Datasheet

"Protecting the air you breathe"

Building Sentry One (BSO)	Metro Sentry One (MSO)	Alpha Sentry One (ASO)	Mobile Sentry One (MOSO)	Remote Monitoring Center (RMC)

Chemical Sensor Array (CSA)	Extended Chemical Sensor Array (E-CSA)	SMART Chemical Sensor Array (S-CSA)	Radiation Area Detector (RAD)	Extended Radiation Area Detector (E-RAD)	SMART Radiation Area Detector (S-RAD)	Biological Trigger Sensor (BTS)	Biological Capture Device (BCD)	Biological Confirm Device (BCON)

Building Sentry One (BSO)
Main Brain Enclosure and Processors

Next Generation Real-Time Continuous Active CBRNe Detection Platform

The Building Sentry One™ is the first complete Next Generation CBRN Sensor System designated by the Department of Homeland Security capable of quickly and reliably detecting toxins then taking immediate action to protect a building, its assets, and the innocent people inside. With detection in milliseconds, the Building Sentry One's sensor array network, strategically placed in the supply, return or other air streams, automatically directs the building management system to shut down the air distribution system in seconds. With the toxin isolated, the Building Sentry One™ contacts first responders and relays real-time toxin and location data, enabling rescue teams to handle the problem effectively – protecting occupants and expediting a safe building recovery.

The robust design allows the Building Sentry One™ to operate in harsh commercial building environments, eliminates false-positives, and requires no sensor calibration, thus eliminating costly maintenance issues. The system's modular engineered design allows for simple installation, flexible to any building architecture, and provides a backbone system for easy expansion.

Developed under the guidance of the best minds in national defense and acknowledged leaders in infrastructure design and system deployment, BPSI's Building Sentry One™ constantly monitors the air supply within commercial properties for the toxic chemicals and over one-hundred twenty radiological isotopes deemed by the Department of Homeland Security and other risk agencies as most threatening to the workplace.

Finally, you have a choice. With the Building Sentry One™ you can once again feel secure; protecting your people, assets, and business from a chemical or radiological targeted terrorist attack or accidental industrial release.

Product Features:

- SAFETY Act Designated Technology
- 24/7/365 Real time Detection
- Next Generation Detection Technology
- **Made in the USA**

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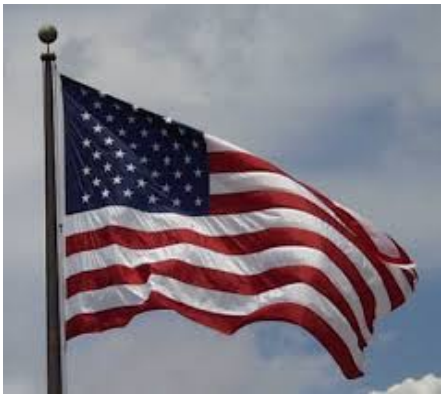
Specifications:

Detector Type	Central Sensor Micro-Processor
Detector Mode	All CBRNe
Inputs	Digital, Analog, Custom
False Positives	Less than .005%
False Negatives	Less than .005%
Analysis time	Immediate to 3 seconds
Repeat exposure time	Immediate
Sample acquisition	Direct from Sensors
Warm up time	45 Seconds
Power	Selectable: 120-240VAC/1/50-60 Hz 15.0 Amp CB
Operating temperature	-10 to 65 C
Signal processing	Real Time Instantaneous (PLC)
Alarms	Dry Contact, Visual, Audible, Digital, Wireless
Calibration	Zero Required
Dimensions	Varies based on sensor count
Weight	Varies based on sensor count
Battery Back-up	On board UPS Battery Back-up Operation: 60 to 90 minutes
HMI	Panel Mounted Touch Screen Interface
Password Protect	Multi-Level Password Protection
Listings	UL 508a Compliant

Applications:

- **Commercial Office Buildings**
- **Government Buildings**
- **Military**
- **High-Rise Residential**
- **Hospitals**
- **Airports**
- **Mass Transit Stations**
- **Buildings adjacent to Highway/Rail Lines**
- **Critical Control Centers**
- **Campus Facilities**
- **Arenas**
- **Shopping Centers**
- **Broad Perimeter Control**



