WONY Energy Recovery Ventilators

Product Introduction

Main Contents

- ERV Introduction
- WONY Eco Smart Hepa ERV
- Certification for ERV
- Applications

ERV Introductions

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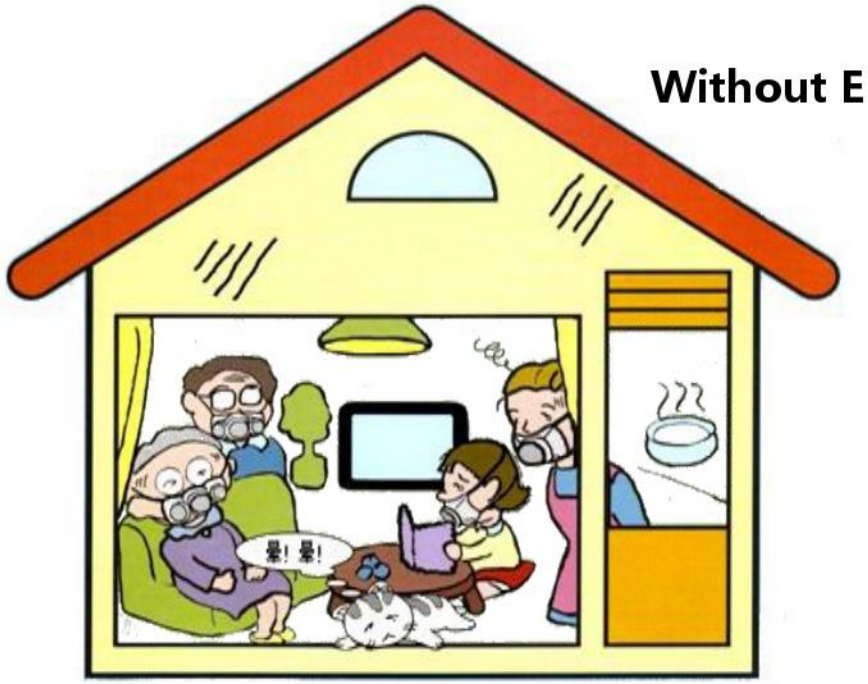
What is energy recovery ventilator?

Why use WONY ERV?

Without ERV

- Increasing CO2
- Increasing humidity level
- Mites, moulds and harmful bacteria
- Smoke, formaldhyde and other odor gases



With WONY ERV Clean and fresh air

Reduce energy consumption of AC system

Energy saving

Live in Beijing, save your running costs USD267.195/year

Airflow (m^3/h)	Heat recovery efficiency (%)	Electricity saving in summer (Kw.h)	Electricity saving in winter (Kw.h)	Electricity saving in a year (Kw.h)	Running costs saving (USD)
250	59/73	1001.38	2338.56	3339.94	267.195

Conditions:

Airflow: 250m^3/h

Running time of air conditioning system

Summer: 24h/day X 122days = 2928h (Jun. to Sep.)

Winter: 24h/day X 120days = 2880h (Nov. to Mar.)

Electric charge: 0.08USD/Kw.h

Indoor conditions: Cooling 26 °C (RH 50%), Heating 20 °C (RH50%)

Outdoor conditions: Cooling 33.2 °C (RH 59%), Heating -10 °C (RH45%)

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Test results showing the effectiveness of WONY ERV

Contamination	Average concentration values before testing (mg/m3)	After operating WONY ERV model XHB-D10 for 1hour and 5 minutes		After operating WONY ERV model XHB-D10 for 1 hour and 54 minutes	
		Average concentration value (mg/m3)	Ratio of concentration reducing (%)	Average concentration value (mg/m3)	Ratio of concentration reducing (%)
Free formaldehyde	0.522	0.016	96.9	0.015	97.2
Ammonia	2.792	0.271	90.3	0.017	99.4
Benzene	4.644	0.288	93.8	0.060	98.7

Tested by National Center for Quality Supervision and Test of Building Engineering, for more information, test report, No. BETC-ZX-2003-54

WONY Eco Design ERV

What's ErP2018?

- The Directive for energy efficiency 2012/27/UE modifies Ecodesign Directive 2009/125/EC (ErP Directive) developing a new frame of Ecodesign requirements for energy-related products. This directive takes part into the 2020 strategy, according to which the energy consumption must be reduced a 20% and the renewable energies quote should increase in a 20% for 2020.

ErP 2018 Compliant

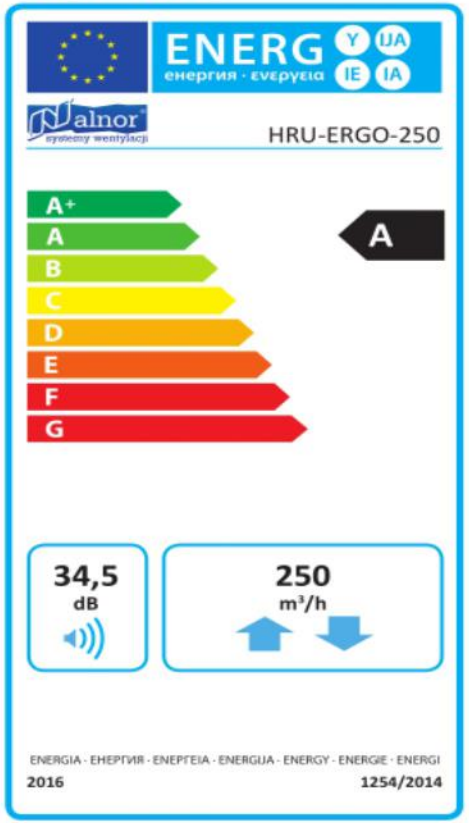
- WONY Eco-Smart HEPA Energy Recovery Ventilator is ErP 2018 compliant. It is built in energy saving BLDC motor, F9 filter, high efficiency enthalpy heat exchanger. Ideal ventilation solution for residential and light commercial projects.

