# KAHN Hygrometers

## Easidew Hygrometer

A panel-mounted hygrometer designed for continuous on-line moisture measurement from -148° to +68°F (-100° to +20°C) dewpoint. Applications include dewpoint monitoring of non-flammable process gases such as air, nitrogen, sulfur hexafluoride, carbon dioxide, helium or argon in a variety of industries: heat treating, pharmaceutical, food and beverage, utilities, semiconductors and many other manufacturing applications.

- Dual Alarm Relays & Scalable 4-20 mA Output
- PPMV Pressure Compensated Readout
- Multiple Engineering Unit Display
- High Accuracy and Repeatability
- NEMA 4 Sensor Housing
- Digital Signal Processing
- Interchangeable Sensors
- NIST Traceability
- Digital Display



### General Description

The Kahn Easidew Hygrometer consists of a digital display with integral signal conditioning board, ceramic dewpoint sensor and an interconnecting cable. The sensor can be installed directly in the gas line or in a separate sampling gas stream by utilizing the optional sensor block. The display can be easily mounted in a control panel or other appropriate location.

Two independent, adjustable set-point relays (opional third relay) are included which can be used to provide an operator alarm should the dewpoint exceed user programmable limits. For systems that use PLCs or other controllers, a 4-20 mA scalable, linear output is provided as standard.

The digital display mounts in a 1/8 DIN cutout. It features a large, easily readable indicator with programmable brightness. Engineering units offered include °F and °C dewpoint and pressure compensated PPMv.

### Sensor

The Kahn ceramic sensor is made from state-of-the-art metalized ceramic and replaces traditional materials such as aluminum, silicon and hygroscopic salts. This sensor is made from a ceramic tile that is plated and vapor deposited to form a surface that is very sensitive to small changes in water vapor pressure.

Our proprietary coating processes make the Kahn ceramic sensor inherently faster to respond than other impedance or capacitive sensors currently available. It also features greater resistance to corrosive gases and other contaminants. All of Kahn's ceramic sensors are fully interchangeable without recalibration.

The sensor features the latest digital technology with calibration data stored directly in the sensor's memory. It can be located up to 2600 feet from the digital display without affecting calibration and will operate at pressures from near vacuum to 6500 PSIG and temperatures from -40° to +140°F. The sensor is equipped with a built-in thermistor for automatic temperature compensation.

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## What is Dewpoint?

Dewpoint is defined as the temperature at which the water vapor pressure of a gas equals the saturated water vapor pressure. It is therefore the temperature at which condensation "just begins" to occur if a gas is cooled.

Dewpoint is a fundamental unit and directly equivalent to water vapor pressure or parts per million. It is a very convenient measure of actual water content of a gas because, unlike relative humidity, it is not a function of temperature.

## Calibration

The Kahn Easidew Hygrometer is factory calibrated to insure consistent, accurate readings. The calibration of all Kahn ceramic, aluminum oxide and chilled mirror hygrometers is traceable to the National Institute of Standards and Technology through master Kahn optical hygrometers which have been directly calibrated at the NIST and are periodically recalibrated. A certificate of traceability is available with any of these instruments. All sensors are fully interchangeable without the need for display recalibration. In addition all calibrations are guaranteed for one year.

## Installation

The meter can be installed in a control panel or used as a stand alone device. The sensor can be installed directly in the main gas line or in a sample stream.

# SPECIFICATIONS

**Measurement Range**
-148° to +68°F
-100° to +20°C
0 to 3000 PPMV
(pressure compensated)

**Dewpoint Accuracy**
±3.6°F (±2°C)

**Ouptuts**
4-20 mA or 0-20 mA
(user selectable)
RS232
Two Relays, Adjustable
5A/250 VAC
3A/250 VAC

**Display**
°F, °C, PPMV

**Sensor**
Ceramic moisture sensor with 10 Micron High Density Polyethylene (HDPE) guard, NEMA 4 housing.

**Dimensions**
Meter:
1.9"H x 3.8"W x 3.4"D
Panel cutout:
1.8H" x 3.6"W
Sensor:
5.2"L x 1.23"W

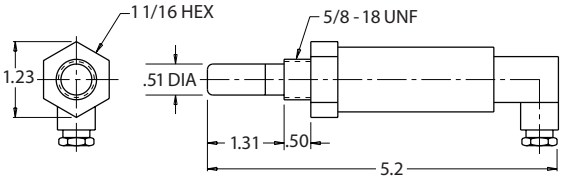
**Operating Conditions**
Pressure:
Vacuum to 6500 PSIG
Temperature:
Sensor Operating:
-40° to +140°F
Sensor Compensated:
-4° to +122°F
Display Operating:
+32° to +122°F

**Flow**
Recommended rate:
2 to 10 SCFH (1 to 5 l/min) in sensor block
Velocity:
0 to 30 feet/second when inserted directly

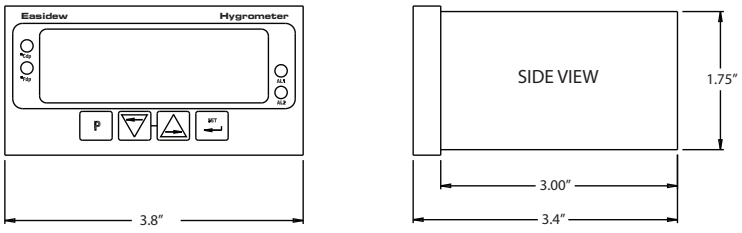
**Power Requirements**
100 to 240 VAC, 50/60 Hz (standard)
24 VDC (optional)

**Sensor Cable**
6 feet (standard)
Up to 2600 feet (optional)

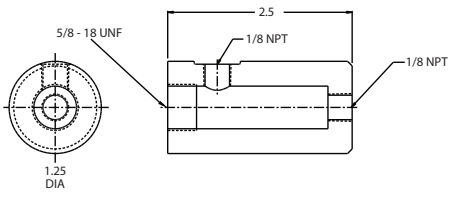
**Options, Accessories**
Sensor Block
10µ Sintered Metal Guard
Gas Sampling System
Coalescing/Particulate Filter
NEMA 4 Enclosure (Meter)
Third Alarm Relay (3A/250 VAC; replaces mA output)



Easidew Transmitter



Digital Display Meter



Stainless Steel Sensor Block

NOTE: The information included herein was correct at the time of publication and supercedes 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.

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