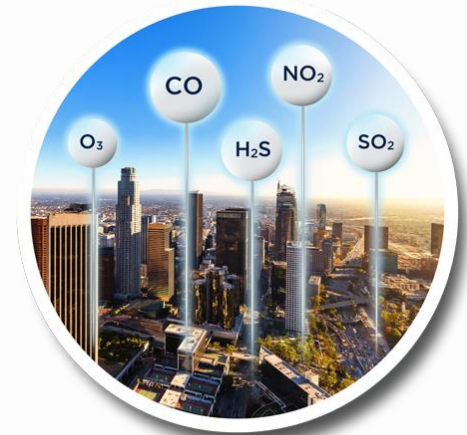


# High Performance Gas Sensors and Systems

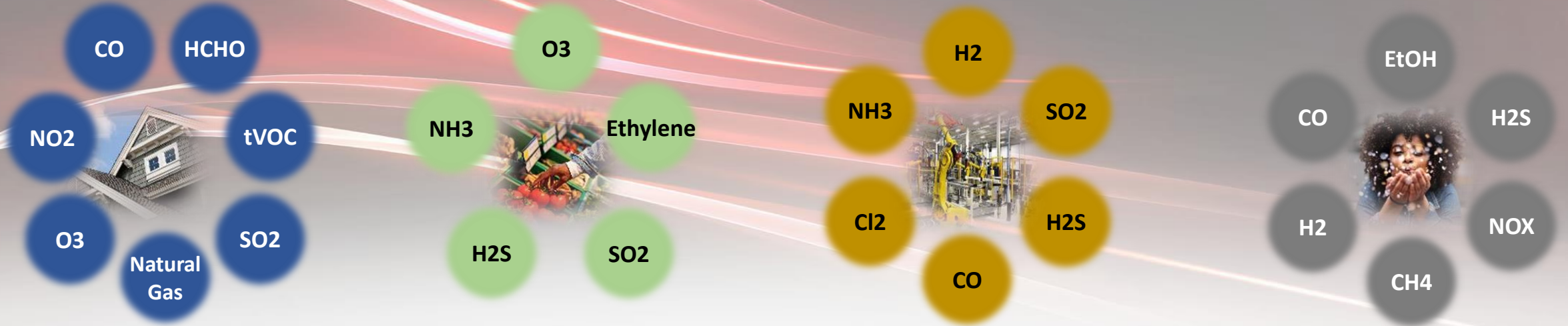
*Industrial and Safety Applications*



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

# Industrial and Safety Applications

1. **Industrial Safety & Health**
2. **Energy Storage and Automotive EV Battery**
3. **Ozone in Industrial and Commercial Applications**
4. **Fresh Water from Underground Reserves**

# 1. Industrial Safety & Health



## Problem

- Ultra-low power IoT sensor platform with wireless sensor
- Check harmful gases (toxic, flammable) in confined spaces to avoid loss of life

## Application Note – Remote monitoring with Intelink's SPEC Sensors™

- Rugged IoT safety gas monitors used to detect gases before entry
- Monitor remotely by smartphone application



## Advantage – CO, H2S Electrochemical Sensors

- Sensitivity, accuracy, fast response
- Always on, long life, small size for wearables or novel applications
- Technical specifications suitable for building automation systems: air quality, ventilation control
- Custom engineering services to develop gas sensor elements, modules & instruments for different applications

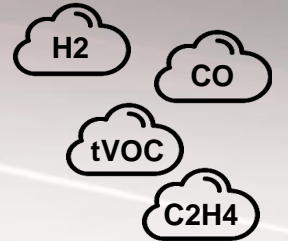
## 2. Energy Storage and Automotive EV Battery

Interlink force sensors & gas sensors  
Hydrogen (H<sub>2</sub>), Carbon Monoxide (CO),  
Ethylene (C<sub>2</sub>H<sub>4</sub>), tVOC



### Problem - Safety & Health

- Energy storage chemistries & technologies continuously evolves
- Venting pressure, gas leaks during recycling / hazardous waste management
- Detect battery swelling from degraded electrolytes
- Typical reactive gases include H<sub>2</sub>, CO, C<sub>2</sub>H<sub>4</sub>, tVOC (epoxy)

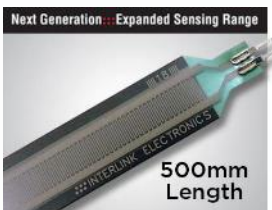


### Application Note – Remote monitoring with Intelink’s sensors

- Gas sensor array monitors for toxic gases from batteries of different chemistries
- Enables data logging for analysis and development of electronic nose applications
- Force pressure sensors detect battery swelling

### Advantage – Force sensor and H<sub>2</sub>, CO, IAQ (tVOC), C<sub>2</sub>H<sub>4</sub> Sensors

- Long life sensors with fast & accurate readings using very low power
- Custom engineering services to develop force sensors, gas sensor elements, sensor arrays, modules & instruments



