

## SPECTRA INDUSTRIAL CHILLED MIRROR DEW POINT MONITOR



The Spectra Industrial Dew Point Systems are designed to deliver accurate, low-cost, dew point measurement for heat-treating and other demanding process control applications. The Spectra delivers reliable readings over extended periods without drift or recalibration and with minimal maintenance.

The Spectra Model A1 Air-Cooled Industrial Dew Point System has a built-in air cooling module which eliminates the need for cooling water, cooling water hook-ups, chillers, or remote cooling modules. In contrast, the Spectra Model L1 Industrial Dew Point System requires cooling water for some applications which might require low dew point measurement. Both meet NEMA-12, IP 65 requirements, and conform to the CE Mark.

Unlike O<sub>2</sub> sensors, the Spectra chilled mirror sensor is non-depleting. It not only performs reliably in the toughest environments, but also eliminates the need for replacement.

### Features:

- Dew and Frost point measurement
- High Accuracy
- Wide operating range
- Non-depleting sensor
- Proven chilled-mirror technology
- Easy to set up and use
- Economical to buy and operate
- No routine calibration required
- Mirror check capability
- Flexible and versatile
- Built-in diagnostics with self-monitoring

Minimal maintenance includes cleaning the mirror and replacing the filter. This can be performed in the field in a matter of minutes. Unlike other humidity sensors, the chilled mirror never needs recalibration.

Both Spectra models are easy to install and operate. Outputs, alarms, and display units can be custom-configured in the field. A back-lit LCD display is easy to read even in dimly lit areas. Built-in diagnostics eliminate expensive and inconvenient impedance tests. The digital display signals the need for occasional sensor cleaning.

For maximum flexibility, both Spectra models can be customized to meet any application with a variety of sample system components such as filters, flow meters, and pumps. General Eastern can assist you with your applications.



## PERFORMANCE

**Accuracy (complete system at 25°C):**  $\pm 1^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{F}$ )  
**Sensitivity:**  $0.1^{\circ}\text{C}$  ( $0.2^{\circ}\text{F}$ )  
**Repeatability:**  $\pm 0.1^{\circ}\text{C}$  ( $\pm 0.2^{\circ}\text{F}$ )  
**Hysteresis:** None  
**Measurement range:** Dew/frost point meas. of  $-60^{\circ}$  to  $+50^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$  to  $120^{\circ}\text{F}$ )  
**Required sample flow:** 0.5 - 5.0 scfh (.25 - 25 L/min)  
**Maximum cooling rate:**  $0.5^{\circ}\text{C}/\text{sec}$  ( $1^{\circ}\text{F}/\text{sec}$ )  
**Display resolution:**  $0.1^{\circ}\text{C}/\text{F}$  (dew point)

## PHYSICAL:

**Weight:** 5.9 kg. (13 lb.)  
**Shipping Weight:** 6.7 kg. (15 lb.)  
**Sample Connections, Sensor:** 1/4" compression (1/16" NPTF)  
**Auxiliary cooling (mandatory on Model L1 only):** *Standard:* water cooling jacket  
*Connections:* 3/8" hose adapter (1/8" NPTF)  
*Cooling Water:* 2 L/min (0.5 gal/min)  
**Environmental:** *Enclosure:* Designed to exceed NEMA-12, IP 65 requirements  
*Sensor wetted parts:* 302, 303 stainless steel, aluminum, glass, silicone O-rings, Teflon ®

## FUNCTIONAL:

**Outputs:**  
**Analog:** 4-20mADC, 750 ohm max., isolated  
**Standard factory scaling:**  $-60^{\circ}$  to  $+50^{\circ}\text{C}$  ( $-76^{\circ}$  to  $+120^{\circ}\text{F}$ ).  
Field scaleable via front panel switch or serial port  
**Resolution:**  $0.025^{\circ}\text{C}$  ( $0.5^{\circ}\text{F}$ ) at standard scaling  
**Alarm:** 1 Form C, 10 amps, 240 VAC/24VDC, resistive load.  
Adjustable dead-band. Enable/Disable via front panel switch or serial port. Field-scaleable via front panel switch or serial port.  
**Digital:**  
**Serial:** RS-232C (DB-9 connector); RS-485 (Two wire), isolated  
**Status Lines:** Two 3 mA logic-level outputs, isolated  
*Standard (factory) assignments:* Control (data valid), Dirty

Mirror Field-selectable for Control (data valid), Dirty Mirror or Alarm condition

**Loop Power Supply:** 28 VDC, nominal, 40 mA max., isolated (for additional, user-supplied measurements)  
**Display:** 2 lines x 16 characters, LCD  
**Indicator:** Power-on LED  
**Inputs (for additional, user-supplied optional measurements)**

**Analog:** 4-20mADC, isolated, 7.5 volt compliance required. Field-scaleable via front panel switch or serial port

## Power:

**Standard:** 115 VAC (+10%/-15%), 230 VAC (+15%/-20%), 47-63 Hz, 85 watts maximum

**Optional:** 100 VAC (+20%/-15%), 200 VAC (+15%/-20%), 47-63 Hz.

## Operating Ranges:

**Ambient/Coolant temp. (Model L1 only):**  $0^{\circ}$  to  $50^{\circ}$  ( $32^{\circ}$  to  $120^{\circ}$ )

**Process pressure:** -7.5 to 175 psig (0.5 to 11.5 bar ABS)

**Coolant pressure (Model L1 only):** 30 psig (2 bar) max.

## ACCESSORIES:

**Tool Kit (standard):** Soft, fabric pouch containing screwdriver, wrench, fuses, O-rings, cleaning solution/applicators, and instruction card.

## OPTIONS:

**SSM:** Sample system module containing vacuum pump and flow control valve in plastic housing

**SM1:** Sample module with pump and oil bath filter; atm pressure only

**SM2:** Sample module with pump and sintered steel filter; atm pressure only

**SM3:** Sintered steel filter; pressure to 125 psig

**OBF:** Oil bath filter; atm pressure only

**BF10DX:** Particulate and liquid oil filter, clear bowl; pressure to 150 psig

**FM1:** Flow meter with control valve; 0-5 scfh, 100 psig max.