

# KAHN Hygrometers

## Optidew

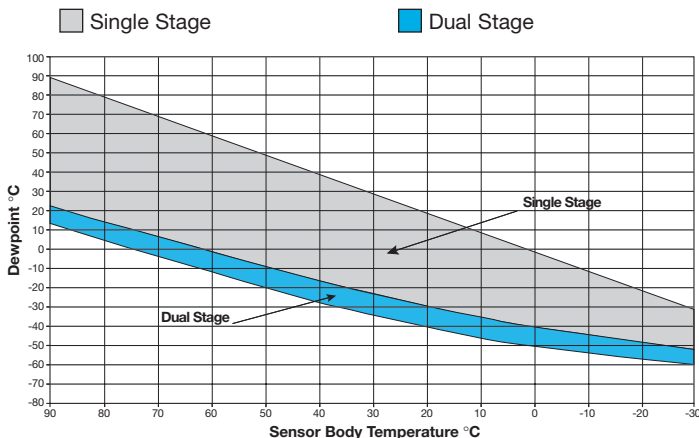
### Optical Dewpoint and RH Hygrometer

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: -76 to +194°Fdp; 0.5 to 100% RH
- Fundamental measurement principle
- Transmitter and digital display models available
- Single and two stage sensor options
- Analog and digital outputs; Alarm relay
- Accuracy:  $\pm 0.36^\circ\text{F}$  dewpoint

### Simple And Economical

The Optidew Dewpoint Hygrometer uses fundamental optical dewpoint measurement to provide drift-free long-term performance. It offers a wide measurement range of -76 to +194°F dewpoint (or 0.5 to 100% relative humidity) at temperatures from -40 to +194°F. Optidew provides two linear 4 - 20 mA outputs in addition to serial communication, allowing set-up and monitoring by a suitable computer or PLC system or via Optidew's own logging software. An adjustable dry alarm contact means that Optidew can be used for direct process control.



Optidew Measurement Range  
Single and Dual Stage



Optidew-Wall

Wall mount transmitter with integral temperature and dewpoint sensors



Optidew-Bench

Hygrometer with remote sensors, interconnecting cables and separate display unit.

### Supreme Flexibility and Rugged Design

Optidew can be mounted in a variety of ways to suit the application – direct in process, flange mounted, tee mounted, or via an external sample line. A bench mount version – the Optidew Vision – includes remote sensors, interconnecting cables, and a separate display unit mounted in a contemporary bench-top housing with an ergonomic carrying handle. No other hygrometer offers such performance and flexibility in a single package. Low dewpoint capability, coupled with cable length of up to 800 feet (100 feet for Optidew-Bench unit) and a pressure rating up to 3600 PSIG, make almost any industrial application possible. Three sensor versions are available: single stage, two stage and high temperature. All three sensors are completely sealed to prevent contamination or corrosion of internal components.

Optidew is sufficiently rugged to withstand most industrial conditions, while retaining the performance and sensitivity of a high-level reference or calibration hygrometer. The sensor includes a corrosion-resistant, gold plated mirror and rugged construction. The transmitter unit is NEMA 4 protected and suitable for outdoor use. The temperature sensor is equally rugged with its four wire 100 ohm PRT.

## Models

The Optidew is available with a fixed or remote sensor together with wall, bench, panel, and flange mount provisions giving great flexibility to suit all applications. All models feature dewpoint and temperature sensors.

<b>Optidew Wall</b>	Wall Mount Optidew Transmitter with Integral Sensor
<b>Optidew Remote</b>	Optidew Transmitter with Remote Sensor and 6-foot Cable
<b>Optidew Probe</b>	Optidew Transmitter with Probe Type Sensor
<b>Optidew Bench</b>	Bench Mount Optidew Hygrometer with monitor, carrying handle, remote sensor, and 6-foot cable

## Measurement Reliability

To alleviate the problems of measurement accuracy due to contamination, Kahn Instruments has engineered a totally new contamination compensation system for Optidew. Dynamic Contamination Correction (DCC) automatically eliminates any error that may be caused by mirror particulate contamination. DCC is a self-learning system that adapts itself to operating conditions, predicts and reacts to the real requirements for contamination correction to achieve optimum transmitter performance at all times. 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 and High temperature

### Dewpoint Range:

-58 to +194°F (single stage)  
-76 to +194°F (dual stage)  
-58 to +239°F (high temperature)

### Relative Humidity:

2 to 100% (single stage)  
0.5 to 100% (dual stage)

### Accuracy:

±0.36°F dewpoint  
±0.27°F dewpoint (optional)

### Operating Temperatures:

Sensor: -40 to 194°F  
Electronics: -4 to +122°F

### Operating Pressure:

Vacuum to 3600 PSIG

### Resolution:

Analog and digital outputs: 0.18°F  
Digital Display: 0.2°F

### Flow Rate (in Sample Block):

0.2 to 4 SCFH (0.1 to 2 l/min)

### Maximum Velocity:

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

### Outputs:

4-20 mA or 0-20 mA analog  
RS232 @9600 baud rate  
RS485 (optional)

### Alarms:

Relay 0.5A@120VAC; 2A@30VDC  
• Optics status  
• DP, RH, and T (User Settable)

### Enclosure Ingress Protection:

NEMA 4 for transmitter models

### Status LEDs:

Power on, DCC, alarm status

**Cable length** (Optidew Remote and Bench) 6 ft. standard

Up to 800 ft. optional (Optidew Remote)

Up to 100 ft. optional (Optidew Bench)

### Power:

90-264 VAC, 47-440 Hz, 20 Watts

### Dimensions:

Wall Mount Version:

9"W x 14.5"H x 4"D

Remote Sensor Version:

9"W x 9"H x 4"D

Sensor: 5.0"L x 1.8" diameter

Probe Type Version:

10"W x 18.4"H x 22.7"D (max)

Bench Mount Version:

11.5"W x 4.0"H x 10.3"D

### Weight:

Wall Mount Version: 7 pounds

Remote Sensor Version: 8 pounds

Probe Type Version: 13.5 pounds

Bench Mount Version: 6.5 pounds

### Options:

Sample block

Liquid cooled sample block

Air cooled heat sink

Sensor guard

Weatherproof cable pack

19" rack kit (Optidew-Bench)

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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