Critical Environment Technologies™

APPLICATION GUIDE

Oil Extraction

FCS Controller & CXT2 Explosion Proof Butane or Ethanol Sensor

Peace of mind. Guaranteed.

Continuous monitoring of Butane or Ethanol in commerical oil extraction facilities

The legal marijuana industry is experiencing a whole new world of possibilities when it comes to product offerings. There are commercial growing, processing and extraction facilities producing forms of the product that can be smoked or eaten.

Edible products are typically infused with a highly concentrated oil or extract, providing edible products as an alternative to smoking. To produce the honey-like oil, the production process typically involves using a flammable and hazardous solvent, such as Butane or Ethanol to extract the THC from the plant. During the process, at some point the gas must be released to remove it from the oil which could pose the risk of explosion and asphyxiation. In a closed system, this release is less dangerous than in an open system. However, the potential for Butane or Ethanol to leak and/or be released into the surrounding air is legitimate safety concern.

Having Critical Environment Technologies' FCS 4 channel Flexible Control System with CXT2 Explosion Proof transmitters with an infrared Butane or Ethanol sensor to monitor for gas leaks is a safety practice that may save facilities from explosions and workers from hazardous gas exposure.

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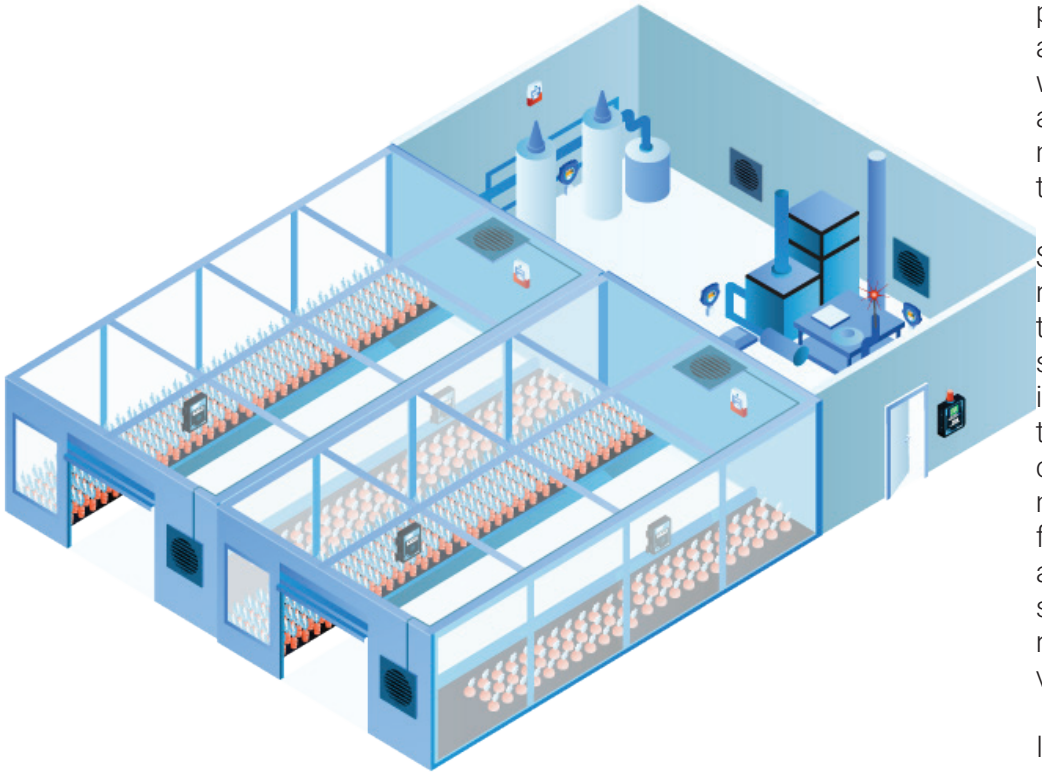
Continuous Monitoring of Butane (C_4H_{10}) or Ethanol (C_2H_6O) in oil extraction processing facilities

Depending on the gas being used, inside the oil extraction processing area, Explosion Proof transmitters with either infrared Butane sensors (CXT2-A-IC4H10) or Ethanol sensors (CXT2-A-IC2H6O) should be mounted 6 inches from the floor near the extractor and where the gas may potentially leak and is likely to collect. Butane and Ethanol are heavier than air and will collect in low places. Mounted at viewing height, outside the extraction processing area door should be an FCS Flexible Control System with a top mounted strobe or a Remote Strobe / Horn device mounted on the wall outside the door.



Similarly there should be the respective Explosion Proof transmitter inside the chemical storage room, mounted 6 inches from the floor, near the Butane or Ethanol gas cylinders to continuously monitor for potential leaks from the cylinders. In addition, an explosion proof strobe/horn should be installed inside the room to provide an audible/ visual alert.

In the event of a gas build up in excess of the alarm set points, the FCS will go into an alarm state and the relays will be triggered, which will in turn activate the ventilation fans and the Remote Strobe / Horn devices. If the CO2 storage area is in the same area as the extraction room or gas storage room, Explosion Proof CXT2-A-ICO2 transmitters should also be used.

The FCS is pre-programmed and field adjustable, offering 4 dry contact relays, priority settings, logic control, including time of day, data logging, audible alarm and a full colour, resistive touch screen. The FCS should be configured to set off alarms and activate the exhaust ventilation system, shut down the equipment or other alarm procedures as appropriate The FCS-4 accepts Modbus® RS-485 digital communication or analog (4 - 20 mA) signal (must add Option -AI). Up to a maximum of four transmitters can be connected to the FCS-4. If more than 4 channels are required, other models of the FCS are available that offer 8, 32 or up to 128 channels.

Remote visual and audible alarm devices such as the Remote Strobe / Horn (RSH-24V-R or RSA-24V) should be mounted outside the entrance to the extraction and storage room.

Note: The CXT2-A analog models can be substituted with the Modbus® RS-485 digital CXT2-D models.

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