

SIMPLY THE BEST
SOLUTIONS | HVAC
SYSTEMS

TECOLOGY

Ecology Units



CE TSEK

TEKNOGEN®

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Teknogen

As one of the leading manufacturers of Heating, Ventilation and Air Conditioning market, **TEKNOGEN HVAC** stands for innovation, top quality, leading technology and reliable service. That's why our motto is '**SIMPLY THE BEST SOLUTIONS**'.

One of the core issues for production is quality and high-end components for reaching top quality units. All internal processes are being regulated by **ISO9001** quality management system.

We combine the demands from the market with the new trends for energy savings and environmental needs. This combination leads us to create new designs with innovated ideas. This approach makes us have loyal customers worldwide.

TEKNOGEN has a large range for Air handling Units, Fancoils, Heat Recovery Ventilators, Swimming Pool Air Handling Units, Chillers, Rooftop Units, Floor Convectors, Ecology Units, Unit Heaters. Our headquarters located in Istanbul and the factory is in Izmir.

If you are looking for high quality production and a solution partner, we Teknogen ready.



Technical Specifications

ECOLOGICAL APPROACH TO FILTRATION IN INDUSTRIAL KITCHENS

Cooking , frying and grilling procedures will cause to grease particles in the air,odor , smoke and increase in atmospheric temperature in industrial kitchens. These negative effects will make it harder to work in industrial kitchens for employees.It can cause to health problems for those who are expose to this stall air for long hours. Evacuation of this stall air from the kitchen and filtration of it before sending it to atmosphere, is vital for a clean nature and human health .

ADVANTAGES OF TECOLOGY UNITS

- Evacuation of filtrated ,clean and unharful air to the atmosphere
- Easy installation and compact solution for filtration in industral kitchens
- Maximum filtration of grease particles
- Washable electrostatic precipitators makes maintenance easy
- Removable active carbon filters
- Diffuser section for maximum precipitation of grease particles
- Selection of single/double ESP according to type of food or grilling / frying applications

TECHNICAL SPECIFICATIONS OF TECOLOGY UNITS

Tecology Units consist of 4 sections which are Diffuser Section, ESP section, Active Carbon Filter Section and ve Fan/motor section .


1.Diffuser Section:

To have efficient and maximum precipitation from the ESP the air speed should not be higher 3m/s. If the air speed is more than 3m/s the efficiency of ESP will decrease which will cause to less precipitation of the grease particles. The aim of having a diffuser section, to descrease the speed of the air coming from the duct and also linear passing of the air over the ESP.

2.ESP Section:

This section is where precipitator located. ESP has slides to ensure easy removal .All models have stainless steel drain pans which can be easily removed through a sliding frame. This section has service door for maintenance. There are 3 types of ESP ,3500 m³/h, 5000 m³/h and 7000 m³/h .The Ecology units are designed in combination of of these precipitators between 3.500 m³/h to 22.500 m³/h.

Technical Specifications

ESP Technical Specifications							
	TECOL 3500	TECOL 5000	TECOL 7500	TECOL 10000	TECOL 15000	TECOL 20000	TECOL 22500
Air Flow (m ³ /h)	3500	5000	7500	10000	15000	20000	22500
Number of Precipitators	1x3500	1x5000	1x7500	2x5000	2x7500	4x5000	3x7500
Precipitator Surface(m ²)	20,7	27,6	41,4	55,2	82,8	110,4	124,2
Number of Precipitator Plates	65	98	129	130	196	392	387
Efficiency (%)	95<	95<	95<	95<	95<	95<	95<
							

ESP Section consist of 4 parts which are Pre-Filtering(Metal Filter), Ionisation , Collector, Post-Filtering (Metal Filter) .

