



SIM-12H

Heated Chilled Mirror Sensor & Sampling System

The Model SIM-12H is a heated, 2-stage sensor with 65°C (117°F) of depression capability. It is designed for high dew point applications up to 85°C (185°F). For dew point measurements above ambient temperature, all components that come in contact with the sample gas must be heated to a temperature above the dew point, in order to prevent condensation and unreliable readings. The SIM-12H is used with the HSS-12 heated sampling system.

FEATURES:

- Primary, fundamental measurement of dew/frost point.
- Hermetically-sealed, wire-wound 4-wire PRT
- NIST traceability
- Interchangeable with other General Eastern sensors without recalibration
- Continuous, on-line measurement

- Infrared optics
- Measures dew points above ambient, up to +85°C (+185°F)
- Field-replaceable mirror
- 65°C (117°F) depression capability

SPECIFICATIONS:

Sensing Element: 1/3 Class A DIN 43760 PRT, 100 ohm @ 0°C (32°F)

Dew/Frost Point Accuracy

Standard: ±0.2°C (±0.36°F)

Optional: ±0.15°C ±0.27°F

Sensitivity: > 0.03°C (0.05°F)

Repeatability: ±0.05°C (±0.09°F)

Hysteresis: None

Cooling Stages: 2

Depression @ 25°C, 1 atm, air): 65°C (117°F)

Typical Meas. Range 75°C (167°F), 1 atm, air):

Dew/Frost Point: -10 to +75°C (+14 to +167° F)

Relative Humidity: equivalent to 1% to 100%

Required Sample Flow: 0.5 to 5.0 scfh (0.25 to 2.5 L/min)

FUNCTIONAL:

Power:

Sensor: From electronics

Heating Elements: 115/230 VAC, 50-60 Hz, 75 watts max.

Operating Ranges:

Ambient Temperature: -15 to +50°C (+5 to +122°F)

Control Temperature*: +20 to +85°C (+68 to +185°F)

* - The maximum recommended control temperature is +50°C (+122°F) when used with Models M3 (analog mode) and M4, and +85°C (+185°F) when used with the Models M2 and M3 (digital mode)

Pressure: -3 to 50 psig (0.8 to 4.5 bar)

Auxiliary Cooling: Not available

PHYSICAL:

Sensor Body Material: Anodized Aluminum

Sensor Wetted Material: Aluminum, copper, plastic, mylar, rhodium or platinum mirror

Inlet/Outlet Fittings: 1/4" compression, 6 mm available

Weight: 3.2 kg (7 lb.)

Shipping Weight: 4.5 kg. (10 lb.)

ACCESSORIES:

HEX-1, rhodium plated mirror (standard)

HEX-2, solid platinum mirror

TW-1, mirror torque wrench

1123HK, sensor cable (10 ft (3 m) standard, up to 300 ft (91 m) available

HSS-12, heated sampling system



Measurement & Sensing Technologies
General Eastern Instruments

The Model HSS-12 heated sample conditioning system is designed for use with the SIM-12H heated sensor for use in applications where the dew point to be measured is higher than the ambient temperature. The individual SIM modules control the temperature of the components so that they are above the dew point, thereby eliminating condensation. The SIM Modules are not available individually, but as a complete heated sampling system, Model HSS-12. Using the HSS-12, dew points up to 85°C (185°F) can be measured with the Models M2 and M3 (digital mode). Dew points up to 50°C (122°F) can be measured using the Models E4, M3 (analog mode) or M4.

The Model HSS-12 consists of the SIM-HFT, SIM-12H, SIM-HFM, SIM-MPL, and SIM-HSL. It is available in 115 VAC or 230 VAC versions. The 115 VAC unit is supplied with 15 ft. (4.6 m) of SIM-HSL heated sampling line; the 230 VAC is supplied with 35 ft. (10.7M).

Model SIM-HFT - Heated Filter Module

The SIM-HFT filters the sample gas of particulate contaminants prior to entering the SIM-12H sensor. The incoming gas is first passed through a 90 micron pre-filter, and then a 15 micron final filter. All parts in contact with the gas sample are heated to a constant 105°C (221°F) to prevent condensation. The filter elements are easily removable for cleaning or replacement.

Ambient Temperature: 0° to +50°C (+32° to +122°F)

Control Temperature: 105°C (221°)

Material: Sintered stainless steel

Pressure: 50 psig (4.5 bar) max.

Voltage: 115/230 VAC, 50-60 Hz

Power: 100 watts.

Model SIM-HFM - Heated Filter Flowmeter

The SIM-HFT controls the sample gas flow rate at the optimum for the SIM-12H sensor. A front panel mounted metering valve allows control over a range of 0 to 2 SCFH. All parts in contact with the gas sample are heated to a constant 105°C (221°F) to prevent condensation. The SIM-HFM is mounted downstream of the SIM-12H sensor.

Ambient Temperature: 0° to +50°C (+32° to +122°F)

Control Temperature: 105°C (221°F)

Material: Glass, aluminum

Pressure: 50 psig (4.5 bar) max.

Voltage: 115/230 VAC, 50-60 Hz

Power: 75 watts.

Model SIM-HSL - Heated Sample Line

The SIM-HSL is self-regulated at a temperature high enough to ensure that no condensation will occur. It is available in standard 15 ft. (4.6 m) lengths for 115 VAC, and 35 ft. (10.7 m) lengths for 230 VAC. Several lengths may be connected in series.

Ambient Temperature: -15° to +60°C (+5° to +140°F)

Control Temperature: 125°C (257°F)

Material: Teflon

Pressure: 50 psig (4.5 bar) max.

Voltage: 115/230 VAC, 50-60 Hz

Power: 250 watts.

Model SIM-MPL - Mounting Plate

The SIM-MPL accepts the SIM-12H, SIM-HFT, and SIM-HFM. The mounting plate provides a convenient method of wall mounting the entire heated sampling system. All mounting, plumbing, and wiring is done at the factory, providing a complete system ready for installation.



Measurement & Sensing Technologies
General Eastern Instruments

500 Research Dr
Wilmington, MA 01887 USA
Tel: 978 203 1900 Fax: 978 203 1920
Email: info@geinet.com
www.generaleastern.com