

SIMPLY THE BEST  
SOLUTIONS

HVAC  
SYSTEMS

# TEVHR

Heat Recovery  
Ventilators



# Content

TEVHR .....	3
Unit Specifications .....	4
Technical Specifications .....	5
Dimensions .....	5
Performance Datas.....	6
Components.....	8
Duck Connection Configurations.....	9
Accessories.....	10

## 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, 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.



The studies show that people spend most of their lives in indoor conditions in civilised cultures. Because of that, air quality becomes one of the core point for health. On the other hand, increasing demand for energy efficiency and the fact that energy sources are limited, consumption of the energy should be more efficient. TEKNOGEN heat recovery ventilators are designed for longlife usage to supply both energy efficiency and air quality.

TEKNOGEN Heat Recovery Ventilator range has 9 models between 800m<sup>3</sup>/h and 6.000m<sup>3</sup>/h. The design made for recovering and transferring the thermal load on the exhaust air to fresh air.

The state of the art technology components are used in TEKNOGEN Heat Recovery Ventilators to offer electrical and thermal efficiency. Eurovent certified heat exchangers and direct driven plug fans are used in Heat Recovery Ventilators. Fan wings are in aerodynamic design which increases the performance and efficiency. The units come with a digital control panel letting user to adjust air volume and selecting on/off position easily.

## Functions

TEVHR units;

- Supplying fresh air to indoor
- Exhausting
- Filtering of supply air
- Transferring energy of the exhaust air to fresh air

## Advantages;

- Double drain pan
- Mounting from both sides thanks to functional design
- Removable plate exchanger
- Electrical heater or water coil application(optional)
- Easy replacing of air inlet-outlet connections
- High efficienct Eurovent certified plate heat exchangers
- Low noise level and high efficiency by using back curved plug fans
- Flexible mounting solution with alternative duct connection covers
- Easy maintenance for all components without demounting of unit
- Thermal and sound isolation(Non flammable)
- Functional control panel

## Why To Choose TEKNOGEN Heat Recovery Ventilators

- Delivery from the stock even for the models with electrical heaters
- Low Energy Consuption with high efficiency plug fans
- Eurovent-certified aluminum recuperator of Klingenburg brand for high thermal efficiency
- Low noise levels
- G4 class filter
- Smart automation solutions(optional)
- Proportional speed control
- 9 different models between 800m<sup>3</sup>/h and 6.000m<sup>3</sup>/h
- Easy mounting for electrical heaters
- Water coil (optional)
- CE and TSEK certified

# Unit Specifications

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## Low noise level and high efficiency by using back curved plug fans

TEVHR Units use direct driven plug fans with AC motors. Thanks to aerodynamic structure of their wings, they reach high efficiency levels. They can work on high performances with low noise levels.

## Flexible mounting solution with Alternative duct connection covers

TEVHR units offer two alternative duct connections on the unit. One or both of them could be used in case of necessity.

## High efficiency with Eurovent certified heat exchangers

The exchangers that are used in TEVHR units are tested in laboratories and their performance are certified. Exchangers supply low pressure drops thanks to state of art technology wing structure which brings energy efficiency as well as lower capacity needs on heating and cooling.

## Easy maintenance for all components without demounting of unit

All the components are detachable in case of maintenance needs without demounting of the unit.



## Thermal and sound isolation (Flame retardant)

Flame retardant, polyurethane foams are used in TEVHR units to assure thermal and sound isolation. The flame retardant feature of isolation prevents thermal transfer. Fans, filters and heat recovery exchangers of the TEVHR are reachable in false ceiling through service doors.

