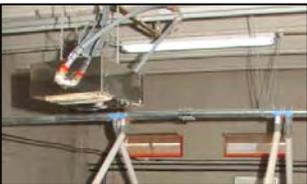
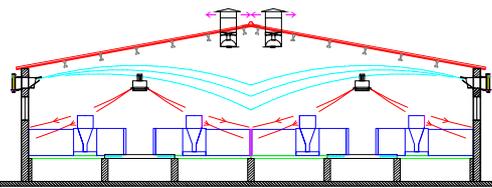


### Experts in air conditioning of buildings

At present the sector needs a great efficacy at the moment of to do projects of air conditioning to face the high energy prices and to the problematic sanitary one

Only thorough knowledge and adequate data processing tools, they permit to do an adequate analysis of each installation and to select the best solution and the adequate equipment.

In this way unnecessary costs in the construction are avoided or reforms and some minimums operating costs



- Complete projects of air conditioning of farms
- Advice for the construction or reforms of the buildings to air conditioning
- Monitoring of the construction, installation, set in motion and formation
- Programming personalized of the controls

- Hot water or electric heating with aeroterms, or radiant pads.
- Refrigeration with cooling pads, or spray nozzle.
- Emergency in windows and air inlets. Motor with automatic recovery

#### Control of air conditioning

- Versatile. Configurable to adapt it to each type of ventilation and building
- 8 amps, -3 programmable contacts
- 2 temperature sensors, configurable.
- Direct access to day of process, for automatic operation of: Temperature, minimum ventilation and temperature of plate
- The multiple possibilities of configuration of the contacts, they facilitate the wiring and the coordination among elements
- Easy assembly and replacement
- An intelligent system of management of alarms they give a great security
- Temperature of the 10 last days
- It negotiates the stop of cleaning

#### Inlet air

- They are opened for the under pressure created by the fan, its operation is simple and efficient.
- They direct the air so that not fall on the animals. Easy to calibrate. It leaves to pass the light
- The special system of counterweight, maintains a very constant velocity and brakes little al fan.
- In case of emergency they can be opened with a counterweight motor system.

#### Extractors

- Of high performance, manufactured with anti-corrosion material. They designed to bear variation of voltage, and the strong demands of the Chimneys with butterfly to avoid the natural shot

#### Heating with aeroterm

- It prompts the hot air in direction to the animals, taking hot air of the high part, avoiding the

#### Heating of fins

- Tube with fins in spiral, everything hot galvanized. Avoid teh corrosion problems

#### Refrigeration with cooling pad

- Of high performance, manufactured in stainless steel. Easy cleaning, al is agreed easily pipe and to the cellulose, they can be extracted easily, by the frontal part. The framework of the board remains all in sight to be able to disinfect.

#### Systems of emergency

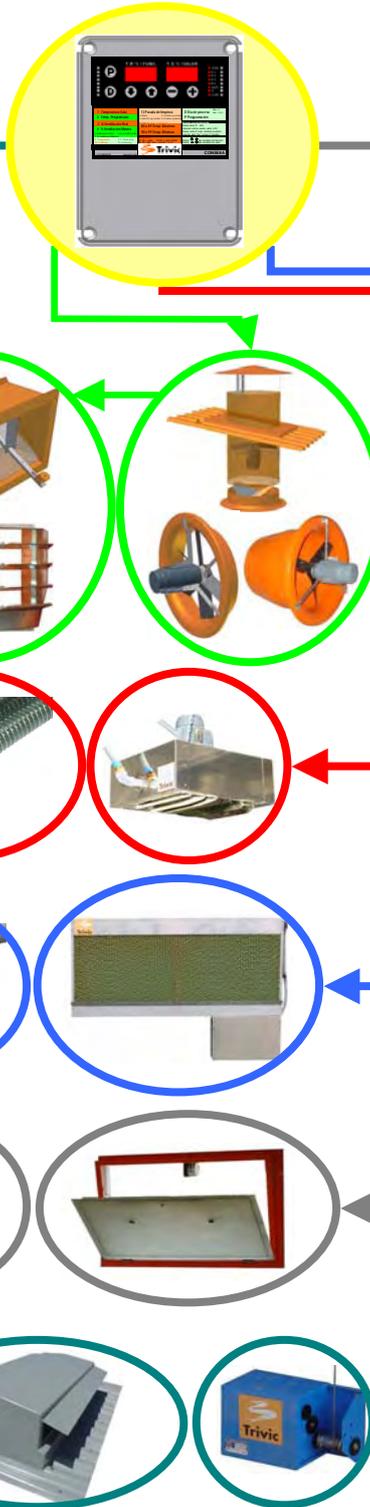
- Systems of emergency Combining the motor and a counterweight or the weight of the window, the openings are opened when there is an emergency and they close al to be re-established the normal
- The control gives order to open for several circumstances, giving al system a high level of security