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Datasheet

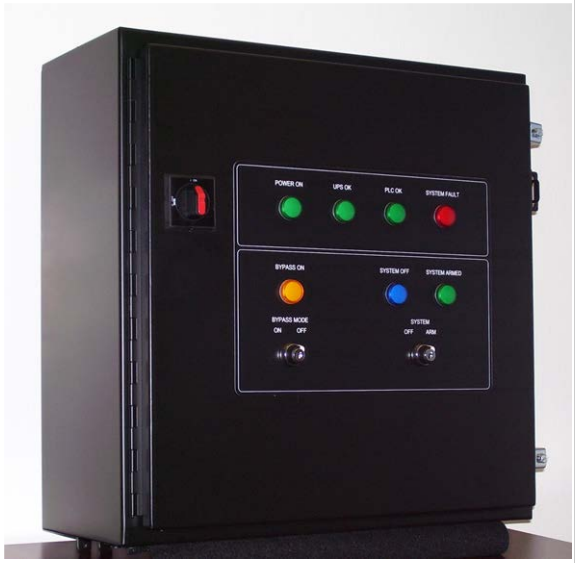
"Protecting the air you breathe"

Building Sentry One (BSO)	**Metro Sentry One (MSO)**	Alpha Sentry One (ASO)	Mobile Sentry One (MOSO)	Remote Monitoring Center (RMC)

Chemical Sensor Array (CSA)	Extended Chemical Sensor Array (E-CSA)	SMART Chemical Sensor Array (S-CSA)	Radiation Area Detector (RAD)	Extended Radiation Area Detector (E-RAD)	SMART Radiation Area Detector (S-RAD)	Biological Trigger Sensor (BTS)	Biological Capture Device (BCD)	Biological Confirm Device (BCON)

Metro Sentry One (MSO)
Main Enclosure and Processors

Next Generation Real-Time Continuous COTS based Active Detection Platform



The Metro Sentry One™ is the first complete Next Generation CBRN Sensor System designated by the Department of Homeland Security capable of quickly and reliably detecting toxins then taking immediate action to protect a building, its assets, and the innocent people inside. With detection in milliseconds, the Metro Sentry One's sensor array network, strategically placed in the supply, return or other air streams, automatically directs the building management system to shut down the air distribution system in seconds. With the toxin isolated, the Metro Sentry One™ contacts first responders and relays real-time toxin and location data, enabling rescue teams to handle the problem effectively – protecting occupants and expediting a safe building recovery.

The robust design allows the Metro Sentry One™ to operate in harsh commercial building environments, eliminates false-positives, and requires no sensor calibration, thus eliminating costly maintenance issues. The system's modular engineered design allows for simple installation, flexible to any building architecture, and provides a backbone system for easy expansion.

Developed under the guidance of the best minds in national defense and acknowledged leaders in infrastructure design and system deployment, BPSI's Metro Sentry One™ constantly monitors the air supply within commercial properties for the toxic chemicals and over one-hundred twenty radiological isotopes deemed by the Department of Homeland Security and other risk agencies as most threatening to the workplace.

Finally, you have a choice. With the Metro Sentry One™ you can once again feel secure; protecting your people, assets, and business from a chemical or radiological targeted terrorist attack or accidental industrial release.

Product Features:

- COTS based Integrated Platform
- 24/7/365 Real time Detection
- Next Generation Detection Technology
- **Made in the USA**

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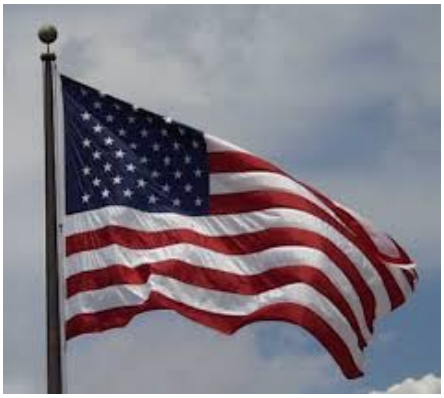
Specifications:

Detector Type	Central Sensor Micro-Processor
Detector Mode	All Types
Inputs	Digital, Analog, Custom
False Positives	Less than .005%
False Negatives	Less than .005%
Analysis time	Immediate to 3-30 seconds
Repeat exposure time	Immediate to 30 seconds
Sample acquisition	Direct from Sensors
Warm up time	45 Seconds
Power	Selectable: 120-240VAC/1/50-60 Hz 15.0 Amp CB
Operating temperature	-10 to 65 C
Signal processing	Real Time Instantaneous (PLC)
Alarms	Dry Contact, Visual, Audible, Digital, Wireless
Calibration	Zero Required
Dimensions	Varies based on sensor count
Weight	Varies based on sensor count
Battery Back-up	Optional: On board UPS Battery Back-up Operation: 60 to 90 minutes
HMI	Optional: Panel Mounted Touch Screen Interface
Password Protect	Multi-Level Password Protection
Listings	UL 508a Compliant