# Technical Specifications

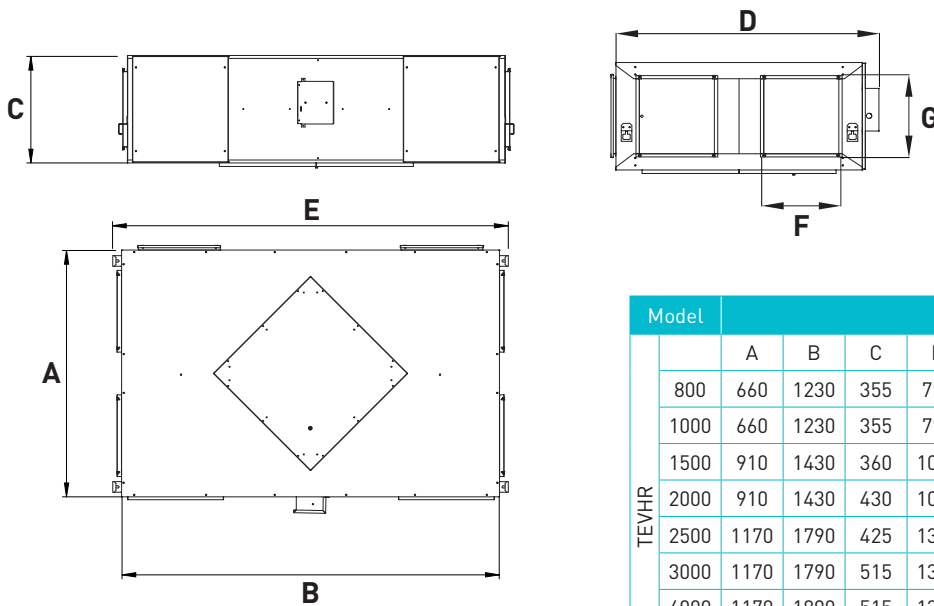
	Birim	TEVHR								
		800	1000	1500	2000	2500	3000	4000	5000	6000
Electrical Connections		1~230 V 50 Hz								3~380 V 50 Hz
Performance Datas										
Air Flow [¹]	m³/h	800	1000	1450	1900	2400	2970	3830	4700	5700
Sound Level [²]	dB (A)	44	45	46	48	49	50	52	53	59
Electrical Requirements										
Fan/motor Power [³]	W	270	420	570	650	1050	1080	1300	1430	1900
Maximum Current	(A)	1,2	1,9	2,5	3,0	4,8	4,8	4,8	6	6

¹ Airflow data when the ESP is 0 Pa.

² Sound levels are measured at 250Hz and at 1,5m distance.