#### Motor of windows

- Independent automatic control for ships of natural ventilation. It coordinated with control of air conditioning for large buildings to positive pressure
- Motor of 12 volts, with battery, up to 1000 Kg.

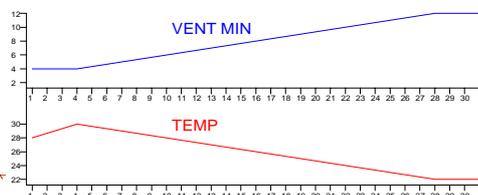
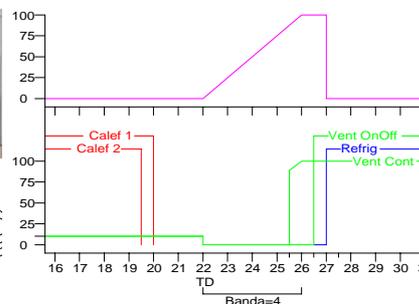
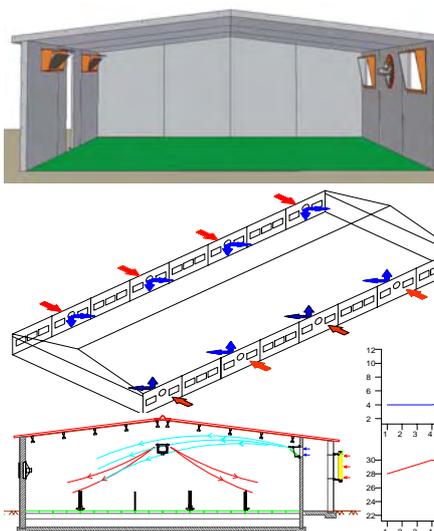
#### Rectangular chimney.

- For exit of air in natural ventilation.
- It is installed easily, new buildings and reforms.
- Easy system to close



With these concepts and the experience of many years, we have designed controls, air intakes, the cooling, systems of security and an adequate situation of the items, to do that the farm works well, with facility of management and with the minimums operating costs.

Continuous innovation, product of own design. Each contact with a customers gives us ideas to improve the product of tomorrow.



### Air conditioning

The air conditioning of a building is essential for the good performance of the farm. So that all the system function correctly, one must do a good design from the building to build or to reform.

The form to air and to heat the building, the situation of air intakes and of extractors, as of the form that we control the ventilation, impacts directly in the consumption and in the good operation of the installation

### The control

Coordinates all the equipment of ventilation, to maintain the inside building parameters of comfort for the animals, avoiding variations of temperature.

For it the control should have sufficient exits to control all the necessary teams.

Each building has its particularities, the control should permit a meticulous configuration, so that we have the flow of correct air and each element among in operation, at the moment adequate, for thus minimize the electric and heating consumption.

### Continuous or intermittent ventilation

The control permits to air in minimum continuous or intermittent ventilations of form.

The volumes to renew in minimum ventilation are very small, if we compare them with the volume of the building

### Continuous ventilation

The small ventilation rate and the inevitable infiltrations, they do that the flow by the air inlets be small, this has little reach, fast fall and little drag of dirty air.

For which we have to enlarge the minimum ventilation and with it the consumption.

### Intermittent flow

During some seconds we cause we enter the necessary volume to greater velocity. Al to be the powerful flow, this arrives further, for which is mixed with the interior air before falling, contributes l oxygenate to more zone of the building and drags better the dirty air.

