a new standard of reliability in moisture measurement

KAHN

KAHN: A full range of hygrometers for spot check or continuous monitoring

A Choice of Technologies

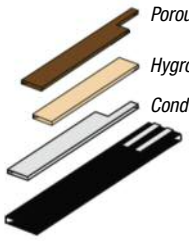
Kahn manufactures a full line of precision hygrometers using the most advanced, proven technologies:

- Ceramic sensors yield the fastest response time and greatest corrosion resistance
- Extremely accurate chilled mirror optical systems provide a fundamental method of dewpoint measurement

In addition, you get the flexibility of local, remotely installed or portable hygrometers rugged enough for any industrial environment. Kahn also offers the latest in dewpoint transmitters with both analog and digital outputs to your computer or PLC.

Kahn features intrinsically safe designs for hazardous locations. All Kahn hygrometers offer traceability to national and international standards.

Capacitive Ceramic Dewpoint Sensor



Kahn offers a wide variety of sampling systems for use with many gases, including natural gas, and at pressures from vacuum to 6500 PSIG.

Our off-the-shelf and custom-designed calibration equipment will allow you to easily verify sensor performance or even outfit an entire metrology laboratory.

We invite you to compare our technical advantages. You will find that, feature for feature, Kahn Instruments sets the standard in moisture measurement.

NOTE: The information included herein was correct at the time of publication and supersedes all previous data. It is our policy to continually improve our products to insure even better performance. Consequently current Kahn products may incorporate modifications not shown on these pages.

CERAMIC SENSORS

Fastest response time and corrosion resistant

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.

Easidew Plus and HygroPort* Portable Hygrometers

- Dewpoints from -100°C to +20°C
- Pressures to 5000 PSIG
- °C, °F, #/MMSCF, PPM, %RH, g/M^3, g/Kg displays (HygroPort) or °F, °C (Easidew Plus)
- Bluetooth capability (HygroPort)
- 320,000 point datalogging capability (HygroPort)
- Temperature compensation
- Temperature or pressure inputs (HygroPort)
- Internal and external dewpoint sensors (HygroPort)
- NIST traceable calibration

Easidew*, Cermet II, Easidew PRO IS* Hygrometers

- Dewpoints from -110°C to +20°C
- Pressures to 6500 PSIG
- °C, °F, #/MMSCF, g/m^3 and PPMv displays (PRO IS)
- PPMv pressure compensated readout
- 4-20mA, 0-20mA or 0-10VDC outputs
- Dual alarm relays and scalable 4-20mA output
- Optional RS232 and RS485
- NEMA 4 sensor housing
- Interchangeable sensors
- Second process input (Cermet II)
- Open sensor alarm
- Temperature compensation
- NIST traceable calibration

Easidew Dewpoint Transmitter*

- Dewpoints from -110°C to +20°C
- Moisture content from 0 to 3000 PPM
- Pressures to 6500 PSIG
- 12 to 28 VDC operation
- Linear 4-20mA output signal
- Temperature compensation
- Stainless steel NEMA 4 housing
- Adjustable output error settings
- NIST traceable calibration

Easidew PRO IS* and XP* Transmitters*

- Dewpoints from -110°C to +20°C
- Moisture content from 0 to 3000 PPM
- Pressures to 6500 PSIG
- 12 to 28 VDC operation
- Linear 4-20mA output signal
- Temperature compensation
- Rugged NEMA 4 housing
- NEMA 7 (PRO XP)
- Adjustable output error settings
- Easidew PRO XP optional display
- NIST traceable calibration

Pura High Purity Gas Dewpoint Transmitter*

- Dewpoint range to -120°C/-184°F/<1PPBv
- High integrity ¼ or ½ inch male VCR fittings
- 12 to 28 VDC operation
- Linear 4-20mA output signal
- Adjustable 4-20mA output span
- 10^{-9} Torr to 3500 PSIG operating pressure
- Temperature compensation
- Adjustable output error settings
- Double or single bagged to clean room standards
- NIST traceable calibration

FM APPROVED

***Intrinsically Safe (IS) Versions Available**

■ Portable/Transmitter/Single Channel ■ Factory Mutual (FM), Canadian Standards Association (CSA) and BASEEFA approved ■ Class I, Division 1, Groups A, B, C, D

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CHILLED MIRROR OPTICAL SYSTEMS
Fundamental Dewpoint Measurement

Kahn offers several optical (chilled mirror) hygrometer products, Optidew, Optisure 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 40 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.

The Optidew Dewpoint and RH Hygrometer is a compact, sturdy and economical instrument that provides continuous dewpoint measurement, display and output.