³ Power consumption

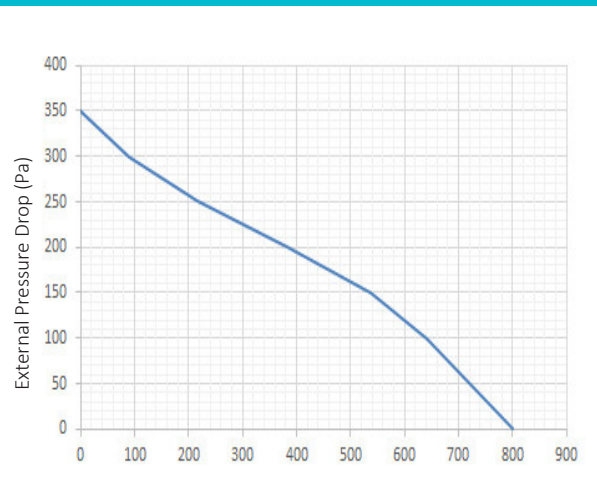
## Dimensions



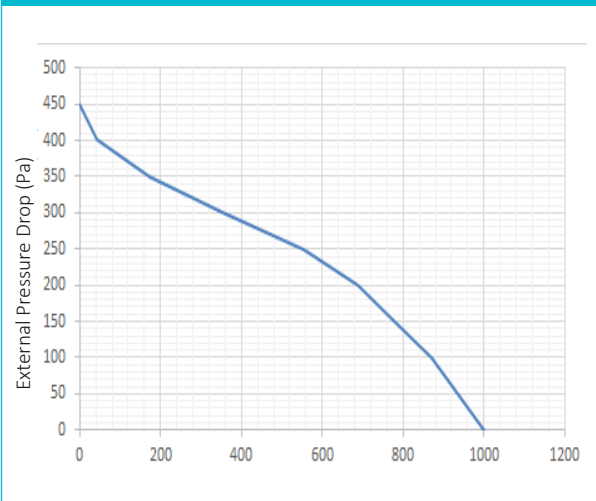
Model		Dimesions							Weight (kg)
TEVHR		A	B	C	D	E	F	G	
	800	660	1230	355	795	1312	200	200	51
	1000	660	1230	355	795	1312	200	200	52
	1500	910	1430	360	1045	1510	170	270	72
	2000	910	1430	430	1045	1510	250	300	84
	2500	1170	1790	425	1300	1870	300	300	103
	3000	1170	1790	515	1300	1870	370	370	116
	4000	1170	1890	515	1300	1970	370	370	125
	5000	1380	1990	645	1455	2070	432	432	186
	6000	1380	1990	645	1455	2070	432	432	199

