



Industrial Products Corporation

"Protecting Plant, Property and Personnel since 1996"

"Your Protection Connection"
www.ipcprotects.com

October 2009
866.4HAZLOC

Feature: Gas Detection



Dear David,

IPC Protects - and that is exactly what we have been doing for over thirteen years. When I started Industrial Products Corporation in 1996, I did not want to be just another Rep firm or process instrumentation distributor. I wanted a company that brought out all of my strengths in teaching and training, as well as provide a real service to Industry - one that would expand on my experience and help others. That is why IPC has been focused on Electrical Safety in Hazardous Locations since the beginning. We are a resource for knowledge, education, and training, as well as a source for the products to protect plant, property and personnel.

This newsletter is designed as a tool to keep our very valued customers informed of the latest technologies and training in our areas of expertise. Protecting Industrial infrastructure has expanded beyond just hazardous locations and includes all connections between the control system and the field instruments. We will highlight a specific product or technology in each issue and invite you to learn. As always, we welcome your feedback. Feel free to call or write anytime. My staff and I are ready.

Kindest regards,
David P. Lambert

IPC'S OFFERINGS:

[INTRINSIC SAFETY](#)

[EXPLOSIONPROOF ENCLOSURES](#)

[PURGE/PRESSURIZATIONSYSTEMS](#)

[LIGHTNING & SURGE PROTECTION](#)

[GAS DETECTION](#)

[FIELDBUS](#)

[ETHERNET](#)

[HART](#)

[INDUSTRIAL WIRELESS](#)

[INDUSTRIAL PC WORKSTATIONS](#)

[PROCESS I/O FOR HAZARDOUS](#)

[NEMA ELECTRICAL ENCLOSURES](#)

TRAINING SEMINARS:

[HAZARDOUS LOCATION INSTALLATIONS\(DOMESTIC & INTERNATIONAL CODES\)](#)

[GAS DETECTION](#)

[SURGE PROTECTION](#)

[FIELDBUS](#)

[INDUSTRIAL WIRELESS](#)

[TOFINO](#)

WHAT TO CONSIDER WHEN CONSIDERING GAS DETECTION (and the things you should know)

*What gases do I want to measure?
How long do I want to measure?
In what environment will I measure?*

There are three (3) categories of gases which OSHA wants to measure, and which anyone, for that matter, should want to measure: Combustible; Toxic; Oxygen.

Combustible - gas or vapor which, when combined with oxygen in free air, is flammable or explosive. (Typically 0-100% LEL; PPM; %Vol.)

LEL - Lower Explosive (Flammable) Limit - concentration below which there isn't enough combustible gas to support combustion.

UEL - Upper Explosive (Flammable) Limit - concentration above which there isn't enough oxygen to support combustion.

Note: LEL and UEL values in tables assume a normal concentration of Oxygen (20.9%).

Toxic - gas or vapor that can be harmful to life or health. (Typically PPM)

PEL - Personal Exposure Limit

TWA - Time Weighted Average

STEL - Short Term Exposure Limit

Oxygen - Normal oxygen concentration in air is 20.9%vol. **Asphyxiation is the leading cause of death in industrial facilities.**

There are primarily two (2) types of gas detection instruments used for measurement: Fixed; Portable.

Fixed - used for continuous monitoring in hazardous or potentially hazardous areas.

Portable - used for personal protection (ex. confined space entry), leak detection.

There are primarily three (3) types of sensors utilized by gas detection instruments to detect the three categories of gases.

