from 1 lpm up to 20 lpm. Additional Baldwin products offered by Perma Pure include flow control drawers, heated filter probes and XP rated coolers. Perma Pure also supports testing companies, integrators and service providers with a lineup of reliable, compact and transportable coolers and other equipment.

## Kahn - Full Range Hygrometers

Kahn has a full range of hygrometers for spot check or continuous monitoring.

Kahn pioneered the use of ceramic substrate sensors to meet the need for accelerated response and for measuring dewpoints in mildly corrosive gases.

The result is a ceramic sensor that not only provides the fastest documented response to dewpoint changes, but also uses a ceramic base material and innovative film deposition techniques to improve chemical and mechanical resistance to corrosive gases. In

addition, Kahn sensors are very stable and are not harmed by contact with water. All ceramic sensors are fully interchangeable without the need for hygrometer recalibration.

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## Kahn - Full Range Hygrometers



Kahn offers two optical (chilled mirror) hygrometer products, Optidew and Series 4000, to meet the requirements of a broad range of dewpoint measurement applications. Each product is available in a variety of models to suit the user's specific needs. Kahn's 20 years of experience in

chilled mirror technology has produced extremely sensitive (parts per billion), accurate and drift-free instrumentation for measurement of gas dewpoint. All Kahn hygrometers offer measurement traceability to national and international standards.

## Delta-F 700 Series - Moisture Sensor

TDLAS Technology Moisture Sensor

Delta F moisture analyzers (the Delta F 700 Series) use Tunable Diode Laser Absorption Spectroscopy (TDLAS) technology to measure moisture in gases. TDLAS is a spectroscopic technique that uses a diode laser as its light source. TDLAS has advantages over other techniques because the moisture sample only comes in contact with a few optical components that are made from very robust materials. It works according to the fundamental principle of Beer's

law; therefore the reading is stable over time and does not ever require calibration.

### Other benefits include:

- Drift free operation self-correcting optics and laser line locking onto the water peak removes all possibility of significant drift
- High accuracy/low maintenance - no field span recalibration required
- Unparalleled performance spectroscopy allows sub-ppb level readings instantly - no lengthy adsorption and desorption times
- Increased capabilities - when packaged with our NanoTrace II Oxygen Analyzer you can make

both oxygen and moisture measurements from a single unit. With the TDLAS technology moisture sensor, Delta F moisture analyzers can deliver unparalleled performance:

- 0.1 ppb sensitivity
- 0.2 ppb LDL
- Operating range: 0.00 ppb to 10.00 ppm (linear)
- Ambient range: 10-40 degrees C
- Fast response and clean up

### NEW PRODUCT

DF-760E  
NanoTrace Dual Moisture and O2 Analyzer

## Rent a Testo 350 - New Rental Services

We now have a Testo 350 available for rental. One-half of a week's rental can be applied to a purchase of any Testo emissions monitor if the purchase is made within 30 days of the rental.

We are also now set up to do calibration and service work on all Testo emissions monitors. Turnaround time is typically 3 days.

### Testo Emission Monitor



## ETA Associates

119 Foster Street, Bldg. # 6  
Peabody, MA 01960  
Tel: (978) 532-1330  
Fax: (978) 532-7325

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