



## Improving Air Ventilation Systems To Reduce Covid-19 Transmission Using xTAG Ventilation Sensors

Installing ventilation systems can have a significant effect on curbing the transmission of Covid-19 and keeping any environment healthy. Ventilation systems are only effective when working correctly. Monitoring their effectiveness requires measuring Carbon Dioxide (CO<sub>2</sub>) within processed air at targeted locations and **comparing indoor CO<sub>2</sub> to**

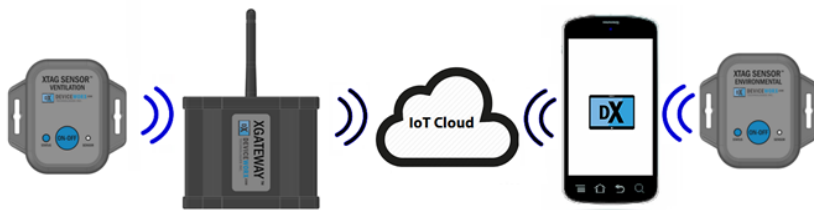
**baseline outdoor CO<sub>2</sub>**. The difference between indoor and outdoor CO<sub>2</sub> levels indicates how well a space is ventilated. Deviceworx new waterproof, extended temperature xTAG Ventilation Sensor design supports measuring CO<sub>2</sub> indoors **and outdoors** to prove ventilation effectiveness. When the difference between indoor and outdoor CO<sub>2</sub> is high, ventilation is insufficient and must be increased. When this difference is very low (often when spaces are empty) ventilation systems can be turned down or off dramatically increasing filter

longevity and reducing energy use. xTAG Ventilation Sensors can substantially increase the safety of public and private spaces while ensuring that ventilation systems do not waste expensive energy.



Operators can review indoor, outdoor and differential CO<sub>2</sub> levels within Internet of Things (IoT) cloud-based reports. Cloud functions can also trigger alarm messages to Smartphones via email or text alerts when indoor/outdoor differential CO<sub>2</sub> levels get high and ventilation systems require attention. Fixes may include simply plugging them back into a wall socket, replacing their filter or simply increasing their output. Air ventilation service providers can charge operators to view reports and receive alerts under a Software as a Service (SaaS) business model and dramatically increase revenue beyond air ventilation hardware markups. SaaS revenue increases are the benefit to service providers while more effective ventilation and purification are the benefit to operators.

All xTAG Sensors can make wireless connections to the cloud via Deviceworx xGATEWAY IoT Gateway devices. xGATEWAYS can also be used to cloud-connect many disconnected air ventilation systems that have simple serial interfaces to support reporting on ventilation system health and, in some cases, providing for their remote control based on CO<sub>2</sub> levels.



For simpler ventilation hardware (without a serial interface), direct on/off control that is based on indoor/outdoor differential CO<sub>2</sub> is possible using an xGATEWAY.

In some cases, simple, opportunistic acquisition of xTAG Ventilation Sensor CO<sub>2</sub> data for storage and reporting in the cloud may be all that is required. In these situations, operators can use the xTAG Explorer app as an IoT Gateway. This app can collect sensor data over wireless for subsequent cloud storage reporting and alarming (using a tablet Wi-Fi or cell data connection).



There are many approaches in monitoring air ventilation system effectiveness. Deviceworx can integrate xTAG Ventilation Sensors, xTAG Gas Sensors, xGATEWAYS, the xTAG Explorer app and 3rd party tools to meet the challenges presented in different installations. Contact our sales team ([sales@deviceworx.com](mailto:sales@deviceworx.com)) to learn more about how we can help.