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APPLIEDSENSOR INTRODUCES iAQ-2000 SENSOR MODULE FOR INDOOR AIR QUALITY "BEYOND CO₂"

Module Maintains Healthy Air in Hotel Guest Rooms, Bathrooms and Public Buildings by Detecting VOCs that CO₂ Monitors Can't; Reduces Utility Costs

WARREN, NEW JERSEY –Traditional carbon dioxide (CO₂) sensors cannot detect volatile organic compounds (VOCs) – smoke, odors and gases released from food, human metabolism, cleaning supplies or building materials – suspended in the air. These undetected VOCs can make air quality unpleasant for occupants and hazardous for people with respiratory conditions. (See graph on next page.) To solve this problem, AppliedSensor has introduced the [iAQ-2000 Sensor Module](#) for integration into air handling units and HVAC systems in hotel guest rooms, bathrooms, schools, offices, gyms, and other commercial facilities. In addition to making air healthier to breath, AppliedSensor's iAQ-2000 can significantly reduce utility costs.

For example, the iAQ module was integrated into a gymnasium's air handling unit to monitor the quality of the facility's air and control the speed of the unit's fan. Before the iAQ module was installed, the air handling unit was time controlled, so the gymnasium was ventilated even when it was unoccupied. Installation of the iAQ module enabled the facility to switch to demand-controlled ventilation, which reduced energy consumption by approximately 60 percent.

"We compared switching the speed of the air handling unit's flow rate using an occupancy sensor and a VOC (air quality) sensor. The VOC sensor reduced operating time by 24 percent," said Erik Edvardsson, an electrical engineer with Swegon, the manufacturer of the air handling units.

The highly sensitive iAQ-2000 sensor module responds quickly to the presence of CO, CH₄, LPG, alcohols, ketones, organic acids, amines, aliphatic hydrocarbons and aromatic hydrocarbons. Mounted on a compact PC board, the module is easy to integrate into building automation systems and offers multiple digital and analog output signals for flexible communications with air circulation systems. In addition, the low-power-consuming module can decrease utility costs by reducing fan operating time.



“Building owners and hotel managers want high-quality indoor air and lower energy costs,” said AppliedSensor, Inc. CEO Tom Aiken. “With its ability to signal fans to run only when VOCs are detected, the iAQ-2000 maintains healthy air, reduces costs and supports green building initiatives.”

The iAQ-2000 uses micro-machined metal oxide semiconductor (MOS) technology to detect a broad range of VOCs and correlates these measurements with CO₂ levels. A change of resistance in the presence of target gases generates a signal that is translated into specific air quality levels and linked to gas concentration ranges. When threshold air quality levels are exceeded, the module alerts the climate control system to increase ventilation. After VOC levels are minimized, the module instructs the system to decrease ventilation, thereby saving energy and lowering the facility’s operating costs.

AppliedSensor (www.appliedsensor.com) is a leading provider of chemical sensor solutions for air quality, safety and control. With a 25-year legacy of research and development, the company provides chemical sensor systems for applications in a broad range of industries. The company operates facilities in Sweden, Germany and the U.S. and can be contacted at 908-222-1477.

COMPARISON OF AIR QUALITY MEASUREMENT VOC vs. CO₂ Sensors