Applications:

- **Mass Transit Stations and Tunnel Systems**
- **High Throughput LNG Refueling Stations**
- **Commercial Office Buildings Adjacent to Chemical Plants, Highway/Rail Lines**
- **Government Buildings**
- **Military**
- **Hospitals**
- **Airports**
- **Critical Control Centers**
- **Campus Facilities**
- **Arenas**
- **Broad Perimeter Control**



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Datasheet

"Protecting the air you breathe"

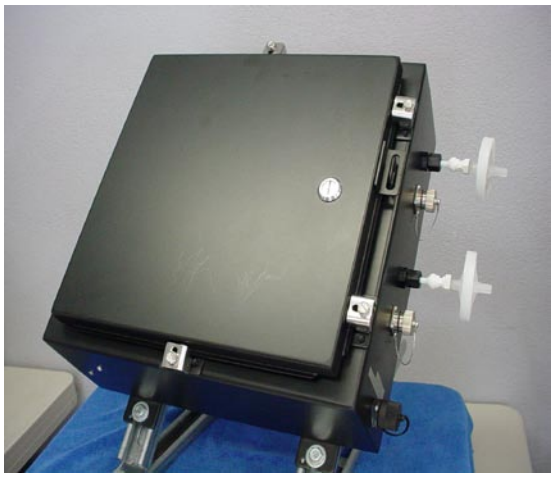
Building Sentry One (BSO)	Metro Sentry One (MSO)	Alpha Sentry One (ASO)	Mobile Sentry One (MOSO)	Remote Monitoring Center (RMC)

Chemical Sensor Array (CSA)	**Extended** Chemical Sensor Array (E-CSA)	SMART Chemical Sensor Array (S-CSA)	Radiation Area Detector (RAD)	Extended Radiation Area Detector (E-RAD)	SMART Radiation Area Detector (S-RAD)	Biological Trigger Sensor (BTS)	Biological Capture Device (BCD)	Biological Confirm Device (BCON)

Extended Chemical Sensor Array (E-CSA)

Toxic Industrial Chemical (TIC) Sensor

Continuous Active Broad Spectrum Sensor System



BPSI's **"Extended" Chemical Sensor Array (E-CSA)** is a key component to the Sentry One™ family of active detection products. The E-CSA uses BPSI's patented, field proven, Electro-Chemical sensor technology aligned in N+1 redundant configuration for reliable detection of the most readily obtained and dangerous chemicals. The E-CSA's cross sensitivity provides the ability to rapidly detect in excess of 38 toxic chemical gasses. The E-CSA is enabled with an adjustable trigger point and is matched with proprietary firmware and software proven to eliminate false alarms.

With constant draw air sampling from the desired location, the E-CSA provides real time monitoring of the air within the space being protected such as building HVAC systems, transit and other subterranean applications, open air environments and any other areas of threat concern. The E-CSA detects Toxic Industrial Chemicals at dangerous levels in seconds sending a signal directly to the Automation System for immediate action.

The E-CSA is equipped with onboard I/O and transmits all the detection data in real-time directly to the BPSI PLC based autonomous network either through an Ethernet connection for direct runs less than 300 feet or through a fiber optic connection for runs over 300 feet but less than 11,000 feet.

Enclosed in a NEMA 4 enclosure using IP 67 connection hardware the E-CSA's rugged design allows it to be placed in harsh commercial environments and to run for years. Simple semi-annual to bi-annual filter changes and a sensor swap at 48 months is all that is required to maintain the E-CSA.

