

## Contamination Detection Monitor (CDM – 516)

The **eNose<sup>®</sup> Aqua** is a very small form factor self-contained electronic sensing module for detecting chemical contaminants in bottled water containers, beverage containers and other applications.

The sensor mechanism consists of a **NoseChip™** nanocomposite sensor array and associated software capable of making a determination of clean or contaminated containers in just 2 seconds. The system provides ready, alarm, and self-test status over simple discrete and/or serial communication interfaces.

The **eNose<sup>®</sup> Aqua** is ready to detect within 5 seconds after each measurement cycle. This provides a capability for a single module to process up to 500 bottles per hour and more than 4000 bottles per 8 hours of operation. The performance of **eNose<sup>®</sup> Aqua** is proven reliable in nearly 10 years of continuous operation in bottling plants worldwide.



### Features and Benefits

- Real-time continuous monitoring and alarming for chemical vapor contaminants
- Energy efficient operation on low voltage DC power
- Automatic on-board initialization
- On-board self-test and diagnostics with real-time status report
- Instrumentation interface with simple discrete or full serial communications
- Continuously adapts to ambient environmental changes
- Easily integrated into host inspection or production machinery
- Scalable to add low cost sensor modules to match line speed as needed

## Detection Specifications

Sensor Technology

### Contaminants Detected (examples only)

Alarm limits are below  
operational requirements

Detection limits are  
much lower

Response Time  
Detection Recovery Time  
Sensor Initialization  
Sensor Life

## Physical Characteristics

Size  
Weight  
Vapor Sample Inlet/Outlet

## Operational Specifications

Temperature (operation)  
Temperature (storage)  
Relative Humidity  
Shock/ Vibration  
Mean Time Between Failure(MTBF)  
Warm-up Time  
Purge/background air supply  
Input Power  
External interfaces

### NoseChip™ Nanocomposite Sensor Array

#### Petroleum products

Gasoline  
Diesel  
Kerosene  
Paint Thinner

#### Chemicals

Ammonia, Urea  
Solvents  
Alcohols  
Aromatics  
Naphthalene  
Flavor additives

#### Cleaning products

Household cleaners  
Laundry products  
Bleach  
Industrial cleaners, degreasers

#### Lubricants, oils

Motor oil; new, used/burned  
Industrial lubricants

#### Beverages

Wine, beer  
Distilled spirits  
Soda, juices

< 3 seconds per head @ 1 Lpm flow rate  
< 6 seconds per head @ 1 Lpm flow rate  
Automatic on line startup  
Two years (>1,000,000 cycles), depending on use

3.3" W x 2.5"D x 1.9"H  
6.2 oz  
1 inlet and 1 outlet port

41°F to +104°F / 5°C to +40°C  
-4 °F to +158°F / -20°C to +70°C  
5% to 95%  
30 g's in Z axis  
Over 15000 operating hrs, electronic/mechanical parts  
5 min. @ 5°C, 3 min. @ 25°C, 1.5 min. @ 40°C  
Oil-free, dry compressed air @ 1 Lpm flow rate  
7.5-16.0 Volts DC  
2 discrete inputs/ 3 discrete outputs  
1 RS-232 serial interface via 12 pin connector



### eNose<sup>®</sup> Aqua Installation:

Typical customer installation in an 8-head automated leak and contamination detection system for bottled water. Inset shows detail of the attachment of the sensors to bottles for testing.

Note: All specification values are typical and subject to change without notice.