

## Model 2010 Portable Gas Dilution Calibrator

The 2010 Intelligent Portable Gas Dilution Calibrator can easily perform gas dilution, multi source gas blending, ozone and gas phase titration (GPT) for environmental, laboratory, or point source monitoring

The Model 2010 is small in size and weight for users who require true portability. Enhanced with the latest technology, the Model 2010 calibration system is an uncomplicated and effective way to precisely control the dilution of gas standards for calibration of ambient air and source monitoring analyzers.

The Model 2010 calibrator uses embedded microprocessor technology to precisely deliver and control gas concentrations along multiple curve fits to linearize the desired outputs for the intended purpose. The unit can be operated manually, automatically, or semi-automatically by remote access. It also has the capability to produce and store in memory 20 calibration sequences with up to 20 levels of source/dilution in each sequence.

Users can choose either the front panel membrane keypad, external keyboard, serial port, or Ethernet to input calibration sequences.

The instrument's pneumatic system uses Mass Flow Controllers to precisely meter gas streams and implements multiple types of curve correction algorithms to linearize calibrations. A second source MFC can be added for a wider dynamic range or trace level applications. An optional second source MFC with blending allows user-performed interferent testing and evaluation.

Calibrator design exceeds US EPA calibration method requirements. Dilution components are calibrated with standards and test equipment traceable to the National Institute of Standards and Technology.

### Standard Features

#### Pneumatics

- ▶ Diluent Mass Flow Controller, 0-10 SLM
- ▶ Source Mass Flow Controller, 0-100 SCCM
- ▶ 2 Calibration Gas Input Ports and 1 Purge Port
- ▶ 3 Output Ports and 1 Vent Port
- ▶ 1 Diluent Gas Input Port

#### Electrical

- ▶ Standard 98-264 VAC, 150-300 VA, 50/60 Hz Operation

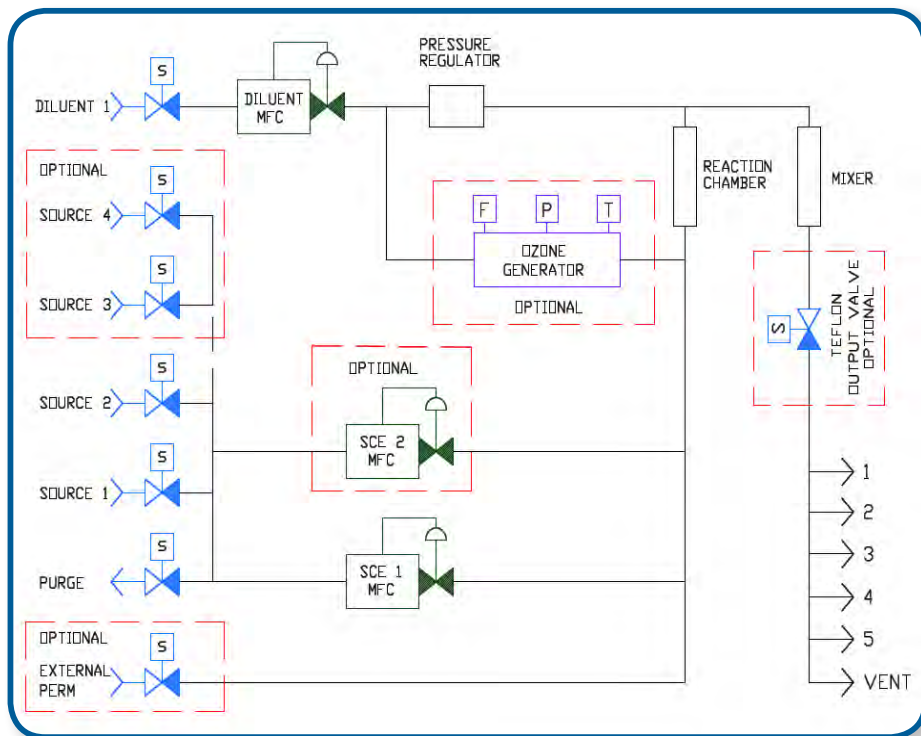


### Electronics

- ▶ Bright Color Display
- ▶ 42-Button Membrane Keypad
- ▶ 8 Bits Digital Input/Output
- ▶ 1 Serial Port
- ▶ External PC Keyboard Port
- ▶ Parallel Printer Port
- ▶ Air Source Control Port

### Optional Features

- ▶ Alternate Diluent Mass Flow Controller, Ranges 0-20 SLM
- ▶ Alternate Source Mass Flow Controller, Ranges 0-1 SLM
- ▶ Second Source Mass Flow Controller, Ranges 0-1 SLM
- ▶ Additional Calibration Gas Input Ports
- ▶ Multi-source Blending
- ▶ Permeation Port
- ▶ Additional Status I/O Bits up to 24 Total
- ▶ Internal Instrument Solenoid Driver
- ▶ Internal Ozone Generator with Gas Phase Titration (GPT) capability
- ▶ Ozone Generator UV Optical Servo Control Loop
- ▶ High-impact transport case
- ▶ Rack Mount Version with Internal UV Photometer (Model 2010D)



<b>SPECIFICATIONS</b>	
Specifications subject to change without notice	
<b>Dilution System</b>	
Input Dilution Gases	1 Standard
Input Source Gases	1 Standard, 1 Purge
Additional Inputs	2 Additional
Dilution Mass Flow Controller	0-10 SLPM (standard)
Optional Ranges	0-20 SLPM
Source Mass Flow Controller	0-100 SCCM (standard)
Optional Ranges	0-2 SLPM
2nd Source Mass Flow Controller	0 thru 2 SLPM
Flow Accuracy	< ±1% full scale
Flow Repeatability	< ±0.15% full scale
Linearity	< ±0.5% full scale
Input Pressure	12-35 PSIG
Output Manifold	3 Outputs, 1 Vent (standard)
Optional Outputs	1 Permeation Port
<b>Optional Internal Ozone Generator</b>	
Output	0.05-1.5 ppm @ 5 SLPM
Accuracy	± 2% of Set Point or ± 3 ppb @ 5 SLPM
Nominal Flow	100 SCCM, 3 SCCM
UV Lamp Temperature	50°C, ± 0.1°C

<b>Calibrator interface</b>	
Operation	Manually thru 42-button membrane keypad, keyboard, serial ports
Calibration Definitions	20 factory-defined calibration sequences with up to 20 points per sequence
Calibration Types	Gas Dilution, Ozone, GPT
Gas Definitions	1 Diluent Gas 20 Source Gases
Auto Calibrations	20 timer driven cal routines performing user-defined calibration sequences on a programmable schedule
Digital Inputs/Outputs	8 status I/O bits control calibrator functions using contact closures or TTL logic
Optional I/O	Additional 16 status I/O bits for a total of 24 I/O bits
Communications	RS232, Optional Ethernet TCP/IP
<b>Physical &amp; Operational Specifications</b>	
Operating Temperature	5°C to 40°C
Dimensions	6.2 (15.6 cm) H 14.3 (36.4 cm) W 12.4 (31.6 cm) D
Average Weight	19 lbs. (8.6 kg)
Input Voltage	98-264 VAC, 100 VA, 50/60 Hz Operation

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