EU regulations compliance

- Energ

SGS CE CERTIFIED

ERP 2018 ECO DESIGN COMPLIANCE



Energy efficiency class of A or A+ according to regulation EU. NO 1254/2014.

Eco-Smart HEPA series

DC Motor

High Efficiency
Heat Exchanger

G3+F9 Filter

Different Pressure
Gauge Alarm

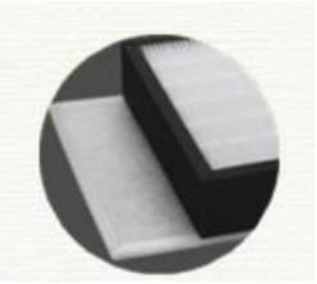
Auto Bypass

Intelligent Control

ECO-SMART HEPA Series

- Airflow: 150~60000 m3/h
- Higher Energy Efficiency and Ecology by Powerful Motors
- Smart Different Pressure Gauge Alarm
- Linkage with External A/C System or BMS Control
- Automatic Energy Recovery Ventilation or Nature Ventilation
- Energy Efficiency Class of A or A+ According to EU NO. 1254/2014

Structures



1. G3+F9 Filters

5. Bypass Facility

2. Enthalpy Heat Exchanger

3. Brushless DC Motor

4. Differential Pressure Switch

Brushless DC motor

Superior torque performance, big starting torque with less starting current

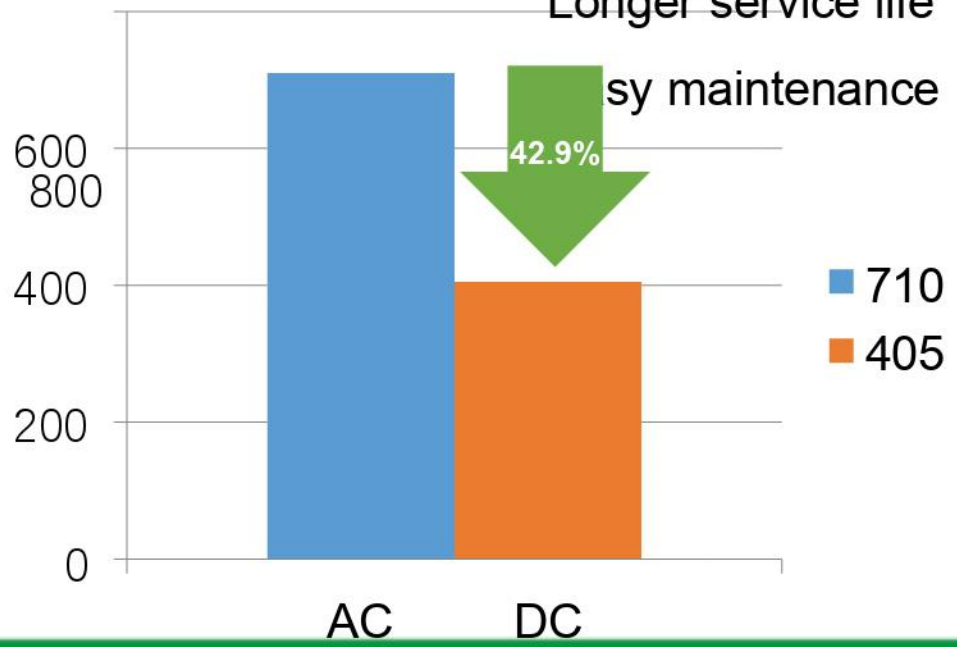
Strong vibration resistance with lower noise and smooth operation

High efficiency, energy saving by 20-60%

Good liability and stability

Longer service life

sy maintenance



Model	Brushless DC	Common AC
WN-V2.5ENUIA	85W	117W
WN-V5ENUIA	140W	200W
WN-V8ENUIA	188W	585W
WN-V10ENUIA	312W	690W
WN-V13ENUIA	405W	710W
WN-V26ENUIA	810W	1300W

