Model 106-H Ozone Monitor™

Designed for Measuring the Output of High Concentration Ozone Generators (0-20 wt%)

Standard Enclosure

Industrial Enclosure

OEM Version

The Model 106 series of ozone monitors was designed specifically for the industrial ozone industry to cover four different ozone concentration ranges by varying the optical path length. The ranges are: -L (low, 0-20 ppm); -M (medium, 0-1,000 ppm); -MH (medium high, 0-10,000 ppm, 0-1 vol%) and -H (0-20 wt%, 0-14 vol%). The Model 106 series is designed as an "ozone monitor on a board" in which nearly all of the components are mounted directly to the printed circuit board with very few wire connections, making these instruments highly robust and very easy to service. As seen in the images above, all models are available in a standard enclosure, weather-resistant Industrial enclosure, or with no enclosure for OEM applications for those who want to mount the instrument in their own enclosure or use it as a component of a larger system. For more details on OEM applications see: Model OEM-106. Configurations for multi-channel sampling are available for Models 106-L and 106-M.

The Model 106-H Ozone Monitor is designed specifically for measuring the output of high concentration ozone generators that produce ozone in either air or oxygen by either UV light or corona discharge. This model differs from other 106-series ozone monitors in that it is flow through with no air pump and the plumbing is designed for high pressure (up to 50 psig) and partial vacuum.

Specifications

Measurement Principle	UV Absorption at 254 nm, single beam
Certifications	CE
Measurement Interval	2 s
Linear Dynamic Range	0-20 wt%
Resolution	0.01 wt%
Precision (1σ for 10-s average; aka rms noise)	0.01 wt% or 2% of Reading
Limit of Detection (10-s measurement, 2σ)	0.02 wt%
Accuracy	0.01 wt% or 2% of Reading
Baseline Drift	< 0.02 wt%/day, < 0.05 wt%/month
Sensitivity Drift	< 1%/day, < 3%/year
Calibration	Iodide Titration
Measurement Time and 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
Flow Rate Requirement	Nominal: Up to 20 L/min; Maximum: 55 L/min 0.5 L/min required for 4-s response time at 2-s output
Data Logger Capacity	32,736 lines (10 s avg. = 3.7 days; 5 min avg = 113 days)
Data Transfer Baud Rates	2400, 4800, 19200
Ozone Units	g m^{-3}, g Nm^{-3}, vol%, wt% air, wt% O_2
Temperature Units	°C, °F, K
Pressure Units	mbar, psi, torr
T and P Corrected	Yes
Operating Temperature Range	0 to 50°C
Power Requirements	100-240 V AC, 50/60 Hz; 11-28 V DC, nominally 250 mA at 12 V DC, 3 watt
Digital Data Outputs	USB, RS232, LCD Display

Analog Data Outputs	0-2.5 V Analog, 4-20 mA, User-Scalable in Menu
Relays with 2 Setpoints	Two provided: Relay 1 responds based on user's ozone set points Relay 2 responds based on user's ozone set points OR responds based on diagnostics (T, P, flow, lamp voltage) [4 relays provided on Industrial Model 106-H]
Size	***Standard:*** 3.6 × 7.9 × 9.4 inches (9 × 20 × 24 cm) ***OEM:*** 2.5 × 7 × 9 inches (6.4 × 17.8 × 22.9 cm) ***Industrial:*** 16 × 14 × 9.3 in (40.7 × 35.7 × 23.6 cm)
Weight	***Standard:*** 4.8 lb (2.2 kg) ***OEM:*** 3.0 lb (1.5 kg) ***Industrial:*** ~14 lb (6.4 kg)
Options	OEM; Industrial Enclosure

Features

- Measurement based on UV absorption
- Low power consumption; can be battery operated (optional external lithium-ion battery)
- Internal data logger with real-time clock
- 2-s measurement interval
- On-board microprocessor with interactive menus includes data averaging options of 10 s, 1 m, 5 m, 1 hr
- USB and RS-232 output of time/date, O_3 concentration, internal temperature and pressure
- Analog output (0-2.5 V and 4-20 mA) of ozone concentration in user-selected units and scaling factors
- Two 2-level relays for control purposes (e.g., control of ozone source or turn warning light on and off); four relays on Industrial model