## Ozone in Industrial and Commercial Applications

Eco Sensors™ - Ozone (O3)  
Hand-held Instrument,  
Monitor & Controller with Sensor Module

### Problem – Safety in ozone applications

- Applications: fumigation/sanitization, purify air, laundry, medical therapy, pulp mill, water treatment
- Ozone above safety limits can cause considerable harm to both human health and to the environment

### Solution – Interlink's Eco Sensors™ monitors & controllers for ozone



- Hand-held instrument: EZ-1X EcoZone™
- Monitors & controllers with data logging: C-30ZX, or OS-4 (or OS-6) with SM-500/RME-O3

### Advantage – Eco™ products

- Simple to setup & operate
- Factory calibrated



EZ-1X



C-30ZX



OS-4



OS-6

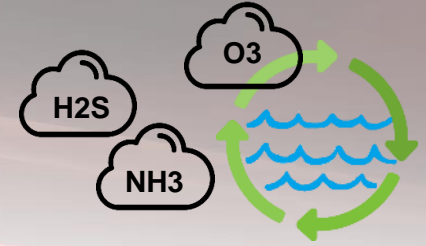
SM-500/  
RME-O3

## 4. Fresh Water from Underground Reserves

SPEC Sensors™  
Ozone (O<sub>3</sub>), Hydrogen Sulfide (H<sub>2</sub>S)  
Electrochemical Gas Sensors

### Problem – Water Quality

- 30% of world's freshwater is underground
- Groundwater from aquifers and wells may include harmful concentrations of H<sub>2</sub>S or NH<sub>3</sub> gases from degrading organic matter or pollution



### Application Note – Monitor, Analyze, Control with Interlink Gas Sensors

- Monitor & control O<sub>3</sub> water treatment to remove H<sub>2</sub>S and NH<sub>3</sub>
- Monitor H<sub>2</sub>S when degassing (removing) toxic pollutants as part of water treatment

### Advantage – H<sub>2</sub>S, O<sub>3</sub> Electrochemical Gas Sensors

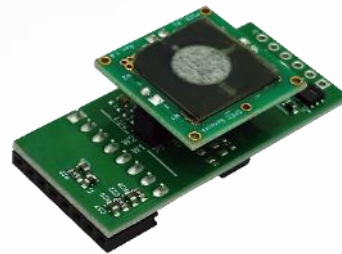
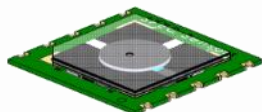
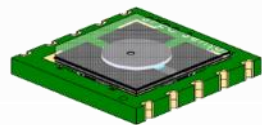
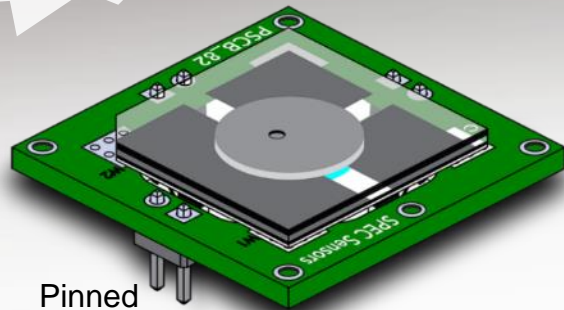
- Long life sensors with fast & accurate readings using very low power
- When protected, deployable to rugged conditions
- Custom engineering services to develop gas sensor elements, modules and instruments

# Product Catalog



## Gas Sensors & Modules

Available at  
[www.spec-sensors.com](http://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)
<b>Carbon Monoxide</b>	CO	110-1xx	0 - 1000	1	4.75 ± 2.75
	CO	110-11x	0 - 100	0.1	35 ± 15
<b>Ethanol</b>	EtOH	110-20x	0 - 1000	1	20 ± 10
<b>Hydrogen Sulfide</b>	H2S	110-30x	0 - 50	0.1	200 ± 75
<b>Ozone</b>	O3	110-40x	0 - 10	0.02	-50 ± 25
<b>Nitrogen Dioxide</b>	NO2	110-50x	0 - 5	0.03	-30 ± 15
<b>Sulfur Dioxide</b>	SO2	110-61x	0 - 20	0.02	40 ± 15
<b>Indoor Air Quality</b>	IAQ	110-80x	0 - 100	0.2	20 ± 10
<b>Respiratory Irritants</b>	RESP	110-90x	0 - 20	0.02	-50 ± 25
<b>Hydrogen</b>	H2	110-00x	0 - 250	1	4 ± 2
<b>Chlorine</b>	Cl2	110-45x	0 - 20	0.02	-35 ± 15
<b>Nitric Oxide</b>	NO	110-70x	0 - 20	0.02	90 ± 50
<b>Ethylene</b>	C2H4	110-65x	0 - 100	0.02	50 ± 15
<b>Formaldehyde</b>	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](http://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](http://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!**

## CONTACT US

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PRODUCT CATALOG