

# *ebm-papst Digital Services* Building Monitoring & Optimization

Use Case Examples

**ebmpapst**

engineering a better life



# Advanced AHU Controller Monitoring

AHUs heat, cool, clean, filter, move and provide fresh air, controlled by simple information like temperature or time of day. But how efficient is the air distribution? Is the temperature accurate in every room? Is there enough fresh air being supplied?

## Pains

Inefficient heating/cooling behavior

Costly and often unnecessary maintenance

Equipment needs to be disassembled for analysis

No alerts

Unknown efficiency

Missing information from AHU components

## Solution

Asset management platform

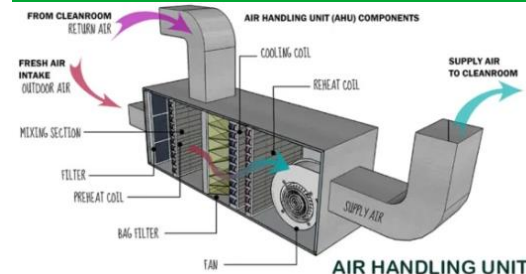
Connectivity options:

- Modbus gateway to:
  - WiFi
  - LTE
  - Ethernet

IAQ / occupancy sensor data

Vibration sensors

Energy metering



## Features

Remote access to all components connected to the controller

Efficiency calculator

Use indoor & outdoor IAQ data to optimize AHU performance

Automated notifications

Filter status monitoring

Constant airflow rate

Pass through commands from BMS to controller

*Access to computation cloud\**

*Adaptive adjustments of set points\**

## Benefits

Demand-driven maintenance

Real time information and control

Know and show efficiency

Healthy indoor environment

Raise productivity of employees with good IAQ

Increase life span of AHU components

Real time interaction between building equipment

Non-intrusive implementation

\*Planned feature

# AHU / FCU Digital Upgrade

Most air handling and fan coil units work with less intelligence than a conventional radiator controlled by a simple temperature sensor. We make them predictive, demand driven, and maximally efficient

## Pains

Inefficient AHU operation

Costly and unnecessary maintenance

Need to disassemble external hardware to do analysis of internal components

No alerts

Unknown efficiency

Manual transmission of information and orders from BMS

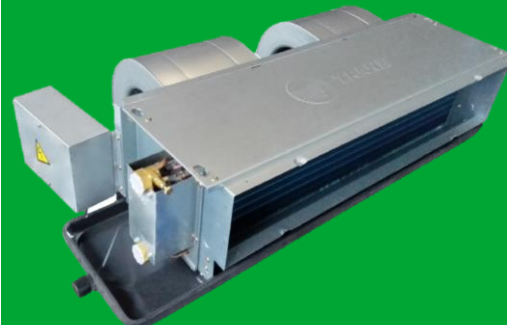
## Solution

Intelligate Air (WiFi v Ethernet)

Intelligate LTE

Customized, customer-oriented dashboard

Computational cloud for advanced analytics



## Features

Display location of assets

Use of outdoor + IAQ data to optimize operation

Remote configuration and monitoring of all connected components

Automated system notifications

Filter status monitoring

Constant air flow rate

*Adaptive control of set points using sensor data\**

*Control of installed actuators\**

*Control of water / glycol valves\**

## Benefits

Improve maintenance response time

Increase device efficiency by event-based input/control

Get real time information / alerts

Early anomaly detection

Improve system lifespan

Know real time efficiency

\*Planned feature

# Embedded IAQ Information

Are you breathing clean air? We deliver this data to our clients to promote IAQ initiatives, and improve the well-being of their visitors / employees.

## Pains

Building Owners invest a lot of money on good IAQ... but no one knows!

People are unaware of initiatives to improve wellbeing inside public buildings

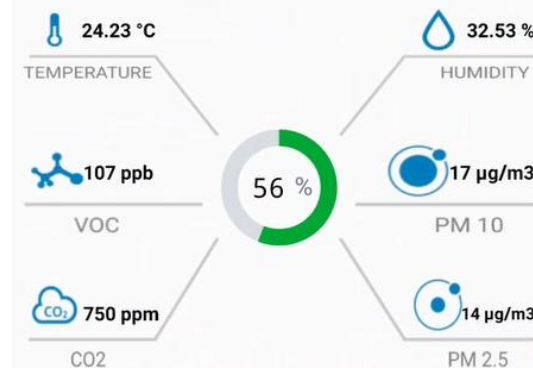
If air quality deteriorates, no one will notice until someone feels uncomfortable

## Solution

WiFi enabled IAQ Sensor  
ebm-papst IAQ App (IAQ Connect)

Customized dashboards for public displays

RESET IAQ and Viral Risk Index



## Features

IAQ information as a widget – easy to implement in web pages and public displays

Monitoring of RESET® parameters and requirements

RESET® viral index as widget

CO<sub>2</sub> heat maps to detect hot spots

Temperature heat map to show indoor comfort levels

## Benefits

Validation of air quality

RESET® certification as evidence of excellent air quality

Improved confidence of building occupants in crowded indoor spaces

Ensured healthy environment

Raise awareness of the importance of good Indoor Air Quality

Attract the public to municipal facilities