This permits us to air with the just volume, saving in consumption of heating and electric and we avoid the variations of temperature.

### Important savings

In retail time of operation of the extractors  
By should to heat smaller volume of air

### Ventilation by negative pressure

We air for negative pressure, the buildings that desire to have a very strict control, as are maternities, weaning, insemination centers and some growing.

The buildings for to be aired by negative pressure, they should be seal, to guarantee that the alone air enters for the air intakes, for thus guarantee the correct flow.

They should have systems of emergency.

### Ventilation by positive pressure combined with natural.

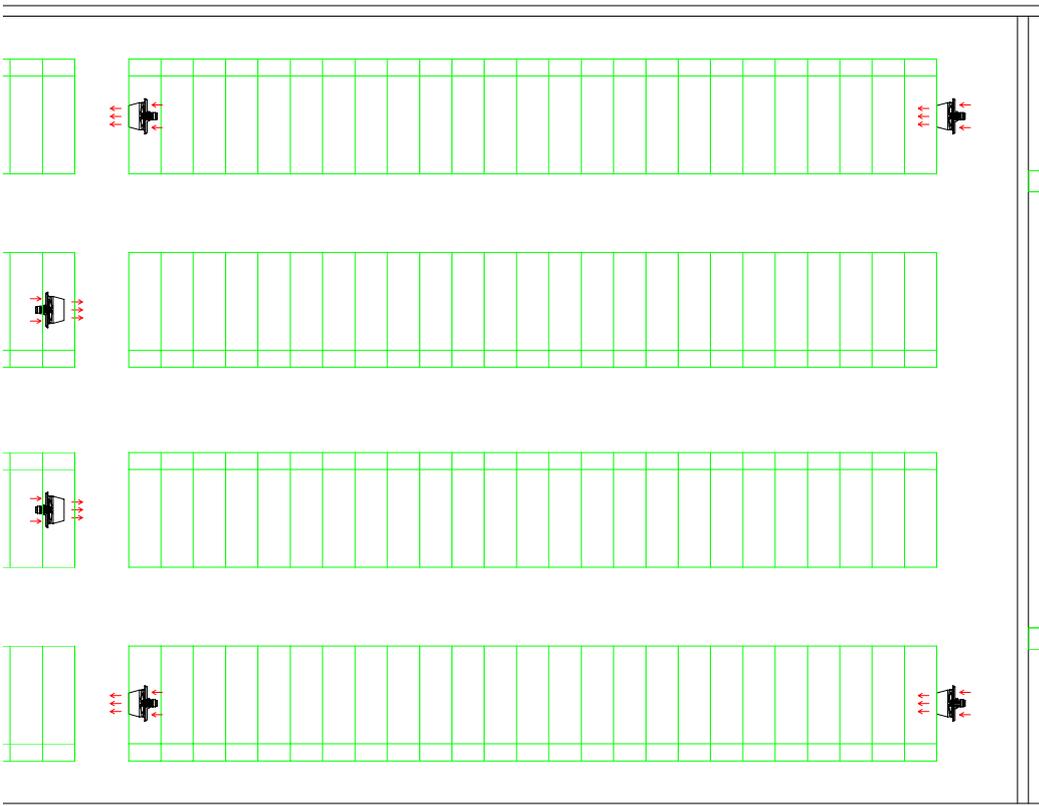
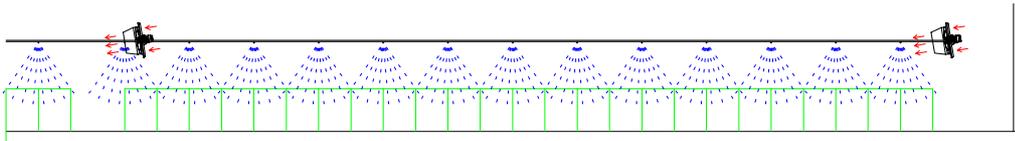
We air for positive pressure the buildings that the control does not do lack that be very to be exact, buildings of gestation and The buildings should have open ridge to guarantee the minimum ventilation.

