KAHN Hygrometers

Easidew I.S.
Transmitter

FM and CSA certified, low cost, 2-wire, intrinsically safe dewpoint transmitter for continuous measurement of the moisture content in hazardous area applications.

- FM and CSA certified for hazardous area applications
- -148ºF to +68ºF (-100°C to +20°C) dewpoint range
- 0-3000 PPMv moisture content
- 2-wire and 3-wire operation
- 12 to 28 VDC operation
- Linear 4-20 mA signal
- NEMA 4 housing
- Fast and reliable
- NIST traceable

Simple And Economical

The economical, NIST-traceable Easidew I.S. Transmitter makes intrinsically safe dewpoint monitoring as easy as measuring temperature or pressure, and can be instantly incorporated into your hazardous area air or gas measurement and control system. The Easidew I.S. Transmitter is also economical to purchase, install and maintain. Both installation and operating costs are minimal because of the transmitter's ruggedness and simplicity. Only periodic re-certification is required to maintain calibration accuracy. We offer an exchange program so that your process is never out of operation.

Broadest Range

Powered by any DC power source from 12 to 28 volts, the Easidew I.S. Transmitter features the broadest calibrated dewpoint range (-148°F to +68ºF) and pressure range (vacuum to 5000 PSIG) in the industry. Flow rate is not critical to measurement accuracy, though speed of response will be improved by operating at a higher sample flow. In the unlikely event that something goes wrong, the embedded microprocessor provides intelligent information on the failure mode. Sensor fault, under-range and over-range conditions are all signaled by predetermined output levels, so you can easily establish the source of the problem, correct it and get back to operation as quickly as possible.

Ceramic Technology

The key to the Easidew I.S. Transmitter's performance is its sensor technology. Kahn's advanced ceramic moisture sensor is coupled with sophisticated digital measurement circuitry to produce a fully calibrated and interchangeable dewpoint transmitter. All calibration data is stored within the transmitter memory so that calibration exchange or service can be accomplished in seconds, even by untrained personnel. The Easidew I.S. Transmitter is simply disconnected, removed from its sample block and replaced by a new, fully calibrated unit. The Easidew I.S. Transmitter can be connected in a 2-wire loop powered configuration while maintaining complete backward compatibility with all existing 3-wire installations.

The Easidew I.S. Transmitter's calibration is traceable to NIST at thirteen points over the range from -148°F to +68ºF dewpoint to an accuracy of ±3.6ºF dewpoint. The inherent stability of our advanced ceramic moisture sensor means that the Easidew I.S. Transmitter will provide years of reliable operation.

Certified Intrinsically Safe

The Easidew I.S. Transmitter is FM and CSA certified for use in Class I, Division 1, Groups A, B, C, & D T4 hazardous locations when used with an approved galvanic isolation barrier for signal and power supply connections (2-wire). Easidew I.S. can therefore be safely used in virtually all industrial gas measurement applications.

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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 (absolute humidity) because it is not a function of temperature in the same way that relative humidity is.

Calibration

The Kahn Easidew I.S. Transmitter 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 calibration is provided with our sensors and instruments. All sensors are fully interchangeable without the need for display recalibration. In addition all calibrations are guaranteed for one year.

Installation

The sensor can be installed directly in the main gas line or in a sample stream.

SPECIFICATIONS

Sensor Type:
Kahn Advanced Ceramic Moisture Sensor

Measurement Range:
-148°F to + 68°F (-100°C to +20°C) dewpoint
0 to 3000 PPMv moisture content

Accuracy:
±3.6°F (±2°C) dewpoint

Power Supply:
12-28 VDC reverse polarity protected

Output:
4-20 mA linear, current source configurable over the entire measurement range

FM and CSA Certifications:
Class I, Division 1, Groups A, B, C, & D T4 hazardous areas

Operating Temperature:
-40°F to +140°F (-40°C to +60°C)

Operating Pressure:
Vacuum to 5000 PSIG

Temperature Compensated:
From -40°F to +140°F (-40°C to +60°C)

Flow Rate:
2 to 10 SCFH (1 to 5 l/min) mounted in sampling block;
0 to 30 ft/sec (0 to 10 m/sec) velocity when inserted directly

Connection:
Two wire loop powered DIN-style with screw terminal contacts
Backward compatibility with 3-wire installations

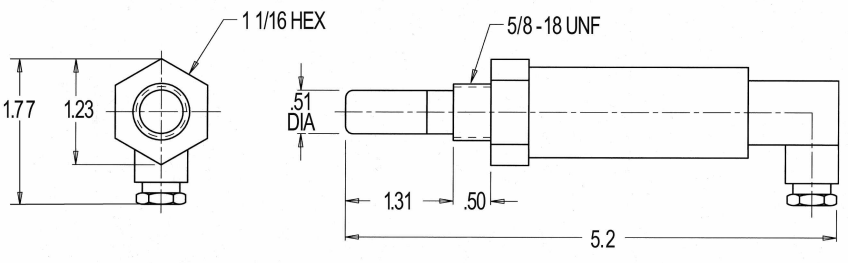
Traceable Certification:
-100°F to +68°F dewpoint traceable to NIST. For dewpoints < -100°F, direct reference to a fundamental optical dewpoint hygrometer

Environmental Protection:
NEMA 4 (IP66)
10µ HDPE Guard (standard)
80µ Sintered Metal Guard (optional)

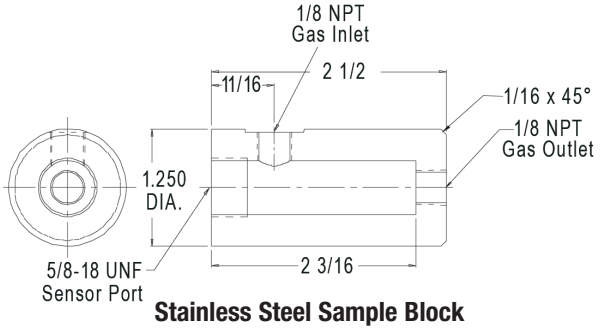
Weight:
0.33 pounds (0.15 kg)

Self Diagnosis:

Condition	Output
Sensor fault	3 mA
Under-range dewpoint	3 mA
Over-range dewpoint	23 mA



Easidew I.S. Transmitter



Stainless Steel Sample 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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