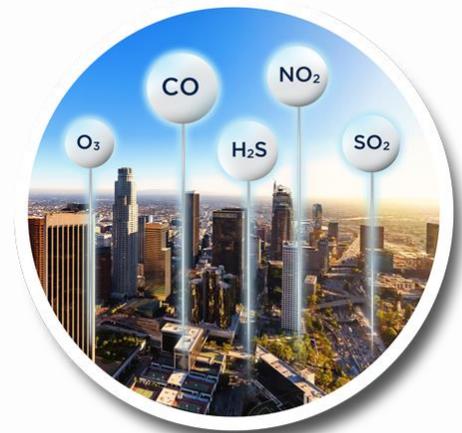


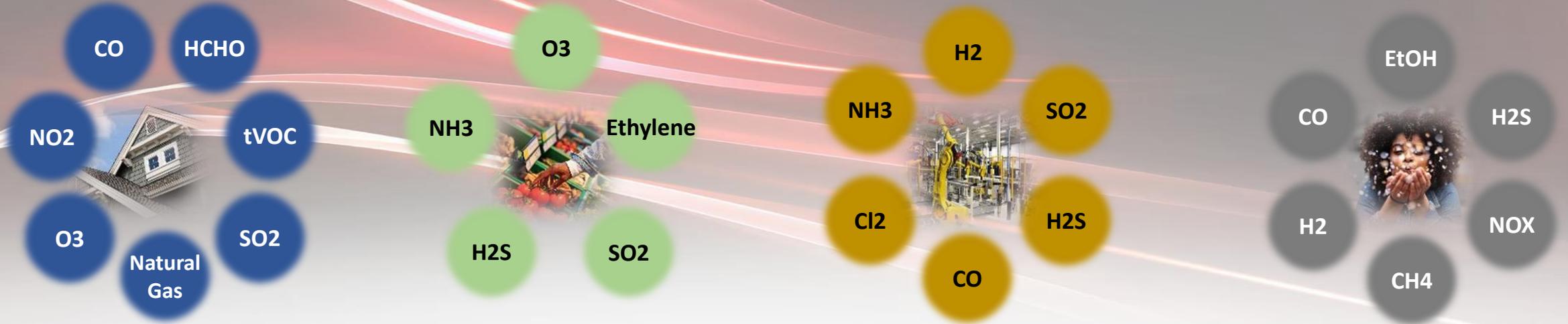
High Performance Gas Sensors and Systems

Food Quality and Agricultural Applications

INTERLINK
ELECTRONICS®



Gas Sensors Applications



Air Quality Monitoring

- Commercial buildings: *offices, hospitals, schools, warehouses, theatres*
- Residential: *living spaces, kitchens, yards (fixed or portable equipment)*
- HVAC control feedback
- Outdoor air quality: *smart cities, wildfire early warning & impact*

Sensor: HCHO = Formaldehyde

Food Supply Chain

- Food transportation asset tracking
- Freshness monitoring, ripening control
- Agricultural land and cultivation applications
- Livestock farms monitoring

Industrial and Automotive

- Automotive in-cabin AQM
- Industrial: *oil & gas, mining, warehouses*
- Hydrogen fuel cell monitoring
- First responder safety

Health and Wellness

- Condition warnings (non-clinical) *Diabetes, Asthma, SIBO, IBS-C*
- Breath analysis
- Sports training applications
- Alcohol monitoring
- Smoking cessation

Food Quality and Agricultural Applications

1. **Water Treatment Systems in Food Supply Chain**
2. **Enhancing Quality & Time-to-market of Produce, Tobacco & Flowers**
3. **Recirculating Aquaculture System (RAS) in Fish Hatcheries**
4. **Commercial Ice Machine Sanitization**

1. Water Treatment Systems in Food Supply Chain

Problem – Safety in ozonated water treatment systems

- Reuse water, increase quality and efficiency of production: agriculture, aquaculture, food processing, storage, winemaking

Solution – Established Equipment Service Providers

- OEM-3 as safety module or controller for many types of ozone generators
- OEM-3 control board integrates with control panel for event logging and remote alarms panels

Advantage – Eco™ OEM-3 Ozone Detector & Control Board

- Simple to setup, operate & service with easy wiring, status lights, hot pluggable sensor, factory calibrated

