OMNIBUS

Building Management System

EURAPO

INTEGRATED
COMFORT
SYSTEMS

OMNIBUS

BUILDING MANAGEMENT SYSTEM

Yet designing and producing air conditioning systems comprising selected, reliable components is not sufficient in itself to guarantee high standards of air-conditioned comfort, these also need to be integrated and harmonised with **the intelligence controlling them**.

Only complete synergy between **terminal unit performance** and **heat regulating devices** can guarantee optimum results and meet the most modern requirements in comfort management simply and efficiently.

This awareness forms the basis of **OMNIBUS**.

OMNIBUS

Digital Management System for water terminal units.

- Elegant design
- LCD Display
- Touch screen
- Humidity sensor
- Plug & Play connections
- Weekly, daily and monthly programs
- Scenarios configuration
- Compatible with brushless and inverter technology
- Flexible configuration
- Service tool available
- MODBUS RTU: free protocol
- ETHERNET (TCP/IP) compatibility
- LONWORKS® compatibility
- Different access levels to the Building Management System

Supervision system for water terminal units, Modbus protocol.

The **EURAPO-OMNIBUS** Digital System is designed to fully regulate the water terminal units (such as fan coil units, water cassette units, high pressure ducted fan coil units and radiant systems) for domestic use, residential buildings, public rooms.
This controller permits to be easily programmed by the installing company and configured accordingly to each particular type of system.

The **OMNIBUS** Digital System can work at different levels:

- **Stand-alone** configuration: the main card (Power Omnibus) installed on the water terminal unit is connected and managed by a Console (built-in the unit or for remote installation).
- **Centralized configuration**, via Master MODBUS RTU: the Power Omnibus card installed on the water terminal units can be also connected to a centralized Supervision System.

The **heart of the system** is the **POWER OMNIBUS** card: this highly-flexible piece of hardware is installed in the terminal unit and enables the firmware to be upgraded **through a serial port**. It can easily be programmed and configured to requirements by the user and by the installer to the type of system being installed.

The **POWER OMNIBUS** card is able to receive and process a broad range of inputs and manage a large number of output technologies.

The POWER OMNIBUS card measures the following input states:

- room temperature
- water temperature
- outside air temperature
- relative humidity of ambient air
- temperature of air leaving the terminal unit
- Economy/Occupancy contact status
- breakdown status
- window contact status

OMNIBUS POWER output is able to:

- control the water terminal units' devices
- modulate the opening of the water valves
- control ventilation using discreet or continuous mode
- regulate opening of the external air dampers
- control a heat recovery unit
- integrate a radiant system with an air terminal unit
- control a primary or supplementary electric heater
- activate the air conditioning water circulation pump
- control an air humidifying or dehumidifying unit
- regulate the timing of a primary air handling unit
- control other POWER OMNIBUS cards as *slaves*

The great INPUT and OUTPUT potential have been combined in order to create strategic ways of saving energy and providing interior comfort.
And that's not all. The flexibility of the OMNIBUS system also benefits **all-inclusive control and architecture modes**: from analogue and digital **stand-alone** units to the digital **centralised unit for small systems** and **remote control** of large systems, which takes us down the path of home automation.

OMNIBUS
BUILDING MANAGEMENT SYSTEM

DISPLAY CONSOLE
FOR BRUSHLESS MOTORS

Managing of brushless motors (EST technology)

EURAPO designed a dedicated OMNIBUS card for managing brushless motors: in this configuration, the POWER OMNIBUS card can modulate the motor speeds automatically (0-10V) or manually, by setting the specific tension for each fan speed (LOW-MED-HIGH).

SPEED SETTING
OF BRUSHLESS MOTORS
BY **OTOUCH**

MANAGING OF BRUSHLESS
MOTORS BY **WEBSERVER**

ANALOGUE PLUS CONSOLE
INSTALLED ON A SPHERA UNIT

The Analogue *Plus* Console

The **Analogue Plus Console** is the system's basic interface. It may be installed on the wall, onto the fan coil unit or into a standard "503" module which is compatible with frames available on the market; it enables the user to set the **room temperature, fan speed, Summer/ Winter function** and **ON/OFF status**.