# Performance Datas

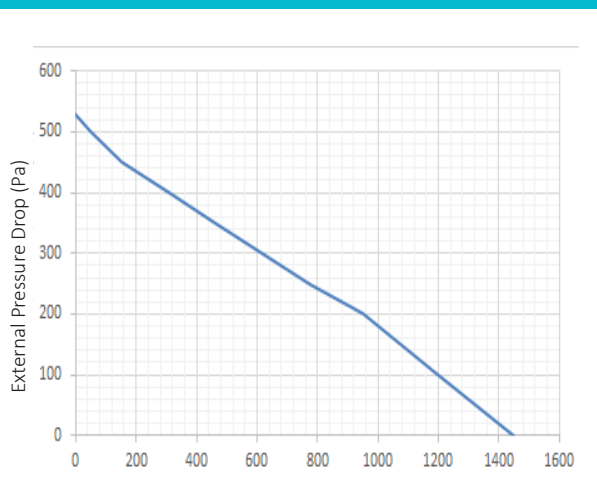
► **TEVHR 800 / Air Flow Performance**



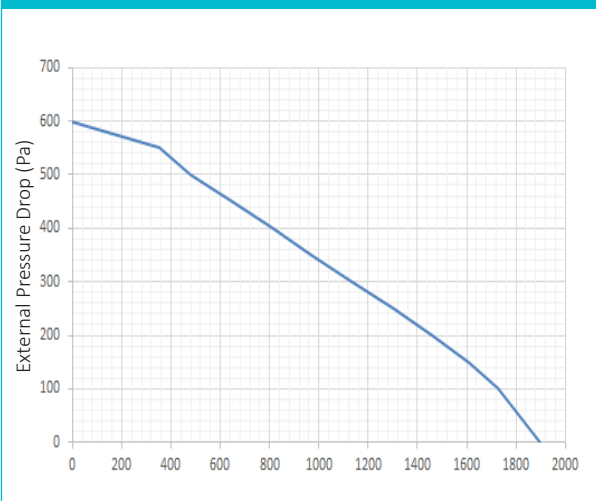
► **TEVHR 1000 / Air Flow Performance**



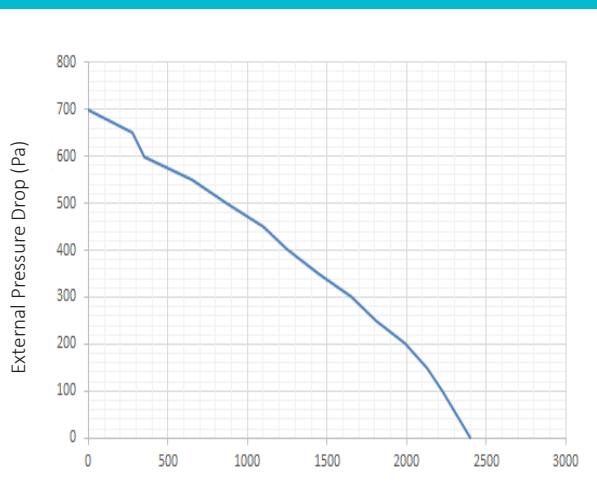
► **TEVHR 1500 / Air Flow Performance**



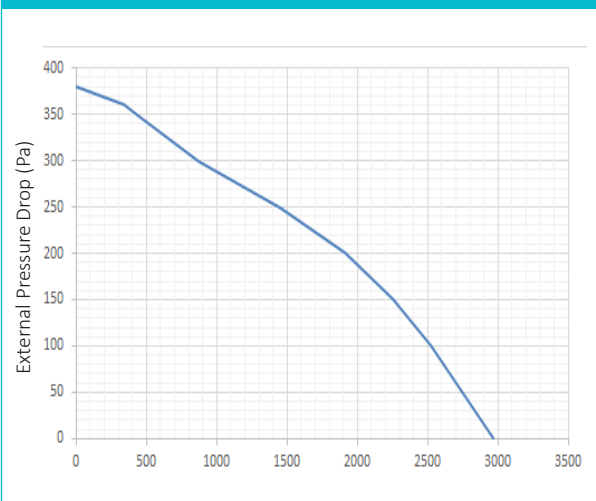
► **TEVHR 2000 / Air Flow Performance**



► **TEVHR 2500 / Air Flow Performance**

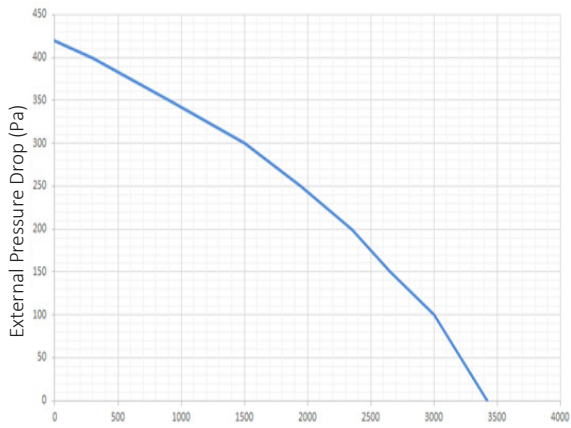


► **TEVHR 3000 / Air Flow Performance**

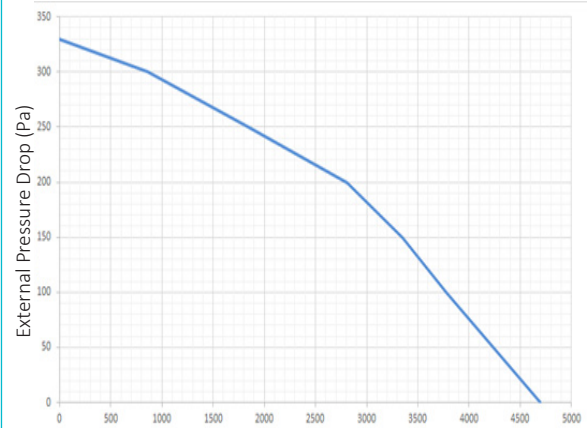


# Performance Datas

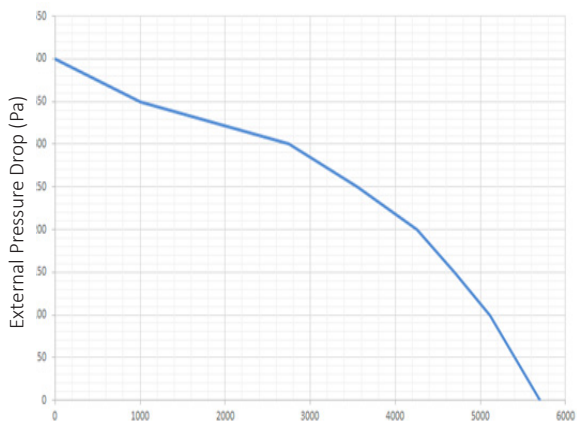
► TEVHR 4000 / Air Flow Performance



► TEVHR 5000 / HAVA PERFORMANSI



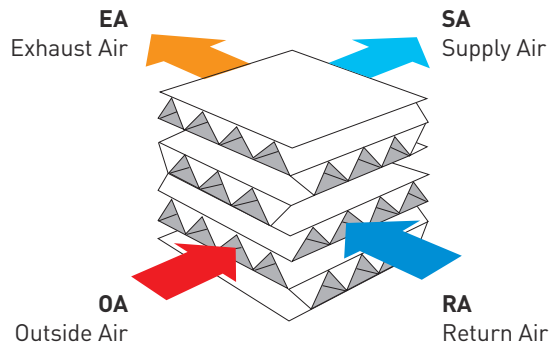
► TEVHR 6000 / Air Flow Performance



# Components

## ► Heat Recovery Exchanger

- Longlife, plate type heat recovery exchanger
- High thermal efficiency
- Low pressure drop
