

# Model DX

## High Performance Primary Method Direct Insertion Dew/Frost Point Sensor

The Model DX primary method chilled mirror dew/frost point sensor is a direct insertion hygrometer sensor with an integral PRT temperature sensor, wide operating range and improved temperature stability. The new DX can be inserted into a process stream or used to monitor the local environment. With its integrally mounted temperature sensor, a single penetration reduces installation cost and improves relative humidity accuracy as the temperature and dew/frost point are measured at the same location. The Model DX expands Instruments' line of easy installation sensors.

Active cooling gives the Model DX sensor enhanced stability and a dynamic range of  $-40^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$  dew/frost point over a wide range of ambient conditions, while active sensor temperature compensation and isolation eliminate drift. An integrated micro aspirator option gives faster response in static environments and an integral barometric pressure measurement option is available on request. Integrated filter options are available for use in dirty environments.

The Model DX Sensor can be used with the Instruments DewMaster and DewTrak II dew/frost point hygrometers. The sensor can be located remotely at distances up to 100 feet. Its compact design reduces the space needed for installation.

### Features:

- Direct insertion expands Instruments sensor choices for easy installation
- Integrally mounted PRT temperature sensor reduces installation cost and improves relative humidity accuracy
- Active sensor temperature compensation and isolation eliminate drift
- Compact design reduces space needed for installation
- Integral barometric pressure measurement option available
- Integrated micro aspirator option for faster response in static environments
- Integrated filter options for use in dirty environments
- Pipe and duct mount thread boss included with mounting hardware
- Remote sensor cable length up to 100 feet



The Model DX Direct Insertion Dew/Frost Point Sensor

### Applications:

- HVAC duct systems
- Critical purged atmospheres
- Glove box environmental chambers
- Pharmaceutical testing and isolation chambers
- Engine air intake and exhaust testing
- Modified atmosphere packaging
- Semiconductor manufacturing furnace and lithography
- Medical packaging
- Dryer efficiency
- Biologics and cell culture
- Fluidized bed driers
- Food storage and packaging
- Air make-up for clean rooms and data centers
- Checking accuracy of polymer and metal oxide probes



## Technical Specifications

### Sensor Types:

Primary method chilled mirror dew/frost point sensor with two stage thermoelectric cooling (TEC), PRT temperature sensor and optional barometric pressure sensor

### Ranges at 25°C ambient:

#### Dew Point:

-40°C to 95°C (-40°F to 195°F)

#### Air Temperature:

--100 to 250°C (-148 to 482°F)

#### Relative Humidity:

1% to 95%

### Accuracy:

Dew/Frost Point:  $\pm 0.2^{\circ}\text{C}$  ( $\pm 0.5\text{gr/lb.}$ )

Temperature:  $\pm 0.1^{\circ}\text{C}$  ( $\pm 0.18^{\circ}\text{F}$ )

### Temperature Depression:

65°C

### Hysteresis:

Negligible

### Repeatability:

$\pm 0.05^{\circ}\text{C}$  dew/frost point ( $\pm 0.1\text{gr/lb.}$ )

### Response:

1°C/sec (2.7gr/lb./sec) not including settling time

### Flow Rate:

Static to 3,000 linear ft./min

### Pressure:

50 psig maximum (consult Edgetech Instruments for elevated pressure)

### Remote Cable Length:

10 ft. standard, 100 ft. maximum

### Mirror:

Standard: chrome plated

Optional: platinum or stainless



Model DX Sensor Mounted on the DewTrak II Hygrometer



DewMaster Hygrometer with Remotely Mounted Model DX Sensor

