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## **Infrared Carbon Dioxide Point Detector Offers Reliable, Low Maintenance Plant Protection**

*Ideal For Carbon Capture and Storage, Enhanced Oil Recovery, Chemical Plants, Fertilizers,  
Food/Beverage Bottling Plants, Coal Gasification, Metals, Wastewater Treatment Facilities*

**LAKE FOREST, CA—December 19, 2011**—Offering reliable gas detection performance with low maintenance, the rugged [Model IR700 Infrared Carbon Dioxide Point Detector](#) from [General Monitors](#) requires no routine calibration and provides complete control room status and control capability for monitoring at the ppm level.

The Model IR700 features a precision IR point sensing element that offers reliable protection against the hazards of carbon dioxide gas leaks. The IR700 features a true fail-to-safe design for dependable gas detection performance, heated optics to eliminate condensation, and a dirty optics indicator informs the user the device must be cleaned before the lenses are entirely blocked, thereby reducing downtime.

Carbon dioxide is an inexpensive and versatile gas that is useful in diverse applications from beverage carbonation to enhanced oil recovery techniques. While nonflammable and fairly innocuous, leaks can be dangerous. Exposure to atmospheric concentrations above 5,000 ppm is considered unhealthy, making careful monitoring crucial at lower levels. Atmospheric concentrations at 1% (10,000 ppm) will make some people feel drowsy while concentrations of 7% and higher can lead to symptoms including dizziness, headache, visual and hearing dysfunction, and unconsciousness.

The Model IR700 IR detector features microprocessor-based technology to continuously monitor CO<sub>2</sub> at a range of 0-5000 ppm. Its detection principle is based on measuring the absorption of infrared radiation passing through a volume of gas using a dual beam, single detector method. The IR detector measures the intensity of two specific wavelengths, one at an absorption wavelength and another outside of the absorption wavelength. Gas concentration is determined by a comparison of these two values.

All of the Model IR700's electronics are contained within a rugged, explosion-proof housing so that detector information can be processed at the point of detection. It features multiple

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communication outputs, a 4-20 mA signal proportional to 0-100% full-scale, Modbus, and HART. The IR700 is also available with relays for warning, alarm, and faults.

The IR700 can be connected to an IR4000S CO<sub>2</sub> transmitter to provide local display and control. The highly versatile IR4000S CO<sub>2</sub> incorporates an LED, relay module, and magnetic interface in a rugged explosion-proof enclosure. Carbon dioxide concentrations are displayed in increments of 100 ppm. The IR4000S CO<sub>2</sub>'s rugged design permits installation and calibration in hazardous locations. Optional 8-A relays expand system functions, reducing the need for integration with other controllers.

The low-maintenance IR700 Carbon Dioxide Detector is factory-calibrated and requires no routine field calibration. Periodic window cleaning and re-zeroing are necessary to ensure performance. The IR700 is able to discriminate between true fault and cleaning requirements and stores fault, gas check, and alarm event history.

The highly dependable IR700 features accuracy of  $\pm 5\%$  of full scale at concentrations less than or equal to 2500 ppm and  $\pm 10\%$  of full scale at higher concentrations. It offers a response time of  $T_{50} \leq 4s$ ,  $T_{90} \leq 8s$ . It operates at a wide temperature range of  $-40^{\circ}F$  to  $122^{\circ}F$  ( $-40^{\circ}$  to  $50^{\circ}C$ ) and humidity range of 10% to 95% RH, non-condensing.

The IR700 IR Point Detector is available in either an aluminum or a stainless steel housing and is designed for use in Class I, Div. 1 and 2, Groups B, C & D and Zone 1 areas for North America and Zones 1 and 21 internationally. Ingress protection is rated IP66/Type 4X. The IR700 has CSA, ATEX, and IECEx approvals, CE Marking, and is HART Registered.

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**Data Sheet:** [http://www.generalmonitors.com/downloads/literature/toxic/IR700\\_DATA.PDF](http://www.generalmonitors.com/downloads/literature/toxic/IR700_DATA.PDF)

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