Key features include:

Optidew

- -40°C to +120°C dewpoint measurement range
- Dewpoint accuracy of ±0.15°C
- Dewpoint temperature and %RH display and output
- 1-stage or 2-stage thermoelectric heat pump
- Automatic contamination compensation
- Data logging SD card
- Analog and digital outputs
- Transmitter or digital display models
- High temperature sensor available

Models

Optidew-Bench Top

- Bench top hygrometer with integral display, remote sensor and sensor cable

Optidew-Wall Mount

- Wall mount transmitter with display
- Transmitter with remote sensors

The Optisure and S4000TRS Hygrometer family feature the most accurate and versatile optical hygrometers available in the marketplace today.

Key features include:

Optisure and S4000 Series

- Dewpoint measurements from -90°C to +120°C
- Dewpoint accuracy and resolution ±0.1°C
- 3-Stage thermoelectric heat pump
- Automatic contamination compensation
- Current, voltage and RS232 digital outputs
- Dual optics detection system
- Precision platinum resistance thermometer
- Microscope to monitor condensation on mirror
- Optional pressure compensation
- Built-in data hold function

Models

Optisure Integrale

- Lightweight with measurement range to -60°C
- Triple display: 10 parameters (dewpoint, RH, temperature, pressure, etc.) available in each window

Optisure Remote

- Remote sensor in a compact housing
- Climatic version: dewpoints to +120°C

Optisure RS

- Temperature-controlled sensor body for dewpoint measurements to -90°C (92 ppb)

S4000TRS*

- Temperature-controlled sensor body for dewpoint measurements to -100°C (13 ppb)

*The S4000TRS also features our unique "speed pipe" technology that improves the response speed at trace moisture levels. The "speed pipe" concentrates the formation of ice crystals on the mirror surface and can reduce response time at trace moisture levels by a factor of four times.

Count on Kahn Experience

Kahn, a leader in pneumatic, hydraulic and electronic technology for over 70 years, provides innovative solutions to practical measurement problems. Since Kahn's first moisture measurement designs were introduced 60 years ago, we have manufactured high quality, durable hygrometers for many specialized applications, often under demanding conditions. Our long-standing success in customer satisfaction and our expanding product line ensure that Kahn can provide you with hygrometers to suit all your needs.

Kahn provides technical support and maintenance for all of its equipment, from the earliest models to the latest innovations. Our hygrometers are also backed by the finest warranty in the industry: One full year on calibration and workmanship for both the instrument and sensor.

OEM Dryers

80% of all desiccant dryer manufacturers use Kahn hygrometers to measure and control dewpoint.

Some Satisfied Customers

Air Products
Amgen
Cargill
DowDuPont
Duke Energy
ExxonMobil
General Motors
Harvard University
Hewlett Packard
Honeywell
IBM
Intel
Lockheed Martin
Merck
NASA
National Weather Service
Pratt & Whitney Aircraft
Spectra Energy
Tennessee Valley Authority
Texas Instruments
U.S. Navy

The calibrations of Kahn hygrometers are traceable to the National Institute of Standards and Technology. Sensors are calibrated through a master optical hygrometer which has been calibrated at the NIST and is periodically re-calibrated. A certificate of traceability is provided with all of these instruments.

