



respira

now breathe

**Buildings &
Infrastructures**

WHAT IS **respira**?

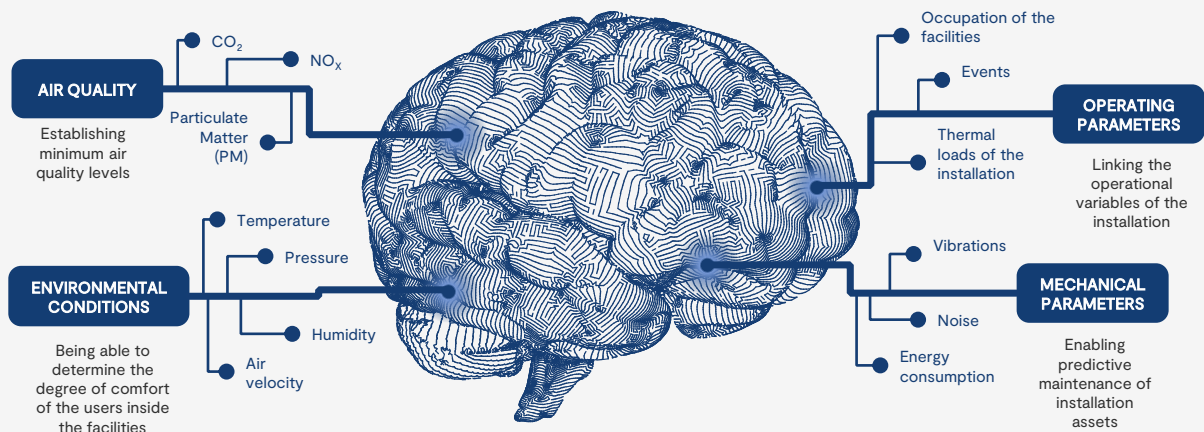
respira® is a control system based on Artificial Intelligence that optimizes the operation and maintenance of HVAC systems in buildings and large infrastructures. Thanks to its predictive algorithms, **respira**® provides significant savings in energy consumption and improves environmental conditions in terms of thermal comfort and indoor air quality.

respira® can be understood as an **intelligent and automatic virtual operator** of the existing HVAC control system.

HOW IS IT DIFFERENT FROM CURRENT CONTROL SYSTEMS?

Dynamic adaptability. HVAC systems are designed under specific casuistries and based on historical data, so the equipment does not usually work optimally at partial loads and its operation is carried out considering only a few variables, most of them remaining static since its commissioning.

respira® uses historical data to learn but also continuously analyzes all available information (occupancy level, special events, HVAC system operation, environmental conditions, weather forecast, energy consumption, etc.). With all this information, **respira**® applies AI to establish correlations, looking for the optimal point of operation of the system for each moment of time and **continuously adapting its algorithm to the changing reality** of the installation of both air distribution and cold / heat production.



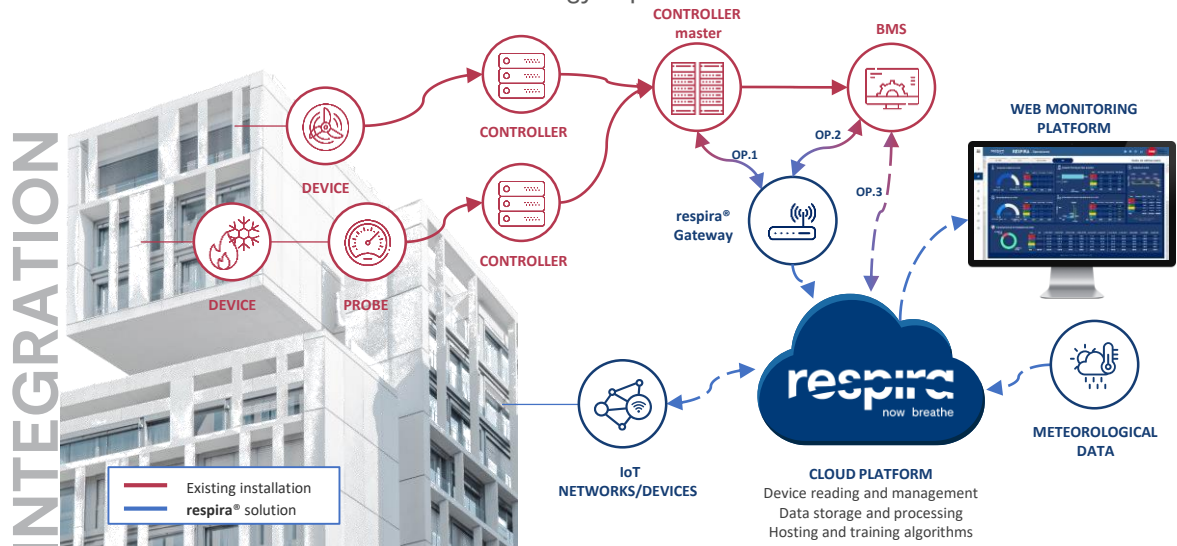
Predictive capability. Control algorithms are mostly reactive, using only instantaneous values in their operation. **respira**®, instead, **uses the prediction of environmental conditions to anticipate** possible stress situations of the installation in order to improve the performance of the system.

respira® AI algorithm **enables predictive maintenance** with early fault detection. In addition, it allows the integration of maintenance alerts with Computer-Aided Maintenance Management (CMMS) systems.

HOW DOES IT WORK?

respira® uses real data to calibrate the reality of the installation and provides a layer of intelligence to the existing control system of the HVAC installation (BMS or similar).

respira® receives data from the BMS and obtains data from meteorological agencies, energy management systems and/or other sources of information related to the behaviour of the installation; correlates all this information and applies AI to predict the environmental conditions and energy consumption of the facility under different operating conditions. With these predictions, respira® automatically modifies the operation of the HVAC system (setpoints, air conditioners, hot water and cold water production plants, ...) in order to achieve the required environmental conditions with the lowest energy expenditure.



respira® is able to integrate in different ways depending on the existing BMS and the established requirements. It can be deployed as a system in the cloud or via Edge Computing and integrated through API or web server, database servers or directly into the communication protocol layer (OPC, Modbus, Bacnet, ...)

WHAT DOES IT GET?

- **Reduction between 15-35% of the energy consumption** of HVAC systems.
- **Improved thermal comfort and indoor air quality.**
- **Integral Management Platform.** It allows to integrate in a single platform, buildings or infrastructures with different control systems, represent the available information, make comparison of KPIs between buildings for anomaly detection and / or recommend investments to improve efficiency.
- **Improvement of the life cycle of the equipment.** It allows fast tracking failures of the HVAC system, streamlining maintenance work.
- **Agnostic to existing installation.** It manages, autonomously and intelligently, any type of HVAC installation and /or any control system. It allows the integration of IoT equipment outside the installation if necessary.



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