- Eurovent certified
- Detachable, easy maintenance
- Washable



## ► Plug Fan

- Direct driven Plug fans with, AC motor
- Mono-phase connection (TEVHR800-TEVHR5000)
- Three-phase connection (TEVHR6000)
- Low electrical consumption
- Low noise level
- Protection against overheating
- Easy maintenance with service cover and easy detachment with smart connection socket



## ► Filters

- G4 class according to EN 779
- Cleanable
- Leakproof sledge design
- Easy service with side and down service covers



## ► Body of the Unit

- High Corrosion resistant sheet metal painted in RAL 9002
- Easy maintenance with service doors
- Easy service
- Flame retardant thermal and sound isolation
- Easy mounting with hangers



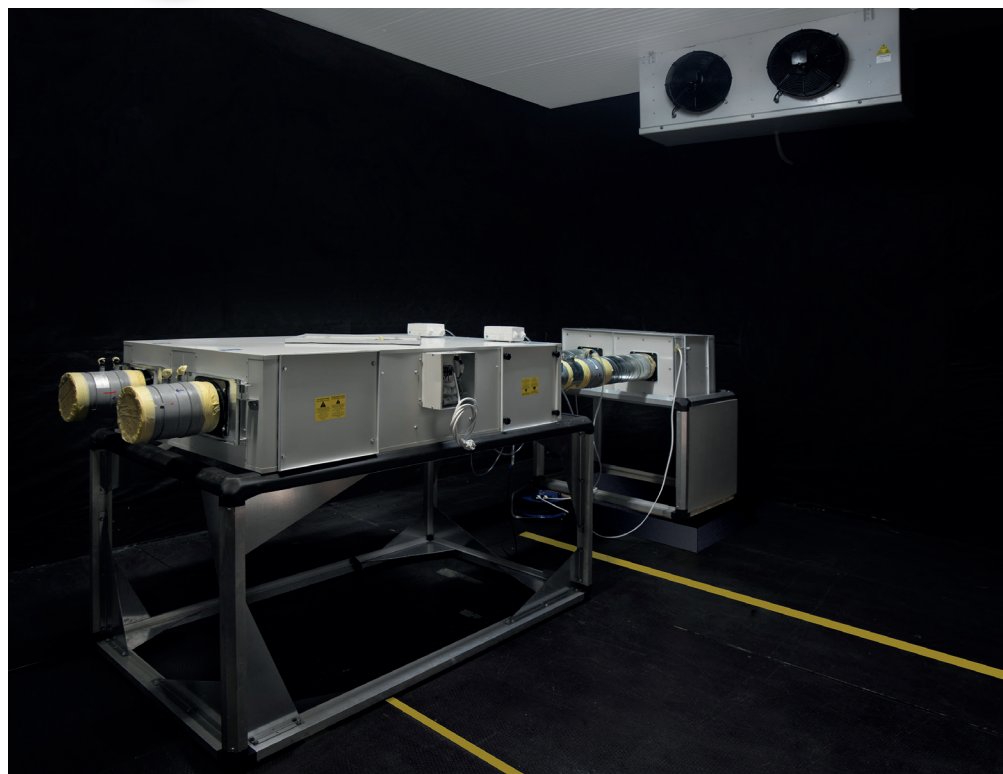
## ► Tests

TEVHR units are tested according to with EN-60204-1 standards at factory test laboratories.