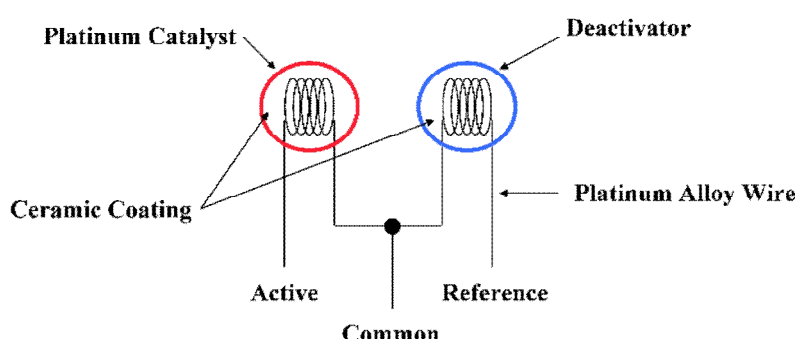
For combustible gases: Catalytic Bead; I.R. (Infrared)

For toxic gases: Electrochemical

For oxygen: Electrochemical

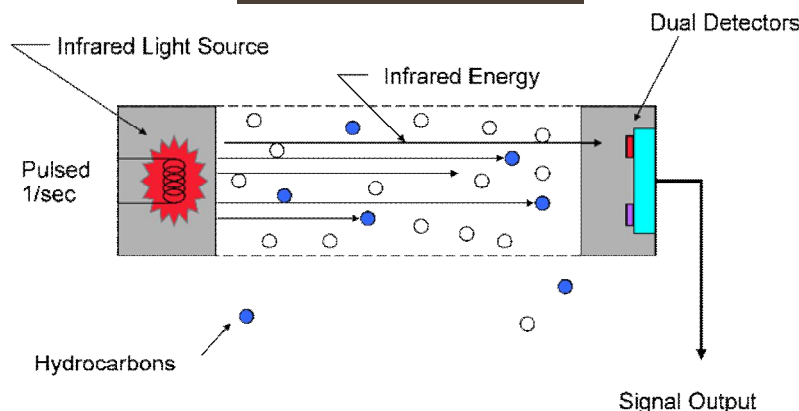
[The following diagrams are the property of Thermo]

CATALYTIC BEAD SENSOR

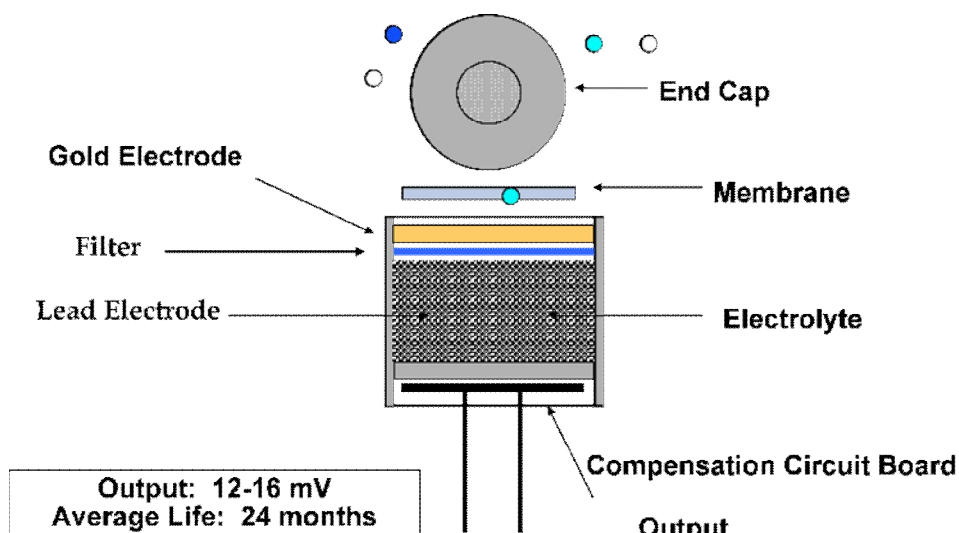


Compensated Catalytic Sensor

INFRARED SENSOR



ELECTROCHEMICAL SENSOR



[OSHA Slide Presentation for Gas Detection](#)

Check out our website, [HERE](#).

Would you like to learn more about Gas Detection? We offer training at *your* facility! Call or [click](#).

For more info, please visit our website:

[Home](#)
[Product Listing](#)
[Seminars & Training](#)
[Contact Us](#)

[Join Our Mailing List!](#)