

Features and Specifications Sheet for FlexStream™ HG Module **(Humidified Gas Module)**

Principal of Operation

Adds an adjustable level of percent relative humidity to trace concentration gas mixtures created in the FlexStream™ Gas Standards Generator.

Function

Humidity is added to the gas stream by dividing the dilution gas flow required to achieve the target trace concentration into two parts. One part is saturated with water vapor. The trace components are added to the other (dry) part of the dilution gas. The two parts are combined to create a humidified gas mixture containing the trace components. The FlexStream adjusts the humidity output by varying the ratio of wet and dry parts. Lower humidity values can be generated when using low total (dry plus wet) dilution flow rates by automatic adjustment of the saturation pressure of the wet-gas portion.

Component Flow Path

Mixture contacts only Teflon® and stainless steel (other materials available; specified a time of purchase). Suitable for reactive component gases.

Flow Control

Electronic mass flow control and measurement. Standard range: 0.25 to 5.0 liters per minute (250 sccm to 5000 sccm). Optional Ranges (specified at time of purchase):

- 0.1 to 1.0 liter per minute
- 0.5 to 10.0 liter per minute

Measurement accuracy: The lesser of $\pm 1.5\%$ reading and $\pm 1\%$ Full Scale.

Saturation Back Pressure Adjustment

Ambient to nominal 18 psig (124 kPa). Pressure control accuracy: $\pm 0.25\%$

Input Pressure

Input Gas regulated to 50 psig at maximum flow setting (input pressure required >50 psig).

Output Pressure

Ambient to nominal 16 psig (110 kPa) maximum for span out mixture. (Output pressure above ambient requires additional interface, e.g., KIN-TEK Interface Module, to convert the span gas stream to a pressurized stream).

Output Humidity Range

~10 to 90+ %RH depending on total (wet plus dry) dilution flow required to generate the component concentration(s). (Not all %RH values are achievable at all total dilution flow rates). Sensor Accuracy: +/- 0.5% rH, +/- 0.1 °C.

Modes of Operation

Offline, Standby, Zero, Span – based on FlexStream™ Base Module operation modes.

Computer Control

The microprocessor in the FlexStream™ Base module calculates and controls the total flow required to generate the target concentration(s) of trace component(s) specified by the user. The FlexStream™ System automatically adjusts the dry and wet flows and/or saturation pressure to maintain the target component concentration(s) within a user-specified narrow window (default ± 3 %RH) about the desired relative humidity setpoint.

DUT Requirements

Device under Test (DUT) Temperature: 20 to 25 °C (higher temperature lowers the upper range of %RH).

Volume: 50 to 200 cc; vented

Environmental Conditions

Operating (Ambient) Temperature: 20 to 28°C, Storage Temperature: 5 to 50°C.

Power Requirements

United States: 110-125 VAC, 2A, 60 Hz

Purchase option (non-EU): 220-250 VAC, 1A, 50/60 Hz

Dimensions

7.5 inch (18.4 cm) Width x 13.5 inch (34.3 cm) Height x 20 inch (50.8 cm) Depth

All dimensions are approximate.

Weight

35 lbs (15.9 kg) with portable carrying case <35 lb (15.9 kg) when mounted in cabinet

All weights are approximate.