- Saves Lives
- Protects Assets
- Reduces Liability via U.S. Dept. of Homeland Security SAFETY Act

Product Features:

- SAFETY Act Designated Technology
- Detection in under 5 seconds*
- Confidence level +99%
- Automated Response
- Broad Spectrum Sensing
- Adjustable Trigger Points
- Flexible, Modular "Plug & Play" Design
- Made for runs either less than 300 feet or over 300 feet and up to 11,000 feet
- Real time Location Reports
- Robust Design
- Field-proven Technology – over 1 Million instrument hours in harsh commercial environments
- No Field Calibration
- Multi-level Security Protection
- **Made in the USA**

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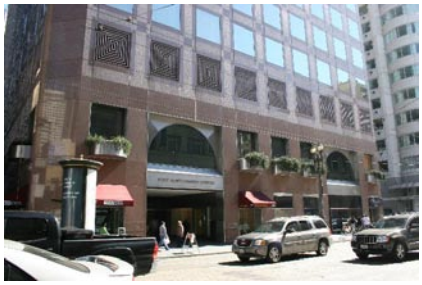
Specifications

Detector Type	Electro-Chemical Sensor (EC) based dual channel processor
Detector Mode	Toxic Industrial Chemical
Sensitivity	Parts per Million (ppm) – Adjustable
False Positives	Less than .005%
False Negatives	Less than .005%
Analysis time	Real Time from 1-5 seconds
Repeat exposure time	Less than 20 seconds
Sample acquisition	Sample draw / Automatic Continuous 24/7/365
Warm up time	30-60 minutes
Power	Selectable: 120-240/1/50-60 Hz 1.0 Amp
Operating temperature	0 to 45 C
Signal processing	Real Time Instantaneous
Data output	Fiber Optic SC or Ethernet
Identifiable toxins	Refer to CSA Sensitivity Sheet
Calibration	Automatic Continuous w/ self calibration features for drift and temperature
Dimensions	16" W x 20" H x 6" D 40.6cm W x 50.7cm H x 15.2cm D
Weight	41 pounds 18.6kg

** Based on mean time test data*

Applications:

- **Commercial Office Buildings**
- **Government Buildings**
- **High-Rise Residential**
- **Hospitals**
- **Airports**
- **Mass Transit Stations**
- **Buildings adjacent to Highway/Rail Lines**
- **Critical Control Centers**
- **Campus Facilities**
- **Arenas**
- **Shopping Centers**
- **Broad Perimeter Control**



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Datasheet

"Protecting the air you breathe"

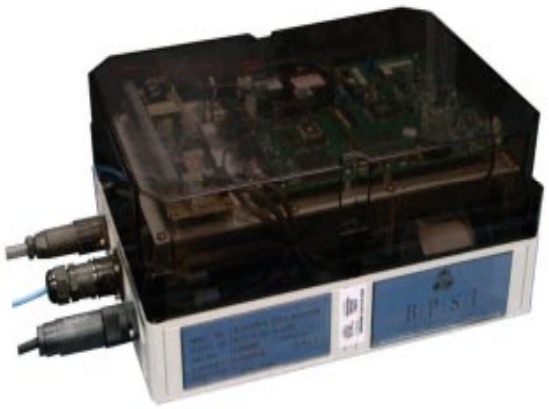
Building Sentry One (BSO)	Metro Sentry One (MSO)	Alpha Sentry One (ASO)	Mobile Sentry One (MOSO)	Remote Monitoring Center (RMC)

Chemical Sensor Array (CSA)	Extended Chemical Sensor Array (E-CSA)	SMART Chemical Sensor Array (S-CSA)	Radiation Area Detector (RAD)	**Extended** Radiation Area Detector (E-RAD)	SMART Radiation Area Detector (S-RAD)	Biological Trigger Sensor (BTS)	Biological Capture Device (BCD)	Biological Confirm Device (BCON)

Extended
Radiation Area Detector (E-RAD)

Real-Time Active Radiological Isotope Detection and Identification System

Continuous Active Broad Spectrum Sensor System



BPSI's **"Extended" Radiation Area Detector (E-RAD**) is a key component to all of the Sentry One™ family of active detection system lines. Based on mature technology, this single instrument combines a complete NaI Scintillation probe, to detect and identify radiological isotopes in real-time (within 1-3 seconds) and is directly connected to a PLC autonomous backbone via a Ethernet connection below 300 feet and a fiber optic connection over 300 feet yet below 11,000 feet.

The E-RAD has rapid shutdown capability in the event of isotope detection using multiple means to detect any radiological activity above normal background. With a library of over 120 nuclides, the RAD identifies the radiological isotopes through the utilization of advanced gamma spectroscopy technology and the proprietary QCC™ statistical enhancement transform which provides background subtraction in real time and therefore the highest degree of sensitivity.

