2B Tech

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Model 108-L Ozone Monitor

For Industrial Ozone Applications and Integration into Existing Ozone Systems

The Model 108-L provides accurate measurements of ozone in air over a wide dynamic range extending from a few parts-per-billion by volume (ppb) to an upper limit of 20 parts-per-million (ppm) based on the well-established technique of absorption of ultraviolet light at 254 nm. The Model 108-L is designed for integration in the user's ozone system and makes use of the ozone system's pump to supply the air sample. The Model 108-L Ozone Monitor is lightweight (2.0 lb, 0.89 kg), has a low power consumption (~2 watt) relative to conventional instruments, and requires minimal maintenance, making it well suited for monitoring of ambient ozone and monitoring/control of ozone in industrial settings. The Model 108-L is ideal for the following applications:

- Replacement of HMOS and Electrochemical sensors in an existing ozone system
- Monitoring ozone exposure of individuals in the workplace
- Monitoring and control of ozone in industrial settings
- Incorporation into ozone disinfection systems
- Long-term monitoring at remote locations where power is highly limited

The 2B Technologies Model 108-L Ozone Monitor has been approved by the U.S. Environmental Protection Agency as a modification of Federal Equivalent Method (FEM): EQOA-0914-218. As a designated FEM, the Model 108-L Ozone Monitor may be used by states and other monitoring agencies under 40 CFR Part 58, Ambient Air Quality Surveillance, for monitoring for compliance with the Clean Air Act.

Specifications for Model 108-L Ozone Monitor

Measurement Principle	UV Absorption at 254 nm, single beam
Certifications	Federal Equivalent Method (FEM), 0-500 ppb (as modification to EQOA-0914-218) CE
Linear Dynamic Range	0-20 ppm (20,000 ppb)
Resolution	0.1 ppb
Measurement Frequency	2 s, 0.5 Hz
Data Averaging Options	10 s, 1 min, 5 min, 1 hr
Response Time, 100% of Step Change	For 2-s output: 4 s, 2 data points For 10-s output: 20 s, 2 data points
Precision (1σ) for 10-s output (rms noise)	Greater of 1.5 ppb or 2% of measurement
Limit of Detection (2σ)	3 ppb for 10-s averaging
Accuracy	Greater of 1.5 ppb or 2% of measurement
Calibration	NIST traceable, annual calibration recommended
Flow Rate Limits	Minimum required: 0.6 Liter/min (volumetric); Nominal: 1 Liter/min; Maximum: 1.5 Liter/min
Ozone Units	ppb, pphm, ppm, µg m^{-3}, mg m^{-3}
Pressure Units	torr, mbar, psi
Temperature Units	°C, °F, K
Temperature and Pressure Corrected	Yes
Temperature Range	0 – 50 °C (10 – 40 °C for FEM)
Data Outputs	RS232, 0-2.5 V, 4-20 mA
Output Ranges	User-defined scaling factor in serial menu
Adaptive Filter	Available; user-defined parameters

Data Transfer Baud Rate	2400
Relay with Two Set Points	Relay responds based on ozone set points (user-defined in serial menu)
Power Requirements	11-28 VDC, nominally 165 mA at 12 V; 2.0 watt
Size	8.7 × 4.0 × 3.0 in (22 × 10 × 7.6 cm) (l × w × h)
Weight	2.0 lb (0.89 kg)
Options	Enclosure; Pump; AQLite packages (108-L)

Features

- Accurate measurement based on UV absorption
- Low power consumption (≈2.0 watt)
- Small footprint (8.7 × 4.0 × 3.0 in; 22 × 10 × 7.6 cm) for easy integration into ozone systems
- 4 s response time (2-s measurement interval)
- Relay with 2 set points (based on user's ozone set points)
- 0-2.5 V, 4-20 mA analog outputs
- RS232 Output
- Options available: Enclosure, pump, AQLite packages for 108-L

Other Options in Our Model 108 Series

Higher measurement ranges are offered in other instruments in our Model 108 Series Ozone Monitors. Please inquire about our Model 108-M (20 ppb – 1000 ppm), Model 108-MH (100 ppb – 10,000 ppm), or Model 108-H (0.02 wt% – 20 wt%).

The Model 108 Series is also available in an optional enclosure with a miniature air pump (right), and the 108-L is available in our AQLite packages (shown below) suitable for outdoor monitoring.