

KAHN Hygrometers

HygroPort / HygroPort I.S. Portable Hygrometer

A fast-responding, easy to use, portable hygrometer for measurement of dewpoint and moisture content of compressed air and other gases. Features include:

- Simple operation
- Fast response
- Long battery life
- Bluetooth wireless interface
- Internal and external sensor connections
- General purpose and intrinsically safe I.S. models
- Lightweight (less than 3 pounds)
- -148°F to +68°F dewpoint range
- I.S. version FM, CSA certified

Simple Operation

The menu-driven display, easily accessible gas connections and application software allow the user to quickly and easily set up the HygroPort and make measurements within minutes. All measurement parameters are available at the touch of a button. The numerous features are easy to navigate with our intuitive interface and multiple, large LCD displays.

Fast Response

The HygroPort features exceptionally fast response from ambient conditions to low dewpoints. Dewpoint readings (T95) from an ambient start point to a -95°F end point can be achieved in less than 10 minutes (15 minutes for I.S. version). A specially heated sensor and a sophisticated response algorithm are the keys to our rapid response. Competitive units utilize a desiccant charge to achieve a one-time rapid response. In contrast, the Kahn unit responds rapidly every time.

Wireless Connection

The HygroPort utilizes the latest Bluetooth technology to provide wireless communication for instrument set-up and for downloading logged data. Datalogging of up to 320,000 points allows the user to monitor conditions remotely and our wireless connection eliminates set-up time when uploading that data.



Internal or External Sensor Connections

The HygroPort includes an internal Kahn ceramic dewpoint sensor to make fast, accurate, reliable measurements.

Optional external sensors for the measurement of dewpoint, pressure or temperature are available for connection to the instrument. The readings from these additional sensors can be simultaneously displayed as well as datalogged to a PC. Further, the optional pressure sensor provides pressure compensated readings for PPMv display.

Additionally, the HygroPort can be used to verify and adjust the Kahn calibration tables of Easidew Dewpoint Transmitters, thereby reducing sensor downtime and calibration costs.

Long Battery Life

Efficient nickel metal hydride batteries and power management circuitry provide 48 hours of usage between charges (24 hours for I.S. version) and allow for more than 100 hours of continuous datalogging (50 hours for I.S. version). Importantly, a dead battery can be re-charged to 90% of its potential within 20 minutes. A full charge is reached in less than 2 hours. Less waiting time means more measurement time.

What is Dewpoint?

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

Dewpoint is a fundamental unit 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 HygroPort Portable Hygrometer is 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.

Applications

- Compressed air monitoring
- Desiccant/refrigerant dryers
- Air separation
- Gas purification
- Furnaces and heat treating
- Glove boxes
- High voltage SF₆ switchgear
- Pipeline drying
- Ozone generators
- Polymer chip drying
- Environmental test chambers
- Natural gas
- Laser gas monitoring
- Wind tunnels
- Fire suppression systems
- Equipment blanket gases
- Fuel cells
- Laboratory purge gases

SPECIFICATIONS

Sensor Type:

Kahn Advanced Ceramic
Moisture Sensor

Calibrated Measurement Range:

-148°F to +68°F (-100°C to +20°C) dewpoint
Readings to +86°F (+30°C) dewpoint

Accuracy:

±1.8°F (±1°C) from -76°F to +68°F
±3.6°F (±2°F) from -148°F to -76°F
±0.36°F (±0.2°C) temperature

Measurement Units:

°F, °C, K dewpoint
PPMv; PPMw: air, N₂, H₂, CO₂, SF₆,
%RH, g/m³, g/kg
PPMV, #/MMSCF, g/m³ NG (I.S. unit)
°F, °C, K gas temperature
PSIG, PSIA, BarA/G, MPa, kPa pressure

Display Resolution:

0.1°C for dewpoint
Autoranging for other units

Sensitivity:

0.01°C or better

Typical Response Speed:

T95 in <10 minutes to -94°F
T95 in <15 minutes to -94°F (I.S.)

Operating Pressure:

5000 PSIG

Operating Conditions:

-4°F to +122°F temperature
0 to 100% RH non-condensing

Gas Connections:

1/8" NPT female

Filters:

50 micron stainless steel sinter in
inlet port

Communication / Data Storage:

Wireless Bluetooth up to 16 feet
8 Megabytes storage
Up to 10,000 points per log file
Up to 32 log files

Gas Wetted Components:

All 316 Stainless Steel

Auxiliary Inputs:

Connection to Kahn Easidew I.S.
or Easidew PRO I.S. Transmitter
via Remote Sensor Interface

Enclosure Type:

Molded high impact case

Environmental Rating:

NEMA 4 / IP66

Flow Rate:

0.4 to 4.0 SCFH (0.2 to 2.0 NI/min)
0.4 to 1.0 SCFH (0.2 to 0.5 NI/min -
I.S. unit)

Power Requirements:

Internal 4.8V rechargeable
NimH battery
Up to 48 hours (24 hours I.S. unit)
continuous battery use between
charges
Charged by external AC charger

Dimensions and Weight:

7.9" W x 3.9" H x 9.8" D
2.9 Pounds (3.3 pounds - I.S. unit)

Options:

Carrying Bag Sampling Systems
Filters External Sensor

I.S. Unit Certification:

FM and CSA: Class I, Division I
Groups A, B, C, D T4

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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