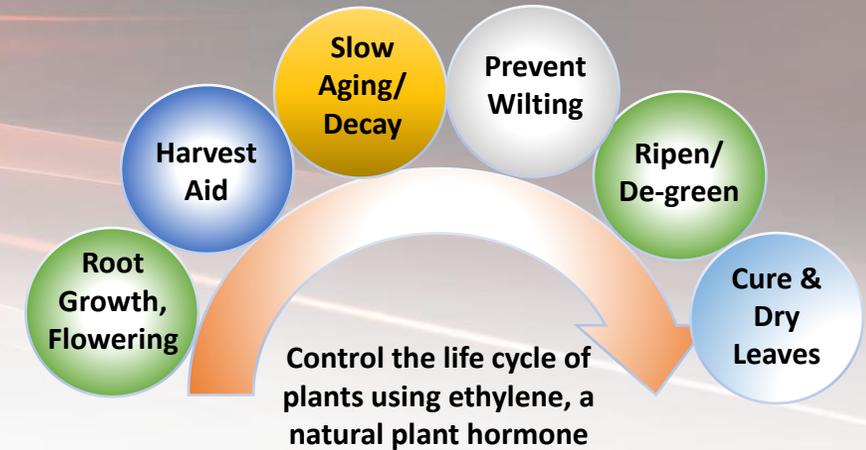


Enhancing Quality & Time-to-market of Produce, Tobacco & Flowers

SPEC Sensors™ - Ethylene (C₂H₄)
Electrochemical Gas Sensor

Problem – Emerging trend to control plant life cycle

- Ethylene (C₂H₄) naturally mediates the plant life cycle from seed germination to retail distribution
- Controlling C₂H₄ in agriculture (yield), cold chain (quality of produce, floriculture), tobacco curing
- Safety, optimizing processes, reducing pollution



Application Note – Interlink enables C₂H₄ management

- Monitoring to remove, add, or control the natural levels of ethylene from plants and that from environment including greenhouse heaters



Advantage – Ethylene (C₂H₄) Electrochemical Gas Sensor

- Cost effective, small size, long life with accurate ppb resolution using very low power
- Suitable for stand-alone use or in a sensor array with other SPEC gas sensors
- Evaluation kit with UART / USB interface supports data logging for further analysis

Recirculating Aquaculture System (RAS) in Fish Hatcheries

SPEC Sensors™
Ozone (O₃), Hydrogen Sulfide (H₂S)
Electrochemical Gas Sensors

Problem – H₂S in recirculating water kills young fish

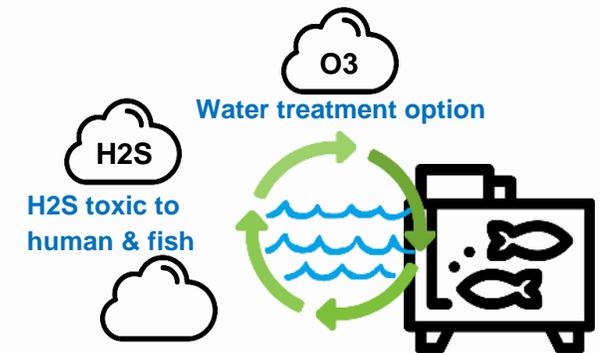
- Excess Total Gas Pressure (TGP), H₂S and other gases are harmful to young fish
- Trending practice, adapt fish raised in freshwater to seawater, 1000 times higher sulfate concentration
- Reuse water, increase production quality, yield and efficiency in fish hatcheries

Application Note – Monitor, analyze, control with Interlink as part of water treatment

- Water quality can be improved by monitoring & controlling ozonation as part of water treatment
- Can monitor H₂S exhaust when degassing as part of water treatment
- Suitable for wireless communication, solar/battery operation to enable quick deployment for alerts, data logging for analysis or for company emissions performance

Advantage – H₂S, O₃ Electrochemical Gas Sensors

- Long life sensors with fast & accurate readings using very low power
- When protected, deployable to rugged conditions



4. Commercial Ice Machine Sanitization

SPEC Sensors™ - Ozone (O3) Electrochemical Gas Sensors
Eco Sensors™ - Ozone (O3) Detector & Control Board
Custom Engineering Services

Problem – Bacteria, viruses, mold in commercial ice machines

- Reduce frequency of cleaning internal parts of ice machine
- Ozonated water treatment disinfects internal parts, ice, drinking water and provides a disinfectant for routine cleaning, but lacks a safety sensor



Application Note – Monitor/control with Interlink's gas sensors

- O3 gas sensor or OEM-3 as safety module/controller for ozone disinfection devices
- Enables remote safety alarms and data logging for further analysis