We combine the natural ventilation with the mechanical.  
Low temperatures: windows closed, ventilation by intermittent flow

Medium temperatures: automatic windows, fans stopped  
High temperatures: closed windows, fans and cooling go entering progressively

### Important savings

Many hours of the day do not function the fans



### FANS

Systems designed to be installed in the farms and to work in hard conditions

### Wall fans

Materials:

- Body made with polyester reinforced with fiber glass
- Metallic stainless steel accessories

### Chimney fans

Set of chimney with easy connection to the roof

Materials:

- Chimney pipe made with polyester reinforced with fiber glass
- Metallic stainless steel accessories

### Chimney accessories

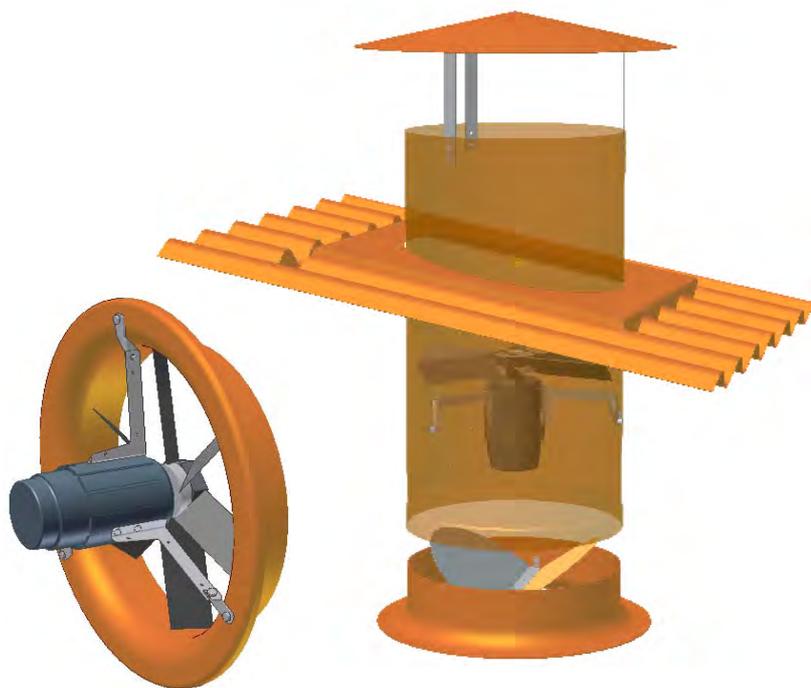
- Connection to wave Uralita type
- Supplement of 1 m of pipe
- Insulating housing outer part chimney
- Butterfly to avoid the natural shot
- System opening anti asphyxia

### MOTOR

Of high performance, humidity and corrosion resistant

Materials:

- Aluminium motor painted with epoxy
- Polyamide impellers, aluminium nucleus
- Metallic stainless steel accessories



Mod.	Phase	amps	kw.	n°	Volume m3/h aprox.			Pa.	
					0	20	30	40	60
450	2-PH	1,9	0,225	6	6250	5970	5810	5690	5280
500	2-PH	2,5	0,300	6	8000	7625	7450	7250	6830
630	2-PH	3,3	0,600	10	12100	11300	11000	10600	9650

### INLET AIR

- They are opened by the depression created by the fan, its operation is simple and effective
- Totally progressive opening of the baffle plate thanks to the exclusive mechanism of counterbalance
- The special system of counterbalance, it maintains a very constant speed with progressive increase
- It causes little pressure drop. Losing little of great volume of ventilation. The transparent baffle it directs the air so that it does
- The top deflector directs the air so that it does not fall on the animals. Easy to calibrate.
- In case of emergency they are possible easily to be installed a system anti asphyxia that opens to a set counterbalance-motor.
- The superior and lateral parts can be isolated easily
- Easy to install, interlocked or sly in the wall.
- Transparent baffle plate allows the passage of the light.

