



DEW-10 CHILLED MIRROR DEW POINT TRANSMITTER

PRIMARY DEW POINT MEASUREMENT WITH 4-20mA or PRTD OUTPUT

The Dew-10 Series is a family of cost effective, high performance chilled mirror dew point transmitters comprising of wall, duct and pipe mounted models. All models provide accurate and reliable dew point measurements over a wide range for energy management and process applications.

Accuracy for the series is $\pm 0.5^{\circ}\text{C}$ ($\pm 1^{\circ}\text{F}$). Dew point may be measured over a range of -40° to $+58^{\circ}\text{C}$ (-40° to $+136^{\circ}\text{F}$). The wall mount version is also available with an optional air temperature measurement capability over the same range.

In the Dew-10 sensor, a miniature heat pump cools a metallic mirror. When the mirror temperature reaches the dew point of the surrounding air, a thin dew layer condenses on the mirror surface. This condensation is optically detected. A feedback loop keeps the mirror at the exact dew point by continuously controlling the mirror temperature. A precision RTD (Resistance Temperature Detector) is imbedded just beneath the surface of the mirror, allowing the dew point temperature to be accurately measured.

Maintenance is easy. Ambient temperature effects, hysteresis, and calibration drift with age are virtually non-existent. Filter replacement and cleaning the mirror with a cotton swab restores the transmitter to its original condition.

Each transmitter is calibrated to NIST traceable reference standards and the DEW-10 is suitable for use as a humidity transfer standard. General Eastern's manufacturing and quality system certified to ISO-9001 standards. For more information on the theory and operation of General Eastern's Chilled Mirror Hygrometers contact us to obtain a catalog and application notes.

FEATURES:

- Fundamental dew point measurement
- High Accuracy
- Wide operating range
- Low-cost design
- No Drift
- No Hysteresis
- Outputs: dew point and optional ambient air temperature

APPLICATIONS:

- Applications
- Precision HVAC
- Clean Rooms
- Museums
- Film Storage
- Pharmaceutical Process Areas



SPECIFICATIONS

WALL MOUNT PERFORMANCE

Accuracy: $\pm 0.5^{\circ}\text{C}$ ($\pm 1.0^{\circ}\text{F}$)
Repeatability: $\pm 0.05^{\circ}\text{C}$ ($\pm 0.1^{\circ}\text{C}$)
Hysteresis: None

FUNCTIONAL:

Output:
Dew Point: Platinum RTD, 4 wire, 100 ohms at 0°C (DIN) 4-20 mA (1-5 VDC) optional
Ambient Air Temp.: Platinum RTD, 4 wire, 100 ohms at 0°C (DIN) 4-20 mA (1-5 VDC) optional
Power Supply Voltage Options: 24 VDC (12-35 V), load dependent; 115 VAC, 50-60 Hz (100-120V); 24 VAC, 50-60 Hz (22-26 V); 230 VAC, 50-60 Hz (200-240 V); 10 watts maximum

OPERATING CONDITIONS:

Sensor:
Dew Point: -24 to $+58^{\circ}\text{C}$ (-10 to $+136^{\circ}\text{F}$)
Ambient Temperature: 0° to $+60^{\circ}\text{C}$ ($+32^{\circ}$ to $+140^{\circ}\text{F}$)
Equivalent RH: 10% to 90% at 26°C (80°F)
Pressure: Ambient
Air velocity: still air

PHYSICAL:

Weight: 2.5 kg. (5.0 lb.)

PIPE/DUCT MOUNT PERFORMANCE:

Accuracy: $\pm 0.5^{\circ}\text{C}$ ($\pm 1.0^{\circ}\text{F}$)
Repeatability: $\pm 0.05^{\circ}\text{C}$ ($\pm 0.1^{\circ}\text{F}$)
Hysteresis: None

FUNCTIONAL:

Output:
Dew Point: Platinum RTD, 4 wire, 100 ohms at 0° (DIN) 4-20 mA (1-5 VDC) optional
Power Supply Voltage Options: 24 VDC (12-35 V), load dependent; 115 VAC, 50-60 Hz (100-120V); 24 VAC, 50-60 Hz (22-26 V); 230 VAC, 50-60 Hz (200-240 V); 10 watts maximum

OPERATING CONDITIONS:

Sensor:
Dew Point: -40 to $+68^{\circ}\text{C}$ (-40 to $+155^{\circ}\text{F}$)
Ambient Temperature: 0° to $+70^{\circ}\text{C}$ ($+32^{\circ}$ to $+160^{\circ}\text{F}$)
Equivalent RH: 10% to 90% at 26°C (80°F)
Pressure: 3m (10 ft) water column
Duct Air velocity: 150 to 900 m/min (500 to 3,000 ft./min)

Electronics:

Ambient Temperature: 0° to $+50^{\circ}\text{C}$ ($+32^{\circ}$ to $+122^{\circ}\text{F}$)

PHYSICAL:

Weight: 2.5 kg. (5.0 lb.)

ORDERING INFORMATION

Dew-10	Option	Power	Output	Mounting
	Power			
	24VDC (std)	0		
	24VAC	1		
	115VAC	2		
	230VAC	3		
	Output Signal			
	PRT direct (100 Ohm 0°C)		A	
	4...20mA (15VDC) 0...100 $^{\circ}\text{F}$		B	
	4...20mA (15VDC) 0...50 $^{\circ}\text{C}$		C	
	4...20mA (15VDC) 40...140 $^{\circ}\text{F}$		D	
	4...20mA (15VDC) user specified		X	
	Mounting			
	Wall			0
	Wall with Temperature*			0
	Duct			1
	Pipe			2

* For wall mount with air temperature select two output modules, one for dewpoint, one for temperature.

Example: **DEW-10-2B1** = Duct Mounted Transmitter with 4-20mA dew point output (0-100 $^{\circ}\text{F}$) and 115VAC power supply

Example: **DEW-10-0BBO** = Wall Mounted Transmitter with dual 4-20mA (dew point & temperature) and 24VDC power supply



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