rotronic
MEASUREMENT SOLUTIONS

BETTER AIR MEANS BETTER PERFORMANCE

We all know the situation: meetings where individuals' performance drops sharply. In most cases, this is a direct result of the poor quality of the air in the room.

Uncomfortable situations like this need not arise. CO_2 displays by Rotronic make it easy to measure air quality, and the results can be used to initiate the appropriate measures.

In an enclosed room, some 25 to 35 cubic metres of fresh air per person per hour are needed, given normal activities. This ensures that the carbon dioxide (CO_2) content remains below 1,000 ppm (ppm = parts per million [value of the proportion of carbon dioxide in the air]), and that the volatile substances exuded by humans are extracted to a sufficient degree. By comparison, the CO_2 concentration in outdoor air is around 400 ppm. The CO_2 concentration is a good indication of the quality of the air in a room. The consumption of air rises particularly quickly in meetings, with many people in small rooms. By the time we notice this productivity has already declined. A CO_2 sensor is the answer here. Alfred Freitag, Sales Manager for Switzerland at Belimo Automation AG, points out that a meeting should be interrupted when the CO_2 concentration reaches 1,200 ppm and the room should be ventilated. The CO_2 content in the air then drops rapidly, and productivity increases again.

A right to good air

Every person has a right to healthy indoor air (WHO). In the case of workplaces, the labor laws require that air quality and room climate must not represent a health hazard for employees. In the private sector, there are no regulations, and the owner is responsible. However, the Swiss Cantonal building regulations require energy-efficient buildings. This requirement can be met only when the buildings are airtight. Consequently, free exchange of air is no longer possible. Martin Bänninger, director of the SVLW (Swiss association for air and water hygiene), has this to say: "Most Cantonal building laws, or municipal building regulations, state the principle that a building must not endanger life or health of the building's users." Furthermore, buildings must be erected according to the rules of the building trade, as laid down in the standards, directives and bulletins (SIA, SWKI).

Careful planning of ventilation systems

Today, however, an adequate supply of fresh air cannot be taken for granted. In densely built-up housing areas, normal ventilation through the windows is of limited value. A good room climate cannot be achieved by regular airing in all buildings – climate-regulating systems are a necessity.

Left to right: Pascal Brunner, Key Account Manager ROTRONIC, Alfred Freitag, Sales Manager Switzerland, Martin Bänninger, Director Swiss Association for Air and Water Hygiene.

Building owners and ventilation planners should therefore conform to the specifications in the SWKI Directives – "Hygiene requirements for room air systems and devices" – starting with the positioning of the air intake, through the controls of the ventilation and heating systems to the instruction of the occupiers. In the case of more complex systems, the responsibilities for surveillance and maintenance must also be clearly defined. "The maintenance of the system should have high priority," Alfred Freitag emphasizes. To keep the ventilation systems functioning reliably, and to keep them hygienic, they must be carefully planned, constructed, regulated and maintained. Rotronic CO_2 displays can then be used to monitor these ventilation systems, the data being read out via USB stick when necessary.

Asked why Belimo decided in favor of the Rotronic CO_2 displays, Alfred Freitag says, "We were very competently advised by ROTRONIC CEO Michael Taraba. He took care of our needs personally. In addition, the visualization of the measured data was very important to us. They are simple and clear to read on the Rotronic display. Hitherto, Rotronic has proved a very reliable partner." In addition, the Rotronic display permits global assessment of the air. It measures CO_2, humidity and temperature. This allows suitable countermeasures to be taken.

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> Alfred Freitag
> Belimo, Switzerland

Belimo Automation AG

Belimo is the world market leader in the development, manufacture and sales of drive solutions for regulating and controlling heating, ventilation and air-conditioning systems. Actuator drives and water actuators are its core business area. Belimo is a listed technology company with 1,400 employees worldwide. It has been developing, producing and selling electric drives for air flaps and valves in heating, ventilation and air-conditioning equipment since 1975.

CO_2 Display

The wall-mounted or bench-top CO_2 display is an inexpensive display unit that simultaneously measures and records CO_2, humidity and temperature. Equipped with the field-tested and proven ROTRONIC HYGROMER® IN-1 humidity sensor, this instrument offers unbeatable value for money. The instrument can be configured directly with buttons, and stored data can be exported to a USB stick for analysis with the free Rotronic software package SW21.

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