Advantage – O3 Electrochemical Gas Sensors

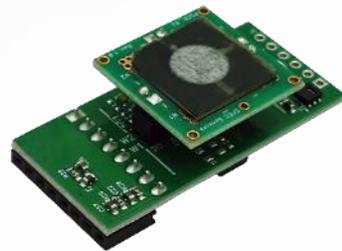
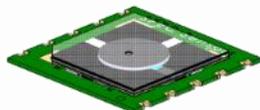
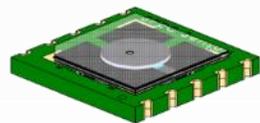
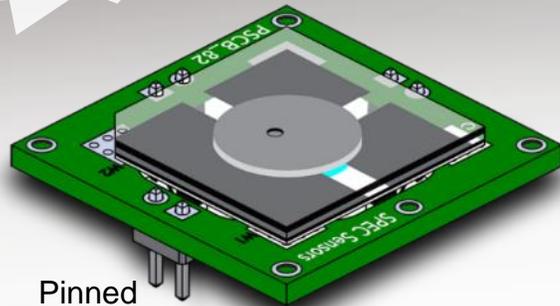
- Cost effective, small size, long life with accurate ppb resolution using very low power
- Custom engineering services for development of gas sensor elements, modules and instruments

Product Catalog



Gas Sensors & Modules

Available at
www.spec-sensors.com



APPLICATIONS

- Indoor & Outdoor Air Quality
- Health & Wellness
- Agriculture & Food Processing
- Industrial Safety
- And more!

FEATURES

- Ultra-Low Power < 50 uW max
- Small Size & Low Profile (20 x 20 x 4 mm)
- Long Life (10+ years)
- Fast Response
- Accurate & Linear Response
- 100% Factory Tested
- RoHS Compliant
- UL & ETL Recognized CO Sensor

Product Catalog



Gas Sensors & Modules

AVAILABLE SENSORS

Gas Type		Part Number Family	Range (ppm)	Lower Detection Limit (ppm)	Sensitivity (nA/ppm)
Carbon Monoxide	CO	110-1xx	0 - 1000	1	4.75 ± 2.75
	CO	110-11x	0 - 100	0.1	35 ± 15
Ethanol	EtOH	110-20x	0 - 1000	1	20 ± 10
Hydrogen Sulfide	H2S	110-30x	0 - 50	0.1	200 ± 75
Ozone	O3	110-40x	0 - 10	0.02	-50 ± 25
Nitrogen Dioxide	NO2	110-50x	0 - 5	0.03	-30 ± 15
Sulfur Dioxide	SO2	110-61x	0 - 20	0.02	40 ± 15
Indoor Air Quality	IAQ	110-80x	0 - 100	0.2	20 ± 10
Respiratory Irritants	RESP	110-90x	0 - 20	0.02	-50 ± 25
Hydrogen	H2	110-00x	0 - 250	1	4 ± 2
Chlorine	Cl2	110-45x	0 - 20	0.02	-35 ± 15
Nitric Oxide	NO	110-70x	0 - 20	0.02	90 ± 50
Ethylene	C2H4	110-65x	0 - 100	0.02	50 ± 15
Formaldehyde	HCHO	110-85x	0 - 20	0.05	30 ± 15

Gas Detection – Featured Instruments

Full-function instruments for Ozone, Carbon Monoxide, VOC's and other gases!

Process Controllers | Area Safety Monitors | Handheld Safety Monitors | Calibrated Replaceable Sensor Modules | Alarm Panels



Analog Control Outputs | Digital Communication | Numeric & Bargraph Displays | Data Logging | Flexible Power Options

OEM3 - Ozone Process Control and Safety Instrument

- Simple setup and operation; flexible power supply options
- Multiple control outputs: Analog 0-2 V, 4-20 mA, signal relay
- User-replaceable sensor modules for easy calibration maintenance with no down-time



www.ecosensors.com

SPARROW Protect+ – Carbon Monoxide and VOC Air Quality Detector

- Small size & lightweight – ideal for travel
- LED alarm level indicator & buzzer alert you to dangerous air quality
- iOS & Android Apps include tons of additional features, including data logging & alerts



www.sparrowsense.com

Custom Engineering Services

CONSUMER DEVICES & INDUSTRIAL INSTRUMENTS

INDUSTRIAL DESIGN

MECHANICAL DESIGN

ELECTRONICS & FW

IOT & WIRELESS

UI & UX DESIGN

NOVEL MATERIALS

CUSTOM SENSORS

ALGORITHMS & AI

PRODUCT DESIGN

- Leverage our decades of experience implementing gas sensors and devices

PRODUCT TESTING

- Advanced capabilities for test and evaluation of gas detection devices
- High accuracy test chambers and reference monitors

CUSTOM GAS SENSOR DEVELOPMENT

- We customize gas sensors for specific gases and applications
- We support you through engineering, design, and manufacturing

If our spec sheets do not meet your needs, contact us to discuss how we can help!

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PRODUCT CATALOG