The E-RAD is designed to operate in any background (high or low), including Bremsstrahlung or Compton, with the interference subtracted in real time (one second or less). The E-RAD requires no field calibration. The instrument continuously and automatically adjusts for temperature and drift at the location where the system is installed. The E-RAD can also verify any unidentified isotopes as well as beta emitters like Sr90 that have no gamma lines. The E-RAD provides both a life-science readout and an ANSI N42.42 file for reach back notification to the appropriate scientific support center. Enclosed in a NEMA 4 enclosure using IP 67 connection hardware the E-RAD's rugged design allow it to be placed in harsh commercial environments.

- Saves Lives
- Protects Assets
- Reduces Liability via U.S. Dept. of Homeland Security SAFETY Act

Product Features:

- SAFETY Act Designated Technology
- Real time Detection and Identification
- Confidence level +99%
- Automated Response
- Engineered for runs less than 300 feet via an Ethernet or over 300 feet and up to 11,000 feet via a fiber optic connection
- Broad Spectrum Sensing
- Adjustable Trigger Points
- Flexible, Modular "Plug & Play" Design
- Life Science and ANSI N42.42 reports
- Robust Design, Field-proven Technology
- No Field Calibration
- Multi-level Security Protection
- **Made in the USA**

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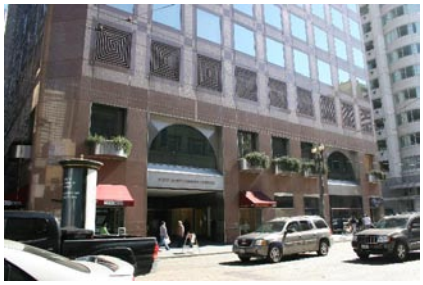
Specifications:

Detector Type	3” Sodium Iodide - NaI
Detector Mode	Radiological/Nuclear
Sensitivity	Counts per Second (CPS)
False Positives	Less than .005%
False Negatives	Less than .005%
Analysis time	Real Time, immediate with identification within 1-30 seconds
Repeat exposure time	Immediate
Sample acquisition	Direct exposure
Warm up time	Immediate
Power	Selectable: 120-240/1/50-60 Hz 1.0 Amp
Operating temperature	0 to 55 C
Signal processing	Real Time instantaneous
Identifiable toxins	Refer to BPSI Isotope Identification sheet
Calibration	Automatic Continuous w/ self calibration features for drift and temperature
Dimensions	11.81” W x 17.72” H x 8.27 ” D 30.0cm W x 45.0cm H x 21.0cm W
Weight	17 pounds 7.72kg

Applications:

- **Commercial Office Buildings**
- **Government Buildings**
- **High-Rise Residential**
- **Hospitals**
- **Airports**
- **Mass Transit Stations**
- **Buildings adjacent to Highway/Rail Lines**
- **Critical Control Centers**
- **Campus Facilities**
- **Arenas**
- **Shopping Centers**
- **Broad Perimeter Control**



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Environmental
Analysis Solutions

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AIRGARD® CWA/TIC

AMBIENT AIR ANALYZER FOR CONTINUOUS CHEMICAL WARFARE AGENT (CWA) AND TOXIC INDUSTRIAL CHEMICAL (TIC) MONITORING

RAPID RESPONSE • VERY LOW FALSE ALARMS • HIGH RELIABILITY • SELF CONTAINED

The MKS AIRGARD ambient air analyzer is an ultra-sensitive, Fourier Transform Infrared Spectroscopy (FTIR) based gas analyzer designed to rapidly detect toxic gases. The analyzer is capable of detecting parts per billion (ppb) levels of most CWAs and TICs below toxic, Immediately Dangerous to Life or Health (IDLH) levels within 20 seconds. This low level detection and fast response ensure sufficient time for an appropriate response such as: shutting down air handling systems, 'shelter in place' or evacuation of the affected area. The AIRGARD analyzer has been thoroughly tested by the Department of Defense for its sensitivity, specificity, response time, and immunity to false positive alarms caused by the sensing of, and alarming to, everyday benign, non-toxic solvents and industrial chemicals. This immunity to false alarms prevents unwarranted evacuation of buildings, associated interruptions of business, and emergency notifications when no threat materials are present in the building airflow.