- **Grounding Continuity Test**
- **Isolation Resistance Test**
- **Puncture Voltage Tests are applied at the factory**

According to EN-779 below tests are applied;

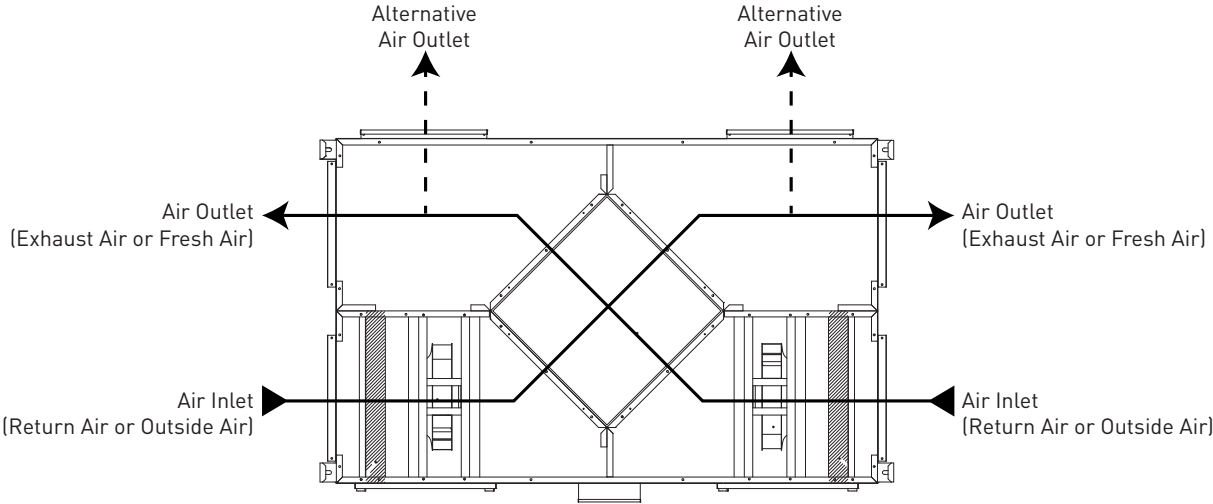
- **Internal leakage**
- **External leakage**
- **Pressure drop**
- **Heat and Humidity**



