Controller suitable for the adjustment, control and monitoring of HVAC and technological systems in general

HEAT COSTALLOCATORS
The system of heat cost allocators

Similar needs in areas and over time require specific solutions: The Coster allocation system supports home and condominium economics, providing the ability to independently adjust the heat, allowing you to pay for only your own consumption and allowing each apartment, office or living area to have different temperatures.

The system is a group made up of a Data Concentrator and a number of Heat Cost Allocators and relative Signal Repeaters. The system generally identifies a building, a block of flats or part of it (stairs). The boundaries of the system are dictated by the radio coverage, the number of components and by the management/administration logic.

The logical entities, or housing units, can be identified within a system, which are sets of Heat Cost Allocators that refer to the same apartment or office (the housing units are defined in the Data Concentrator).
and its components

HEAT COST ALLOCATOR RPC301
The **RPC301 Heat Cost Allocator** is designed to work in combination with UCD708 Data Concentrators and RTR301 Signal Repeaters.

DATA CONCENTRATOR UCD708
The **UCD708 Data Concentrator** works as a central element of the Network, collecting consumer data, which are stored locally and can then be read later. The data concentrator can store the consumption data from up to 1000 Heat Cost Allocators (up to 100 directly).

SIGNAL REPEATER RTR 301
The use of radio signals for communication can lead to coverage and reachability problems due to distances, obstacles and building materials.

The **RTR301 Signal Repeaters** can extend the network by increasing the radio signal coverage, gathering the data from the Heat Cost Allocators and then later transmitting this data to the Data Concentrator.
Why use an ALLOCATION SYSTEM

**RECORD**

Recording the heat used in each apartment or office using the new Coster heat cost allocator system allows all users to achieve significant savings by paying only for what they consumed, observing the actual energy savings on a daily basis.

**OPTIMIZE**

The smart system for the independent adjustment of the heat improves living comfort and lets you independently set the temperature to your liking.

**MONITOR**

The central unit monitors the power consumption in real-time, and stores and archives the metering data. The data for all the consumption verification and distribution operations can then be easily retrieved.
The main principles of the NETWORK system

THE TIMING AND SYNCHRONIZATION OF THE SYSTEM COMPONENTS

The Heat Cost Allocators are factory set with the date and time. If necessary they can be automatically resynchronized by the system during the configuration phase.

The Signal Repeaters automatically receive the date and time setting from the system during the installation phase.

The Data Concentrator is the heart of the system, which can re-synchronize the clocks on the Signal Repeaters and Heat Cost Allocators if it discovers any differences. The configuration of the date and time is the first operation to be performed during installation.

Timing and synchronization through the Mesh* network

During the day, the system is normally at rest (low power) in order to preserve battery power.

The Heat Cost Allocators continue to take temperature and metering measurements during the 24 hours, but do not transmit data.

During the day the Signal Repeaters do not perform operations of any kind.

The Data Concentrator, which is powered, is substantially more active and receives the calls or remote commands from the service center.

At night, the system will ‘wake up’ at fixed times and go into operating mode. It remains in this state as long as it takes to complete all the necessary operations. The scheduled times are 0:30 and 1:30.

The Heat Cost Allocators will begin transmitting their consumption data. At the same time the Signal Repeaters and the Data Concentrator begin to receive and store the data acquired from the Heat Cost Allocators.

After the consumption data transmission-acquisition session has ended, the data is then transferred to the Data Concentrator through the Radio-Mesh network.

After this data transfer session, the Data Concentrator holds the updated data from all the Heat Cost Allocators that were correctly received from the previous midnight.

The data in the Data Concentrator can now either be accessed or sent via email.

*Mesh is a mesh network made up of numerous nodes that act as receivers, transmitters and repeaters. Mesh networks are extremely reliable. Each node is connected to several other nodes. If a node drops out of the network because of hardware failure or any other reason, its neighbouring nodes simply find another route to transmit the signal (they refer to other nodes).
The work to be done

IN THE HOME (wireless)
Replacing of radiator valves and installation of temperature controllers on each valve (thermostatic heads or other temperature regulation system). Installation of heat cost allocators on the radiators.

ON THE LANDING (wireless)
Possible installation of a signal repeater. The signal repeaters create a MESH network that will allow consumption data to be transmitted to the central processing unit under any condition.

IN HEATING PLANT (need for electrical power)
Installation of the central processing unit (manages up to 1000 heat cost allocators). This unit will be able to AUTONOMOUSLY process the consumption report of each condominium.
Are the radio waves from this system dangerous?

The COSTER RPC301 heat cost allocators only transmit the necessary metering data a few times a day, for a very short time, at a frequency of 868 MHz and are located away from the occupants of the building units. Radio waves can only be harmful if the exposure is continuous, the source of radiation is very close to the body and the transmission is continuous. Therefore the risk of harm that a heat cost allocator has to one’s health is negligible when compared to other objects such as mobile phones, PCs, tablets, Wi-Fi Internet routers, microwave ovens, etc.

Who does the reading once the heat cost allocators have been installed?

The system allows Coster “self-reading”. By entering the email address you want in the Data Concentrator, the system itself will then send regular condominium consumption to the administrator or manager. The condominium can also ask for the amount of their shots, called “Allocation” units to be sent through SMS.

Can the radio technology be manipulated?

NO. The system alarm occurs if the radio signal is no longer being emitted.

Why is the radiator half hot and half cold?

The thermostatic valve regulates the temperature of the environment by shuttering the flow of water in the radiator: only the water needed to maintain the set point passes through. This causes a slowdown in the flow of water through the radiator, resulting in a “thermal stratification”. The warmer water remains in the upper part of the radiator and the colder water, which has released it heat, remains in the lower part.

Can the individual metering be done in only a few units of a condominium?

No. In order to allocate the total consumption, the consumption of all the radiators connected to the heating system must be known.

Do I have to lower the temperature every time I leave the house?

It really depends on how long the housing unit can stay without the need for heat. For an occupied apartment, it’s always better to maintain the original setting. In other cases (holiday homes, offices, shops, etc.) an automatic adjustment system should be used (allowing operating times and temperatures to be set) and metering like in WIRELESS INDEPENDENT HEATING.
COSTER TECNOLOGIE ELETTRONICHE S.p.A.
Head Office and Sales
via San G.B. De La Salle, 4/a 20132 Milano
Tel. +39 02 2722121 Fax +39 02 2599645
info@coster.eu  www.coster.eu
export.dept@coster.eu

Branch in UK
COSTER T.E. UK BRANCH
5 Shaftesbury Street South, Sir Francis Ley Industrial
Park - Derby DE23 8YH
Tel. +44 (0) 1332 200555 Fax +44 (0) 1332 204181
ukbranch@coster.eu