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Energy efficient DC motors

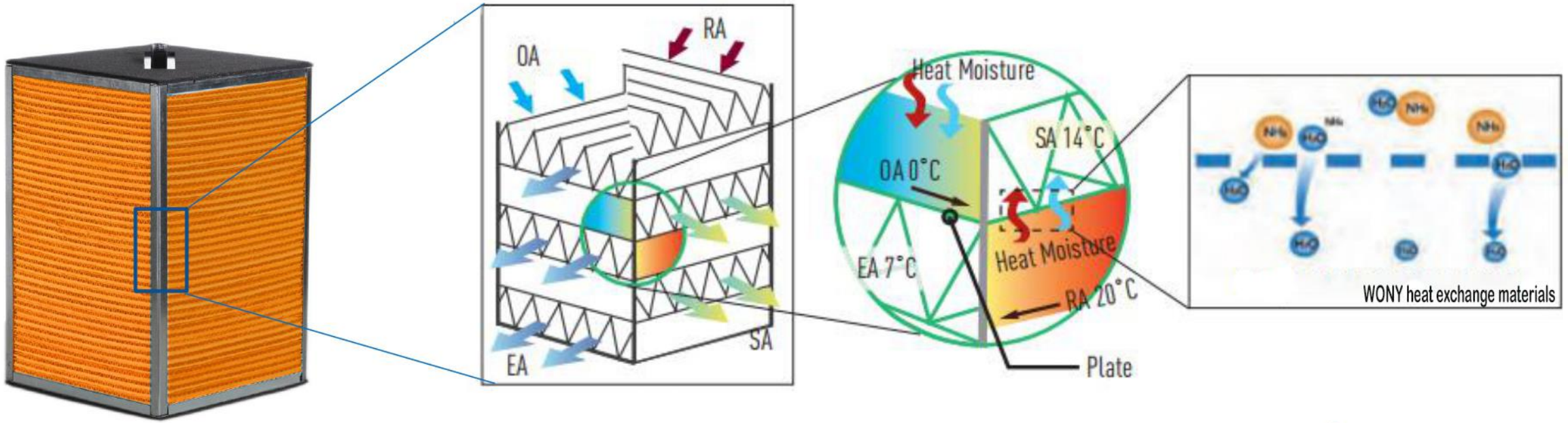
Running costs comparison of conventional ERV and Eco-smart ERV

Conditions:

Location:	Beijing	Summer:	24h/day x 122days =2928h (Jun. To Sep.)
Airflow:	250m³/h	Winter:	24h/day x 120days = 2880 (Nov. To Mar.)
Electric charge:	0.08 USD/Kw.h		

Special heat exchanger minimizes cross contamination

High Efficiency with 3rd Generation Enthalpy Exchanger

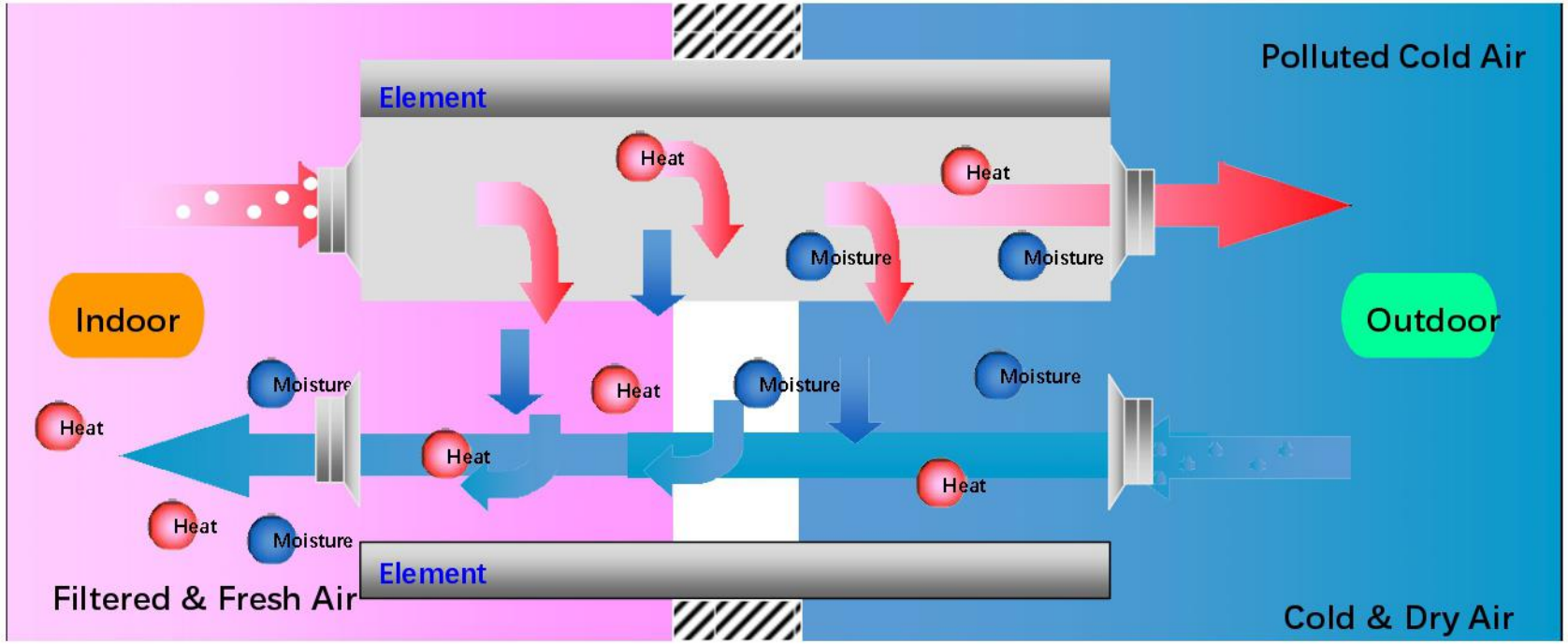


advantages of ER Paper Heat Exchanger

1. Higher efficiency, temperature and humidity recovery
2. High moisture permeability
3. Good air tightness
4. Excellent tear resistance
5. Long lasting more than 5 years
6. Test certificate from 3rd party available

Heat Exchanger

- **In Winter** Heat is transferred when the air streams flow crossly through the channels, cold fresh air is pre-heated.
- **In Summer** It recovers the cooling from exhausted air to pre-cool the hot fresh air, to save energy consumption of AC.



