Device for measurement concentration of toxic gas in an enclosure

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Abstract.
This article presents the design and practical realization of a device for measuring the concentration of gases in an enclosure. In addition to measuring the concentrations of gases in the room (carbon dioxide, carbon monoxide, ozone, etc.), the main objective is to simulate the integration of the prototype itself in a ventilation system, resulting in a quality index. of the air as suitable as possible depending on the occupancy level of the room. A ventilation control system according to the needs of the occupants of the enclosure, is a system which monitors a sequence of parameters such as: ambient temperature, toxic gas concentrations and air humidity, and thus, according to the measured values, will introduce a quantity corresponding air quality ensuring an optimal air quality factor.
This system offers a good compromise between minimizing energy consumption and ensuring good air quality, especially given that the occupancy rate of the monitored rooms is variable and unpredictable. The built-in system is designed to constantly monitor air quality by adjusting the amount of clean air introduced, so that it will keep the level of CO, CO2 and O3 below a maximum allowable limit, thus adjusting the ventilation as needed.