EXTERNAL **DISPLAY CONSOLE**

Digital Display Console

Just as versatile to install as the analogue version, the digital Display Console permits to view and modify the programming of all the parameters available on the Power Omnibus card.
The easy-to-read Display Console offers the user four control modes:

- **Status**: OFF / Economy / Comfort;
- **Set-point**: for setting room temperature;
- **Function modes**: Cooling-Heating-Ventilation-Dehumidification;
- **Speed selection**: Minimum, Medium, Maximum, Automatic.

INFRARED CONTROL

With different **access profiles** (**user** and **service**), the Input/Output states of the Power Omnibus card can be read on the Display Console, which makes it an **important instrument in diagnosis**, without the need to access the terminal units fitted into false ceilings.

Except for Analogue Plus Console, all Omnibus Console can communicate also with **infrared remote control**.

OMNIBUS
BUILDING MANAGEMENT SYSTEM

Manager Console

The **Manager Console**, which comprises the same functions as the Display Console, is a **Supervisor for small systems**, which permits to **manage up to 10 POWER OMNIBUS cards** connected to the network by means of a MODBUS RTU serial bus.

Each individual card can in turn be controlled independently by using one of the available consoles: Analogue *Plus* Console or Display Console.

By the Manager Console it is possible to set daily and weekly programs (Off / Economy / Comfort) for all of the units connected to the same network.

SUPERVISION SYSTEM
MANAGER CONSOLE
(MAX. 10 UNITS)

Supervision and control

OTOUCH

INNOVATIVE TOUCH SCREEN DEVICE

An innovative device

OTOUCH is a control and supervision system developed by Eurapo Laboratories in order to enhance residential comfort. This high tech solution is matched with an easy-to-use graphical interface which has been studied in collaboration with Udine University in order to guarantee an intuitive and simply comfort control.

This new touch panel can functionally fully control air condition system devices (such as fan coils units) or radiant system ones (such as hydraulic actuators or dehumidifiers) or even both at the same time, following an innovative idea of control philosophy.
OTOUCH strong point consists of including monitoring and controlling functions of fan coils units together with the capacity of interacting and integrating different HVAC system devices in the same control panel.

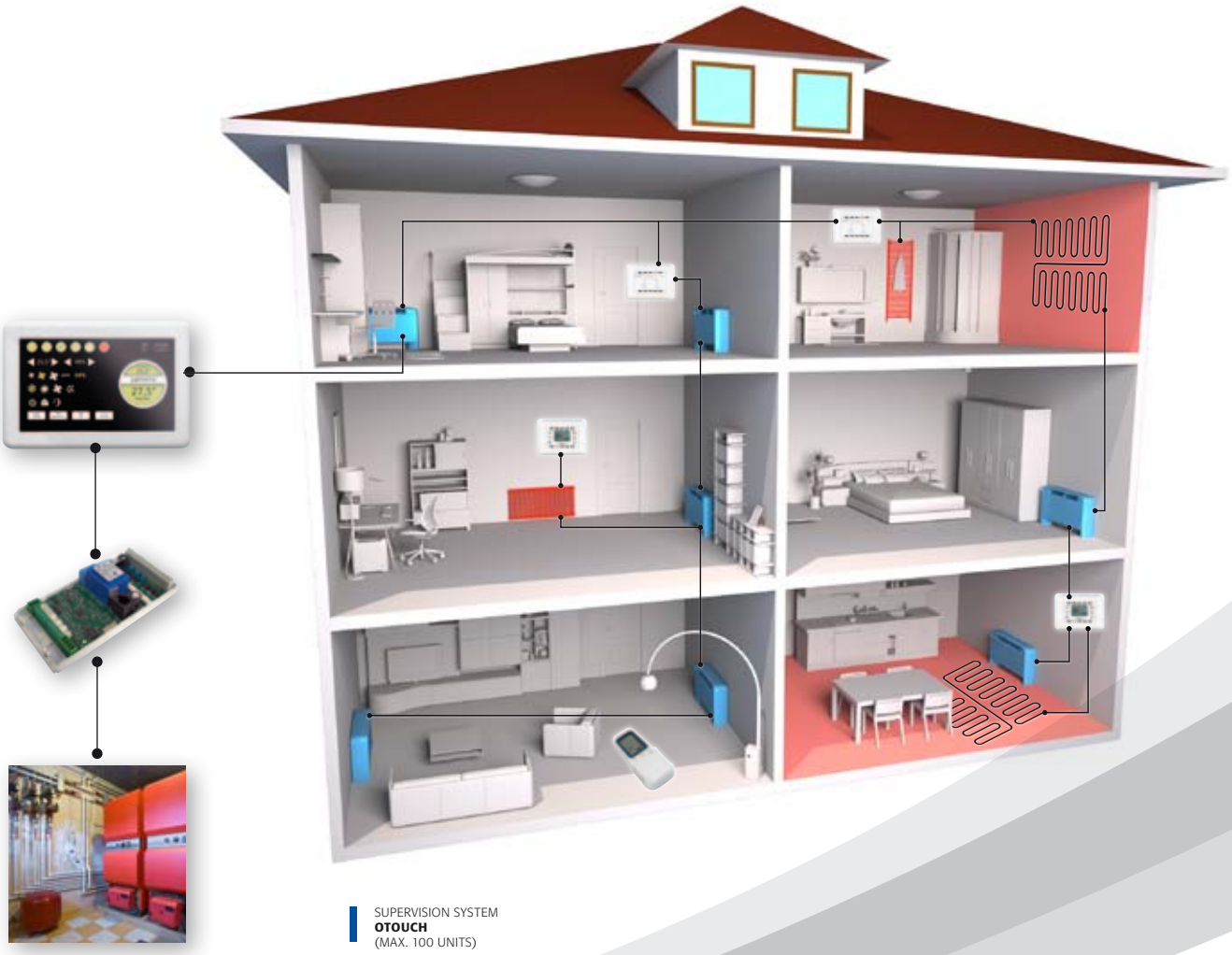
- Cooling and heating units (chillers / boilers)
- HVAC system pumps
- Modulating valves (for radiant systems)
- Thermical zone valves
- Dehumidifiers
- Fan coil units

