

THE ART OF AIR INNOVATION SINCE 1983

FOR HOMES AND BUSINESSES

ENSTO



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PRO greenair HP PAT.PEND

A ventilation unit with built-in heat pump

Energy and environment saving solution

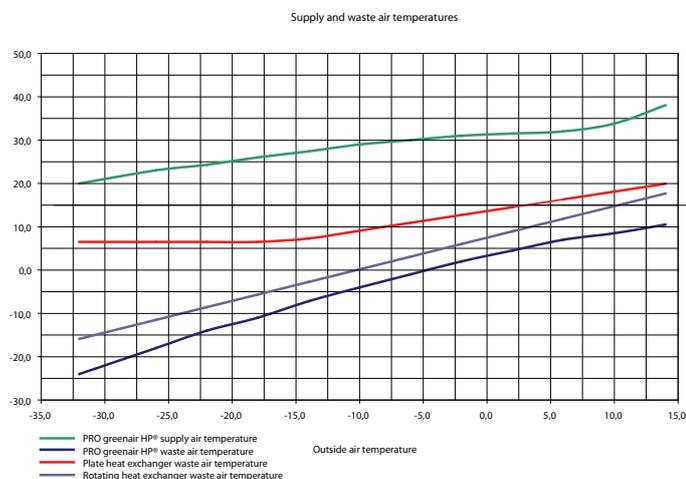
The superior energy recovery of the **Enervent® PRO greenair HP®** unit is based on the combination of a rotating heat exchanger and an inverter controlled heat pump. The unit recovers heat from the exhaust air of the house both with the heat pump (2) and the rotating heat exchanger (1). The heat pump has a superior performance because it starts the heating from the exhaust air of the building not the outside air.

Installation of the unit is easy. Because the heat pump is built-in, no cooling installation needs to be done at the building site. The PRO greenair HP suits both new and renovation building projects. Because there aren't separate outside units that disfigure the front of the building, the unit can be used in building projects where front regulations impose restrictions. The unit is easy to install in the technical space of a one-family house. Healthy and correct temperature air is distributed evenly to the whole living space along the ventilation ducts and separate heat pump fan units are not needed.



PRO greenair HP operating principal in winter

Temperature comparison



PRO greenair HP operating principal in summer

Substantial savings

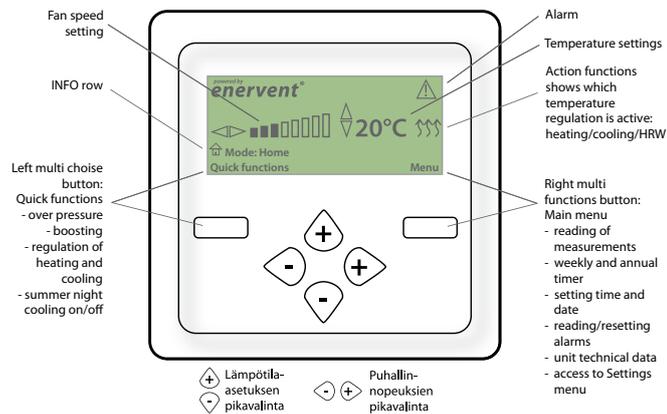
The PRO greenair HP® works as an additional heating source. The unit saves substantial amounts of the heating costs for an one-family house because it decreases heat loss through ventilation and heats the supply air.

PRO greenair HP® decreases heat loss 66 % compared to a ventilation unit with a plate heat exchanger. The integrated heat pump participates in heating the house by recovery heat from the exhaust air and heating the supply air. An outside air pump recovers heat from the outside air, which usually is con-

siderably colder than the room temperature. This is the reason for the superb performance of the integrated heat pump. The PRO greenair HP COP (Coefficient of Performance) is 6,04. The biggest gain of the PRO greenair HP is gotten when the house is well insulated. The biggest user potential lies in low energy and passive houses.

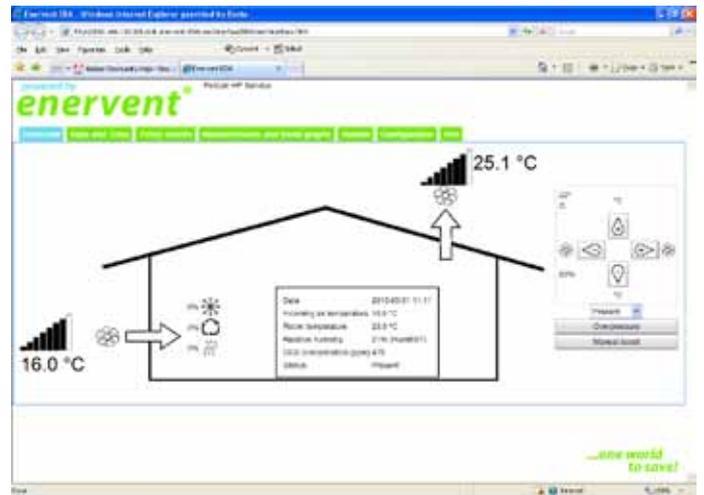
Simple and user friendly control system

The PRO Greenair HP® is equipped with digital EDA control. The control is versatile and very easy to use. The settings are changes by pressing the "+" and "-" buttons. The control panel menus are logical and the numerous quick functions simplify the use. The EDA control is suitable for connection to different field BUS, i.e. home security systems with an external relay output.