Features & Benefits

- ppb detection limits – ability to discriminate and alarm to a broad range of threat substances. The AIRGARD analyzer has been tested against all ARFCAM listed threat gases, mixtures of threat agents and common interfering materials with no false positive alarms.
- Rapid response – typical time to alarm and identify threat agents < 20 seconds
- Automated, stand-alone operation – self-contained analyzer with embedded computer and sampling pump
- Continuous (24/7) air monitoring
- Ethernet connectivity and monitoring for remote troubleshooting
- Reliability – rugged design with minimum downtime
- Low maintenance – only occasional filter changes required
- High selectivity with ability to adapt to evolving threats – large "background" library file (375+ gases) with custom gas additions available
- Safety Act Designation

Applications

- Building air handling monitoring
- Enclosed public area air monitoring (arenas, subways, airport terminals, large office buildings, etc.)
- Air sampling and threat warning around CWA and TIC manufacturing and storage facilities — Chemical Facility Anti-Terrorist Standards (CFATS)

AIRGARD® Analyzer Operation

In the typical, non-alarming mode, the panel mounted “Gas Alarm” LED is green, indicating the sampled air is safe from toxic gases. If a toxic gas is detected within the concentration and probability limits set in the operational setup file, the “Gas Alarm” LED will change from green to flashing red. In addition to the visual, panel mounted status indication, the AIRGARD analyzer can communicate via Ethernet link to a sensor platform system to alert or alarm a command and control facility within the subject building. The AIRGARD analyzer will remain in this mode until a trained user acknowledges the alarm and initiates the necessary safety actions. In addition, if any of the sensor parameters (flow, temperature and pressure) are determined to be out of their optimal range, the “System Alarm” LED will turn yellow or possibly red (depending on the severity of the fault) and will communicate this information remotely via the Ethernet TCP/IP interface using an XML-based remote monitoring and control protocol. This interface uses state-of-the-art encryption technology to ensure a secure and robust connection between the remote AIRGARD analyzer and a central receiving computer.

The AIRGARD air analyzer is a totally self-contained monitoring device, having a sampling pump, FTIR spectrometer, controlling electronics and computer enclosed in a package measuring 18.5" x 24" x 7.5" which can be easily wall mounted. All AIRGARD air analyzers are individually tested for optimum signal-to-noise which ensures that consistent, reliable air monitoring will be provided in multiple deployments. The AIRGARD analyzer self calibrates after installation, constantly self checking the system health. This ensures readiness should a specified and applicable threat substance be introduced into the sampled air flow.

Specifications

Packaging

Dimensions	18.4" (W) x 25.4" (H) x 7.5" (L) [46.7 x 64.5 x 19.1 (cm)]
Weight	75 lbs. [34.1 kg]
Installation	Wall mount (bracket included)
Power Requirements	120 VAC, 50/60 Hz, 3A, 240 VAC available
Operating Temperature	10 to 40°C
Operating Humidity	Up to 65%

User Interface

Communication	TCP/IP (Ethernet); 1 USB port; XML Standard Protocol

Compliance Testing

The AIRGARD analyzer has been designed and tested to be fully compliant with the following:

- European Electromagnetic Compatibility Directive 89/336/EEC — assures product tolerance to:
  - – Electrical stresses such as ESD (Electro Static Discharge)
  - – EMF (Electro Magnetic Fields)
  - – Transients
  - – Surges
  - – RFI (Radio Frequency Interference)

NOTE: Substance Specific Reports Available Upon Request

Ordering Information

Please contact the BPSI Sales office for price and availability information.

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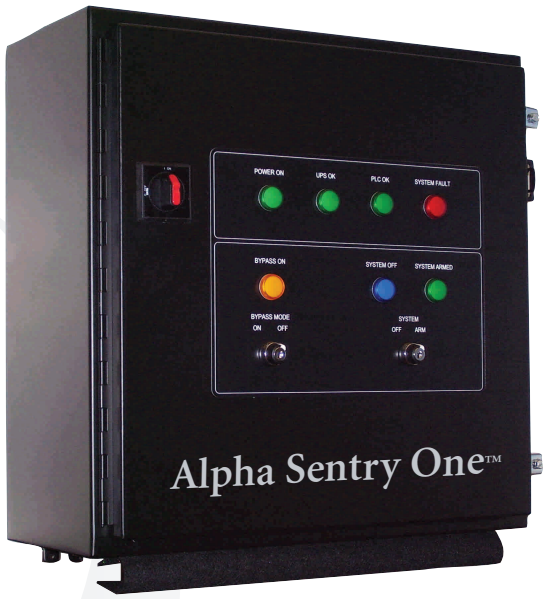
DETECT • IDENTIFY • ISOLATE • INFORM

