

# Energy Recovery Ventilator

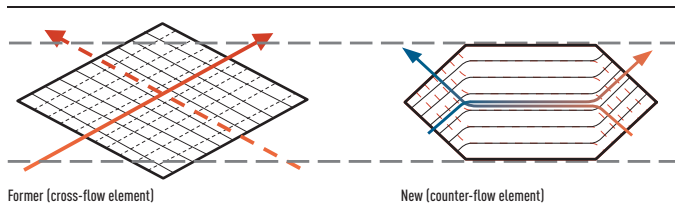
Suppresses indoor temperature changes while providing fresh air.

## Energy efficiency and ecology

Energy consumption is dramatically reduced by using a counter-flow heat-exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings.

## Comparison of former and current elements

With the cross-flow element, air moves in a straight line across the element; with the counter-flow element, air flows through the element for a longer time (longer distance), so the heat-exchange effect remains unchanged even if the element is made thinner.



## Heat exchange ventilation and normal ventilation

Energy-saving ventilation can be achieved through the proper use of heat-exchange ventilation and normal ventilation.

### Heat exchange ventilation

When a room is cooled or heated, the exhausted cooling / heating energy is recovered by heat-exchange ventilation.

### Normal ventilation

This is used in the spring and autumn, when rooms are not cooled or heated, that is, when there is little difference between the indoor and outdoor air conditions. In addition, at night during the hot season, when the outside air temperature drops the outside air is drawn inside without heat exchange, alleviating the load on the air conditioning equipment. The heat exchanger is made up of a membrane manufactured from a special material covered in resin for optimal heat transmission. The nylon/ polyester fibre filter offers high dust retention capacity. We have also redesigned the air ducts to obtain a long-lasting heat exchange system which does not need periodic cleaning.

## Heat exchanger

With the cross-flow element, air moves in a straight line across the element. With the counter-flow element, airflows through the element for a longer time (longer distance), so the heat-exchange effect remains unchanged even if the element is made thinner.

## More Comfort

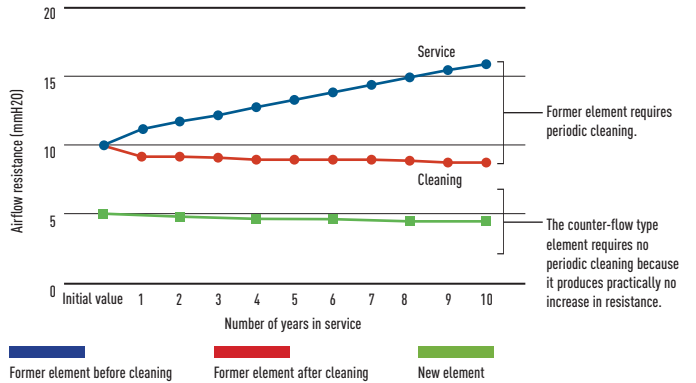
### Quiet operation

Low noise operation results in noticeably quieter units. All models with capacities below 500 m<sup>3</sup>/h run at noise levels below 32 dB (High setting) and even our largest 1.000 m<sup>3</sup>/h-capacity model runs at only 37,5 dB (High setting).

## Long service life of heat-exchange element

We used a nonwoven cloth filter with a high dust collection efficiency and redesigned the air flow passages to achieve a durable heat-exchange element that requires no periodic cleaning.

Changes in airflow resistance based on number of years in service



## Easy Installation and Maintenance

### Slim shape and easier installation

Counter-flow heat exchange element used for reduced noise and slimmer, more compact body shape.

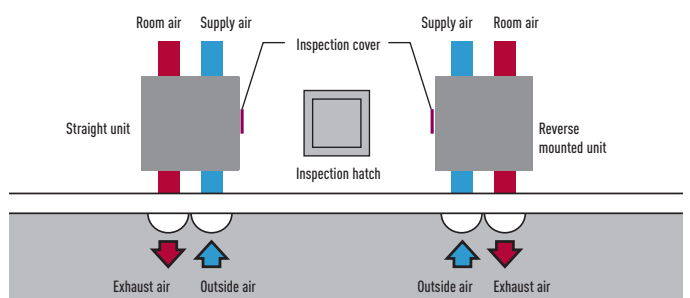
270 mm Height: FY-250ZDY8 // FY-350ZDY8 // FY-500ZDY8

388 mm Height: FY-800ZDY8 // FY-01KZDY8A

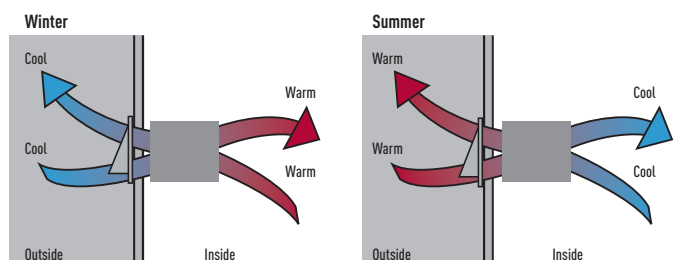
### Reverse mountable direct air supply / exhaust system

Adoption of straight air supply / exhaust system: Duct design is simplified because the air supply / exhaust ducts are straight.

