GE
Sensing

The Model SIM-12H is a thermostatically controlled, heated, two-stage chilled mirror sensor with 85ºC depression capability at 75ºC. It is designed for high dew point measurement applications up to 85ºC. For elevated dew point measurement, all components that come in contact with the sample gas must be heated to a temperature above the dew point to prevent condensation and unreliable readings.

The sensor is available with either a field-replaceable rhodium mirror or a more robust platinum mirror. The vapor barrier may also be upgraded from the standard mylar to stainless steel.

The SIM-12H may also be purchased as a component on the turnkey HSS-12 heated sampling system, which also includes a heated filter, flow meter and sampling line assembled on mounting plate. When used with an Optica chilled mirror analyzer, the system provides precise primary measurement of humidity.

SIM-12H and HSS-12

Heated Chilled Mirror Sensor and Sampling System

The SIM-12 and HSS-12 are new additions to the General Easern product lines for dew point measurement.

HSS-12 Heated Chilled Mirror Sensor and Sampling System

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 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 HSS-12 provides a prewired, preassembled turnkey solution for measuring elevated dew points.

The HSS-12 system consists of the following components:

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°F)
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 Valve/Flowmeter

The SIM-HFT controls the sample gas flow rate 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

SIM-HFT 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 +140F°)
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.

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, internal connections and wiring are done at the factory, providing a complete system ready for installation.

Dimensions 23 in H x 13 in W (584 mm H x 330 mm W) mounting plate

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SIM-12 and HSS-12 Specifications

Sensing Element
4-wire 1/3 Class A DIN 43760 PRT, 100Ω. @ 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
Negligible

Cooling Stages
Two-stage TEC module

Auxiliary Cooling
N/A

Depression
85°C (185°F) at 75°C body temperature and atmospheric pressure

Typical Measurement Range
-10° to +75°C (14° to 167°F) dew point/frost point (Td) in air at @ 75°C (167°F) body temperature in 25°C (77°F) ambient temperature and atmospheric pressure. Equivalent to 1 to 100% RH. Other parameters based on calculations.

Sample Flow
0.5 to 2.5 SCFH (0.25 to 1.25L/min)

Operating Temperature
-15° to +100°C (+5° to 212°F)

Heater Control
Thermostatically controlled set points of 25, 40, 55, 70, 85 and 100°C

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

Power
100/115/230 VAC, 50-60 Hz, 75 watts

Sensor Body
Cast aluminum with 314 stainless steel flow cell. sensor wetted material 302, 316 stainless steel, silicone O-ring, BK-7 glass, rhodium or platinum mirror.

Mirror
Rhodium-plated copper standard. Solid platinum optional.

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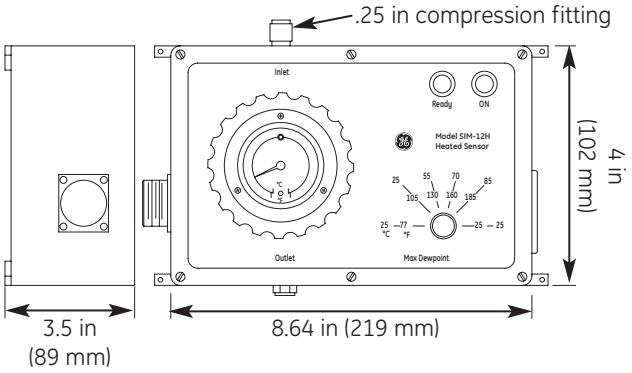
Vapor Barrier
Mylar (upgradeable to stainless steel)

Electrical Connectors
MS style multipin connector mates with optica cable. IEC receptacle for power.

Weight
7 Lb (3.2 Kg) net

Accessories/Upgrades

P	Platinum mirror
X	Enhanced accuracy: ±0.15ºC Td
S	Stainless steel vapor barrier
HSS-12	Heated sampling system. SIM-12 heated chilled mirror, SIM-HFT heated filter module and SIMHFM heated flow meter mounted on a plate with SIM-HSL heated sample line



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