

# General Specification for the **PHRU** Range of Packaged side by side Recuperator Units

## GENERAL SPECIFICATION

The New Automatic PHRU heat recovery units are available in both P and T versions in 5 different sizes, with a nominal air capacity ranging from 0.25 m<sup>3</sup>/h to 0.92 m<sup>3</sup>/h. The units have been developed to satisfy four typical needs of residential and commercial applications.

1. The renewal of room air, particularly needed for building where smoking is allowed.
2. The energy saving, by using a static crossflow heat exchanger.
3. The neutralisation of the renewal air heat loads by a fully automatic microprocessor controlled heat pump system; in particular, the function of heat recovery increases both cooling and heating performances.
4. The neutralisation of room heat loads, specifically for P version, where the available power left over the renewal air heat loads is particularly high; the T version, because of a lower room available power, has to be generally intergrated by other heating/cooling systems.

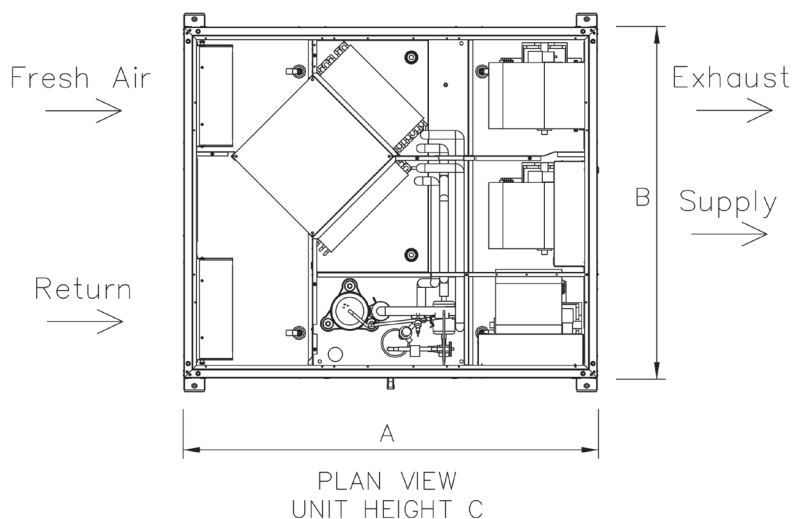
## GENERAL CONSTRUCTION AND TECHNICAL FEATURES

- Aluzink frame
- Fully removable double skin Aluzink panels, with polyethylene or polyester thermal and acoustic insulation having a minimum thickness of 20mm.
- High efficiency crossflow heat recovery, aluminium heat exchanger plates with supplementary sealing, stainless steel drain tray, extended to all cooling/heating components and heat insulated.
- G3 efficiency synthetic cell filters, positioned on suction sections and easily removable from the side or bottom.
- Single speed double inlet forward curved fans, matched with an electronic speed regulator or supplied with a built-in frequency inverter motor. Fans are mounted on rubber anti-vibration mounts.
- Heat pump refrigeration system (R407C) comprises a scroll hermetic compressor, 3 row summer evaporator/ winter condenser coil and a 7 row summer condenser/winter evaporator coil, constructed from copper tubes with aluminium fins, bi-directional thermostatic valve, liquid separator, receiver, 4-way valve for cycle inversion, safety valve, high and low pressure switches, freon filter and liquid indicator.
- Internal electrical board for supplying all the electrical powers; room outside and frost temperature sensors; microprocessor control, for fully automatic management of room temperature, free-cooling and free-heating, heating/cooling mode and defrost cycles; display for setting and for visualizing sensor and set point temperature values, connected up to 20 metres from the unit board.
- T Version Units have a single pass recuperator whereas P Version Units have in addition to the recuperator, a fixed return air damper set at 50% of the volume, thus increasing the amount of heat or cool air recovered.

## General Specification for the **PHRU** Range of Packaged side by side Recuperator Units (continued)

The PHRU units can be supplied with a complete series of accessories, selected for facilitating the installation, flow adjusting and safety; they are:

- Additional electric heating
- Adiabatic humidifier/cooler
- Cutting phase speed controller
- Built-in frequency inverter
- Air filter pressure switch
- Intake dampers
- Anti-vibration duct joining kits
- Weather canopy



### ELECTRONIC CONTROLLER

The electronic control system inside the PHRU units comprises of two parts, the console and the power board, each connected to the other through a common telephonic cable. The console, should be installed in an easily accessible place, which lets the User input the control parameters by the front keyboard.

On the display each operation is visualised and confirmed; the power section, installed inside the electrical board, is an electronic component that controls the electrical outlets on the base of the parameters and the configuration determined by the User.

#### On the console, there are:

- The Keyboard, for setting the working parameters.
- The Display, for visualising the set values, room temperature and system alarm codes.
- The Signalling LEDs, for visualising system working mode (on-off, cooling, heating, free-cooling, defrost and alarm).

### UNIT LAYOUT AND DIMENSIONS

MODEL: PHRU	10	20	40	60	80	100
A - Length (mm)	1450	1450	1700	1700	1900	1900
B - Width (mm)	1230	1230	1560	1560	1700	1700
C - Height (mm)	470	470	530	530	705	705
Air Volume (m <sup>3</sup> /s)	0.25	0.39	0.56	0.72	0.92	1.11

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