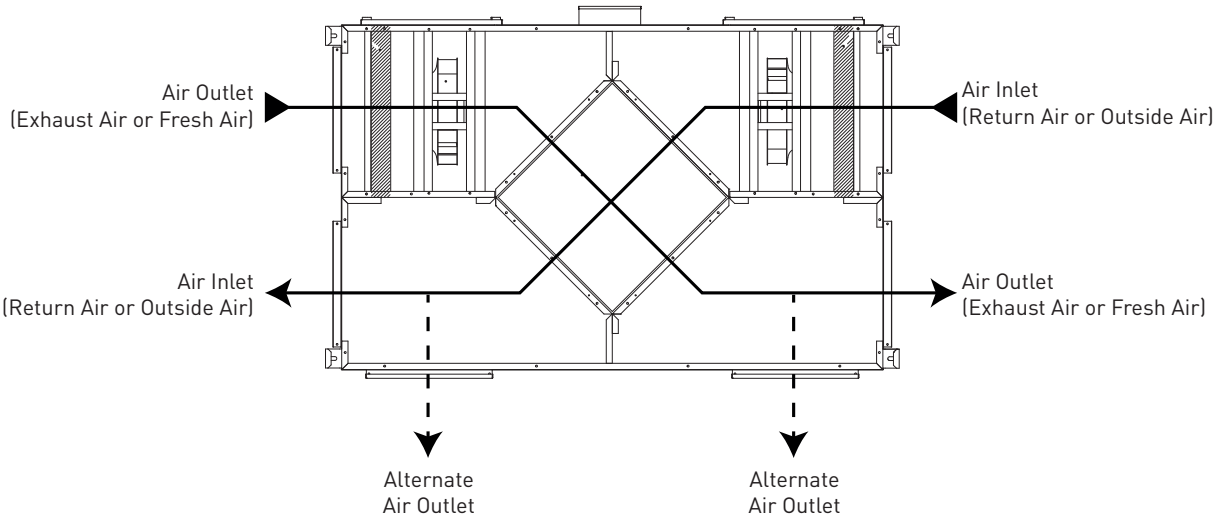


# Duct Connection Configuration

## RIGHT HAND SIDE INSTALLATION



## LEFT HAND SIDE INSTALLATION



# Accessories

## ► Digital Room Controller

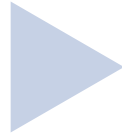
TEVHR units are supplied with a digital room control panel. It can control air flow while changing the exhaust and fresh air flows individually(L/M/H).All the changes could be followed on LCD screen. The mode of the unit can be adjusted to winter or summer.In summer mode only the unit works. In winter mode, Unit and electrical heater works. According to the temperature adjusted on the control panel, electrical heater start up automatically. The "off " button on the control panel stops both electrical heater and unit.

Electrical board comes with the unit, it adopts unit orders coming from room controller.Components like relay,contactor,capacitor and connector are located in electrical board. Required electrical power should be supplied to heater and also to unit

Tevhr Units can connect to Building Automation System via contactor or MODBUS(RS485).Thereby all the features of the unit can be controlled through a centralized system.

Fresh air and return air flows can be adjusted with automation panel.Thus,negative or positive pressure could be obtained.

By using Air Quality or CO2 sensors (optional) Ventilation on demand feature could be started. To use it, either room control panel or building automation panel should be taken to VOD mode.

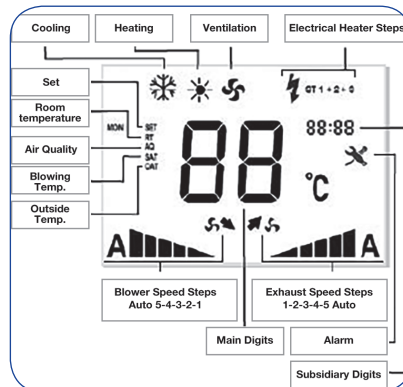


## ► Digital Controller



### ► Standard Panel Specifications

- 1 Manages exhaust and fresh air fan volumes individually in 5 steps.
- 2 Filter service alarm after 1200 hours of performance.
- 3 Thermal protection for motors.



### ► Pro Panel Specifications

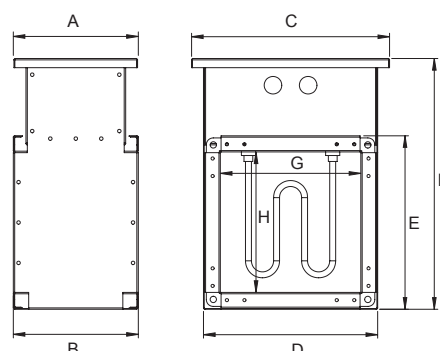
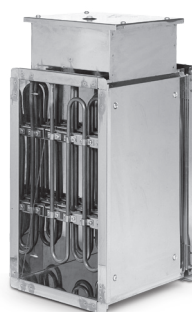
- 1 Manages exhaust and fresh air fan volumes individually in 5 steps
- 2 Filter service alarm after 1200 hours of performance
- 3 Thermal protection for motors
- 4 Electrical heater connection
- 5 Water Coil connection
- 6 Protection of heaters for over-heating
- 7 Boost Function
- 8 Carbondioxide sensor connection
- 9 Control of damper motor
- 10 BMS control
- 11 Control of heating and cooling coil valves
- 12 Fire alarm
- 13 Weekly programming
- 14 Thermal check with a sensor located on duck

