

AIR+PLUS

Air Conditioning Technologies



HRV-IP Ceiling Type Heat
Recovery Units with Heat
Pump

67



Plug & Play

HRV-IP Ceiling Type Heat Recovery Equipment with Heat Pump

Ceiling type heat pump heat recovery devices are designed to meet the exhaust and fresh air needs in indoor spaces and thanks to its special plate heat exchanger and with the help of the built-in fans, it provides energy saving by recovering the heat energy without mixing the exhaust air with fresh air. The device has a compact structure thanks to the evaporator, condenser, compressor, heating-cooling equipment and control panel it includes.

► Product Material

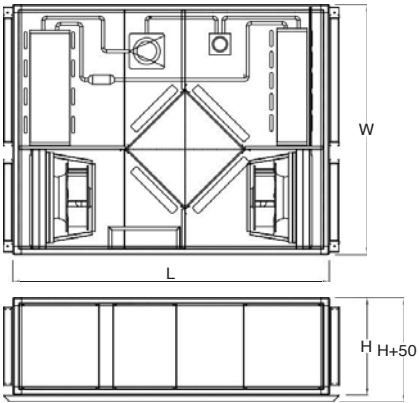
The frame of the ceiling type heat recovery device with heat pump is made of natural anodized aluminum profile and plastic corner fittings. The cellular panels are made of 42 mm thick rock wool, where the outer wall is electrostatic powder coated and the inner wall is made of galvanized sheet. It has self-powered, imported, silent, mono-phase (230 V) and plug-in fans. Aluminum plate heat exchangers with 40-50% efficiency are used in our heat recovery devices. Highly efficient scroll compressors are used in Heat Recovery devices with Heat Pumps. The safety of the system is ensured by low and high pressure switches. Depending on the season selected from the control panel, the system operates in either heating or cooling mode. High efficiency evaporator and condenser are used in copper pipe - aluminum blade type.

A distributor is found at the inlet of the evaporator for homogeneous refrigerant distribution. Air side pressure losses are reduced since the air velocities in the evaporator and condenser are selected at 2.5 m/s or less. There is a condensate tray made of stainless steel under the evaporator and condenser. Fresh air passes through the plated heat recovery exchanger in the device after being cleaned from the particles in the outdoor and indoor ambient air by G2 class filters in the exhaust line. In this way, the supplied air is cleared of particles and the plate heat recovery is free of dirt. Optionally, a compressor sound dampening jacket is used for compressor noise.



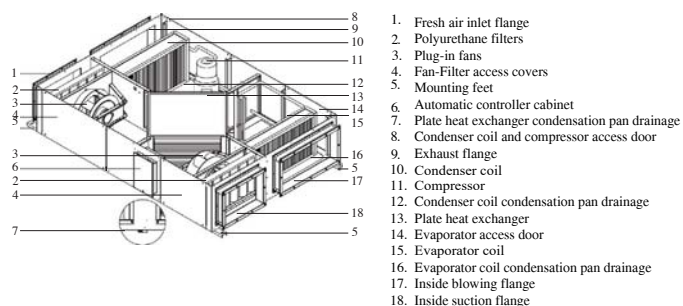
► HRV-IP Capacity, Dimension, Electric Power and Flow Rate External Pressure Loss Table

Model		HRV- IP- 1000	HRV- IP- 2000	HRV- IP- 3000
Air Flow	m³/h	1000	2000	3000
External Pressure Loss	Pa	230	215	305
Filter		G2Panel	G2Panel	G2Panel
Fan Motor Power	kW	0,225x2	0,68x2	1,55x2
Compressor Power	kW	1,92	4,75	5,9
Installed Power	kW	2,37	6,11	9,00
Supply Voltage	V/Hz	230/50	380/50	380/50
Noise Level	dBA	51	53	54
Plate Heat Recovery Cooling Capacity	kW	1,39	2,69	3,79
Plate Heat Recovery Heating Capacity	kW	3,01	5,84	8,22
Coil Cooling Capacity	kW	5,40	14,10	17,60
Coil Heating Capacity	kW	6,00	15,70	19,50
Total Cooling Capacity	kW	6,79	16,79	21,39
Total Heating Capacity	kW	9,01	21,54	27,72
	Width (W)	1250	1550	1800
Standard Dimensions (mm)	Height (H)	500	630	630
	Lenght (L)	1400	1900	2000
Standard Device Weight	kg	190	320	430
Optional Compressor Sound Dampening Jacket	mm	40	40	40
Optional Electric Pre-Heater	kW	2	4	8
Optional Steam Humidifier	kg/h	4	8	15
Optional Steam Humidifier Power	kW	3,0	6,0	11,3
Steam Humidifier Device Dimension (WxHxL) mm	mm	1250x650x2000	1550x650x2500	1800x650x2600



