SENTERA
CONTROLS

HVAC control solutions

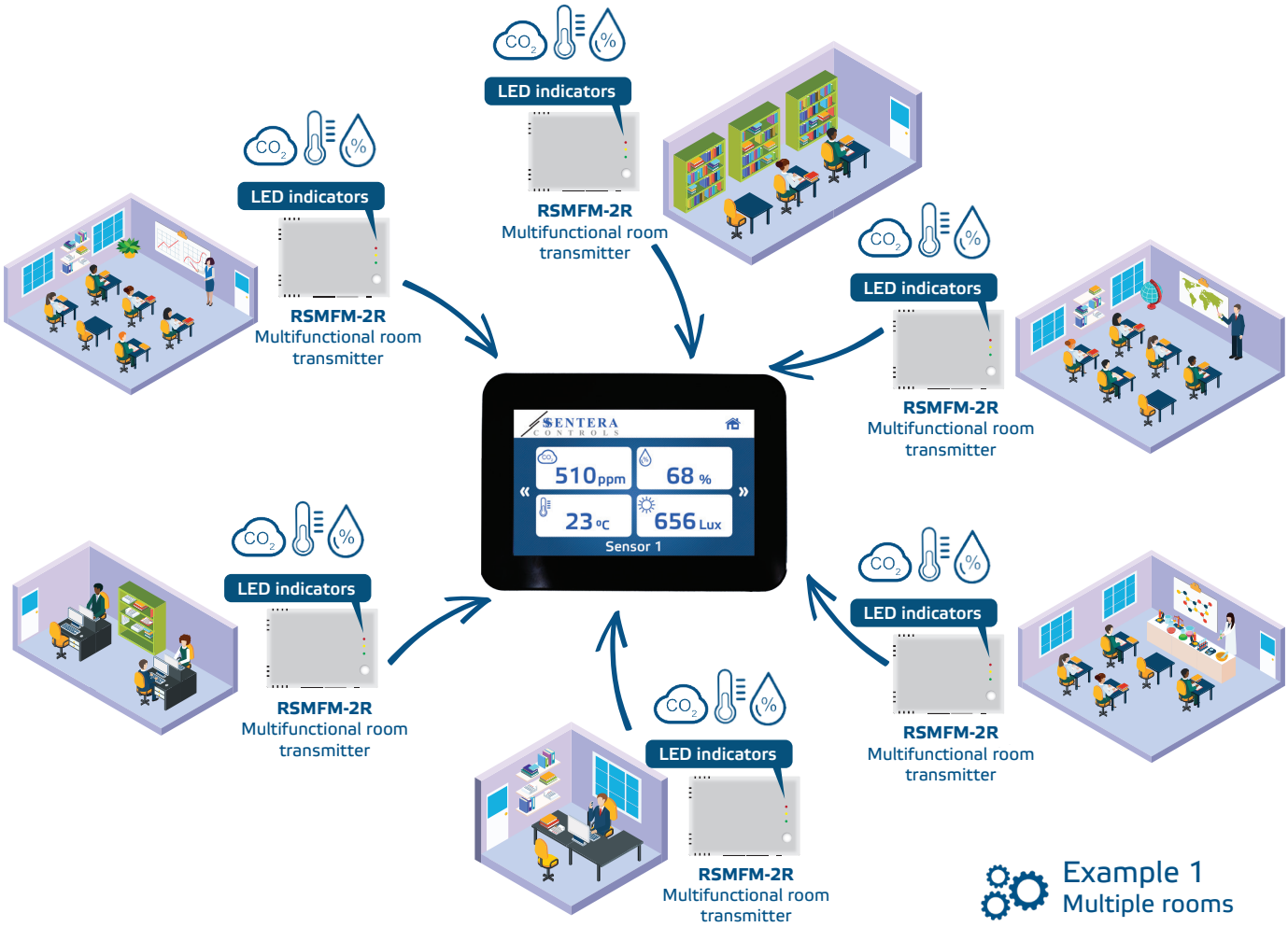
Monitor your indoor air quality

Suitable for public buildings, schools, restaurants, hairdressers, etc.