Freeway WEB

Enervent Freeway enables the controlling and monitoring of air handling units using the Internet or LAN. The Freeway user interface has almost all of the same functions as an Enervent EDA unit's user panel. The interface can be protected with a password. Possible alerts can be sent by email. The Freeway -range also includes Freeway KNX.



To be noticed when planning cooling

Careful planning is essential when building a ventilation system. The following matters should be noticed when planning a ventilation system with cooling. A system that is able to carry out both cooling and basic ventilation is the wisest solution out of an energy efficient point of view. The purpose of the cooling is to lower the room temperature and dry the supply air. The air amounts for the basic ventilation should be planned according to prevailing regulations. The ventilation unit however, should be chosen so basic ventilation is realized at fan speeds 50-60 % and the boosting speeds when cooling at 70-100 %. Take into consideration that boosting when cooling demands big air amounts. The duct system should be planned so that these big air amounts can be run without noise pollution. A suitable terminal device is one that functions at two operating points - one for basic ventilation and one for boosted ventilation. The duct must be adequately insulated. The insulation plays an especially important role when the unit is equipped with cooling. By planning and building the system as advised above you get a well balanced and quiet solution for both basic ventilation as well as boosted ventilation when cooling.

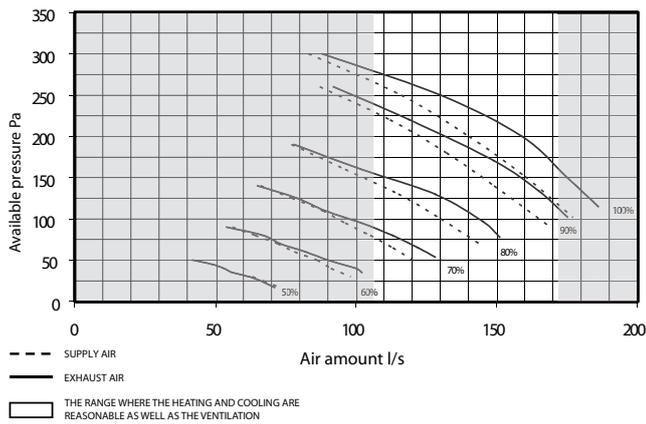
Experience guarantees high quality

Behind the PRO greenair HP innovation are our experienced engineers who have expert knowledge of energy efficient ventilation. Enervent has manufactured energy recovery units in Finland for over a quarter of century. During this time we have become one of the biggest manufacturers in our field in Finland. Constant product development guarantees that we are able to offer our customers functioning and energy friendly options. We take advantage of the long experience and knowledge in the field especially in low energy- and passive house construction in collaboration with domestic house factories and constructors.



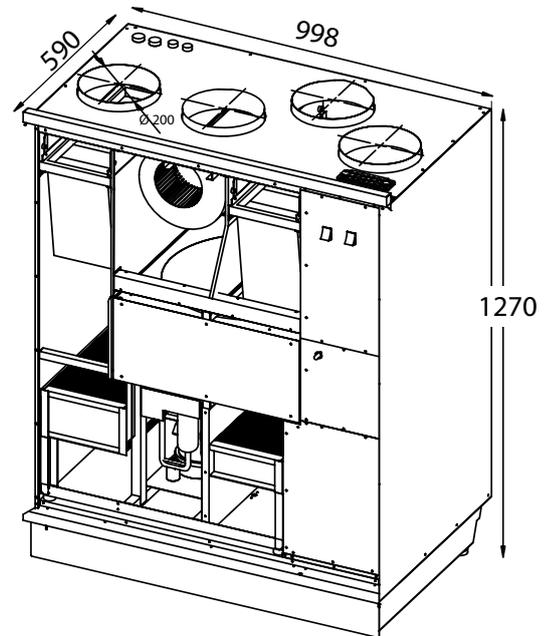
Characteristic curves

Characteristic curves for Pelican PRO greenair HP with F5 filters



Technical data

Air amount Pelican eco PRO greenair HP	+160 / -173 l/s
Space Pelican eco PRO greenair HP	0 - 958 m ³
Fans Pelican eco PRO greenair HP	170 / 170 W
Current	230 V~ / 50 Hz
Fuse	16 A quick
Over heating protection	yes
Duct connections	Ø 200 mm
Weight	150 kg
Filters (standard)	F5
Alternative filters	F7
Heat pump refrigerant	R410A
Compressor nominal output	1,1 kW
Heat pump COP (heating)	6,04
Heat pump EER (cooling)	9,22



Our energy calculation software
ENERGY OPTIMIZER
 gives you annual heat recovery rate,
 specific fan power, coil pressure drops, sound data,
 dimension drawings and lots more
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