### Made with lasting materials:

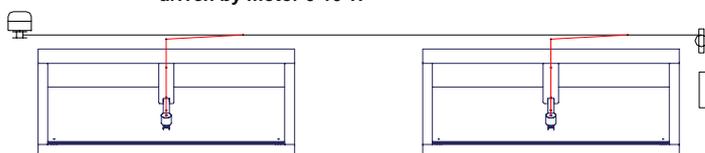
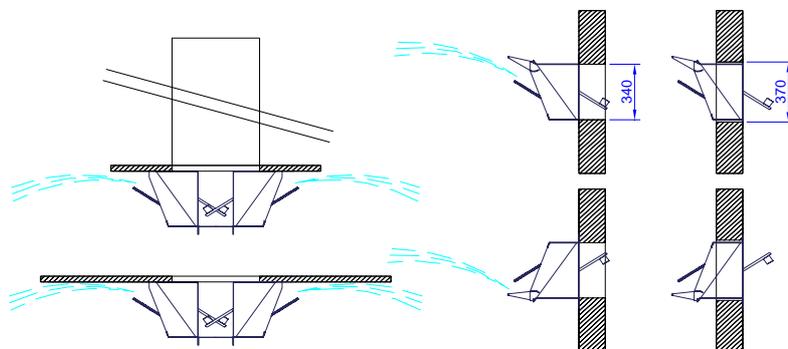
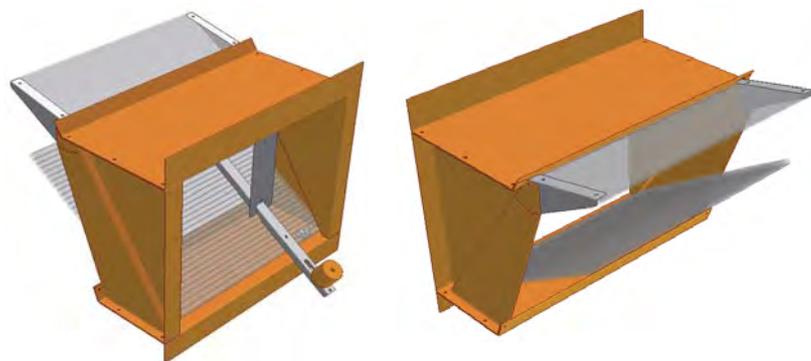
Materials:

- Deflector sheet made with cellular polycarbonate
- Body made with, polyester reinforced with fiber glass.
- Metallic stainless steel accessories
- Painted steel counterbalance.
- It is provided disassembled.

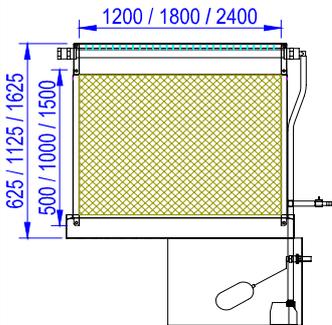
### Multiple possibilities of assembly

- In wall with baffle plate opening from top to bottom
- In wall with baffle plate opening of down to above
- In a chimney in center of a room
- In a false ceiling

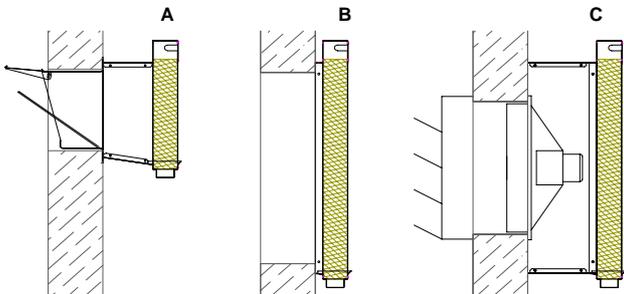
They are possible to be mounted without counterbalance to be driven by motor 0-10 v.



Mod.	Volume m3/h aprox.	Sly		Interlocked	
		Wide	Height	Wide	Height
ENTV 50	2000	510	370	420	340
ENTV 100	2001	1010	370	920	340
ENTV 150	2002	1510	370	1420	340



m <sup>3</sup> /h	A= 1200	A= 1800	A= 2400
H= 500	3000	4500	6000
H=1000	6000	9000	12000
H=1500	9000	13500	18000



## Easy maintenance Channel anti leak Independent bombs

### The pad cooling is the more efficient system to refrigerate farms

The air that passes for the cellulose evaporates the water, when evaporates the water of the cellulose the air loses heat and enlarges the humidity, consuming water.