www.sentera.eu

Solution target

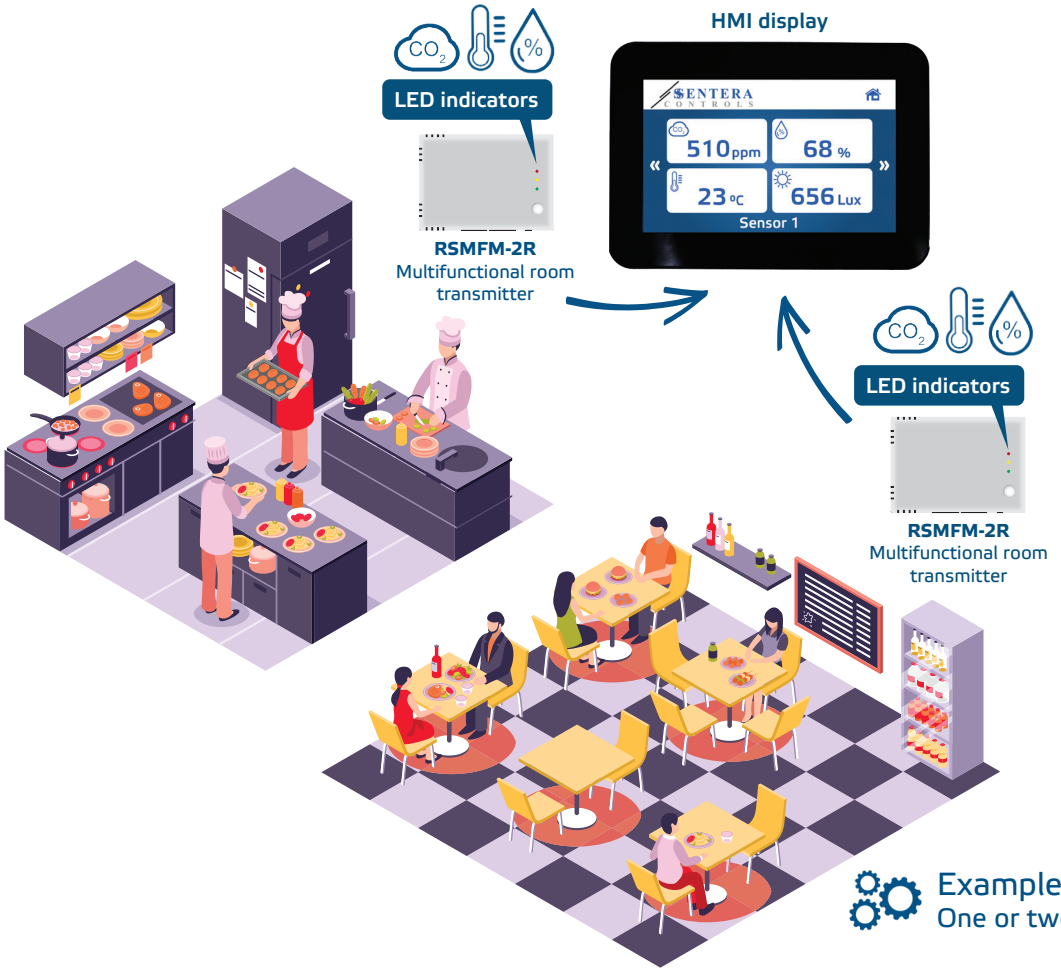
The risk of becoming infected with the COVID-19 virus is higher in crowded and poorly ventilated spaces. Transmission of COVID-19 via aerosols rarely occurs outdoor or in enclosed spaces with a large volume. In case no ventilation system is available, window airing in combination with the monitoring of indoor air quality is recommended. For this purpose, Sentera advises to use CO_2 transmitters. When many people share a limited space, the CO_2 concentration will increase rapidly. Just like the risk of spreading COVID-19 virus particles. Long before occupants will perceive bad air quality or lack of ventilation, the climate monitoring system will alert you to increase ventilation or to open the window.



Example 1
Multiple rooms

General principle of this solution

Sentera CO_2 sensors are installed in different rooms. The sensor measurements are visualised via the central HMI display. There is one pictogram per sensor. This pictogram shows the measured temperature, relative humidity and CO_2 concentration. Also the ambient light level is visualised. If one of the measured values exceeds the predefined range, the pictogram colours red. The CO_2 sensors have LED indicators. As long as the measured CO_2 level stays within range, the green LED will light up. As soon as the CO_2 concentration exceeds the alert range, the yellow LED will light up. The red LED is active when the CO_2 level goes out of the predefined range.



