

Features and Specifications Sheet for FlexStream™ GF/PM Module **(Gas Feed/Permeation Module)**

Principal of Operation

Allows users to safely fill a Trace Source™ Gas Fed (57H/57S) permeation tube from a component gas cylinder source (user supplies) and hold at a set pressure and temperature for combining vapor emission into the total dilution gas stream. Extends the capability of a FlexStream™ Permeation system to provide complex calibration scenarios and gas mixtures using 57H or 57S Gas Fed tubes.

Function

Preparation of precise, adjustable, low concentration dynamically blended gas mixtures from Gas Fed permeation devices. Trace concentration calibrations – ppmv, ppbv, pptv

Permeation Chamber (Oven)

Accepts KIN-TEK Trace Source™ disposable permeation tubes, diffusion tubes, high rate liquid filled tubes (LFH) and prefilled gas permeation tubes (57 Series) AND adapted to use 57H Gas Fed tubes. Permeation chamber (equipped with glass adapter bottle) holds up to 8 disposable tubes with maximum 6-inch (15.2 cm) length x ¼ inch (0.635 cm) diameter (KIN-TEK HRT, SRT and EL tubes). Chamber/oven is situated vertically, and each unit is supplied with a glass adapter bottle for use with disposable tubes. Oven chamber will hold the glass adapter bottle or one KIN-TEK LFH tube or one KIN-TEK 57 Series (57S/FPK) tube, or one 57H gas fed tube.

Oven Temperature Control

High mass oven with electronic PID control. Control Range: 5 °C above ambient from 20 °C to 150 °C (heat only).

Setpoint Resolution: 0.01 °C across control range.

Display Resolution: 0.01 °C as shown on front panel touch screen.

Calibrated Accuracy: +/- 0.1 °C or better, calibrated traceable to N.I.S.T.

Component Flow Path

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

Flow Control

Small flow through permeation chamber/oven via fixed orifice of 50 micrometers to allow ~80-100 sccm of flow across permeation device(s).

Input Pressure

Pressure based on input pressure regulator setting in FlexStream™ Base Module.
Component gas input controlled by electronic pressure controller from 0-60 psi.
Pressure controller accuracy: +/-0.5% of Reading.

Output Pressure

Ambient to nominal 20 psig (138 kPa) maximum for span out mixture. (Output pressure above ambient requires additional interface, e.g., KIN-TEK Interface Module, to convert ambient span gas stream to a pressurized stream).

Output Concentration Range

Below 1 ppb to over 1,000 ppm (depending on permeation tube emission rate and dilution flow rate).

Modes of Operation

Standby, Span, Purge.

Local Interface

Via FlexStream™ Base module color touch screen display with virtual keypad.

Remote Interfaces

Connection to controlling FlexStream™ Base module via RS485 (DB9 connection).

Communication Protocol

Modbus RTU through FlexStream™ Base module.

Computer Control

Controlled through the microprocessor subsystem in the FlexStream™ Base module.

Environmental Conditions

Operating (Ambient) Temperature: 5 °C to 40 °C. KIN-TEK requires that the oven setpoint temperature be maintained at least 5 °C above the ambient room temperature.

Storage Temperature: 0 to 50 °C. Relative Humidity: Maximum of 80% for operating (ambient) temperatures up to 31 °C decreasing linearly to 50% at 40 °C.

Maximum Altitude: 2000 m (only for CE-rated modules).

Power Requirements

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

European Union (EU): 230V~, 1A, 50/60 Hz

European Electronic Fuse Replacement: F 1A L 250V

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

30 lbs (13.6 kg) for Standalone module with portable carrying case. All weights are approximate.