ENMET

CW Sentry 3G

Critical Infrastructure Monitoring for CWA Threats

PRODUCT HIGHLIGHTS

- **Highly Selective**

- **Trace Level Detection**
  CWAs
  TICs

- **Fully Automated Operation**

- **Self Diagnostics and System Verification**

- **Low Maintenance**

Introduction

The CW Sentry 3G provides continuous fixed site ambient air monitoring for Chemical Warfare Agents (CWA) and select Toxic Industrial Chemicals (TIC). The CW Sentry 3G is a fully automated detection system ideally suited for critical infrastructure protection and has been successfully deployed in subways, airports and office buildings.

The CW Sentry 3G is a third-generation instrument which has been evaluated by the US Government as a front-line tool for consequence management protection. The CW Sentry 3G offers combination of trace level CWA detection, best in class agent selectivity and cost-effective sustainment. The CW Sentry 3G employs two separate detector arrays: one to determine the presence of chemical agents and the other for the identification of TICs.

Nerve and Blister Detection

The CW Sentry 3G uses a three-step approach for detection of nerve and blister agents. It begins with the sample collector which functions to control, enrich and define the sample. This collector uses a

reversible adsorbent to inject the ambient air sample across the sensor array. The detector module uses Surface Acoustic Wave (SAW) sensors. SAW sensors are piezoelectric crystals that are ideally suited for detection of chemical agents. They detect chemicals by the measurement of mass changes on the surface. SAW sensors operate at high vibration frequencies and therefore can detect very small changes in mass. To improve the chemical specificity of the SAW sensor, a chemical coating is applied to increase its chemical affinity for a specific characteristic of each type of chemical agent. Using a multi-element SAW array, it creates a chemical response fingerprint unique to the types of chemical agents. The third and final step in the process is the agent arrival time from the collector to the detector. This arrival time is specific to the agent. Applying this sequence of measurement steps allows the CW Sentry 3G to be highly selective.

It is this multistep process that avoids false alarms and is the primary difference between the CW Sentry 3G and other WMD detection technologies which are often associated with frequent false alarms.

CW Sentry 3G

Toxic Industrial Chemicals Detection

The CW Sentry uses an electrochemical sensor array to determine general class identification of TIC threats to expand the range of detection. The electrochemical sensors report the presence of the specific chemical or chemical class. This allows for a real-time detection and a cost-effective solution using an orthogonal technology. This design avoids relying on complex software algorithms which are highly conditional, and generally fail to anticipate real world environments often mis-identifying the actual threat chemical.

Deployment

The CW Sentry 3G can be deployed in a variety of locations depending on the threat scenario. Designed for the long term, the CW Sentry is low maintenance and simple to sustain. General instrument maintenance is intended to be performed in the field, reducing down time vulnerability. The CW Sentry is Ethernet configurable and can communicate with building control systems and a wide variety of security control software systems.

The CW Sentry 3G has a proven track record for around-the-clock WMD detection. It offers trace level detection, unsurpassed chemical specificity and is cost effective to operate, making it the best overall solution for early detection of WMD threats, protection of personnel and critical assets.

GENERAL SPECIFICATIONS

Weight	40 Pounds or 18.2Kg
Dimensions	24.75x19.5x9.in or 62.9x49.5x24.2cm
Sensor Technologies	Surface Acoustic Wave Array
	Electrochemical Cell Array
Analysis Time	
SAW	30 Seconds
Electrochemical	5 seconds
Warm Up Time	Less than 5 minutes
CWA Alarm Thresholds	Adjustable
CW Detection Thresholds	Nerve Agents (Meets the ECt50 mild exposure dose level)[1]
	Blister Agents (Meets the ECt50 mild exposure dose level)[1]
TIC Alarm	Hydrogen Cyanide 5.0ppm
	Phosgene 0.3ppm
	Hydride 0.5ppm
	Halogen 10.0ppm
Data Output	RS232c serial
	Ethernet and Fiber Optics Ports (Optional)
Operating Temperature	04° to 122°F or -20° to +50°C
Operating Humidity	0-95% non condensing
Power Supply	90-240VAc 50/60Hz (60 Watts)
Warranty	One year Parts and Labor

CW Sentry 3G Product Configurations

M1200010	Detects Nerve and Blister Agents
M1200030	Detects Nerve and Blister Agents & Toxic Industrial Chemicals (Hydrogen Cyanide, Phosgene, Halogen and Hydride Gases)

[1] Somani, Satu M., and A. Romano. "Pg 415." Chemical Warfare Agents Toxicity at Low Levels. Boca Raton: CRC, 2001.

DIMENSIONS
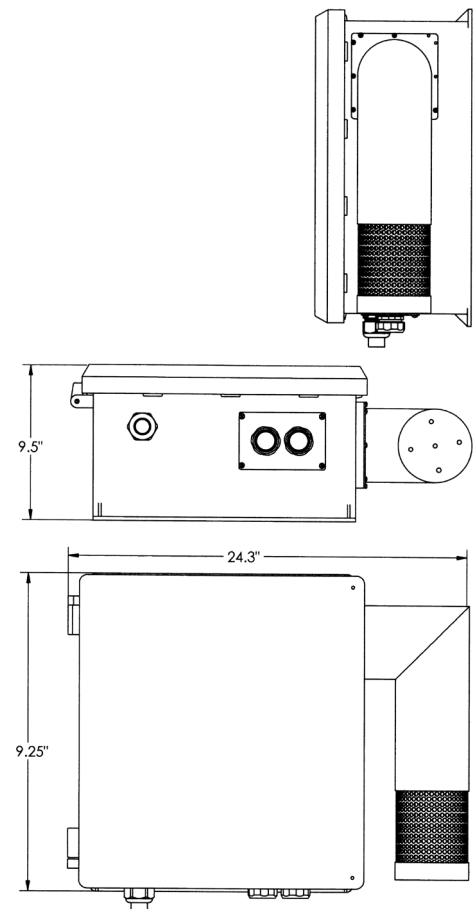
ORDERING INFORMATION

Contact ENMET sales department for a list of applications and product ordering information.

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