

DPS Series

Heated Dew/Frost Point Hygrometer System

The Edgetech Instruments Inc DPS Series consists of heated, primary method, chilled mirror hygrometer systems that continuously measure the dew/frost point of high dew point gases from high temperature environments.

When the dew/frost point temperature of a sampled gas is equal to or higher than the temperature of the sensing system, saturation occurs in the sensing system causing liquid water to condense in the apparatus. Under these conditions, reliable dew/frost point measurement is not possible.

The DPS Series heated hygrometers solve this problem by heating all the components of the sensing system to a temperature above the dew/frost point temperature of the sampled gas, preventing condensation in the measurement system. The entire sampling system within the DPS, including the chilled mirror sensor, is heated. The heated sensor and system allow reliable, accurate measurement of high dew/frost point temperatures that are above the ambient temperature.

The DPS heated chilled mirror hygrometer extracts a gas sample from a high temperature, high dew point process, transports it through a heated hose and measures its dew/frost point over the range of -35°C (-31°F) to as high as $+95^{\circ}\text{C}$ (203°F) dew/frost point temperature. The three models are the DPS3 standard unit, the DPS4 featuring the ability to measure and automatically compensate for pressure and the DPS5 deluxe unit that offers an advanced display, operational software and interface options. For details see the [DPS Series application note](#) on the Edgetech Instruments website.

All Edgetech Instruments hygrometers are manufactured, calibrated and supported in the USA in a modern, ISO 9001:2015 registered facility with ISO/IEC 17025:2005 accredited calibration laboratory. All certifications and calibrations are traceable to NIST.

Benefits:

- Allows measurement of dew/frost point temperature that is above ambient temperature
- Primary method chilled mirror sensor
- Prevents measurement system failures
- Improves process control with accurate knowledge of dew/frost point temperature
- Reduces down-time and maintenance frequency



The Edgetech Instruments DPS3

Features:

- Automatic Balance Control mode provides automatic correction for optics contaminants
- User programmable system temperature controller
- Current or voltage outputs, RS-232 available
- User programmable alarm functions

Applications:

- Wood veneer drying
- Combustion processes
- On-engine test
- Leakage testing of nuclear reactors
- Fluidized bed dryers
- Product drying chambers
- Bakeries
- Exothermic process chambers
- Fuel cell testing
- Furnace applications
- Pharmaceutical powder drying
- Elevated temp process chambers
- Plastics molding processes
- Chemical reactors
- Heat treating and annealing ovens
- Nuclear process monitoring

Technical Specifications

Specifications:

Primary Method Chilled Mirror Sensors:

DPS3 available with the HTS2 two stage chilled mirror or HTS3 three stage chilled mirror

DPS4 and DPS5 available with HTS2 two stage chilled mirror or HTS3 three stage chilled mirror with standard aluminum body or the HTX3 stainless steel body

Heated System Temperature Range:

20°C to 99°C (68°F to 210°F)

Dew/Frost Point Measurement Range:

35°C to 95°C (-31°F to 203°F)

Measurement Accuracy:

±0.2°C (±0.4°F)

Repeatability:

±0.05°C (0.9°F)

User Programmable Temperature Controller:

Standard

Display Parameters:

Dew/frost point temperature, system set point temperature, system actual temperature

Two Alarm Relays:

Standard

Analog Outputs:

Selectable 4 to 20 mA, 0 to 5 Vdc or 0 to 10 Vdc

Serial RS-232 Output:

Standard

Sample Connection:

¼ inch compression fitting

Sample Pressure:

0 to 200 psig

Heated Sample Hose:

3 ft. included

AC Power:

100 or 240 Vac, 50/60Hz, 250 W, specify voltage

Mirror Material:

Standard: chrome

Optional: stainless steel or platinum

Sample Flow:

0.5 to 5.0 SCFH (0.25 to 2.5 l/min)

Automatic Balance Control standard

Integral adjustable sample flowmeter

Options:

Pressure transducer kit, live pressure for PPMv output

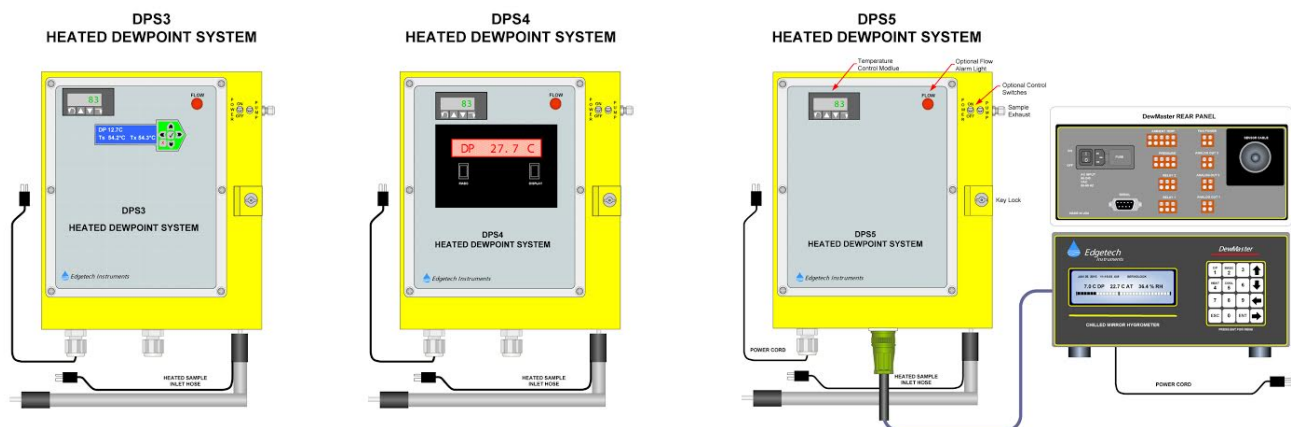
Sample flow detection, sample flow switch with SPST dry contacts

Sample flow detection, sample flow switch triggers red lamp alarm

Vacuum pump to extract sample flow from process to the sensor

Cart mount, specify model analyzer

Extended length sample hose, 10 ft.



Made in USA

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Edgetech Instruments

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ISO 9001:2015 Registered