Critical Environment Technologies™

Brewery Applications

Peace of mind. Guaranteed.

Continuous monitoring of CO_2 and O_2 in beer fermentation room and bottling area.

Areas of concern for high levels of Carbon dioxide (CO_2) in breweries include the fermentation room and bottling area. During fermentation a significant amount of CO_2 is generated and depending on the setup, may be ventilated or captured for use. Any CO_2 that escapes can collect in low lying areas, forming potentially hazardous pools of gas that can build up and displace Oxygen (O_2). Levels of CO_2 should be checked prior to workers going into the vats to clean them. Being odourless and colourless, the presence of CO_2 is not known until symptoms of exposure are experienced, unless gas detection equipment is used.

Using Critical Environment Technologies Canada Inc. (CETCI)'s **QCC Quad Channel Controller** with an **LPT-A Analog O_2 Transmitter** and an **AST-IS18 Industrial CO_2 Transmitter** is the solution. The placement of the two transmitters inside the fermentation room and in the bottling area provides continuous monitoring for Oxygen levels and potential leaks of Carbon dioxide. The **QCC** Controller with a top mounted strobe mounted outside the room door provides a status of the air quality conditions inside the room prior to entry. If Oxygen levels fall below safety levels or if a CO_2 leak is detected the top mounted strobe will activate and an audible alarm will sound. The designated relays will activate a preset response, such as turning on a remote alarm device, actuating the mechanical ventilation system and/or triggering another set response as required.

Brewery Applications

Typical O$_2$ and CO$_2$ Monitoring System
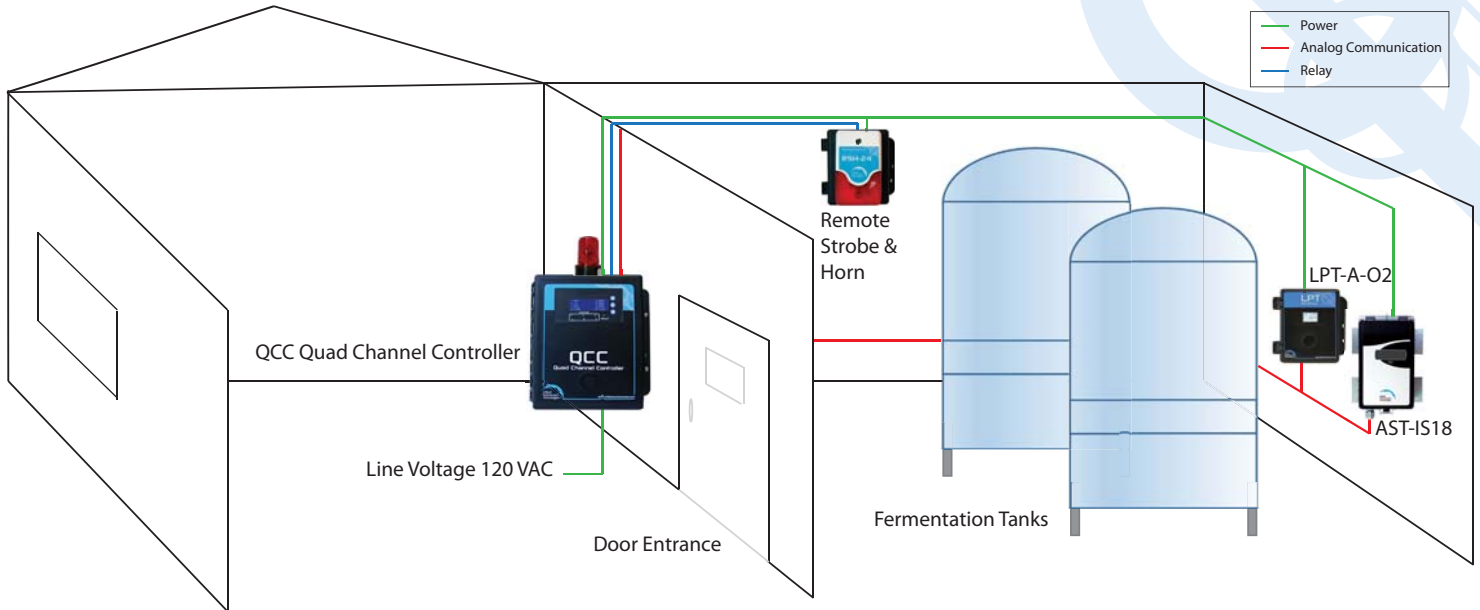
The LPT-A-02 Analog Transmitter with an electrochemical Oxygen sensor and should be mounted on the wall inside the fermentation room, at the breathing zone height (4 - 6 feet from the floor). It should be close to the fermentation tanks where oxygen is most likely to be depleted in the event of a leak of CO$_2$. The measurement range for oxygen is 0 - 25% volume. With the optional splash guard installed, the enclosure is water tight (IP54 rated) and will withstand water spray or wash down applications.

The AST-IS18 Industrial Transmitter with a non-dispersive CO$_2$ infrared sensor that provides accurate, reliable Carbon Dioxide detection, should be mounted on the wall inside the fermentation room, next to the LPT-A-O2 transmitter. The measurement range for Carbon Dioxide is 0 - 4% volume. The enclosure is waterproof (IP65 rated) and will withstand water spray or wash down applications.

The QCC Quad Channel Controller with a top mounted strobe should be mounted outside the fermentation room entry door. It will interface to the LPT-A and CO2 transmitters inside the room and will display the target gas levels for viewing prior to entering the room. The QCC is pre-programmed and field adjustable. Functions that can be set include relay assignment, time delays, logic control, sensor types and ranges, alarm set points, etc. The QCC should be configured to set off alarms and activate the exhaust ventilation system, shut down the chillers or other alarm procedures as appropriate when a leak is detected.

During the bottling process, CO$_2$ is used to pre-fill each bottle before it is filled with beer. Another LPT-A-02 Analog Transmitter with an electrochemical oxygen sensor and AST-IS18 Industrial Transmitter with a non-dispersive CO$_2$ infrared sensor should be mounted in the bottling area to monitor and protect workers on the bottling line. The QCC can accept inputs from up to 4 analog and/or digital transmitters using Modbus® RS-485 digital communication.

Remote visual and audible alarm devices such as the Remote Strobe / Horn (RSH-24VDC) should be set up inside each room and if there is another entrance to the room, a QCC-RDM Remote Display Module should be mounted outside the door of that entrance, to provide visual confirmation of gas level readings prior to entering the room.