OTouch

The **OTouch** panel is a **Supervisor for middle systems**, which permits to **manage up to 100 POWER OMNIBUS cards** connected to the network by means of a MODBUS RTU serial bus.

Each individual card can in turn be controlled independently by using one of the available consoles: Analogue *Plus* Console or Display Console.

OTouch gives the possibility to configure complex scenarios and to program the system's seasonal schedule.

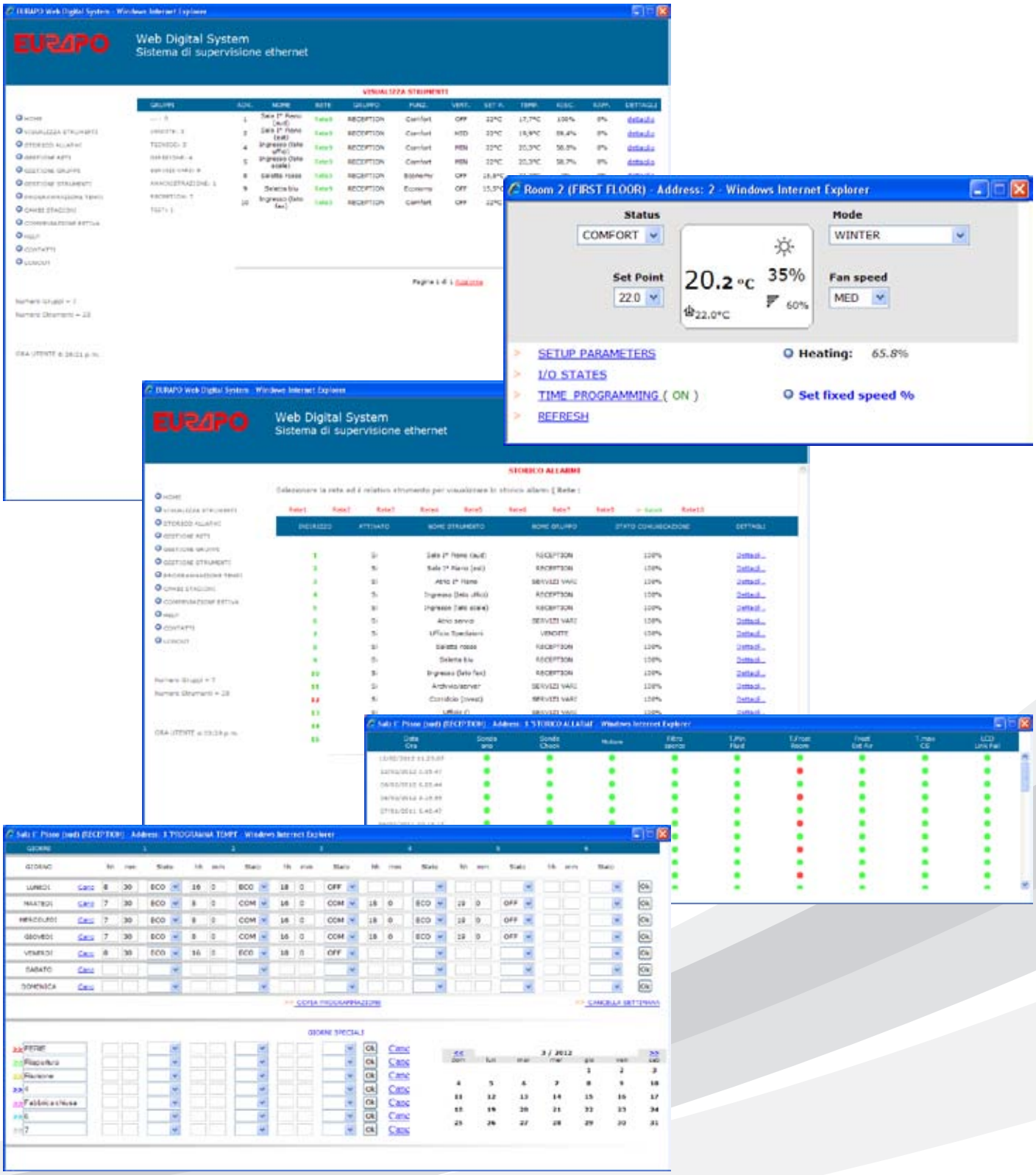


SUPERVISION SYSTEM
OTOUCH
(MAX. 100 UNITS)

Web Server

At a higher level, for maximum control, Eurapo designed a dedicated **WEB SERVER for the OMNIBUS system** available to the user, which enables up to **1024 terminal units** (8 networks x 128 units) to be connected and controlled through **Intranet** or **Internet**. Several **access profiles** co-exist in this architecture: **user, service and administrator**.

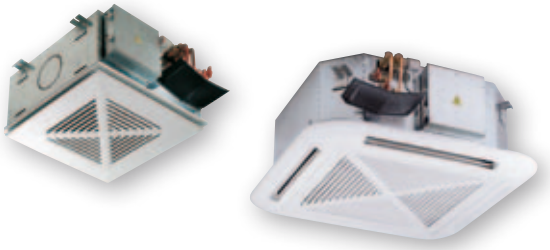
SUPERVISION SYSTEM WITH **WEB SERVER-RS-485** (MAX. 128 UNITS DIRECTLY CONNECTED TO A SINGLE NET – MAX 8 NETS).


EURAPO
Web Digital System
Sistema di supervisione ethernet
Room 2 (FIRST FLOOR) - Address: 2 - Windows Internet Explorer
Status
COMFORT
Mode
WINTER
Set Point
22.0
20.2 °C
35%
60%
22.0°C
Fan speed
MED
SETUP PARAMETERS
I/O STATES
TIME PROGRAMMING (ON)
REFRESH
Heating: 65.8%
Set fixed speed %