Example 2
One or two rooms situations

Solution purpose

This system can visualise the indoor air quality. Typically, it is installed in buildings without a ventilation system. Long before occupants will perceive bad air quality or lack of ventilation, this climate monitoring system will alert you that more fresh air supply is required. In schools or buildings with a strongly fluctuating occupancy rate, this system can be used to reduce the risk of Covid-19 contaminations.

Based on the measured temperature and humidity, the dew point temperature is calculated. This information can be useful to avoid condensation in colder seasons.

One up to 36 CO_2 sensors can be connected to the HMI display. Each sensor can be given a specific name. This makes it possible to personalise the system for your building.

The sensors and the HMI display communicate via Modbus RTU communication. This is an open communication protocol. This makes the system compatible with most BMS systems.

The length of the main line can go up to 1.000 m. The combined length of all stubs or branch lines must be limited to a maximum of 20 m. If necessary, these lengths can be increased via Modbus RTU repeaters. To reduce wiring time, Sentera products are available with RJ45 sockets. This makes it possible to distribute Modbus RTU communication and 24 VDC power supply via one UTP cable with RJ45 connectors.

Solution products

1. RDPU – monitoring and controller device
2. RSMFM(B) - Combined sensor for CO_2, Temperature, relative humidity, ambient light with or without buzzer
3. SPR-M-3-BK – RJ45 splitter
4. DRPS – Power supply
5. DIGWM – Wireless Internet Gateway (optional)