Summer operation: Outside Air 35°C K.T. 40% rH & Inside Air 25°C K.T. 50% rH (evaporation 7,2°C /Condensation 50°C)
Winter operation: Outside Air 0°C K.T. 80% rH & Inside Air 22°C K.T. 40% rH (evaporation -5°C /Condensation 40°C)
Electric pre-heaters must be used in case the outside weather is between -5°C and -15°C and there is condensation. In humid climates, return air channel must be insulated against condensation. With electric heater, the device's dimension extends as 300mm.

► Main Equipment of HRV-IP Device

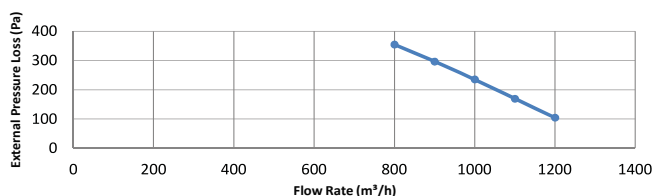


► Optional Features

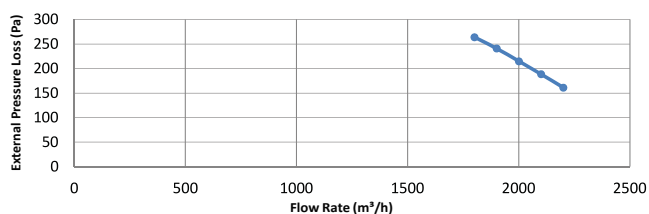
- * Electric heater can be connected.
- * Water heater coil can be connected and motorized valve control can be carried out.
- * Steam humidifier can be connected.
- * Air damper can be connected and controlled.
- * Compressor sound dampening jacket can be made.

► HRV-IP External Pressure Loss Flow Rate Table

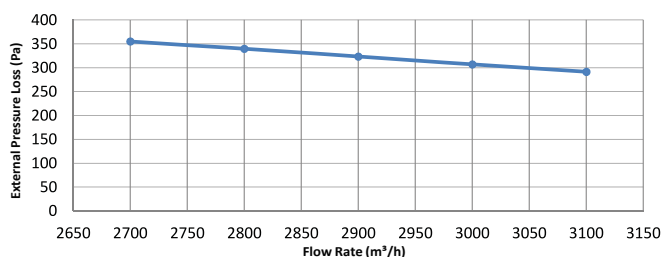
HRV-IP-1000



HRV-IP-2000



HRV-IP-3000



► Control Features

- * Ceiling type heat recovery equipment with heat pump can be switched On-Off.
- * Allows communication from a distance of 100 m.
- * Mode selection is possible in the device
- * Active alarms can be observed in the shape of alarm codes.
- * Time program can be drawn up.
- * Room temperature set value can be input.
- * Inside temperature can be read on the display.
- * Can connect to building automation system via Modbus RTU or BACnet MS/TP.



► Usage Features

Ceiling type heat recovery devices with heat pump are compact devices designed to provide high indoor air quality as well as saving energy. In addition to energy saving advantages, they also target to meet the need for air-conditioned fresh air in workplaces, banks, offices, hotels, houses, cinemas, fair-exhibition areas, hospitals, multi-purpose halls, restaurants, coffee halls and such high-density areas with the need to be exhausted. They are produced in standardized 3 models with an air flow range between 1000 m³/h to 3000 m³/h. The models are designed to be placed between the suspended ceiling, installed and maintained easily. The Control Unit is capable of controlling the basic equipment and optional accessories in the Heat Recovery Unit with Heat Pump.

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