

KAHN Hygrometers

MORE ACCURATE & FASTER RESPONSE

Optidew

Optical Dewpoint and RH Hygrometer

Fundamental, optical technology in a PID controlled, digital dewpoint hygrometer. Measuring dewpoint, temperature and relative humidity, the Optidew is inexpensive to purchase and easy to use. Features include:

- Dewpoint, temperature and RH measurement
- Range: -40 to +248°Fdp; 0.45 to 100% RH
- Analog and digital outputs; Alarm relay
- Transmitter and digital display models
- Single and two stage sensor options
- Fundamental measurement principle
- Accuracy: $\pm 0.27^\circ\text{F}$ dewpoint
- Fast response speed
- NIST Traceable

Simple And Economical

The NIST-traceable Optidew Dewpoint Hygrometer uses fundamental optical dewpoint measurement to provide drift-free long-term performance. It offers a wide measurement range of -40 to +248°F dewpoint (or 0.45 to 100% relative humidity) at temperatures from -40 to +248°F. Optidew provides two linear 0/4-20 mA outputs in addition to multiple digital communications, allowing set-up and monitoring by a suitable computer or PLC system or via the Optidew's own logging software. An adjustable dry alarm contact means that Optidew can be used for direct process control.



Optidew - Wall Mount
Wall mount transmitter with display



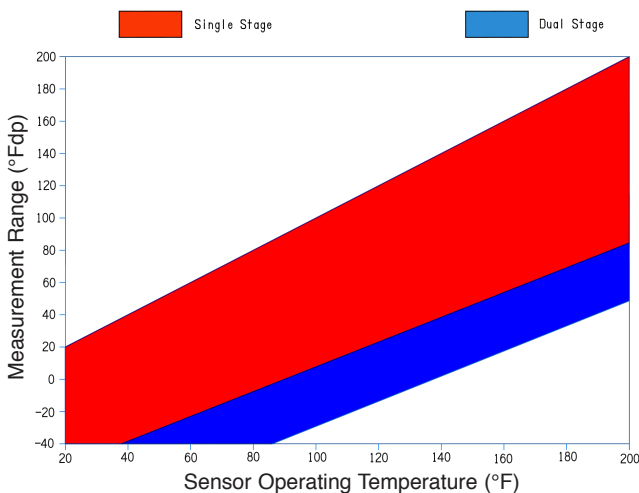
Optidew - Bench Top
Hygrometer with remote dewpoint and temperature sensors

Supreme Flexibility and Sensor Options

The Optidew uses a new design of chilled mirror sensor, which provides a faster response speed coupled with the accuracy and reliability of the fundamental chilled mirror technique. For example, measuring in climatic chambers, the Optidew is able to directly track changes in temperature and humidity without experiencing time-consuming loss of control like traditional chilled mirror sensors.

Additionally, Kahn offers a choice of sensors to suit varied applications. The standard sensor is available with single or dual stage cooling and is a reliable and cost effective option for many environmental control applications. The dual-stage, harsh environment sensor is designed for tough industrial conditions and allows high temperature measurements to +248°F for applications in metal conditioning furnaces and fuel cell testing.

The Optidew features a broad range of measurement units (more than 15 in total) including °F, °C, relative humidity, and wet bulb temperature for HVAC applications. The optional pressure sensor provides helpful information to determine whether changes in dewpoint result from changes in moisture content or pressure. Changes in pressure will result in real time changes in dewpoint and PPMv measurement.



Optidew Measurement Range
Single and Dual Stage

Models

The Optidew is supplied with remote dew-point and temperature sensors together with wall mount or bench top options.

Optidew Bench Top

The Optidew Bench Top has a simple, intuitive touch screen for ease of operation and configuration. It includes a USB port and SD card slot for data logging. It is ideal as a transportable standard and features an optional transport case.

Optidew Wall Mount

The Optidew Wall Mount is offered either with a display or no display. Modbus over RS485 is provided as standard with the option of Modbus TCP over Ethernet for simple networking instruments.

Measurement Reliability

To alleviate the problems of measurement accuracy due to contamination, Kahn Instruments now offers a totally new contamination compensation system for Optidew. Dynamic Contamination Correction (DCC) automatically eliminates any error that may be caused by mirror particulate contamination. This feature extends operation in harsh or dirty environments without the need to stop the process to manually clean the mirror. Although the DCC system is fully automatic, it can be user configured to accommodate your own process conditions.

Applications

Optidew is designed to satisfy a wide range of industrial and laboratory applications including:

- Industrial process control
- Environmental test chamber
- Air intake monitoring to gas turbine
- Engine test cell
- Furnace monitoring
- Calibration laboratories

Optidew can be effectively deployed in any situation where precise and continuous measurement of the dewpoint or relative humidity of a process is required.

SPECIFICATIONS

Sensor Type:

Sealed Optical (Chilled Mirror)
Single stage, Two stage or
Harsh Environment

Dewpoint Range:

-13 to +194°F (single stage)
-40 to +194°F (dual stage)
-40 to +248°F (harsh environment)

Relative Humidity:

2.25 to 100% (single stage)
0.45 to 100% (dual stage)

Accuracy:

±0.27°F dewpoint
±0.18°F temperature

Operating Temperatures:

Sensor: -40 to +194°F
(to +248°F optional)
Electronics: -4 to +122°F

Operating Pressure:

0 to 360 PSIG max.

Sensitivity:

0.02°F

Response:

Stable measurement at +50°F dp
within 1 minute

Flow Rate (in Sample Block):

0.2 to 4 SCFH

Maximum Velocity:

33 feet/sec direct insertion
100 feet/sec with sintered guard

Outputs:

Two 4-20 mA or 0-20 mA analog
RS485
USB (Bench Top only)
Ethernet (optional)

Alarms:

1x Process Relay
1x Alarm Relay
Both Form C, 1A, 30VDC

Enclosure Ingress Protection:

IP54
IP65 optional for Wall Mount

Cable Length:

Wall Mount 1 ft. with bracket
Bench Top 10 ft.
Additional lengths 10, 15, 30, 60 ft.
For longer lengths consult Kahn
Maximum cable length 165 ft.

Power:

100-240 VAC, 50-60 Hz, 30 Watts

Dimensions:

Wall Mount:
7.1"W x 10.3"H x 2.8"D
Bench Top:
4.7"W x 8.7"H x 6.8"D

Weight:

Control unit: 3.3 pounds
Sensor: 7 ounces

Options:

Sample block
Air cooled heat sink
Sensor guard
Transport case (Bench Top)

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.

Number 061518 Printed in USA

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