Heat recovery with DX coil for VRF

Panasonic launches an heat recovery solution for greater energy efficiency. Panasonic's heat recovery solution performs well in extreme weather conditions and can achieve up to 77 % efficiency (63 % in enthalpy efficiency).

The counter-flow heat exchanger reduces the air conditioning load, enabling customers – typically owners of hotels, restaurants and other large commercial buildings – to reduce their energy consumption and save on the cost of maintaining comfortable room temperatures.

Energy efficiency

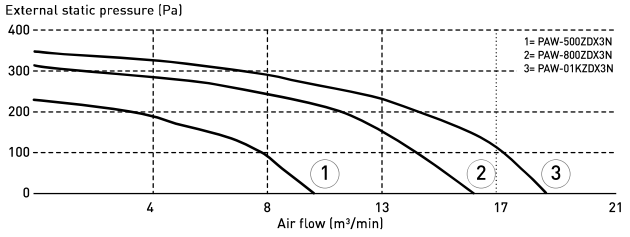
As the latest example of Panasonic's continued commitment to developing unbeatable, energy-efficient air conditioning technologies for commercial applications, the company has introduced a heat recovery device.
The unit features a DX coil designed to recover up to 77 % of the heat from outgoing air, and a air purifying system which helps to improve air quality.
In even the most demanding commercial applications, business owners will benefit from the unit's ability to by-pass the heat exchange process when the outside air temperature is cool enough for fresh air to be drawn directly inside (free cooling).
This alleviates the load on the air conditioning equipment and consequently reduces energy bills.

Supply section complete

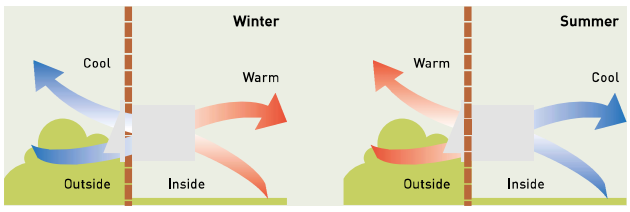
The supply section comes complete with the DX coil (using R410A refrigerant) – fitted with a solenoid control valve, freon filter, contact temperature sensors on the liquid and gas line, and NTC sensors on the upstream and downstream air flows. The built-in electric box is equipped with a PCB to control the internal fan speed and to interconnect the outdoor and indoor units, and the ducts are connected by circular plastic collars.

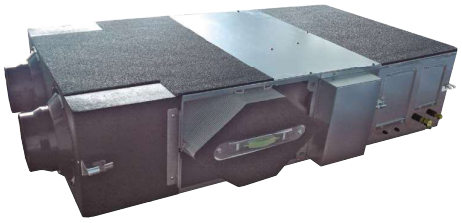
Characteristic curves

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



Balanced Ventilation





Optional controller. CONEX wired remote controller.
CZ-RTC6 - CZ-RTC6BL

Optional Controller. Control for hotel application.
PAW-RE2C4

Optional Controller. Wired remote controller.
CZ-RTC5B

Model			PAW-500ZDX3N		PAW-800ZDX3N		PAW-01KZDX3N	
Power source	Voltage	V	230		230		230	
	Phase		Single phase		Single phase		Single phase	
	Frequency	Hz	50		50		50	
Air flow		m^3/min	8,33		13,33		16,67	
External static pressure [1]		Pa	90		120		115	
Maximum current	Total full load	A	0,6		1,4		2,1	
Input power		W	150		320		390	
Sound pressure [2]		dB(A)	39		42		43	
Pipe diameter	Liquid pipe	Inch (mm)	1/4 (6,35)		1/4 (6,35)		1/4 (6,35)	
	Gas pipe	Inch (mm)	1/2 (12,70)		1/2 (12,70)		1/2 (12,70)	
Heat recovery			**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Temperature efficiency		%	76	76	76	76	76	76
Enthalpy efficiency		%	63	67	63	65	60	62
Saved power summer mode or winter mode*		kW	1,70	4,30 (4,80)	2,50	6,50 (7,30)	3,20	8,20 (9,00)
DX coil								
Total / Sensible cooling capacity		kW	3,00 / 2,10	2,50 / 2,70	5,10 / 3,50	4,40 / 4,80	5,80 / 4,10	5,20 / 6,70
OFF temperature		°C	15,9	28,0 (27,3)	15,5	29,6 (29,0)	16,2	28,5 (27,8)
OFF relative humidity		%	90	16 (15)	90	14 (13)	89	15 (14)

Accessories	
CZ-RTC6	CONEX wired remote controller (non-wireless)
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®

Accessories	
CZ-RTC5B	Wired remote controller with Econavi function
PAW-RE2C4	Wired remote controller for hotel application

Nominal summer conditions: Outside air: 32 °C DB, RH 50 %. Ambient air: 26 °C DB, RH 50 %. Nominal winter conditions: Outside air: -5 °C DB, RH 80 %. Ambient air: 20 °C DB, RH 50 %. Cooling mode air inlet condition: 28,5 °C DB, RH 50 %; evaporating temperature 7 °C. Heating mode air inlet condition: 13 °C DB, RH 40 % (11 °C DB, RH 45 %); condensating temperature 40 °C. DB: Dry Bulb; RH: Relative Humidity. 1) Referred to the nominal air flow after filter and plate heat exchanger. 2) Sound pressure level calculated at 1 m far from: ducted supply exhaust air ducted return - first air intake / service side, at normal condition. * Tentative data.

Interconnection

This ventilation unit is connected to an ECOi indoor unit (3,0 kW, 4,0 kW or 4,5 kW) and can be controlled by the easy-to-use ECOi remote controller CZ-RTC5B.
This capability makes the system an excellent choice for hotels, offices (large and small), educational settings and other buildings requiring different temperatures in multiple rooms. The system also integrates easily with building management systems.

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
- High efficiency enthalpic heat recover, static cross flow type, made by membrane with high moisture permeability, good air tightness, excellent tear resistance, and aging resistance, it is structures with flat plates and corrugated plates. Total heat exchange with temperature efficiency up to 76 % and enthalpy efficiency up to 67 %, also at high level during summer season
- ISO16890 ePm$_{2,5}$ 95 % (F9 EN 779) efficiency class filter with synthetic cleanable media and COARSE 50 % (G3 EN 779) pre-filter ON fresh air, COARSE 50 % filter on 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
- 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 air flow
- 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-RTC5B Timer remote controller (option)

INTERNET CONTROL: Optional.

Interconnection to outdoor/indoor units