Technical Specifications

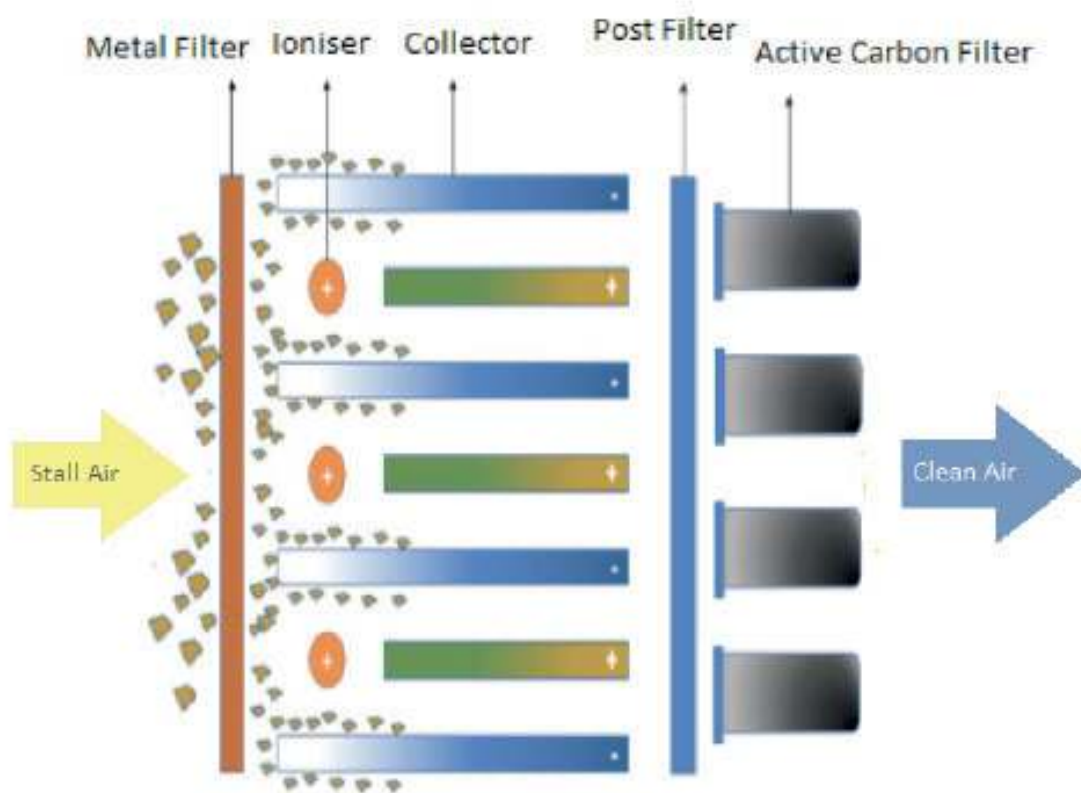
Pre-Filtering :

The pre-filtering of the grease particles are done in this stage. A washable metal filter is used for this procedure.

Ionisation :

The particles which are 0,3 micron(1 micron= 1/1000mm) in size, will be positive loaded in this stage which will make participation possible. This stage has very high electrical power.

The stall air is positively loaded after ionisation stage ready for collection of the particles.



Collector Stage:

This stage consist of plates which one side is negatively and other is positively loaded. While passing through, the particles which are loaded positively will be pushed by positively loaded part of the plates towards to negatively loaded part of the plates. Then these particles will be collected on the negatively loaded part of the plates. This process is the participaton stage .



Post Metal Filter:

Post metal filter and pre metal has the same specifications. It is used for preventing passage of the particles detached from the ioniser and collector to the fan section when the unit turned on.

Technical Specifications

3. Active Carbon Filter Section:

It is used for filtration of the odor . The cartridges which have cylindrical body and mesh structure and filled with carbon pieces 3 to 4 mm in size. The length of the canister is 40cm. There is an easy locking system on the plate where the cartridges are located. The replacing of the cartridges should be done periodically by checking active carbon pieces.

Active Carbon Filter Specifications	
Filter Body	1mm Electrostatic painted galvanised
Dimensions	Ø 140 x 400 mm
Quantity of Carbon	3 kg
Maintenance	Rechargeable
	

Technical Specifications

4. Plug Fan Section

The unit has plug fans with frequency drivers . Using of plug fans will decrease energy consumption of the unit and will let control pressure and the air volume.



Technical Specifications

Tecology Tech. Specs	Unit	TECOL 3500	TECOL 5000	TECOL 7500	TECOL 10000	TECOL 15000	TECOL 20000	TECOL 22500
Maximum Air Volume	m³/h	3500	5000	7500	10000	15000	20000	22500
External Static Pressure	Pa	500	500	500	500	500	500	500
Motor Round	rpm	3000	3000	3000	1500	1500	1500	1500
Motor Power	kW	1,5	2,2	4	5,5	7,5	11	15
Collector Surface	V/F/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Number of Collector Plates	Adet	1 x 3500	1 x 5000	1 x 7500	2 x 5000	2 x 7500	4 x 5000	3 x 7500
Efficiency	m²	20,7	27,6	41,4	55,2	82,8	110,4	124,2
Diffuser Length	Adet	65	98	129	130	196	392	387
Efficiency	%	95<	95<	95<	95<	95<	95<	95<
Active carbon filter	Adet	16	24	36	48	72	96	108
Air Diffuser Cell Length	mm	1000	1000	1000	1000	1000	1000	1000
Air Diffuser	Piece	1	1	1	1	1	1	1
Frequency Inverter	Piece	1,5	2,2 kW	4 kW	5,5 kW	7,5 kW	11 kW	15 kW

