

Purity of calibration gases is assured with the Series 2000. Manufactured with metal-sealed MFC's and orbitally welded joints, the system has minimal dead volume and maintains a low leak rate to prevent atmospheric contamination of gas calibration standards.

The Envionics® Series Ultra High Purity Computerized Calibration System automatically blends and/or dilutes gases to generate precise gas calibration standards, to create gaseous atmospheres, or to produce gas mixes for analytical research or production purposes. The Series 2000 possesses the capacity to create blends that contain up to eight (8) individual component gases in a balance gas. The concentration of each component may be independently varied in response to user commands.

The instrument's mass flow controllers are factory calibrated using a primary flow standard traceable to the United State's National Institute of Standards and Technology (NIST). The calibration data consists of an eleven-point comparison of commanded versus actual flow with linear interpolation between points.

PRODUCT FEATURES AND BENEFITS

- Mixes up to eight (8) gases automatically.
- Generates a wide range of complex gas standards.
- Minimize inventory gas cylinders
- Accuracy: 1% of reading
- All plumbing is orbitally welded to adhere to strict leak specifications.
- Components have minimal dead volume and low leak rates (2×10^{-9} atm cc/ sec He).
- High capacity memory permits storage and recall of up to 200 multi-component "recipes" saving time and reducing errors.
- Twenty-five (25) by eighty (80) character display permits viewing of data worksheet form.
- Optional RS-232 Serial Data Interface permits remote operation and complete integration with a computer-controlled system.

SOFTWARE

The Series 2000 has six primary routines.

- **Concentration Mode:** User enters target output gas concentration for the span gas. The actual concentration is displayed during mixing.
- **Flow Mode:** User enters target flow rate (cc's per minute) for each component gas. Actual flow rates are displayed after mixing is initiated.
- **Maintain Ports:** User enters the name of the component gas in the source cylinder, its concentration and the port to which it is connected.
- **Automatic Sequencer:** Permits unattended automatic operation of the instrument on a programmable seven-day schedule.
- **Purge Mode:** Purge component gas circuits and mixing zone.
- **Status (Optional):** Allows user to remotely activate different modes of the system and also activate external devices

SPECIFICATIONS

Performance (as a percent of setpoint)*

	From 10 to 100%
Accuracy	<u>of Full Scale Flow</u>
Concentration:	± 1.0%
Flow:	± 1.0%
Flow Repeatability (as % of setpoint)	± 0.05%

* Mass flow controllers are at Standard Temperature (0° C) and Pressure (760 mm Hg, 29.92 in. Hg) using a primary flow standard traceable to the United States' National Institute of Standards and Technology (NIST).

Warm up time: 30 minutes

Mechanical

Inlets

Balance:	One external 1/4" VCR*
Purge:	One external 1/4" VCR*
Analyte:	One external 1/4" VCR*
Valve Activator:	1/4" Swaglok

Outlet

One external 1/4" VCR*

*(or compatible fitting)

Operating Pressures

Minimum:	Dependent on flow rate
Recommended:	25 psig (1.68 Bar)
Maximum:	100 psig (6.72 Bar)

Wetted Surfaces

Tubing:	10 RA Electropolished Stainless Steel (Optional- Teflon, Hastelloy, Monel).
MFC's:	Stainless Steel (Optional- Hastelloy, Monel)
Seals:	316 Stainless Steel

Leak Specifications

2 x 10⁻⁹ atm cc/sec He.

Solenoids

Nupro Ultra Clean or equivalent.

Operating temperatures

0° - 50° C (32° - 122° F)

Performance temperatures

59° - 95° F (15° - 35° C)

Weight

Minimum: 35 lbs. (16 Kg).

Maximum: 70 lbs. (32 Kg) .

Dimensions

Portable: 41.6 cm wide, 17.2 cm high, 58.8 cm deep (17" wide, 7" high , 24" deep).

Rack: 46.6 cm wide, 17.2 cm high, 61.3 cm deep (19" wide, 7" high, 25" deep).

Electrical

Standard: 115 VAC (100 to 130 VAC),
50/60 Hz.

Optional: 220 VAC (200 to 260 VAC),
50/60 Hz.

Current: 3 Amps (maximum).

Electronics

Microprocessor: Imos T 400 series, 32 Bit,
parallel processor.

12 Bit A/D and D/A conversion.

Operating Modes

Front panel membrane keypad

Internal timer control

Optional RS-232 serial data interface

Data Input/Output

Parallel printer port (Centronics™ compatible)

Optional RS-232 port serial data interface

OPTIONS

RS-232 Serial Data Interface

Status Board

Permeation Oven

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