Since each unit can be mounted in reverse position, only one inspection hole is needed for two units: Two units can share one inspection hole so duct work is easier and more flexible.



## Balanced Ventilation





Recovers up to 77% of the heat in the outgoing air, for an ecological and energy efficient building.

### Technical focus

- High energy saving, up to 20%
- Counter Cross Flow technology for better efficiency
- Long life element core
- Easy installation and 20% less thickness
- Easy connection to air conditioning units
- Super quiet units

### Features

#### Healthy Air

- The filter guarantees healthier air

#### Energy efficiency and ecology






- Up to 20% energy saving in the installation
- Recovers up to 77% of the heat in the outgoing air

### Comfort

- Cleaning reduced due to the revolutionary structure of the exchanger (recommended every 6 months)
- Ideal for indoor spaces without windows

### Easy Installation And Maintenance

- 6 models for easier selection
- Reduced system height (270 mm and 388 mm)
- Side opening for cleaning (inspection of filter, motor and other parts)
- Installation can be reversed to share an inspection opening between 2 machines
- Easy connection to the air conditioning unit (without additional elements)
- Installation in false ceilings
- Units operate at 220 - 240 V
- High static pressure for easier installation

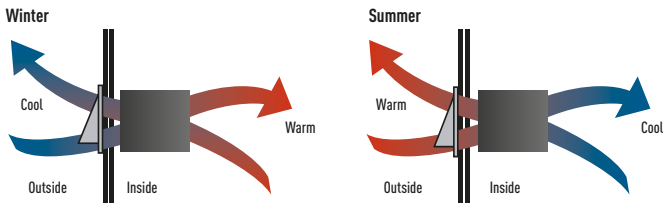
Rated flow rate	250 m³/h			350 m³/h			500 m³/h			800 m³/h			1000 m³/h			
Models	FY-250ZDY8			FY-350ZDY8			FY-500ZDY8			FY-800ZDY8			FY-01KZDY8A			
																
Power Source	220 - 240 V - 50 Hz			220 - 240 V - 50 Hz			220 - 240 V - 50 Hz			220 - 240 V - 50 Hz			220 - 240 V - 50 Hz			
Heat Exchange Ventilation	E - High	High	Low	E - High	High	Low	E - High	High	Low	E - High	High	Low	E - High	High	Low	
Input	W	112 - 128	108 - 123	87 - 96	182 - 190	178 - 185	175 - 168	263 - 289	204 - 225	165 - 185	387 - 418	360 - 378	293 - 295	437 - 464	416 - 432	301 - 311
Air Volume	m³/h	250	250	190	350	350	240	500	500	440	800	800	630	1.000	1.000	700
External Static Pressure	Pa	105	95	45	140	60	45	120	60	35	140	110	55	105	80	75
Noise	dB	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	36,5 - 37,5	34,5 - 35,5	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	37,5 - 38,5	37,0 - 37,5	33,5 - 34,5
Temp. Exchange Efficiency	%	75	75	77	75	75	78	75	75	76	75	75	76	75	75	79
Normal Ventilation	E - High	High	Low	E - High	High	Low	E - High	High	Low	E - High	High	Low	E - High	High	Low	
Input	W	112 - 128	108 - 123	87 - 96	182 - 190	178 - 185	175 - 168	263 - 289	204 - 225	165 - 185	387 - 418	360 - 378	293 - 295	437 - 464	416 - 432	301 - 311
Air Volume	m³/h	250	250	190	350	350	240	500	500	440	800	800	630	1.000	1.000	700
External Static Pressure	Pa	105	95	45	140	60	45	120	60	35	140	110	55	105	80	75
Noise	dB	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	37,5 - 38,5	37,0 - 38,0	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	39,5 - 40,5	39,0 - 39,5	35,5 - 36,5
Temp. Exchange Efficiency	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimensions (W x D x H)	mm	882 x 599 x 270			1.050 x 804 x 317			1.090 x 904 x 317			1.322 x 884 x 388			1.322 x 1.134 x 388		
Weight	kg	29			49			57			71			83		

This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value. The input, the current and the exchange efficiency are values at the time of the mentioned air volume. The noise level shall be measured 1,5 m below the centre of the unit. The temperature exchange efficiency averages that of when cooling and when heating.