### ► Advanced Panel Specifications

- 1 Manages exhaust and fresh air fan volumes individually in 5 steps
- 2 Filter service alarm after 1200 hours of performance
- 3 Thermal protection for motors
- 4 Electrical heater connection
- 5 Water Coil connection
- 6 Protection of heaters for over-heating
- 7 Boost Function

## ► Electrical Heater

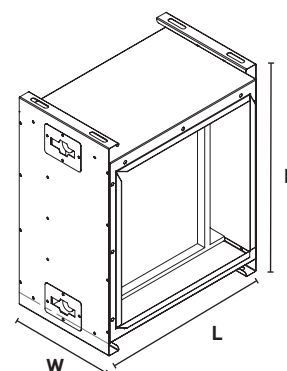
- Control board
- Overheat sensor, thermistor
- non-flammable macaron for electrical cables
- Low energy consumption with step control
- Rectangular shape
- Galvanised steel body



											Resistor	
Model	Electrical Power	Step	A	B	C	D	E	F	G x H		Electrical Power	Quantity
	kW		mm								W	
TEVHR	800	2	1	176	178	282	248	247	357	200 x 200	667	3
	1000	3	1	176	178	282	248	247	357	200 x 200	1000	3
	1500	3	1	326	328	252	218	317	427	170 x 270	500	6
	2000	5	2	326	328	332	298	347	457	250 x 300	834	6
	2500	7	2	326	328	382	348	347	457	300 x 300	1167	6
	3000	8	3	476	478	452	418	417	527	370 x 370	889	9
	4000	10	3	476	478	452	418	417	527	370 x 370	1112	9
	5000	13	3	476	478	512	478	477	587	430 x 430	1444	9
	6000	13	3	476	478	512	478	477	587	430 x 430	1444	9

## ► Hot Water Coil

TEKNOGEN hot water coils are used at the exit of fresh air duct or inside the duct. They are made up of copper pipe, aluminium wings and brass collectors. The electrical board starts up the coil on/off according to set temperature with room controller. They have low pressure drops and can connect to duck system without using additional connection systems.



Air flow	Heating Performance (90/70°C)		Waterside pressure drop	Connection Diameter		Airside pressure drop	Consumed Power	Dimensions			Duct Connection	
	Capacity	Blowing Temperature						W	L	H	A	B
m³/h	kcal/h	°C	kPa	inch	mm	kPa	W	mm			mm	
900	4190	34	3	1/2	21,3	12	100	240	440	500	396	411
1060	5784	36.5	5.34	1/2	21,3	19	100	240	440	500	396	411
1400	9129	40.5	21.5	1/2	21,3	46	100	240	440	500	396	411
1600	11070	41.5	31.8	1/2	21,3	63	130	240	440	500	376	376
1725	12760	45.5	37	1/2	21,3	78	130	240	440	500	376	376
1800	17620	49.5	32.4	1/2	21,3	51	130	350	550	635	481	513
1900	20551	55	66.8	1/2	21,3	61	130	350	550	635	481	513
2450	25778	54	30.6	1/2	21,3	84	170	350	550	635	481	564



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## **TEKNOGEN®**

### **HEADQUARTERS**

BY ISITMA SOGUTMA KLIMA HAVALANDIRMA SAN TIC. A.S.  
ATATURK MAH. DUDULLU CAD. SEREF SOKAK. NO 46 34758 ATASEHIR - ISTANBUL / TURKEY  
TEL + 90 216 324 51 59 • FAX + 90 216 324 99 32  
info@TEKNOGENHVAC.COM • WWW.TEKNOGENHVAC.COM

### **FACTORY**

KAZIM KARABEKIR MAHALLESİ BEKİR SAYDAM CAD.  
NO:104 İS KAPI NO: 25 PANCAR, AYRANCILAR, TORBALI - İZMİR / TURKEY  
TEL + 90 232 864 11 11 • FAX + 90 232 864 10 11