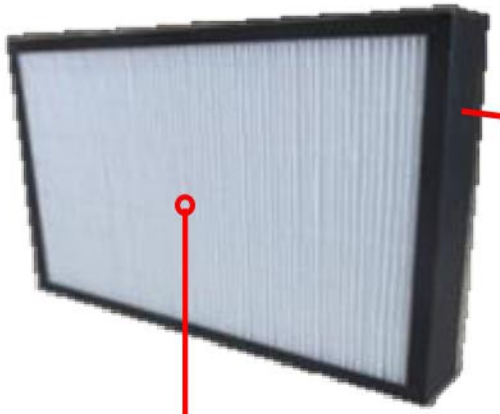
Filters

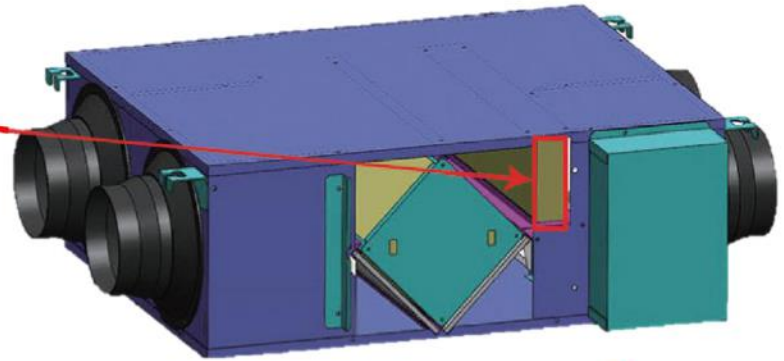
Low resistance and high capacity of dust load

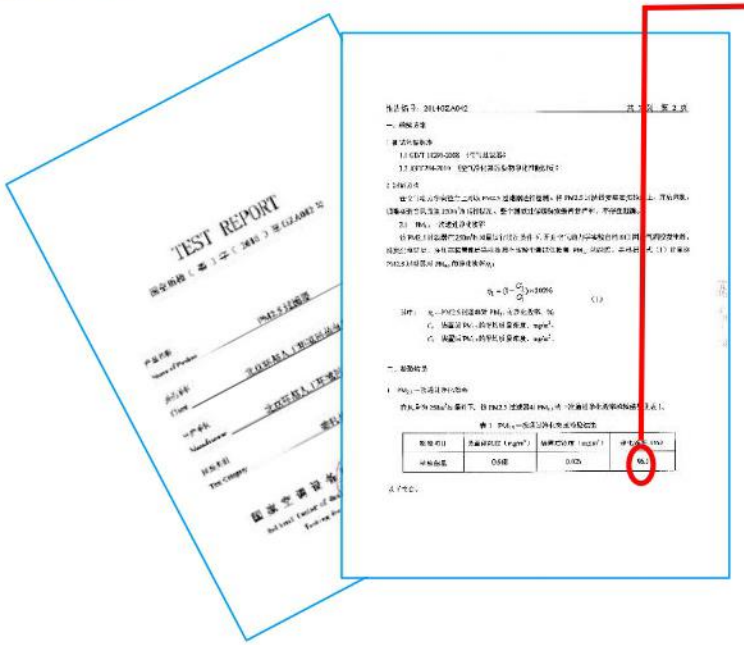
PM2.5 filtration efficiency 96.3%

	Filter Class	Material
Primary filter	G3	Plastic frame and non-woven cloth
Sub HEPA filter	F9	Paper frame and non-woven cloth

Sub-HEPA PM 2.5 filter







PM2.5 filtration efficiency 96.3%

Whole machine PM2.5 filtration efficiency

> 90%

Smart Different Pressure Gauge Alarm

Full series is equipped with F9/F7 filters and different pressure gauge as standard, filter cleaning alarm will be activated if the filter pressure drop exceeds the maximum allowed final pressure drop.

Once the pressure difference is larger than the setting value, the switch will transmit dirty filter signal to the control system, filter alarm symbol on the LCD display flashes to remind customer to replace the filter.

