Environmental Sensors Co.

Ethylene Oxide Meter

Model Z-100

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-100)

Z-100 Ethylene Oxide Meter

INTRODUCTION

Environmental Sensors Co.'s Carbon Ethylene Oxide Meter is a handheld instrument that measures ethylene oxide concentration in a range of 0-20 ppm and a resolution of 0.1 ppm

The instrument makes it possible to monitor ethylene oxide 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.

Data Logging (Model ZDL-100)

The ZDL-100 Ethylene Oxide 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.

CALRIGHT INSTRUMENTS
The Right Source For Your Test & Measurement Needs

2222 Verus Street Suite C San Diego CA 92154 USA
Toll Free: 866.363.6634 Tel: 619.429.4545 Fax: 619.374.7012
Email: sales@calright.com http://www.calright.com

Ethylene Oxide Meter

Model Z-100

SPECIFICATIONS

Sensor Type	Electrochemical
Measuring Range	0-20 ppm
Maximum Overload	100 ppm
Resolution	0.1 ppm
Sensor Life	2 years
Response Time	< 140 sec.
Operating Temp.	-20 Cº to +50 Cº
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 ethylene oxide 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	% as Ethylene Oxide
Ethanol	55%*
Toluene	20%
Methyl-Ethyl-Ketone	10%
Carbon Monoxide	40%

*eg. 55% of a given concentration of ethylene will react as ethylene oxide to the sensor.

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