Environmental Sensors Co.

Formaldehyde Meter
Model Z-300

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-300)

INTRODUCTION

Environmental Sensors Co.'s Formaldehyde Meter is a handheld instrument that measures formaldehyde concentration in a range of 0-30 ppm and a resolution of 0.01 ppm

The instrument makes it possible to monitor formaldehyde 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 0-30 ppm.

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

Z-300 Formaldehyde Meter

Data Logging (**Model ZDL-300**)

The ZDL-300 Formaldehyde 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.

Formaldehyde Meter
Model Z-300

SPECIFICATIONS

Sensor Type	Electrochemical
Measuring Range	0-30 ppm
Maximum Overload	34 ppm
Resolution	0.01 ppm
Sensor Life	2 years
Response Time	< 60 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 ammonia in air.

ELIMINATES INTERFERENCES

The Z-300 Formaldehyde meter uses two filters to eliminate many of the common interferences. Measurements are first made with a filter that permits determination of the background or baseline. Insertion of a second filter then permits the measurement of formaldehyde. The instrument prompts the user for all required actions.

The procedure is simple. Insert one filter, remove it, and insert another. With the use of the filter system, interferences are virtually completely removed. Only certain aldehydes and ketones need to be considered. The filters do not permit separations of these classes of compounds

Cross-Sensitivity Data

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

Gas	as formaldehyde without filters (ppm)	as formaldehyde after use of filter (ppm)
Acetone	2	2
Mthylethyl Ketone	2	0
Diethyl Ketone	2	2
Acetaldehyde	12	0
Acetic Acid	0	0
Ethylene	67	0
Methanol	125	0
Ethanol	55	0
I-propanol	44	0
Carbon Monoxide	40	0