Bypass Facility

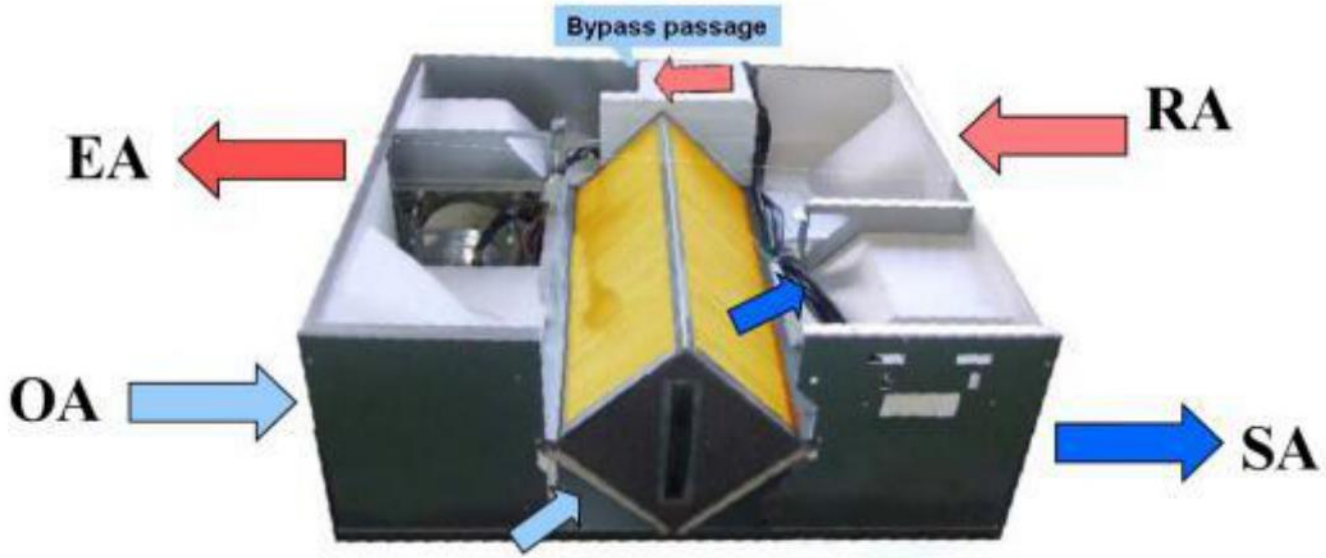
Spring/Autumn

During transition season or when may not use air conditioning, outdoor air is comfortable, bypass can help you take full advantage of fresh air resource.

In this case, it's not required to recover the heat from indoor, fast supply of fresh air is priority.

Automatic Energy Recovery Ventilation or Nature Ventilation

- In summer or winter when cooling or heating devices are in used. Bypass system is closed for energy recovery, when in spring or autumn when the outdoor temperature is soft, bypass system is open for nature ventilation.



Intelligent controller

Airflow adjustment

Threes speeds
Fan can stop individually

- **Temperature display**

Selected display for room air, outdoor air, exhaust air and supply air temperature

- **Automatic bypass**

Bypass opens automatically when the outdoor air temperature stays in the setting temperature range, the opening temperature can be set.

- **Weekly timer**

From Monday to Sunday
Two periods per day
Override setting

- **Electrical heater***

Reserved port for connect external electrical heating box, temperature can be set with this function

- **Data memory**

Restart when power resume, running status memory.

- **Defrosting**

Automatically defrosting, the defrosting temperature and defrosting interval can be set.

- **CO2 concentration control***

Reserved port to connect CO2 sensor, when ERV is under off condition and detects CO2 higher than preset concentration, the ERV turns on automatically till the concentration is below the preset one

- **External ON/ OFF***

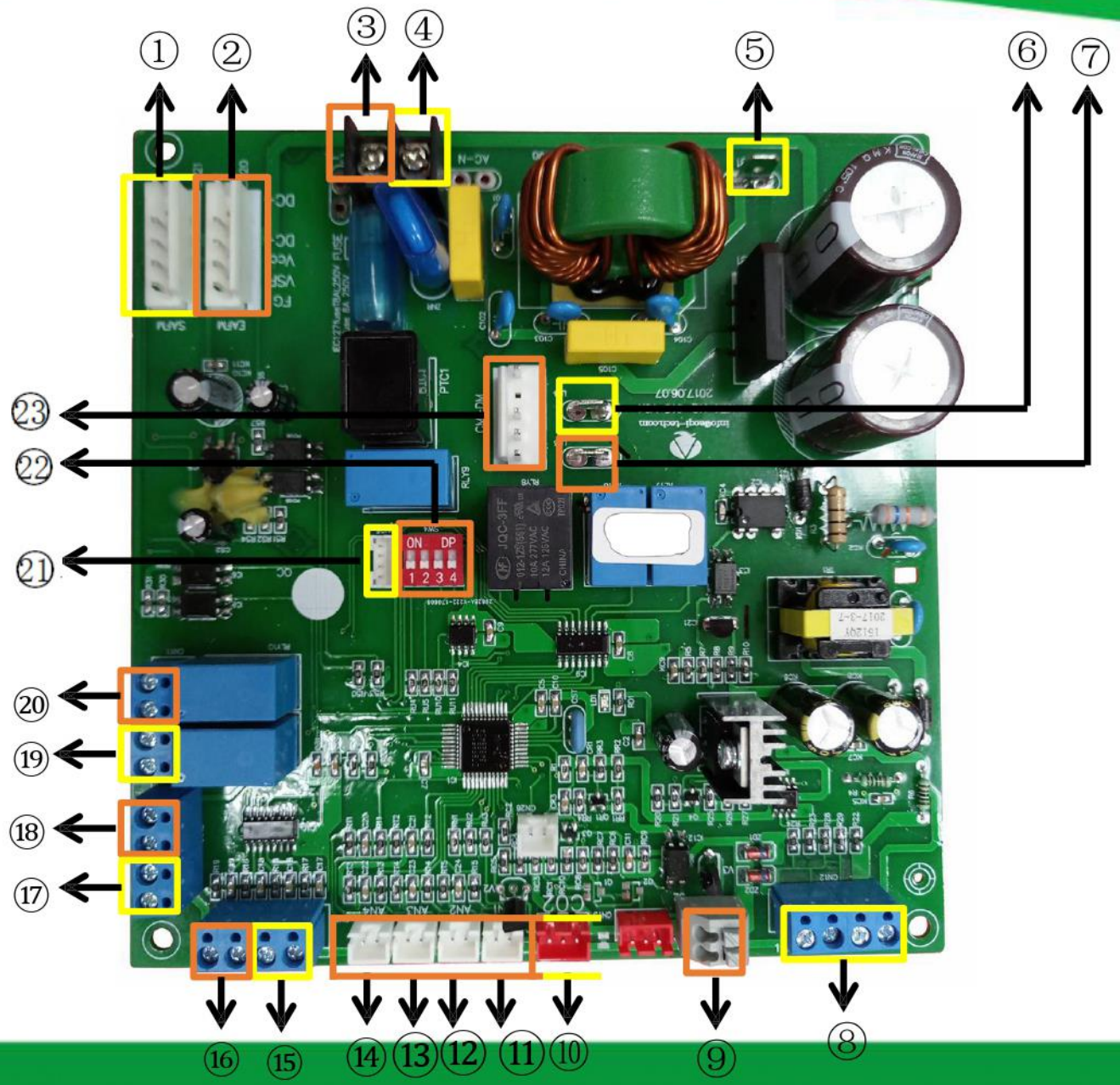
Reserved port to connect to the central controlling system