DIMENSIONS	Unit	TECOL 3500	TECOL 5000	TECOL 7500	TECOL 10000	TECOL 15000	TECOL 20000	TECOL 22500
Height	mm	872	872	872	1484	1484	1484	2096
Width	mm	712	1018	1477	1018	1477	1936	1477
Length	mm	4025	4025	4025	4178	4484	4484	4484
Outlet Diameter	mm	300x652	300x958	300x1417	600x958	600x1417	600x1876	900x1417
Inlet Diameter	mm	300x652	300x958	300x1417	600x958	600x1417	600x1876	900x1417
Weight	kg	750	865	1035	1180	1415	1860	1815
Maintenance Side	Piece	1	1	1	1	1	2 (right-left)	1



Technical Specifications

AUTOMATION

Tecology units have a special control and automation system . Main control board is separate and can be mounted to the kitchen. It has IP 55 panel as standard. IP 65 panel is optional.

Control Module:

There are two parts on control module which are controlling of ESP and controlling of the unit. ESP control panel comes mounted on the unit but unit control panel comes on loose. Unit control panel can be mounted to a place near to users (could be kitchen) and can be connected to unit with cables. The warnings are below:

- Fan is on
- Fan is not working
- ESP is on
- ESP is not working

Controlling of the Fan:

The frequency drivers which are harmonic, EMC filtered and suitable for communicating with ModBus RS485 are being used. Fan can be controlled in three steps which are low, medium and high. Frequencies related to each step can be adjusted.

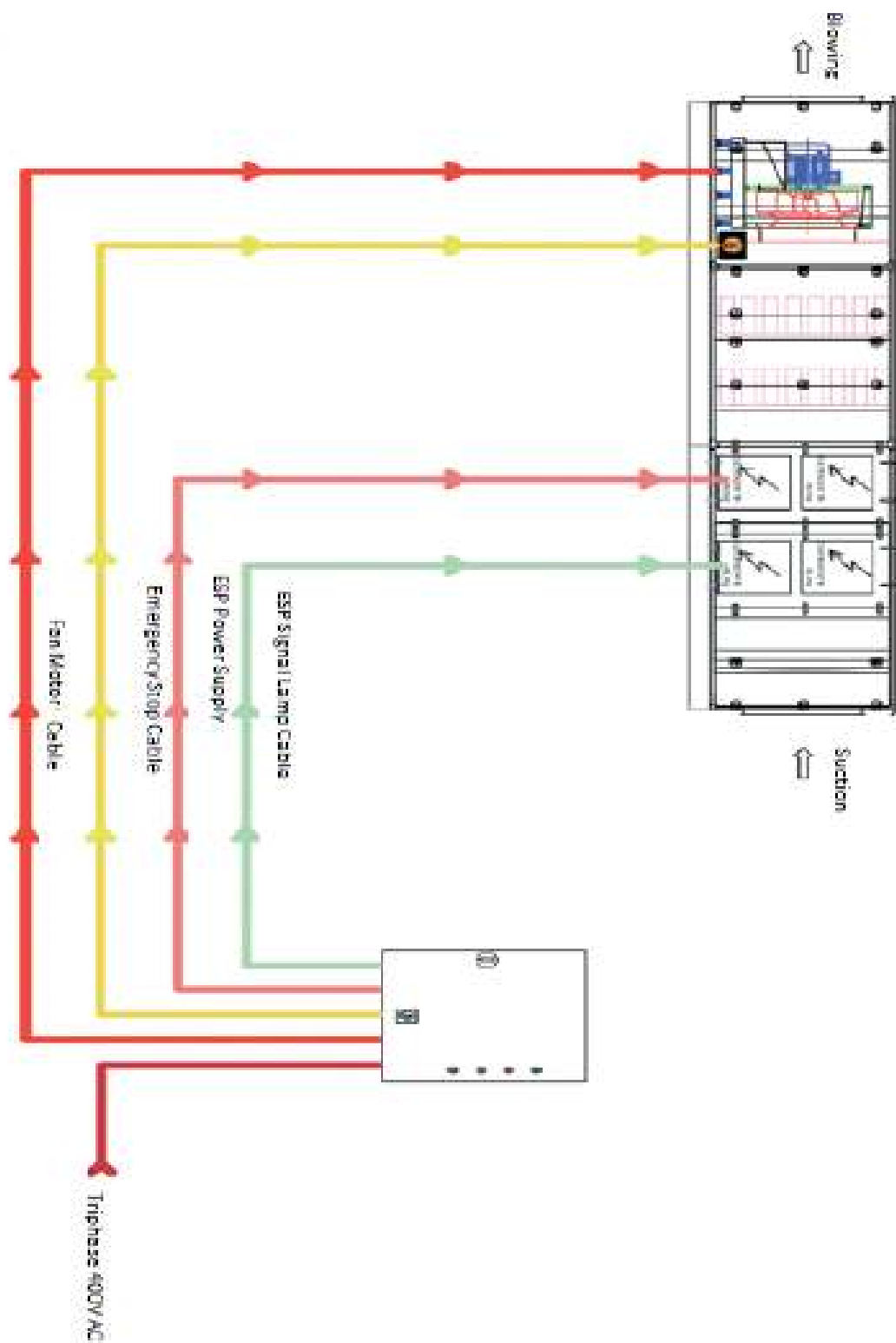
Protections:

