



FlexStream™ Secondary Dilution Module

FlexStream™ SD

The FlexStream™ Secondary Dilution (SD) Module is used in a series with the FlexStream™ Base Module (controlling module) to extend the range of concentrations attained from a permeation tube. The FlexStream™ SD provides an additional stage of dilution of the primary gas stream created in the FlexStream™ Base Module or additional oven module. Very low concentrations – ppb or ppt – can be generated depending on the emission rate of the tubes and the flow rate range of the primary and secondary dilution mass flow controllers. Using the full flow range of the standard FlexStream™ Base and SD Module allows a concentration range of 10,000:1 from a single permeation tube. For applications requiring fixed flow of the output mixture, the FlexStream™ SD can provide adjustable concentration over a 200:1 range.

The FlexStream™ SD is one of several auxiliary modules designed to work with the FlexStream™ Base Module. Up to 5 auxiliary modules can be used with a single FlexStream™ Base Module to form a complete gas standard generating system (6 modules total) that can be controlled remotely using FlexLink™ software included with a FlexStream™ Base Module purchase.

Operation

Operation of the SD is automated and controlled through the microprocessor in the FlexStream™ Base Module. The FlexStream™ SD Module has two operating modes; Standby and Span. In the Standby Mode, the secondary dilution flow controller is isolated and put into a non-operative state allowing upstream span gas from the FlexStream™ Base Module to pass directly to the Span Gas Out port to the device under test (DUT). In the Span Mode, the microprocessor automatically calculates the amount of primary concentration needed and a carefully measured portion is spit off and re-diluted to form a lower concentration secondary mixture. The FlexStream™ SD Module also allows fixed flow output using a non-automated manual operation. Levels of concentrations are varied upstream and output flow remains fixed. Dilution ratios from 3:4:1 to 500:1 are available with the standard FlexStream™ SD Module.

Adding the FlexStream™ SD Module to a FlexStream™ instrument series broadens concentration ranges and increases calibration possibilities.

Features

- Principle of Operation - Secondary dilution of upstream single or multi-component gas stream when used in conjunction with a FlexStream™ Base module
- Component Flow Path - Mixture contacts only Teflon® and stainless steel (other materials available; specified at time of purchase)
- Flow Control - Extended ranges via hand-selected flow controllers and extended calibration available (specified at time of purchase)
- Computer Control - Controlled through the microprocessor subsystem in the FlexStream Base module running FlexLink™ Software
- Requires FlexStream™ Base Module for operation
- Completely automated function
- Allows variable concentrations with fixed flow output

Specifications

Flow Control:

- Electronic mass flow control and measurement
- Standard Control Range: 0.25 to 5 slpm secondary dilution, with 10 to 100 sccm component flow rate
- Optional Ranges (specified at time of purchase): 0.5 to 10 slpm secondary dilution, with 20 to 200 sccm component flow rate
- Flow Measurement: The lesser of $\pm 1.5\%$ reading and $\pm 1\%$ FS
- Flow Change: 0 to Full Scale: < 10 sec (2 time constants) at ambient pressure
- Mode Change: Zero at 1 slpm to Span at 1 slpm: < 5 sec (2 time constants) at ambient pressure

Dilution Ratio:

- Standard 500:1; Optional: 1000:1, 1250:1, 1667:1
- When combined with the FlexStream Base module primary dilution, the total system dilution ratio is Standard: 10,000:1; Optional: 20,000:1, 25,000:1, 50,000:1

Power Requirements:

- United States: 110-125 VAC, 1A, 60 Hz
- European Union (EU): 230V~, 0.5A, 50/60 Hz
- European Electronic Fuse Replacement: F 0,5A L 250V
- Purchase option (non-EU): 220-250 VAC, 0.5A, 50/60 Hz

Dimensions:

7" (18 cm) Width x 13.5" (34 cm) Height x 20" (51 cm) Depth with portable carrying case. All dimensions are approximate.

Weight:

24 lb (10.9 kg) with portable carrying case. All weights are approximate.

Certification: CE (for 230 VAC, 50 Hz European option)

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