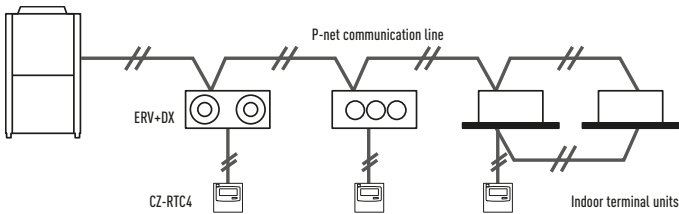
# Heat Recovery with DX Coil



## Balanced Ventilation

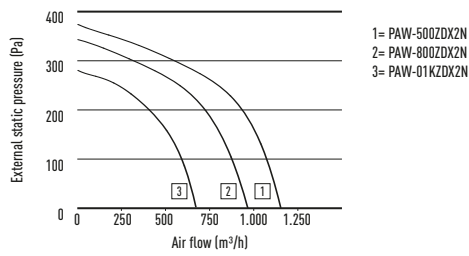


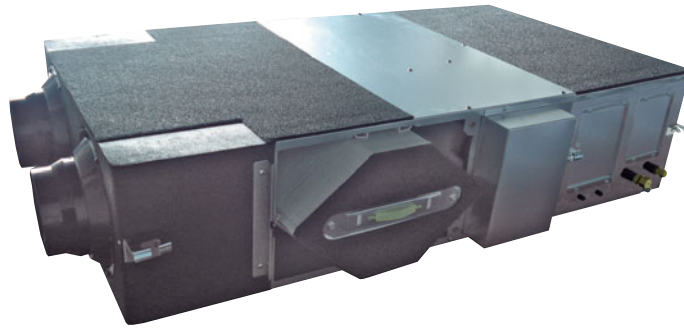
## Interconnection to outdoor/indoor units



## Characteristic curves

The following curves show the unit external static pressure at maximum fan speed for each model.





## Technical focus

- Motorised heat recovery by-pass device automatically controlled by unit control to use fresh air free-cooling when convenient

## General characteristics

- Galvanized steel self-supporting panels, internally and externally insulated
- Counterflow air-to-air heat recovery device, made of sheets of special paper with special sealing to keep airflows separate and only permeable to water vapor. Total heat exchange with temperature efficiency up to 77% and enthalpy efficiency up to 63%, also at high level during summer season
- G4 efficiency class filters with synthetic cleanable media, both on fresh air and return air intake
- Removable side panel to access filters and heat recovery in the event of scheduled maintenance
- Low consumption, high efficiency & low noise direct driven fans with 3-speed EC motors

- Supply section complete with DX Coil (R410A) fitted with solenoid control valve, freon filter, contact temperature sensors on liquid and gas line, NTC sensors upstream and downstream airflow
- Built-in electric box equipped with PCB to control internal fan speed and to interconnect outdoor/indoor units
- Duct connection by circular plastic collars
- CZ-RTC4 Timer remote controller (option)



Optional Controller.  
Wired remote controller  
CZ-RTC5  
Compatible with Econavi



Optional Controller.  
Timer remote controller  
CZ-RTC4  
Compatible with Econavi

Model		PAW-500ZDX2N	PAW-800ZDX2N	PAW-01KZDX2N
Power source		230 V / Single Phase / 50 Hz	230 V / Single Phase / 50 Hz	230 V / Single Phase / 50 Hz
Air volume	Hi / Med / Lo	m <sup>3</sup> /h 500 / 500 / 360	800 / 700 / 600	1.000 / 780 / 650
External static pressure <sup>1</sup>	Hi / Med / Lo	Pa 135 / 95 / 50	115 / 45 / 25	100 / 70 / 35
Maximum current		A 2,0	2,8	3,0
Maximum power input		W 135	300	310
Sound pressure level <sup>3</sup>	Hi / Med / Lo	dB(A) 33 / 31 / 27	38 / 36 / 32	39 / 37 / 33
Pipe connections	Liquid / Gas	inch (mm) 1/4 (6,35) / 1/2 (12,70)	1/4 (6,35) / 1/2 (12,70)	1/4 (6,35) / 1/2 (12,70)
<b>HEAT RECOVERY</b>				
Temperature efficiency summer mode	%	62,5	59	59,5
Enthalpy efficiency summer mode	%	60	57	57,5
Saved power summer mode	kW	1,7	2,5	3,2
Temperature efficiency winter mode	%	76,5 (76,5)	73,0 (73,0)	73,5 (73,5)
Enthalpy efficiency winter mode	%	62,3 (64,1)	59,0 (60,8)	59,5 (61,2)
Saved power winter mode	kW	4,3 (4,8)	6,5 (7,3)	8,2 (9,0)
<b>DX COIL</b>				
Total cooling capacity	kW	3,0	4,0	4,5
Sensible cooling capacity	kW	2,0	2,8	3,3
Off temperature	Cooling	°C 16,5	17,9	18,6
Off relative humidity	Cooling	% 86	82	81
Total heating capacity	kW	2,9 (3,1)	4,0 (4,3)	4,6 (5,0)
Off temperature	Heating	°C 30,1 (29,2)	27,5 (26,5)	26,3 (25,3)
Off relative humidity	Heating	% 16 (15)	18 (17)	19 (18)

Nominal summer conditions: Outside air: 32°C DB, RH 50%. Ambient air: 26°C DB, RH 50%. Nominal winter conditions: Outside air: -5°C (-10°C) DB, RH 80%. Ambient air: 20°C DB, RH 50%. Cooling mode air inlet condition: 28.5°C DB, RH 50%; evaporating temp. 4°C. Heating mode air inlet condition: 13°C DB, RH 40% (11°C DB, RH 45%); condensating temperature 49°C. DB: Dry Bulb; RH: Relative Humidity.

1) Referred to the nominal airflow after filter and plate heat exchanger. 3) Referred to 1,5 meters from inlet in free field condition.



INTERNET CONTROL: Optional.