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Portable Combustion Analyzers and Carbon Monoxide

OVERVIEW

With all residential and commercial boilers, furnaces and heaters, there is an inherent risk that cracks in the heat exchanger, improperly maintained ducting systems, improper venting, faulty equipment, incorrect fuel/air mixture, or other malfunctions can cause carbon monoxide (CO) to leak into the living or working environment of a building.

CONCERN

During the combustion process, an **inadequate supply of oxygen** can result in the production of higher than normal concentrations of **carbon monoxide (CO)**. Thus, if a combustion system is **not properly maintained**, the occupants of the building or any HVAC contractors working in the boiler room may be at **risk of exposure** to dangerous levels of carbon monoxide.

Carbon monoxide (CO) is a colorless, oderless, tasteless, flammable and **highly toxic gas** that can cause even death in extreme cases. Here the effects of different level of exposure.

9 ppm	The maximum allowable concentration for short term exposure in a living environment (ASHRAE).
35 ppm	The maximum allowable concentration for continuous exposure in any 8 hour period according to US federal law.
200 ppm	The maximum allowable concentration for any time according to OSHA. Can cause headaches, fatigue, and nausea after 2-3 hours.
800 ppm	Nausea and convulsion within 45 minutes and death within 2-3 hours.
3200 ppm	Headaches and nausea within 5-10 minutes and death within 30 minutes.

CO POISONING SYMPTOMS

INSTRUMENTATION SOLUTION

Combustion gas analyzers can be used to **measure the levels of ambient CO** present in a boiler room and throughout the building along with the CO in the stack. The Seitron **Novo** and **S1500** are designed with a built-in ambient CO monitor that can accurately detect dangerous concentrations of CO.

This is an **essential tool** that enables proper maintenance of the HVAC system and at the same time allows to confirm that the environment is save for people.