



FOR BETTER AIR IN CLASSROOMS AND OFFICES

Do you still remember your schooldays? Following a lesson in mathematics, the air in the classroom was stale and stuffy. This problem has grown worse today as law requires many buildings to be airtight, meaning basic ventilation no longer exists. This “Meine Raumluft” an independent platform whose aim it is to improve the quality of indoor air wishes to change. In its project involving 100 Swiss classrooms the quality of room air was measured using CO₂ displays from Rotronic. They enable easy and practical measurement of air quality, temperature and humidity in rooms.



CO₂ display from Rotronic in use in Class 5 / 6B at Köniz-Buchsee Primary School (Switzerland).

The platform “MeineRaumluft.ch” is an independent platform set up to inform the general public about all matters concerning healthy indoor air and to contribute to a noticeable improvement in room air quality. A large-scale campaign to measure room air was launched in schools in mid 2017 and is set to run through to mid 2018. The campaign was initiated by “Meine Raumluft” and the non-profit organization “Lunge Zürich”. The project involves free and neutral measurement of the air quality in

classrooms and sensitization of the pupils and teaching staff. To measure the air as efficiently, exactly and simply as possible, “Meine Raumluft” used CO₂ displays from Rotronic. These instruments can also measure temperature and humidity, both of which also have an influence on the quality of air in a room. Teachers are able to ask for an instrument for a week per school class at www.meine-raumluft.ch or buy one from Rotronic for permanent use.

Sobering results

Air quality testing in the first 100 school classrooms has resulted in a sobering report. More than half of all the school buildings tested without ventilation systems exceeded the maximum advisory limit for indoor CO₂ of 1400 ppm according to the SIA standard (Swiss Engineering and Architects Association). In the case of school buildings with installed ventilation systems, there was a significant reduction to 25% of classrooms that exceeded the limit. During the monitoring period teachers and pupils took notice of the large visual display and the alert bars next to the CO₂ value so they opened the window more often than usual, leading to the conclusion that the CO₂ values obtained would have been much higher.

Bad atmosphere from airtight buildings

Some 25 to 35 cubic meters of fresh air are needed per person per hour in an enclosed room, given normal activities. This ensures that the carbon dioxide (CO₂) 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. Since many buildings are

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Harry Tischhauser
Platform Spokesman, “Meine Raumluft”

VIDEO CO₂

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airtight nowadays and basic ventilation is no longer guaranteed, the quality of indoor air suffers, resulting in, for example, mildew. An airtight building therefore needs an efficient ventilation concept. This also applies to all products installed. The aim is to use materials that do not outgas harmful substances as far as possible.

The prime aim of “Meine Raumluft” is to raise awareness of the subject in people. The free measurements and CO₂ displays from Rotronic immediately show how good the room air is.

CO₂ guidelines

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|--------------------|-----------------|---|---|-----------------------------------|---|
| 350 – 450 ppm | 400 – 1,200 ppm | > 1,000 ppm | 5,000 ppm (0.5 %) | 38,000 ppm (3.8 %) | > 100,000 ppm (10 %) |
| Fresh air outdoors | Room air | Fatigue and loss of concentration become apparent | Maximum permissible value at the workplace during an 8-hour workday | Breathing air (direct exhalation) | Nausea, vomiting, loss of consciousness and death |



CO₂ Display

The wall or benchtop CO₂ display from Rotronic can visualize measured values such as temperature, humidity and air quality in a room very quickly. The compact instrument is easy to use and displays the data without complication. The CO₂ display is good value for money. The free Rotronic software SW21 can be used to analyze the data. To do so, the data are downloaded to a USB drive.

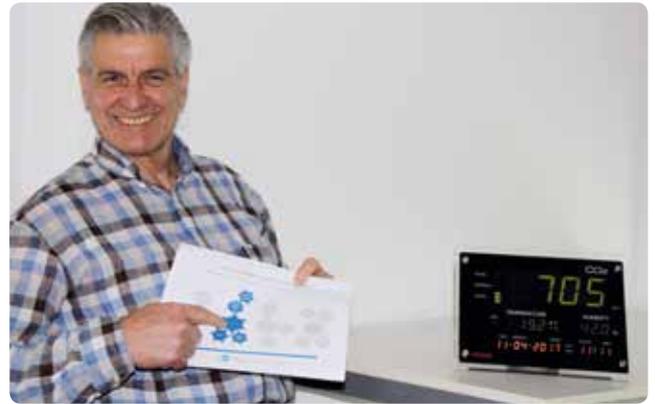


The CO₂ displays from Rotronic in use

For the platform spokesman of “Meine Raumluft”, Harry Tischhauser, it was clear right from the start that he wanted to work together with Rotronic: “The CO₂ displays from Rotronic are the best value for money available on the market. They look good and immediately visualize the quality of the air. In other words, the display is very easy to read.” This is useful particularly in schools as the children can see how good the air in their classrooms is.

Class 5 at Talhof Winterthur also took part in the campaign. Class teacher Emmanuel Monteleone was positively surprised by the friendly contact and how quickly everything ran: “The children had great fun during the measurements and compared the values amongst classes. The children looked into the different questions in a playful manner. Does a student in junior high need more oxygen than a pupil in elementary school? How long must be aired? Is it enough to air at the end of a lesson? What is wellbeing like at optimum or inadequate values? We can recommend this measurement to everyone. Use is totally uncomplicated; all you have to do is plug in the instrument and it works.”

“Meine Raumluft” has already planned a further project with the CO₂ displays from Rotronic, this time to measure the quality of air in Swiss office buildings.



Harry Tischhauser, platform spokesman of “Meine Raumluft”

“MeineRaumluft.ch”

The platform “Meine Raumluft.ch” is sponsored by academia, institutions working in the field of indoor air, research institutes and companies. “MeineRaumluft.ch” is an independent platform that aims to sensitise the general public to all questions concerning the subject of “healthy indoor air” and thus to contribute to a noticeable improvement in the quality of room air. The platform offers extensive information on the many correlations between health, wellbeing and performance and the quality of air in enclosed rooms and also provides an opportunity to discuss issues with experts from science, building and health.

About Rotronic

Rotronic is an international development and manufacturing company that offers a wide range of products and solutions in the B2B segment. Founded in 1965, the company is headquartered in Switzerland and now has 8 subsidiaries and 42 distributors. Rotronic develops and manufactures solutions for measuring and monitoring relative humidity, temperature, CO₂, differential pressure, pressure, flow, dew point, and water activity. Rotronic began the digital transformation 17 years ago and has invested in automated data transfer (machine-to-machine). With the development and launch of its RMS monitoring software, Rotronic further strengthened its position as a key supplier of measurement solutions.

Rotronic is part of “Process Sensing Technologies” (PST).