

Ice Arena Applications



Peace of mind. Guaranteed.

Continuous monitoring of carbon monoxide, nitrogen dioxide, propane and ammonia in ice rink applications.

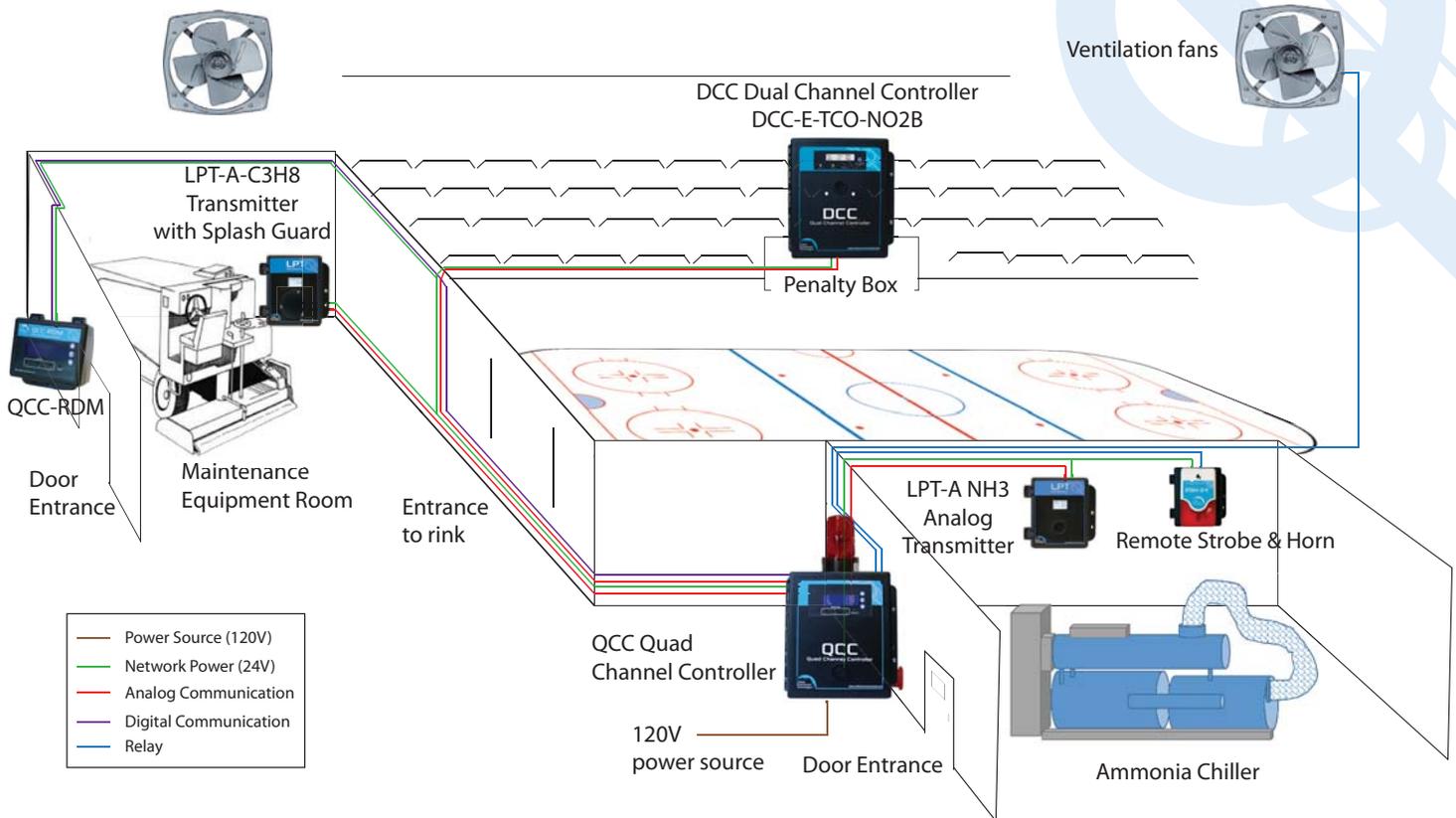
Ice arenas have multiple gas hazards in various locations throughout the facility. At the ice surface level, gasoline, propane, natural gas (and sometimes diesel) powered equipment such as an ice resurfer and ice edger produce exhaust composed of carbon monoxide and/or nitrogen dioxide. Other fuel powered equipment such as floor sweepers, lift trucks and other vehicles idling in close proximity can add to the CO and NO₂ levels. Ammonia is commonly used in the ice chiller mechanical room and if a leak were to occur, it would become a corrosive, toxic gas.

Using Critical Environment Technologies Canada Inc. (CETCI)'s **QCC Quad Channel Controller** with two **LPT-A Analog Transmitters**, and a **DCC Dual Channel Controller** is the solution. This 4 channel system offers strategic placement of the gas detectors which provide continuous monitoring for potential leaks. Each device communicates with the **QCC Controller** which provides a status of the air quality conditions in all potentially hazardous areas.

The **QCC** should be equipped with a top mounted strobe and a manual shut off switch (meets B52 code requirements). At specified alarm levels, the ventilation system can be activated as well as any remote devices such as the Remote Strobe / Horn combo. The manual shut off switch can be used to shut off the chiller equipment.

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Typical Ice Arena Monitoring System (Carbon monoxide, Nitrogen dioxide, Propane and Ammonia)



The DCC Dual Channel Controller with two internal sensors should be mounted atop the penalty box or score keepers box to monitor carbon monoxide and nitrogen dioxide levels on the ice from resurfacing equipment. The LPT-A-C3H8 transmitter in the ice resurfacer parking area should be mounted 6 inches from the floor, preferably near the drain channel as propane is heavier than air and will accumulate in low lying areas. Being so close to the floor, it should be equipped with a factory installed splash guard to protect the sensor from the wet environment. If the ice resurfacer is powered by natural gas, an LPT-A-CH4 transmitter should be used instead, mounted on or near the ceiling to monitor the levels of methane. Outside the door of the maintenance equipment room should be mounted a QCC-RDM Remote Display Module to provide a visual check of gas levels prior to entering the room. There should be an LPT-A-NH3 analog transmitter inside the chiller room, mounted on or near the ceiling because Ammonia is lighter than air and will typically collect within 12 inches of the ceiling. There should also be a Remote Strobe / Horn (RSH-24VDC) inside the room, configured to be activated by the LPT-A relay or one of the QCC relays.

The QCC Quad Channel Controller communicates with the two LPT-A transmitters and the DCC Controller, providing a single point of access to view gas level readings and configure transmitter settings. Likewise, the QCC-RDM displays the information gathered from the QCC as another point of access to view the gas level readings. The QCC should be mounted outside the chiller mechanical room entry door to provide a visual check of the gas levels prior to entering the room. The QCC is pre-programmed and field adjustable. Configurable settings include relay assignment, time delays, logic control, sensor types and ranges, alarm set points, etc. There is a 4-line x 20 character backlit LCD display that actively scrolls through the programmed channels and displays the gas name, concentration and alarm status. The QCC has 3 relays that can be configured to activate the exhaust ventilation system, trigger onboard and remote alarms and other procedures as appropriate. The QCC can accept up to four 4-20 mA inputs and/or Modbus RS-485 digital inputs. An optional analog output module is available that offers two 4-20 mA outputs and data logging.