

## PORTABLES

### 4 GAS, CONFINED SPACE ENTRY PORTABLE MODEL IQ-200

IST's Model IQ-200 requires just two sensors for confined space entry applications, a single solid state sensor for CO, H<sub>2</sub>S, and combustible gases, and an electrochemical sensor for oxygen. This makes the IQ-200 much more affordable than comparable confined space entry portables. Additionally, both the solid state and oxygen sensors used in the IQ-200 are long-life sensors. Typical life expectancy is 5 years for the O<sub>2</sub> sensor and over 10 years for the solid state sensor. This results in a tremendous savings in long term operating costs associated with sensor replacement.

The IQ-200 has an audible alarm buzzer, and alarm LED's indicate low, mid, and high alarm levels for the solid state sensor, and low and high alarms for the O<sub>2</sub> sensor. The IQ-200 does not incorporate a sample pump and samples by diffusion only. It is small and lightweight, weighing just 22 ounces, including batteries. It operates on 4 size 'AA' alkaline or nicad batteries, or the AC adapter/charger. Carrying case is included.



from ppm to 20% by volume, with the lower ranges offering better resolution. CO is available in % volume ranges, and hydrocarbon ranges are available from %LEL up to 100% by volume, depending upon the gas.

### PHOTOIONIZATION DETECTOR (PID)

Photoionization detectors (PID) operate by ionizing the target gas with ultra-violet radiation, and then collecting the ions across a high voltage plate which produces an electrical signal proportional to the gas present. PID's offer fast response for many Volatile Organic Compounds (VOC's), including, among others, benzene, vinyl chloride, phosphine, and hexane.

### ELECTROCHEMICAL

Electrochemical sensors operate by producing a chemical reaction with the gas of interest. Sensors are available for certain toxic gases in ppm ranges, including NH<sub>3</sub>, CO, Cl<sub>2</sub>, H<sub>2</sub>, HCl, HCN, H<sub>2</sub>S, NO, NO<sub>2</sub>, O<sub>2</sub>, O<sub>3</sub>, and SO<sub>2</sub>. For some of these gases, electrochemical sensors can offer a fairly high degree of selectivity. Electrochemical sensors have a life expectancy of 1 to 2 years and come with a 1 year warranty.

### CATALYTIC BEAD

Catalytic Bead sensors operate by burning combustible gases, raising the temperature of the sensor. This temperature rise changes the resistance of the sensor and produces a signal proportional to the gas concentration. They detect combustible gases in higher concentrations (above 1000 ppm) only. They are not selective and will respond to a wide range of combustible gases. However, since they only detect higher gas concentrations, they are not prone to interference from many toxic gases. Catalytic Bead sensors have a life expectancy of 2 years and come with a 1 year warranty.

## GAS SENSORS

IST offers 5 different types of sensors: Solid State, Infrared, Photoionization, Catalytic Bead, and Electrochemical. This gives you the flexibility to choose the best sensor(s) for your particular application. A brief description of each sensor type follows:

### SOLID STATE

Solid State sensors are made of a heated metal oxide material which temporarily changes resistance in the presence of gas. Solid State sensors are available for the detection of over 150 different toxic and combustible gases, in ranges from low ppm %LEL. A list of gases and ranges appears on the back of this brochure. Solid State sensors come with a 3 year warranty, and have a life expectancy in excess of 10 years.

### INFRARED SENSOR (IR)

Infrared (IR) sensors detect gases that absorb light in the infrared spectrum. Sensors for carbon dioxide (CO<sub>2</sub>), carbon monoxide, and hydrocarbons (such as Methane, etc.) are currently available. IR sensors offer good selectivity and good lifetimes. Ranges for CO<sub>2</sub> are available



- 1 IST'S PATENTED SOLID STATE SENSOR
- 2 INFRARED SENSOR (IR)
- 3 CATALYTIC BEAD SENSOR
- 4 ELECTROCHEMICAL SENSOR
- 5 PHOTOIONIZATION DETECTOR (PID)

To help you select the most appropriate sensor for your application, contact IST to receive additional assistance and a copy of IST's Sensor Selection Guide.