The performance of a board they depend on of factors of design as is the width, the type of cellulose and the velocity in which passes the air by the board and of environmental factors, temperature and humidity of the air, like drier is the air more can descend the temperature.

In dry climates the performance is higher, they can descend more than 10 °C, In humid climates the performance is low.

The quality of the water influences in the duration of the cellulose, with water with more calcium, should be purged and to clean periodically.

A board with the cellulose of high performance, clean and the velocity in transit of the air well calculated, does that the performance of the ventilation be the correct one (do not we lose volume of ventilation)

#### Characteristics

In our board we utilize cellulose of 10cm of high performance, treated with special resins.

The framework totally manufactured in stainless steel permits, dismantling only the front cover, to remove easily the board to clean the channels and to remove the pipe of distribution of the water to clean it.

#### A Wide Model To mount.

To install:  
In front of the air intakes.  
In smaller holes than the board.

#### B Narrow model

To install:  
In holes of the measure of the board

#### C Narrow mode with separator

To install:  
In front of the air intakes.  
In smaller holes than the board.  
With fan between wall and board

#### Sprinklers and nebulizers

It combined with fans inside the room, they wet to the animals of intermittent form and later causes circulate air

Installed on the gestations and in departments  
Nebulizers to low pressure.

With valve anti leak

Volume to 3 AT: 5 l/hour, 10 l/hour



## Experts in air conditioning of farms

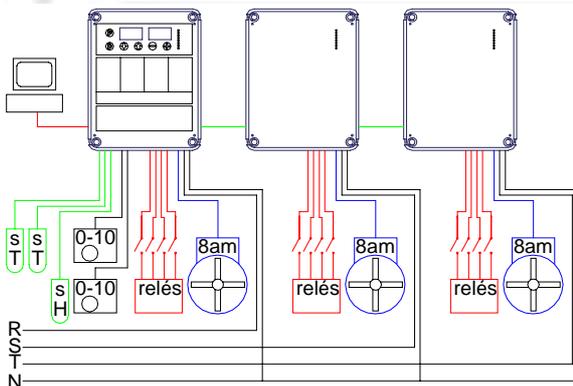
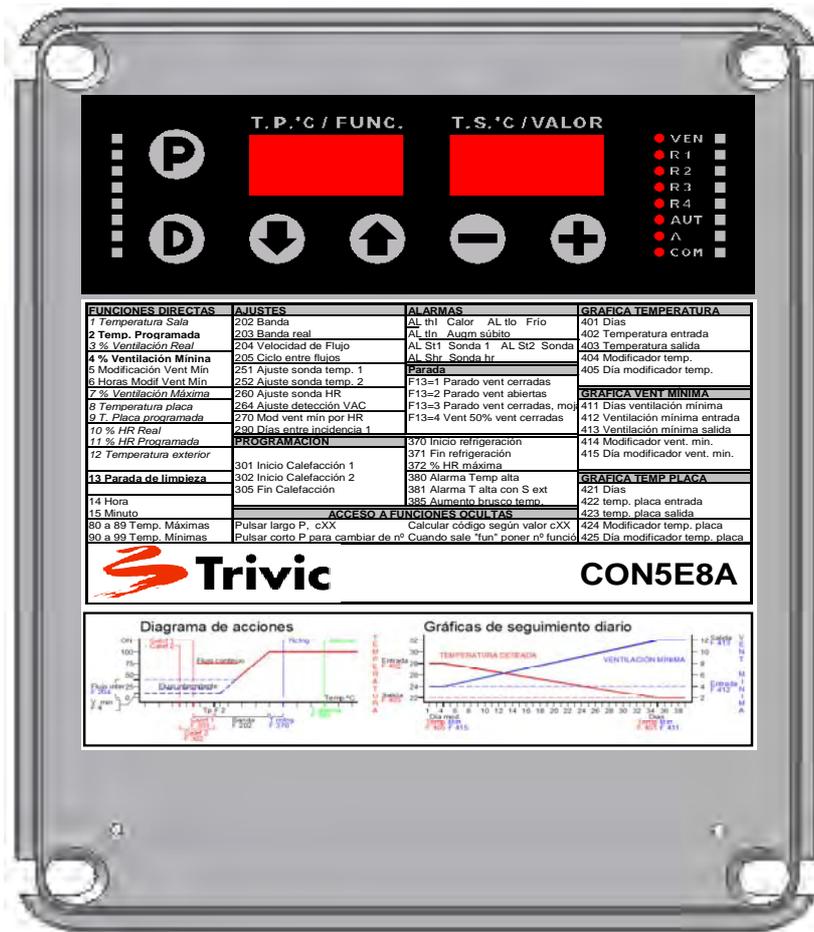
Each building has its particularities. The control must allow a meticulous configuration, so that we have a correct air flow and so that each element between in operation in precise element, thus TO REDUCE the electrical COSTS and of heating.

