

Clear the air and save energy with CO₂ sensors

Submitted by Manitoba Hydro

Install Carbon Dioxide (CO₂) sensors in your municipal buildings to improve air quality and save on energy costs.

“In most businesses, heating, ventilation, and cooling typically accounts for more than 50% of total energy costs,” says **Jan Peters**, Marketing Specialist, Manitoba Hydro. “Any opportunity a building has to reduce heating and cooling loads can result in significant energy savings.”

Proper ventilation ensures improved indoor air quality. During ventilation, buildings bring in “fresh” outdoor air to replace outgoing stale or polluted air. Better indoor air quality is linked to improved health and higher employee productivity. In Manitoba, our extreme winter and summer temperatures often require outside ventilation air to be heated or cooled before it is distributed internally.

“In addition to energy savings, CO₂ sensors help ensure consistent indoor air quality and improve overall comfort.”

According to Peters, HVAC systems often over-ventilate when a building is partially occupied – such as in a school after classes are over for the day. “The building is empty overnight, but ventilation is set for maximum design occupancy. Energy is wasted to heat or cool this unnecessary outside ventilation air. CO₂ sensors eliminate this energy waste by supplying just the right amount of ventilation air that meets occupant needs.”



CO₂ sensors are especially suited for municipal spaces where the numbers of people and/or occupant hours are variable. “Municipal offices, administration buildings, conference rooms, classrooms, gymnasiums and community halls are all ideal settings for this technology,” says Peters. “People exhale CO₂ at predictable rates, so the measurement of CO₂ serves as a useful indicator of a building’s ventilation needs. As people leave a space, such as at the end of a work day or after an event, the sensors detect a decrease in CO₂ levels and reduce ventilation accordingly.”

According to Peters, you can save approximately \$230 off your annual energy bill for every CO₂ sensor you install.

“CO₂ sensors offer good energy savings for a minimal investment,” says Peters. “A school that installs seven CO₂ sensors to control a gymnasium, auditorium, cafeteria and 12 classrooms can save \$1,800 annually on energy costs. It takes an average of about three years to payback the cost of this ventilation upgrade through annual energy savings.”

In addition to energy savings, Peters points out the impact CO₂ sensors have on your building environment. “CO₂ sensors help ensure consistent indoor air quality and improve overall comfort. By eliminating the need to heat or cool unnecessary outside ventilation air, CO₂ sensors also reduce the demand placed on your HVAC system and reduce a building’s total greenhouse gas emissions.

According to Peters, there has never been a better time to install CO₂ sensors. “Manitoba Hydro is offering an incentive of \$200 per sensor installed in existing commercial buildings. Pre-approval is required for the incentive, so it’s important for municipalities to contact Manitoba Hydro before they purchase or install their sensors.” says Peters.

You can apply for pre-approval by contacting the Commercial HVAC Program at 360-3676 in Winnipeg, 1-888-MBHYDRO (1-888-624-9376) toll-free, or at powersmartforbusiness@hydro.mb.ca. Information is also available on the Manitoba Hydro website at www.hydro.mb.ca.

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