* is optional function, please confirm before ordering

Smart Control system

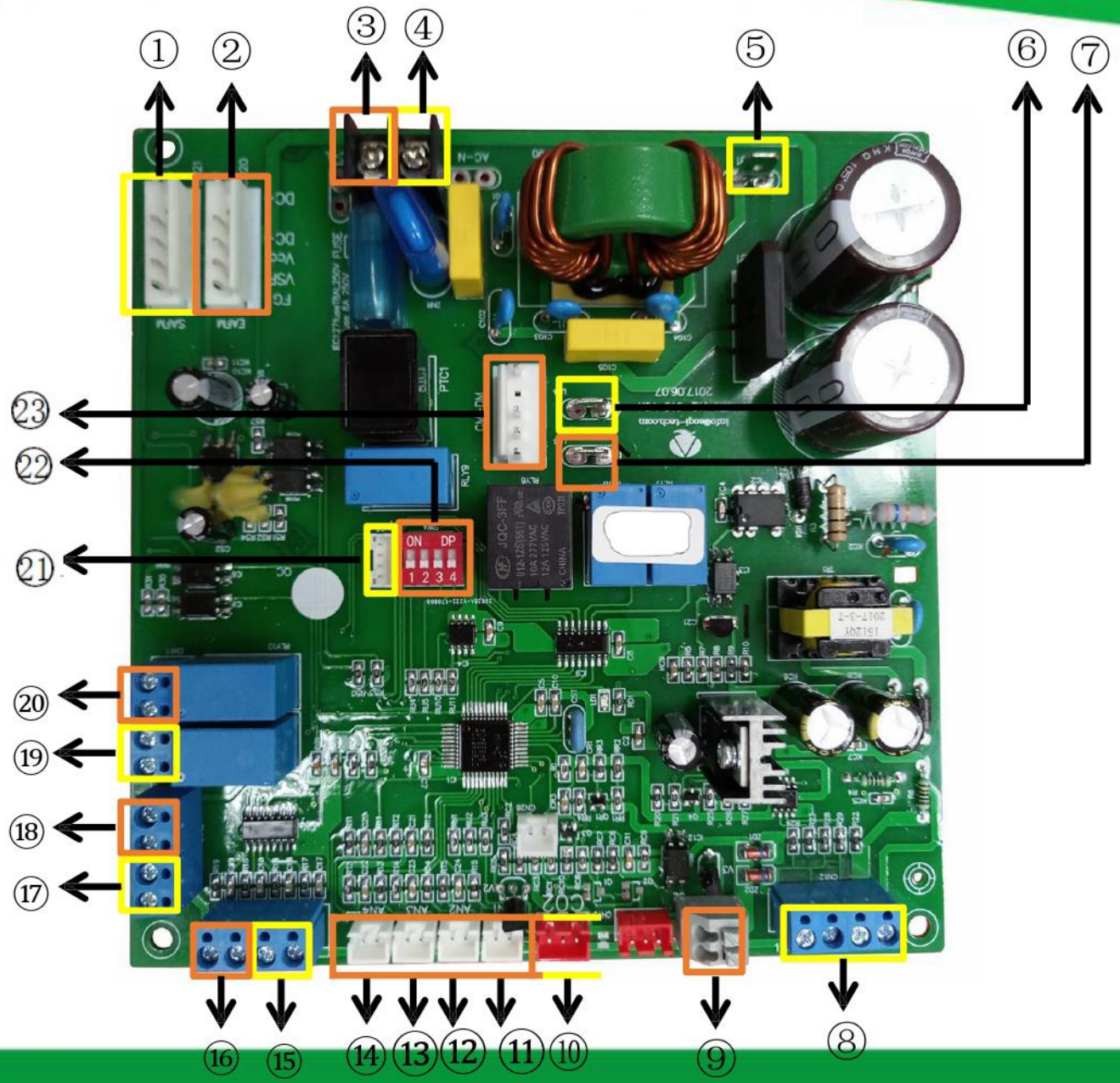
- Temperature Display
- Speed Selection
- Timer ON/OFF
- Bypass
- External ON/OFF Control
- Comfortable Heater Control
- Defrosting
- CO2 Control
- Filter Alarm
- Fault Alarm
- Power to Auto Restart
- Night Free Cooling
- BMS Integration(RS485 connector)
- Humidity Control
- Defrosting Heater Control
- Working Condition Monitor
- connect WIFI mudule

