



**Environmental Sensors Co.**

## **Nitrogen Dioxide Meter**

Model Z-1400

### **FEATURES**

- Meets OSHA Accuracy Requirements
- Time Weighted Average (TWA)
- Short Term Exposure Limit (STEL)
- Compact, Light Weight, Durable
- Battery Status LED
- Data Logging Available (Model: ZDL-1400)

### **INTRODUCTION**

Environmental Sensors Co.'s Nitrogen Dioxide Meter is a handheld instrument that measures nitrogen dioxide concentration in a range of 0-20 ppm and a resolution of 0.1 ppm

The instrument makes it possible to monitor nitrogen dioxide vapor in air. The instrument has a LCD display giving concentrations in ppm, a low battery indicator, and an audible alarm that can be set at any level from 0-20 ppm.

With the touch of a button, the meter displays STEL (average of every 15 min.), TWA (average of every hour) and Peak.



**Z-1400 Nitrogen Dioxide Meter**

### **Data Logging (Model ZDL-1400)**

The ZDL-1400 Nitrogen Dioxide hand-held data logging meter stores all of the exposure points for up to 14,400 at 10 sec. interval in 5 logs (a log is created in the instrument's internal memory each time it is used). A log contains: date, time, number of exposure points. All of the log files can be easily uploaded to PC using components available within the Microsoft Windows Operating System or the terminal software included with the instrument.



# Nitrogen Dioxide Meter

Model Z-1400

## SPECIFICATIONS

Sensor Type	Electrochemical
Measuring Range	0-20 ppm
Maximum Overload	200 ppm
Resolution	0.1 ppm
Sensor Life	2 years
Response Time	< 40 sec.
Operating Temp.	-20 C° to +40 C°
Relative Humidity Range	15-90% non-condensing
Alarm	Audible, 80 db
Dimensions: HxDxW	4.75"x2.5"x1.5"
Weight	170 gms
Power Source	9-V Alkaline Battery
Warranty	1 year

## THEORY OF OPERATION

The sensing element of the instrument is an electrochemical cell. The cell is a four-electrode type, which contains a working and an active auxiliary electrode. The signal from the auxiliary electrode is used for temperature compensation and to improve the selectivity of the entire sensor. The sensor response is linear with the concentration of nitrogen dioxide in air.

## INTERFERENCES

Some representative examples of the common compounds and the corresponding signals they are shown below. Care needs to be exercised when using this instrument in the presence of large concentrations of interfering gases. Contact the manufacturer if difficulties are suspected with other gases, or with other usage problems. In addition variations in the baseline, as a result of variations in concentrations of compounds other than the target gas, during the course of the measurement, can impact the reading.

### Cross-Sensitivity Data

The actual concentration of interfering gases and the corresponding signals they give are shown below.

Gas	Concentration	Z-1400 (ppm)
Carbon Monoxide	300 ppm	0
Hydrogen Sulfide	15 ppm	-1.5<x<0
Sulfur Dioxide	5 ppm	-0.05<x<0
Nitric Oxide	35 ppm	0
Chlorine	1 ppm	1
Hydrogen	100 ppm	0
Hydrogen Cyanide	10 ppm	0
Hydrogen Chloride	5 ppm	0
Ethylene	100 ppm	0