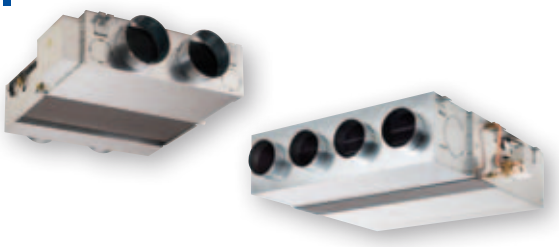
Applications

Fan coil units

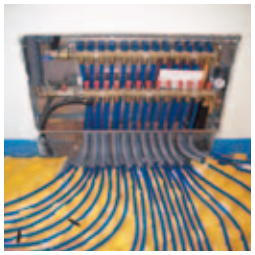
Hydronic cassette



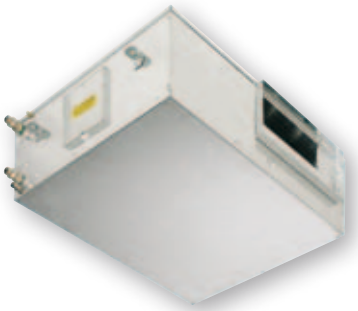
Ducted units



Radiant systems



Dehumidifiers



Heat recovery units

Mechanically controlled ventilation systems

Chilled beams

OMNIBUS
BUILDING MANAGEMENT SYSTEM

Components

Main card
without modbus

Main card
with modbus

Multitask card

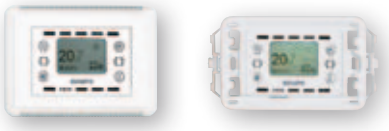
AS Console
with air sensor, for remote installation either on wall or concealed on 503 module

Analogue Console
for built-in application and remote installation either on wall or concealed on 503 module

Analogue Plus Console
for built-in application and remote installation either on wall or concealed on 503 module

Display Console
for built-in application and remote installation either on wall or concealed on 503 module

Display Console with humidity sensor
for remote installation either on wall or concealed on 503 module Infrared console for installation on the unit, for wall installation or built-in the wall installation, on 503 module

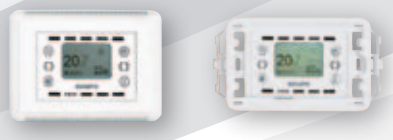


Infrared Console
for built-in application and remote installation either on wall or concealed on 503 module

Main card with modbus
for **EST** brushless units

Display Console for built-in application and remote installation either on wall or concealed on 503 module, for **EST** brushless units

Display Console with humidity sensor
for remote installation either on wall or concealed on 503 module, for **EST** brushless units



Supervision

FOR SMALL SYSTEMS (recommended up to 10 units)

MANAGER CONSOLE

- Modbus/RTU protocol
- Different access levels (user/service/factory)
- Direct configuration of connected units
- Centralized operations
- Set-up parameters configuration
- INPUT/OUTPUT status monitoring
- Daily and weekly program
- Alarms management

FOR MEDIUM SYSTEMS (recommended up to 100 units)

OTOUCH - TOUCH PANEL (PROVIDED WITH MODEM ON REQUEST)

Same features as Console Manager, plus...

- 7 inches touch screen
- Optional modem for remote management via GSM
- Boiler room management (pumps, boiler, heat pump)
- Radiant systems management (mixing valves and manifolds)
- Scenarios management
- Multilanguage
- Several access levels available (user, service, administrator)
- Suitable for the most common web browsers
- Remote management via Internet

FOR LARGE SYSTEMS (recommended up to 1000 units)

WEBSERVER WITH BUILT-IN ETHERNET CARD

Same features as OTouch, plus...

- Suitable for connecting up to 8 lines of 128 units each
- LAN interface with TCP/IP protocol
- Available with touch screen interface
- LON converter

OMNIBUS
BUILDING MANAGEMENT SYSTEM

Advantages

The highly innovative technology used in OMNIBUS ensures exclusive advantages on several fronts.

OMNIBUS is a wired-up system, designed for the highly rationalised installation and co-ordination of several terminal units: it only takes two wires to connect a POWER OMNIBUS master unit to a *slave*.
A WEB SERVER can be installed without using special programs,

OMNIBUS adapts to the most extreme management requirements: from **total centralisation** to **the highest levels of customisation of individual units**. The overall architecture of the system can be enhanced using solutions which feature sophisticated **home automation** for technical or administrative user profiles, and a wide range of local control options, which take into consideration the various sections and different functions inside a building,

Thanks to a CHECK SENSOR (available upon request), the Omnibus system can check if **all the terminal units are working properly**. OMNIBUS is able to highlight any breakdown in the system on each unit's own console.

Precision diagnostics allows targeted servicing and maintenance to be carried out, thereby reducing the relative management costs.

OMNIBUS enables an **all-inclusive energy-saving strategy** to be implemented, by:

- supervision and control of units provided with brushless motors and inverter (EST technology)
- suspending function when doors and windows are open
- ECONOMY function
- limiting of the room temperature that can be set by the user
- programmed reduction of the Set-Point values
- adjusting of the room Set-Point depending on the outside temperature

OMNIBUS is a dynamic system, open to the future; it is based on upgradable software compatible with standard management protocols, a large number of communication buses and can be integrated with several types of supervision technologies.

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