OMNIBUS
BUILDING MANAGEMENT SYSTEM

EURAPO
INTEGRATED COMFORT SYSTEMS
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.
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 **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 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.
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).
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.

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.

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.
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.
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.
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.
Applications

- Fan coil units
- Hydronic cassette
- Ducted units
- Radiant systems
- Dehumidifiers
- Heat recovery units
- Mechanically controlled ventilation systems
- Chilled beams
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, for EST brushless units

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)

• 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

MANAGER CONSOLE

FOR MEDIUM SYSTEMS (recommended up to 100 units)

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

OTOUCH - TOUCH PANEL (PROVIDED WITH MODEM ON REQUEST)

FOR LARGE SYSTEMS (recommended up to 1000 units)

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

WEBSEVER WITH BUILT-IN ETHERNET CARD
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.