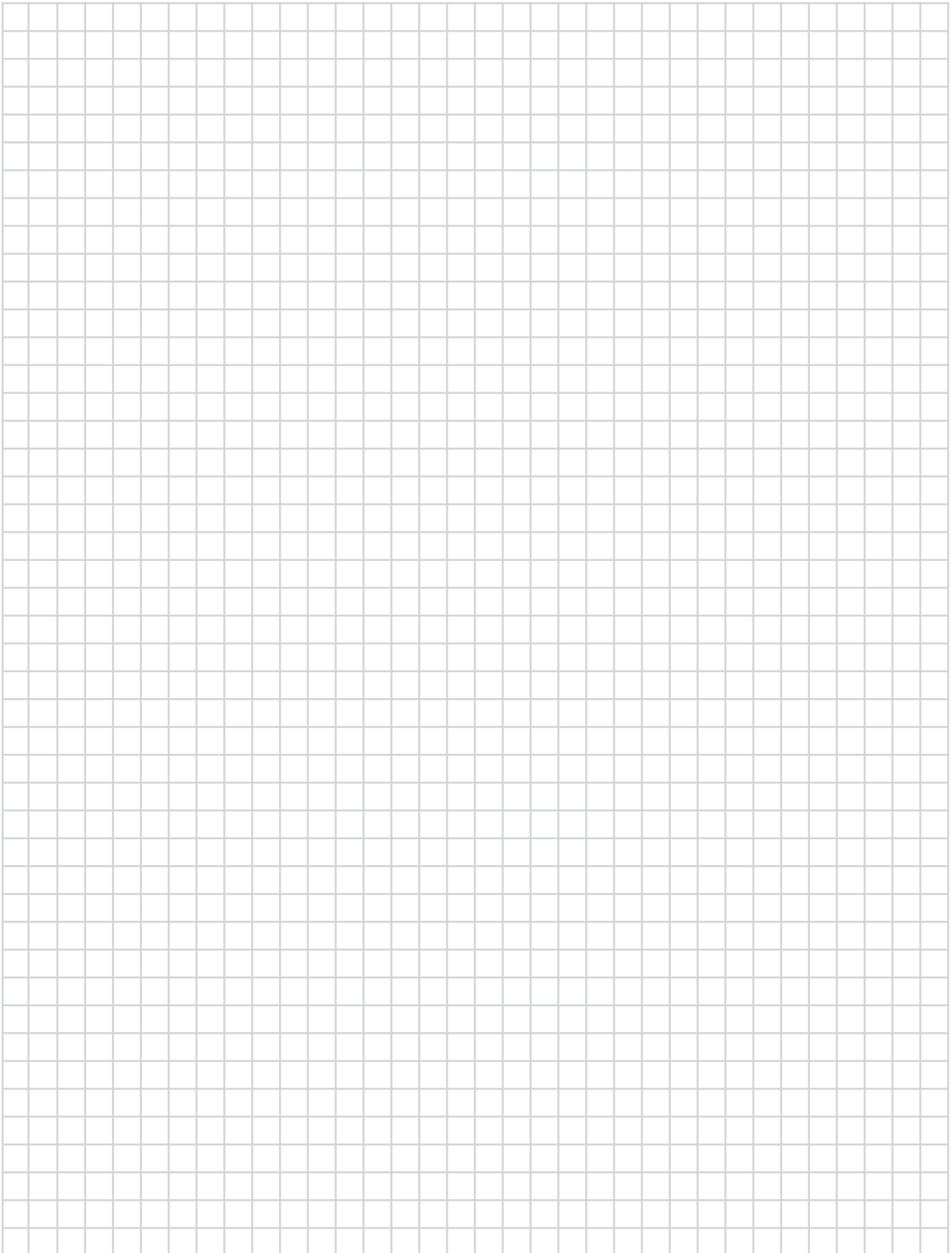
- If the fan is off ESP is off
- The fan stops in case of fan door is open
- Emergency start and stop button
- Fuses for protection of the electrical board
- Canopy type roof for outdoor applications

Controlling of ESP:

There is a switch with 4 stages to control the unit. 1st stage makes ESP and fan work. 2nd and 3rd stage are for increasing the air volume. This type of control stops ESP if the fan is not working.

Electrical Scheme





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