HYGROMETER SPECIFICATIONS

MODEL	CERAMIC					OPTICAL	
	PORTABLE		TRANSMITTER	ON-LINE HYGROMETER			
	EASIDEW PLUS	HYGROPORT*	EASIDEW* PRO IS* PRO XP*	PURA*	EASIDEW CERMET II* EASIDEW PRO IS*	OPTIDEW	OPTISURE INTEGRALE REMOTE RS
RANGE & ACCURACY	-50°C to +20°C ±2°C	-100°C to +30°C ±1°C (+20°C to -60°C) ±2°C (-60°C to -100°C)	-100°C to +20°C -110°C to +20°C (XP) 0-3000 PPMv (XP) ±2°C	-120°C to -40°C ±1°C (-40°C to -60°C) ±2°C (-60°C to -100°C) ±4°C est.(-100°C to -120°C)	-100°C to +20°C 0-3000PPMv (Easidew) 0-9999 PPMv (Cermet II, IS) ±2°C	-25°C to +90°C (Single Stage) -40°C to +90°C (Dual Stage) -40°C to +120°C (Harsh Environment) ±0.15°C	-60°C to +40°C (INT) -40°C to +90°C (REM) -90°C to +20°C (RS) ±0.1°C
SENSOR	Polymer Capacitive	Thin film Ceramic Interchangeable	Thin film Ceramic Interchangeable	Thin film Ceramic Interchangeable	Thin film Ceramic Interchangeable	1 or 2 Stage Optical (Chilled Mirror)	3 Stage Optical (Chilled Mirror)
SENSOR LOCATION	Built-In	Built-In Remote (optional)	Remote	Built-in or Remote	Remote	Remote	Built-In (INT, RS) Remote (REM)
CONFIG.	Portable	Portable	Transmitter	Sensor block with 1/4" VCR 1/2" VCR (Sensor version)	Bench or panel	Wall mount, remote, probe or bench type	Bench or 19" rack
OPERATING PRESSURE	Vacuum to 4350 PSIG	Vacuum to 5000 PSIG	Vacuum to 6500 PSIG	Vacuum to 3500 PSIG	Vacuum to 6500 PSIG	0 to 360 PSIG	0-290 PSIG (INT) 0-3625 PSIG (REM) 0-145 PSIG (RS)
SENSOR OPERATING TEMPERATURE	-20°C to +50°C	-20°C to +50°C	-40°C to +60°C	-40°C to +60°C -20°C to +60°C (IS)	-40°C to +60°C	Sensor: -40°C to +90°C Electronics: -20°C to +50°C HT sensors to +120°C	Sensor: -20°C to +40°C (INT) Electronics: -20°C to +30°C (REM) HT sensor to +120°C
DISPLAY UNITS	Digital, °C, °F	Digital, °C, °F, K, PPMV, PPMW %RH, g/m³, g/kg, #/MMSCF °F, °C, K Temperature PSIG, Bar A/G, MPa, KPa, Pressure	None Digital, °C, °F, PPMV, PPMW Liquids (XP)	None	Digital, °C, °F, PPMV, #/MMSCF (IS)	°C, °F, PPMV, PPBV PPMW / RH, g/m³, Twb, g/kg, Kpa °C, °F, temperature PSIA, PSIG, Kpa, Bar, pressure	°C, °F, PPMV, PPBV PPMW, %RH, g/m³, g/kg, KPa °C, °F, temperature PSIA, PSIG Kpa, Bar, pressure
OUTPUT	4-20mA	Bluetooth 8 Mb storage	4-20mA	4-20mA or RS485 4-20 mA (IS)	4-20mA 0-20mA (Easidew) 10 V (Cermet II, IS) RS232, RS485 (Optional)	4-20mA, 0-20 mA, RS485, USB, Ethernet	4-20mA, 0-1VDC USB Ethernet, RS232, RS485, SD Card
ALARM RELAY	None	None	None	None	Two 5A 250 V or 3A at 250 V (Easidew) 10A 240 V or 8A at 24 V) (Cermet II, IS)	One process relay, One alarm relay, Both Form C, 1 A, 30 VAC	One process relay, One alarm relay, Both Form C, 1 A, 30 VAC
OPTIONS	None	Carrying case External sensor Sampling system	Digital display Power supply Sampling system	Digital display Power supply Sampling system	NEMA enclosures Second process input RS232/RS485 Sampling system	Sample block Air cooled heat sink Sensor guard Transport Case	Microscope Transportation Case Built in pressure transducer Built in sample pump assembly
WEIGHT	8.8 lbs.	2.9 lb 3.3 lb (IS)	0.3 lb 2.9 lb (IS) 3.5 lb (XP)	1.0 lb 0.4 lb (Sensor version) 3.1 lb (IS)	0.3 lb (Easidew, Cermet II Sensors) 2.9 lb (IS Sensor) 0.95 lb (Display)	Control unit: 3.3 lb Sensor: 0.44 lb	24.3 lb (INT) Control Unit: 9.26 lb (REM) Sensor: 0.44 lb (REM) 49.38 lb (RS)
POWER	NiMH Battery or 115 VAC	Battery or 110-240 VAC 43-64 Hz	12-28 VDC	12-28 VDC	85-265 VAC (Optional) 24 VDC (Easidew) 18-36 VAC (Cermet II, IS) 9-60 VDC (Cermet II, IS)	100-240 VAC 50/60 Hz	85-264 VAC 50/60 Hz
DIMENSIONS SENSOR MONITOR L x Dia H x W x D	10.8" x 4.9" x 9.9"	3.9" x 7.9" x 9.8"	5.2" x 1.23" x 1.06" 5.9"x 3.18"x 2.24"(IS) 7.6" x 5" x 4.2" (XP)	4.72" x 1.38" x 5.97" 6.06" x 3.38" x 7.0" (IS) 5.24" x 1.23" dia. (Sensor version)	1.9" x 3.8" x 3.4" (Easidew Display) 1.9" x 3.8" x 5.7" (Cermet II, IS Displays) 5.4" x 1.3" (Easidew, Cermet II Sensors) 5.9" x 2.24" (IS Sensor)	Wall Mount: 7.1"W x 10.2"H x 2.7"D Bench top: 6.8"W x 8.7"H x 4.7"D Sensor: 5"L x 1.8"D	7.4"H x 17.3"W x 13.5"D (INT) 7.4"H x 10.1"W x 8.4"D (REM) 7.5"H x 17.5"W x 21.7"D (RS)

STANDARD AND CUSTOM CALIBRATION EQUIPMENT ALSO AVAILABLE

*** INTRINSICALLY SAFE VERSIONS AVAILABLE; SPECIFICATIONS MAY DIFFER**

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