Easy handling with functions. Separated menus in clear sections, access by code. With this system it facilitates the telephone attendance.

With only one control, modifying the configurations and with extensions, we can solve ALL the ventilations of a farm. This facilitates spare parts and the learning, as much of the users as of commercial and the installers.

## One control control for:

- Simple and great rooms with many equipment
- Combination, forced and natural ventilation
- Continuous ventilation or intermittent flow
- Customized programming of the controls
- Easy handling, visible functions according to user
- Multiple and intelligent alarms, very safe
- Applications that they facilitate, handling and installation
- Registry of data that improve the management



S HR



### Control of air conditioning

Easy use, a screen with the functions and another one with its value

Adaptable visible functions at the level of each user, if a single user is wanted can accede to very few functions, Direct access to day of process, for automatic operation of: Temperature, minimum ventilation and temperature of The multiple possibilities of configuration of relays, they facilitate the electrical system and the coordination An intelligent system of alarms, they give a great security

Modification of the minimum ventilation without modifying the graph

Adjustments of sesors, voltage and adaptation of regulated exit, by keyboard

It manages the cleaning shutdown

Assembly with connectors. Facilitate assembly and substitut

### Technical characteristics

Fast extreme processor of 40MHz

Realtime clock with battery

Firmware in easily actualizable flash

Possibility of programming and data acquisition with EXCEL, through adapter RS485, (2 channels)

Hermetic box of of PVC

### Inputs:

-2 configurables sensors of temperature like:

- Average with sesor 1 - Outer
- Plate heating. - Pipe hot water
- Sounding relative humidity.
- 2 digital entrances, configurables

### Outputs:

-1 exit 8 amps regulated

-1 exit for extensions of power

-4 relays: 2 NA/NC, one of them special one of security.

Configurables like:

- Heating 1 and 2 and of plate, return hot water
- Ventilation on-off 4 levels
- Refrigeration with panels, intermittent sprinkler
- Performance on natural ventilation
- Maxima Alarms hight, low, increase suddenly
- Hour time-lag

-2 exits 0-10/ 10-0 v. Configurables like:

- Copy of ventilators, regulated heating, windows

### Extension

- Connection to expansion board up to 12 relays, 3 triacs
- We avoided imbalances between phases

### Statistics:

Temp Maxima and minim of the 10 last days

Running hours of:

- Triac, lessened ventilation, heating, ventilation on-off, refrigeration



**The solution to the heating of the farms**

**Without corrosion problems**

**Heating by convection**

- Great capacity of heating
- Few meters is sufficient
- Occupies little space in the wall
- Assembly underneath the air intakes
- Mounts in the walls
- Great facility of Resistant
- Easy to clean
- Of easy installation

**Characteristics and measures**

- Tube 3/4", Threaded
- Outside Ø 75 mm

**Materials:**

- Tube and steel sheet
- Inside and outside hot galvanized
- Stainless steel support

**Models:**

- TCE100, tube 1 m
- TCE200, tube 2 ms
- TCE300, tube 3 ms
- CTSOP34, wall support

**Accessories:**

- Support to the wall
- Tube multicarates
- Racord union 3/4" tube multicarates
- Supports multicarates tube
- Motrized valves
- Pumps of circulation

**Complete systems of heating**

**Capacities:**

°C room	°C water	Kcal/ml	Kw/ml
20	70	528	454
20	80	634	737
20	90	740	860
25	70	475	552
25	80	581	676
25	90	687	799
30	70	422	491
30	80	528	614
30	90	634	737

