

**DOCKETED**

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## **Ventilation issues while mitigating costs**

Some Districts have CO2 sensors in each classroom. When those systems are installed, they operate normally for the first few years. Then they start to see a lot of sensor drift and sensor failures that cause the accuracy of the sensor to deteriorate. The Districts did not have the in-house expertise to maintain these types of sensors, nor do they have the funding to replace them when they fail. As the system failed the reading was forced to a value through their EMS systems, which eliminates the benefit of the sensors.

Here is the listed price for two commonly used sensors:

• Honeywell C7262A1016 Wall Mount CO2 / Temperature Sensor: \$241.61 (Part Only)

• Siemens QPA2284.FWSC Wall Mount CO2 / Temperature Sensor / RH Sensor: \$393.25 (Part Only)

Our average elementary school can have as many as 30 classrooms. Adding CO2 sensors to a school of that size initially would cost over \$20,000 per school for parts and installation. It also adds thousands of dollars in additional maintenance expense as the sensors age. It would cost our 50 plus school district to spend approximately \$1,000,000 to add CO2 sensors to each classroom. While these numbers are approximations, anytime we start adding expensive and maintenance-intensive products to a classroom, we should understand the potential costs.

The CEC should consider the following recommendations:

• Schools with central service air handlers (VAV / Multizone / Large Constant Volume AHU's) with ducted return (non-plenum return systems) • Monitor the CO2 levels of the space with a single return air duct mounted CO2 sensor. Use it as specified in ASHRAE 62.1 to control the ventilation of those systems.

• All other schools • Provide a handheld CO2 meter to the maintenance organization with a monthly written procedure for testing the CO2 levels of each classroom. The procedure must be extremely formal in how/when the measurements must be taken and recorded for each site. The meter must be one that can be periodically calibrated to ensure that the readings are accurate. Funding should be tied to the commitment to maintain the testing during the COVID event. Funding should be provided to report the results.

The goal should be to identify spaces that are not being ventilated properly. Either recommendation would catch ventilation issues while better mitigating the cost impacts to the District.