1. RDPU

2. RSMFM

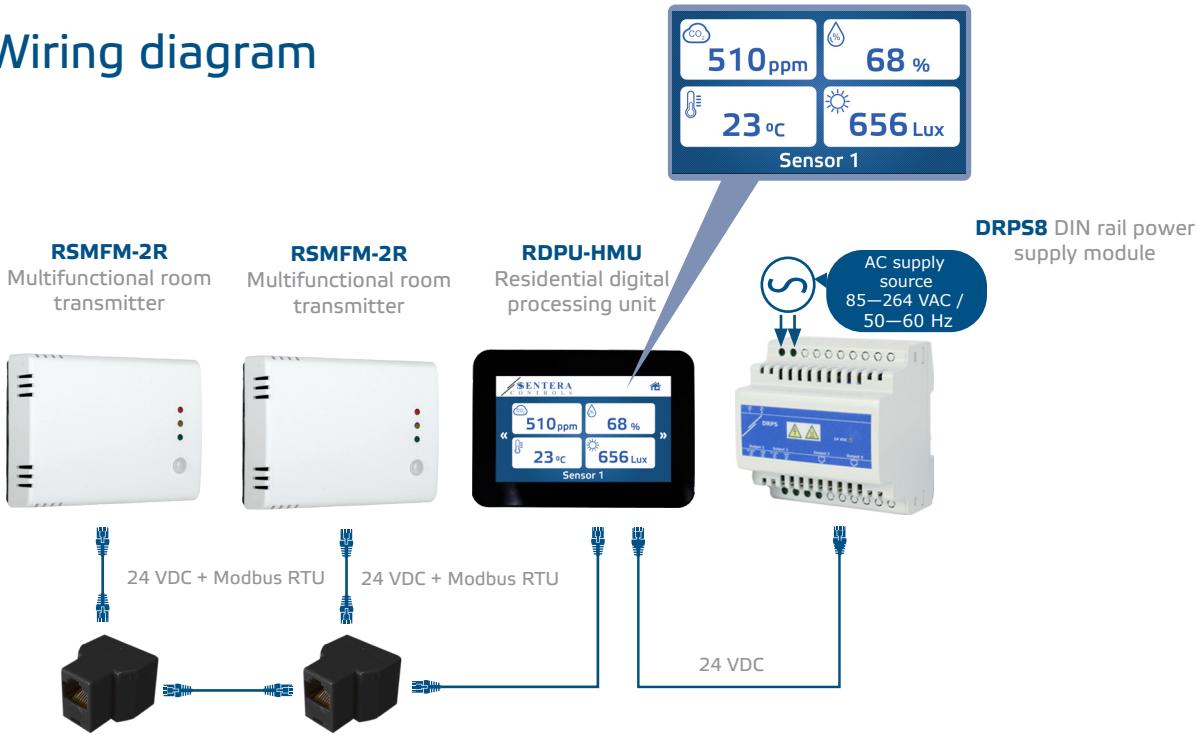
3. SPR-M-3-BK

4. DRPS

5. DIGWM

*optional

Wiring diagram

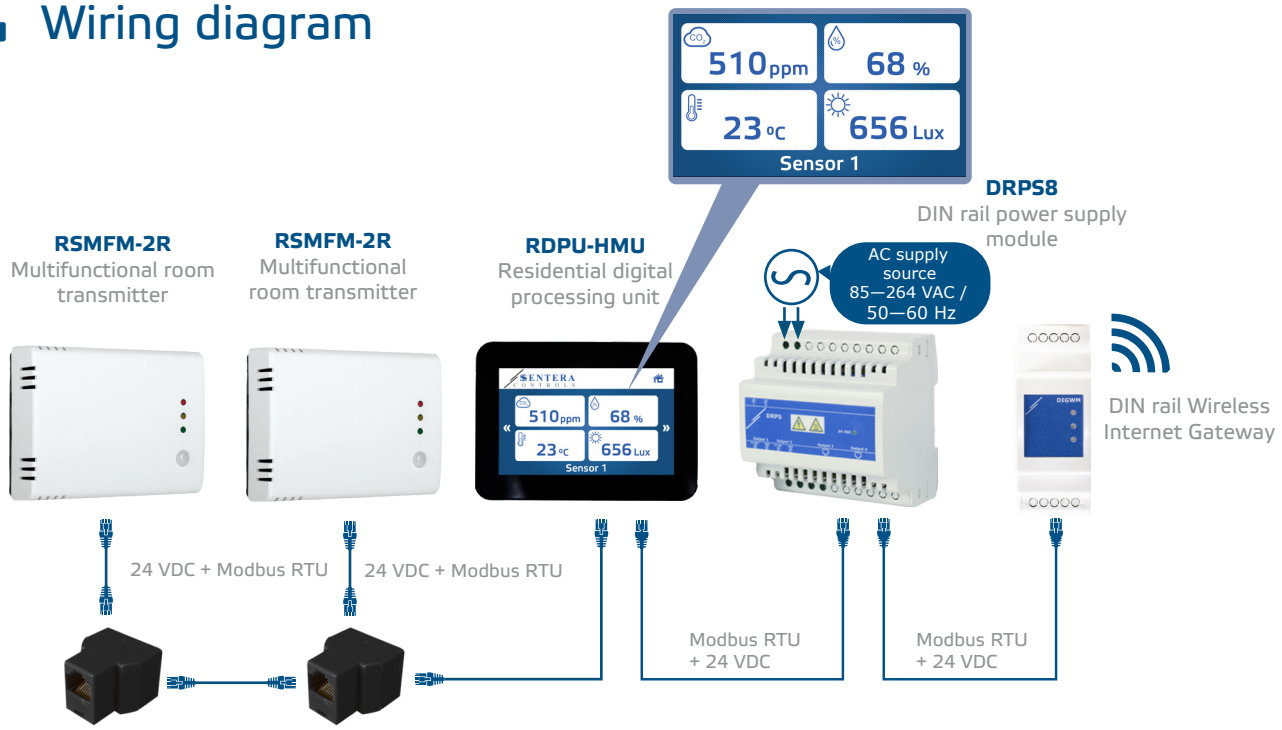


Data logging - IoT

Monitor your indoor air quality.
Whenever you want, wherever you want.

By adding a Sentera internet gateway, it is possible to connect your installation to SenteraWeb – the online platform to monitor and log your HVAC installation. This makes it possible to check your indoor air quality via a web browser. Via your SenteraWeb account, you can visualise the measured values and the status of your HVAC installation. Data can be logged and visualised in diagrams. You can receive alerts in case the measured values enter the alert range. Extra users or configurators can be defined, etc. Internet of Things for your HVAC installation! Powered by Sentera.

Wiring diagram



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