

Gas Detection for Ice Arenas

Peace of mind. Guaranteed.

Monitoring of carbon monoxide,
nitrogen dioxide and propane (or
methane) in ice rinks.

Ice arenas have multiple gas hazards in various locations throughout the facility. At the ice surface level, gasoline, propane, natural gas or 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 also add to the CO and NO₂ levels. A handheld IAQ monitoring device such as the YES AIR would provide accurate, reliable gas level readings for the duration of the time the equipment remains running on the surface of the ice.

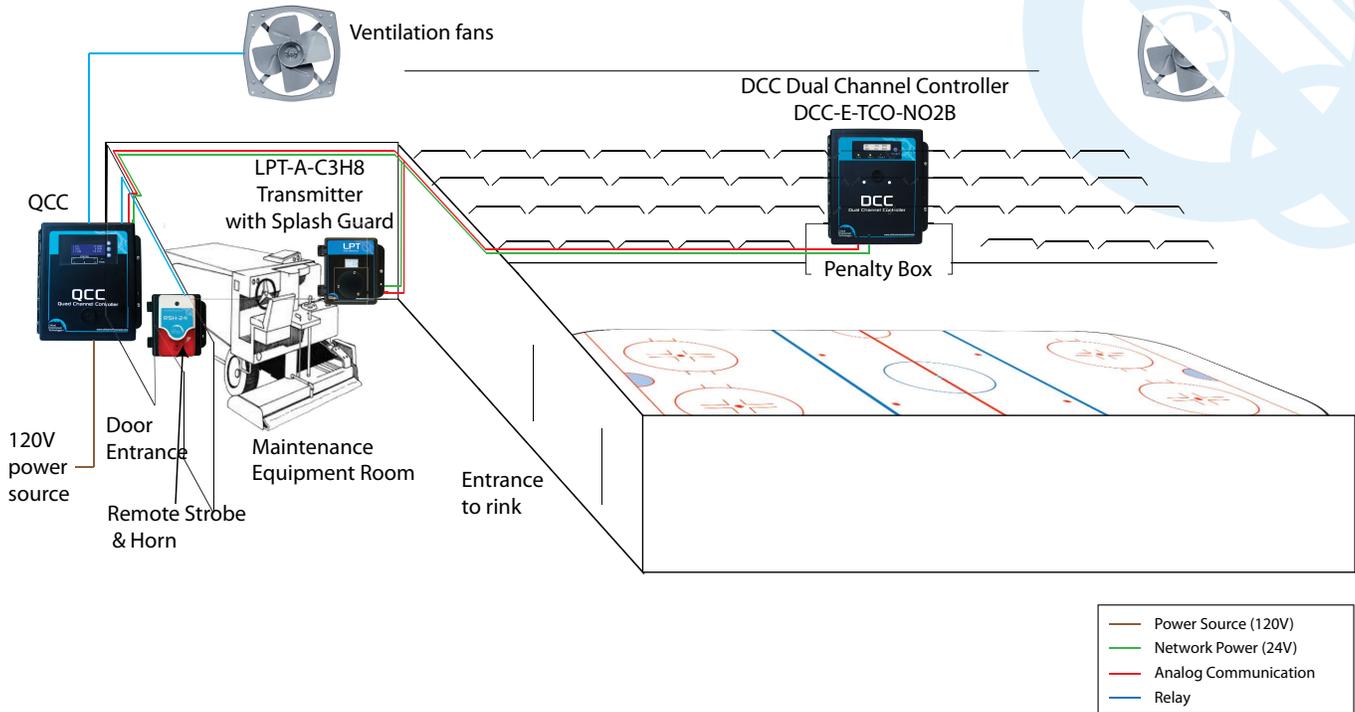
In the parking/maintenance area for the ice resurfer there are concerns of possible leaks of propane or natural gas (depending what fuels the ice resurfer) thus there should be a propane or methane gas detector installed to provide continuous monitoring of these potential gas hazards.

Using Critical Environment Technologies Canada Inc. (CETCI)'s **DCC Dual Channel Controller** at the ice level surface and an **LPT-A Remote Transmitter** in the parking/maintenance area, both connected to the **QCC Quad Channel Controller**, is the solution. At specified alarm levels, the ventilation system can be activated as well as any remote safety devices such as the remote strobe & horn combo.



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



The QCC Quad Controller should be mounted outside the entrance to the Maintenance Equipment room or the area where the ice resurfer is parked to provide a visual check of the gas levels prior to entering the room. If the ice resurfer is powered by propane, an LPT-A-C3H8 transmitter with a propane sensor should be mounted inside the room, 6 inches from the floor and near the drain channel, as propane is heavier than air and will accumulate in low lying areas. Being so close to the floor, the LPT-A-C3H8 should have a factory installed splash guard to protect the sensor vent from the wet environment of melting ice and splashing water. If the ice resurfer is powered by natural gas, an LPT-A-CH4 with a methane sensor should be used instead and mounted on or near the ceiling. At the ice surface level, a DCC Dual Channel Controller with an internal carbon monoxide sensor and nitrogen dioxide sensor should be mounted atop the penalty box or score keepers box to provide accurate, reliable gas level readings for the duration of the time the equipment remains running on the surface of the ice and/or throughout the occupied periods as per local regulation requirements.

The LPT-A and the DCC will be connected to, and communicate with the QCC and in the event of a gas build up in excess of the alarm setpoints, the QCC will go into an alarm state, the relay will be triggered, which will in turn activate the ventilations fans and the Remote Strobe / Horn mounted (RSH-24VDC) outside 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.

NOTE: The gas detection specifications for the ammonia chiller room are not included in this application example.