

# Applications Case Study

## Brewery Hazards

### The Challenge

Safety requirements in a large brewery required the detection of excess carbon dioxide (CO<sub>2</sub>) in a large fermentation room. Odorless, tasteless carbon dioxide displaces oxygen and creates a hazard for unsuspecting workers. The locations of the sensors posed a unique problem for the customer, as the units were constantly being washed down with high-pressure water.



In addition, the brewery housed a 20 year old centralized gas monitoring system that used a network of sample draw tubes to monitor the air in an adjacent warehouse. The centralized monitor was failing and no replacement unit was available.

### The Solution

Initially, the water ingress problem remained unrecognized. An increase in sensor failure rate eventually resulted in an inspection of the entire system and discovery of junction boxes half-filled with water.

To solve the water problem, GDS Corp developed a specialized sensor unit utilizing a SmartIR Infrared carbon dioxide detector connected to a sealed and potted junction box with extended leads. The SmartIR carbon dioxide sensor is a thumb-sized, fully integrated device that features a built-in source, detector and microprocessor controller that mimics the output from a bridge-type catalytic bead. This allows the SmartIR to be used with existing systems that accept inputs from traditional bridge-type sensors. To complete the system, a splash guard with integrated cal nipple was attached to the sensor to provide protection from directed water spray and allow calibration gas to be focused on the sensor element via remote tubing.

For the centralized gas monitoring system, the customer chose the GDS-IR long-path infrared gas monitor with stainless steel flow cell. The GDS-IR accepts 18-30VDC input and offers an industry standard 4-20mA output. The unit features an internal heater to minimize internal condensation and the built-in microprocessor continuously monitors the source, detector and optics for problems. Factory calibration is generally

not required for the life of the device, while periodic zero drift calibration is easily performed by pressing and holding the zero set pushbutton. In this example, the GDS-IR was a perfect fit to replace the existing 1980's detector, allowing the brewery's centralized gas detection system to continue to function for years to come.



GDS-IR

# GDS Corp

Gas and Flame Detection