Smart Control system



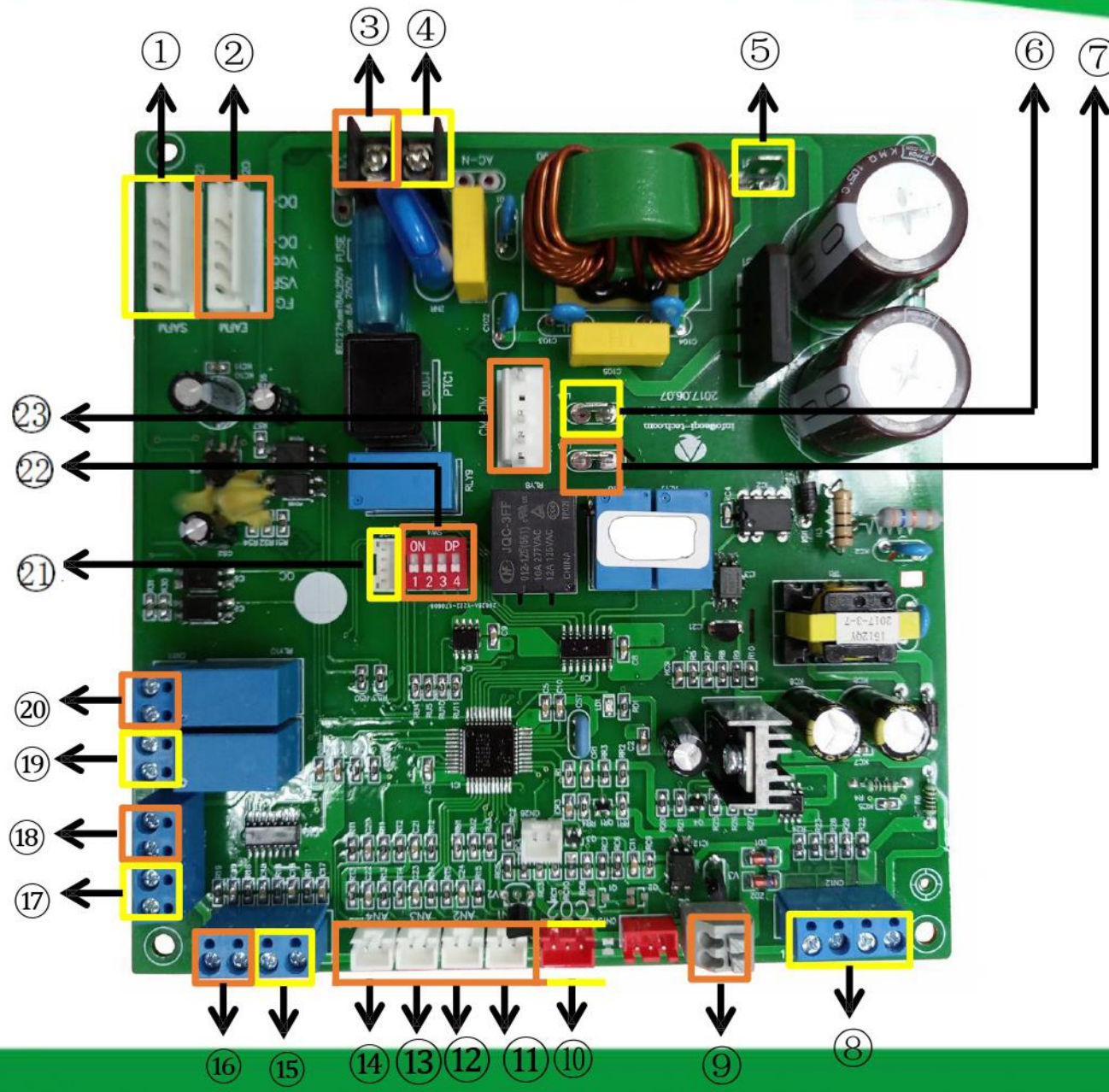
No.	Item	Detail
1	Supply fan	Default
2	Exhaust fan	Default
3	N	N line
4	L	L line
5	PE	G line
6	LD4	External electrical heater for OA, EA -1℃ defrosted
7	LD3 & LD4	External electrical heater for SA, 2 speed
8	RS485 connector	BMS control
9	Control panel port	Default
10	CO2 sensor	Optional
11	SA sensor	SA temperature display
12	EA sensor	EA/FR temperature display
13	OA sensor	OA temperature display
14	RA sensor	RA temperature display

Smart Control system



No.	Item	Detail
15	Differential pressure switch	Default
16	External switch	Voltage free connector
17	Bypass switch	Night free cooling
18	Fire alarm signal input	ERV will stop when connect to fire alarm port on fire
19	Fault signal output	If connect to a light, when ERV is faulty, the light will be on.
20	Running signal output	If connect to a light, when ERV is running, the light will be on.