Alpha Sentry One™ (ASO)

Compact System Controller

Real-Time Active Toxin Detection System for Smaller Applications



Designed specifically for smaller buildings, lobby security, and perimeter control, the compact **Alpha Sentry One™ (ASO)** provides extraordinary protection from an accidental airborne toxic chemical or radiological release, or targeted attack. Utilizing the same breakthrough technology as the Building Sentry One™, the Alpha Sentry One™ reliably detects and identifies toxins in seconds then automatically activates the desired protocol to isolate the toxin, thereby protecting building assets and occupants from exposure and possible death. With an optional communications module, the ASO can send real-time data to your security command center and/or BPSI's 24/7/365 remote monitoring center, identifying the toxin and its location enabling first-responders to expedite a safe building rescue.

The robust design allows the Alpha Sentry One™ to operate in harsh environments, eliminates false-positives, and requires no sensor calibration, thus reducing costly maintenance issues. The system's modular engineered design allows for simple installation flexible to any architecture, and allows for easy expansion.

- Save Lives
- Protect Assets
- Reduce Liability
- Accelerate Recovery

✓ Department of Homeland Security
SAFETY Act Designated Technology

Product Features

- **High-speed detection & shutdown *in under 5 seconds****
- **Elimination of false positives**
- **Automated response**
- **Broad spectrum sensing**
- **Flexible, modular "Plug & Play" design**
- **Easily interfaces with any type of building management control system**
- **Real-time toxin and location data**
- **Robust design, field-proven technology**
- **Multi-level security protection**
- **Optional 24/7/365 Remote Monitoring Center**
- ***Made in the U.S.A.***
- ***SAFETY Act Designated Technology***

****based on mean-time test data***

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Specifications

Detector Type
Main data & media acquisition and processing unit, available in either 2 or 4 module configuration

Detector Mode
Toxic Industrial Chemical (TIC)
Nuclear/Radiological (RAD)

Sensitivity
Chemical = parts per million (ppm)
Radiological = counts per second (cps)

False Positives
Less than .005%

False Negatives
Less than .005%

Analysis Time
Real-time from 1-5 seconds

Repeat Exposure Time
Less than 20 seconds

Sample Acquisition
Automatic Continuous

Warm Up Time
30 minutes

Power
Selectable: 120-240/1/50-60 Hz., 15 Amp, Uninterrupted Power Supply (UPS) field installed ensures proper power conditioning

Operating Temperature
0° to 45° C

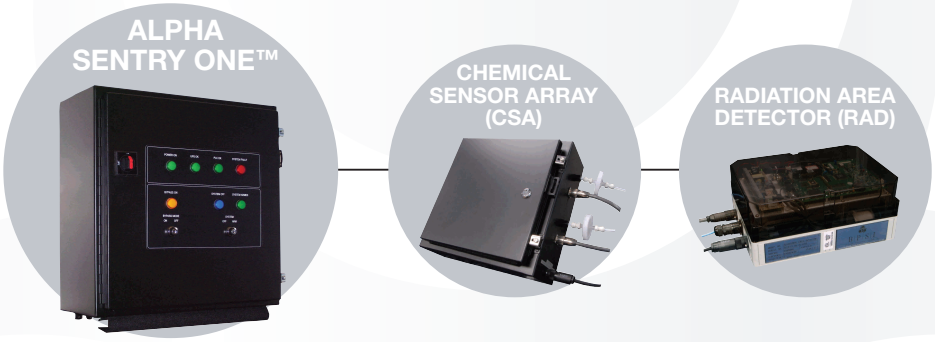
Signal Processing
Real-time, visual and audible alarms, variable trigger points

Identifiable Toxins
Refer to sensor identification charts

Calibration
Automatic Continuous with self calibration features for drift and temperature

Dimensions
24" W x 24" H x 10" W / 60.9cm W x 60.9cm H x 25.4cm W

Weight
94 pounds / 42.6 kg



Applications

- Lobbies
- Smaller buildings
- Buildings adjacent to highway/rail lines
- Critical control centers
- Schools
- Hospitals
- Embassies
- High-end homes
- Campus facilities
- Perimeter control locales
- Individual office space

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