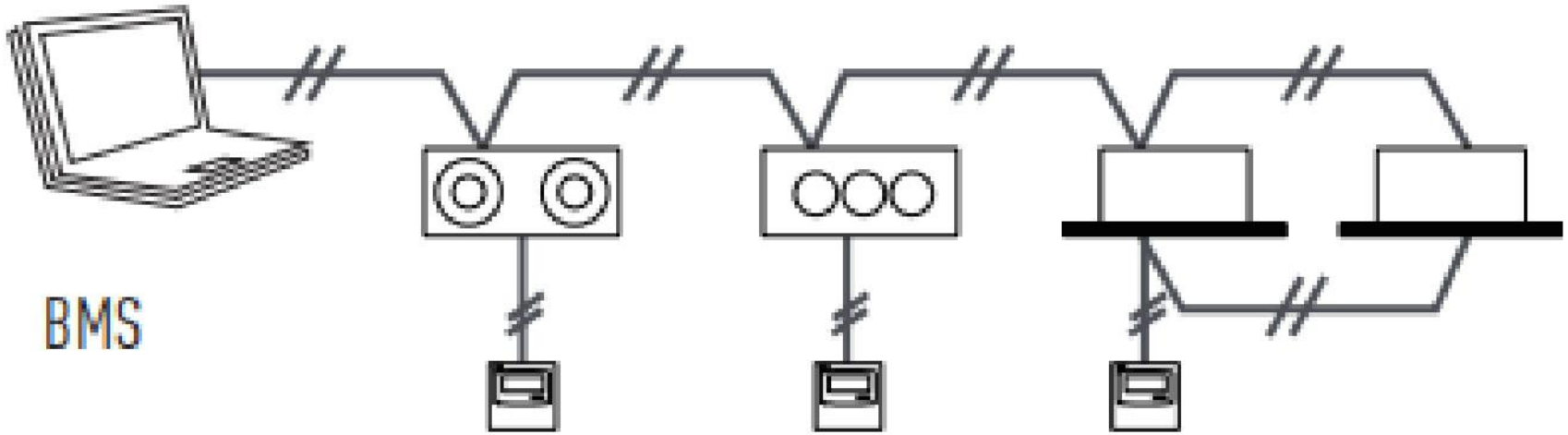
Smart Control system



No.	Item	Detail
21	Humidity sensor	If
22	Dial Switch	Refer to below Tag.
23	Bypass connector	Default

1. SW4-1: OFF-Traditional EA fan defrost
2. ON-OA side electrical heater defrost
3. SW4-2: OFF-Auto by-pass and manual bypass via voltage free connector (free cooling)
4. SW4-3: OFF-CO2 sensor
5. ON-Humidity and temperature sensor
6. SW4-4: Reserve

Linkage with External A/C System or BMS Control



Specifications

Model	Rated Airflow (m^3/h)	External Pressure (Pa)	Enthalpy Efficiency (%)		Temperature Efficiency (%)	Noise dB(A)	Voltage (V)	Power Input (W)	N.W. (kg)
			Cooling	Heating					
WN-V1.5ENUIA	150	70	60-65	63-70	75-80	31.5	220-240	38	25
WN-V2.5ENUIA	250	90	62-71	65-73	73-81	34.5	220-240	85	27
WN-V3.5ENUIA	350	140	62-70	65-73	74-82	37.5	220-240	107	33
WN-V5ENUIA	500	110	63-72	67-75	76-84	39	220-240	140	38
WN-V6.5ENUIA	650	100	60-67	65-71	74-82	41	220-240	160	62
WN-V8ENUIA	800	140	63-71	65-73	76-82	42	220-240	188	72
WN-V10ENUIA	1000	140	60-68	62-72	76-82	43	220-240	312	81
WN-V13ENUIA	1300	135	58-71	59-75	74-82	43	220-240	405	81
WN-V15ENUIA	1500	95	63-71	65-73	76-80	50	220-240	700	147
WN-V20ENUIA	2000	115	60-68	62-72	76-82	51.5	220-240	724	167
WN-V26ENUIA	2600	115	58-66	59-75	74-82	55	220-240	810	190
WN-V40ENUIA	4000	230	60-68	61-71	73-81	59	380-400	2140	335
WN-V50ENUIA	5000	260	60-68	61-71	73-81	68	380-400	2630	395
WN-V60ENUIA	6000	300	60-68	61-71	73-81	70	380-400	3030	557

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Installation

Applications

Applications

- Suitable for household, villa, school, hotel, meeting room, laboratory, office, computer room, dining and gym places etc.

Malls & Biz centers

Wuhan International Expo Center

Xinjiang Weitai Building

Hospitals

Zhejiang Lishui People's Hospital

Shanghai Longhua Hospital

Villas & Hotels

Qingyuan Lion Lake

Sheraton Hotels & Resorts

Industry Factory

BASF Shanghai Coatings Co., Ltd.

Xi'an Metro Line 2

Project reference

Indoworth India Limited,
India,**Eco Vent ERV**

Tokyo Inn, Germany,
Eco Slim ERV

National Chung Cheng University,
Taiwan, China, **Eco Vent ERV**

Workington Academy, UK,
Eco Smart ERV

Primary School, Poland,
Eco Vent ERV

Stanford University, USA,
Eco Smart ERV

WE'RE ALL USING WONY ERV

Fresh Air for Your Life!

- Heat & Energy Recovery Ventilators
- Air to Air Heat Exchangers
- Air Handling Units

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