

# Semi-custom ERV/HRV

## ERV/HRV WITH ROTARY HEAT RECOVERY CORE

**RH**

Double-deck units 800-3500 CFM



**RV**

Low-footprint units with vertical outlets 800-2000 CFM



## HRV WITH COUNTERFLOW PLATE HEAT RECOVERY CORE

**CFP**

Ceiling-mounted units 800-2000 CFM



**CFH**

Double-deck units 800-3500 CFM



**CFV**

Low-footprint units with vertical outlets 800-3500 CFM



## MAIN FEATURES

- Counter flow aluminum plate heat exchanger or rotary heat exchanger class H1 (DIN EN 13053)
- High-efficiency EC fans, backward-curved, external rotor
- Integrated automatic dampers
- Integrated plug-and-play controls
- Automatic full-size bypass
- Insulated double-skin frameless casing
- ECO-Design'18 compliant
- Web-interface, MODBUS, outputs for optional DX or Hydronic cooling/heating
- Complete set of accessories: silencers, VAV, CAV, etc.
- Operation by RH/CO<sub>2</sub>/temperature/constant pressure/timer schedule
- Outdoor installation with outdoor mounting kit (optional)



## CONTROLS

- Supplied units come with "Plug-&-Play" control system based on Carel programmable controller. Depending on the unit configuration, the system is fitted with 3 temperature sensors: outside, supply, and exhaust air temperature; return water temperature sensor and frost protection relay for water heater configuration; overheating protection relay for electric heater configuration. Standard controller outputs allow to connect various additional sensors. The list of the optional sensors may be found in the accessories section.
- Plug-and-play control system is fitted with Carel th-Tune control panel which ensures basic setting options and has user friendly interface. Carel PGDe extended control panel may be fitted on request and provides more flexibility and sophisticated control adjustments. The compact dimensions and elegant design make both suitable for all types of premises.

**CAREL**



### Default control system functions and optional features are listed below (th-Tune):

- operation in comfort, precomfort or economy mode
- temperature control
- weekly schedule setting: holiday and special day functions, selection of up to four daily time bands with settings for each operating mode
- coils and heat exchanger auto protection
- air pressure control, airflow and humidity control (with optional sensors)
- air quality control (with optional CO<sub>2</sub>/IAQ sensors)
- freecooling or freeheating mode (according to model)
- pumps control, overload alarms and anti-blocking for each pump (according to model)
- MODBUS supervisor protocol and user friendly WEB-interface via Ethernet port

### PGDe panel's extended settings:

- parameters settings divided by level (user, installer or manufacturer) with password-protected access
- 3 adjustable fan speeds
- priority to temperature or humidity control by room/supply/extract sensors

## HEAT WHEEL (MODELS RH, RV)

Rotary heat recovery core is made of two types of material:

- Sensible type (standard)
- Enthalpy type. Hygroscopic coating is applied on tape, providing additional latent heat transfer from one stream to another. This feature is especially useful when using a rotor in hot and humid areas in conjunction with air conditioning system.

The advantages are: high efficiency, keeping comfortable humidity and low risk of freezing.



## COUNTERFLOW PLATE HEAT RECOVERY CORE (MODELS CFH, CFV, CFP)

Heat exchanger is made of profiled aluminum plates, packed with elastic heat-resistant sealant.

The sealing provides a reliable separation of the supply and exhaust air, eliminating internal flows, and not allowing moisture, dirt, odors and microorganisms transfer between streams.

Bypass channel on heat exchanger with automatic Belimo actuator provides active frost protection, freeheating and freecooling functions.

Drain pan is installed under the heat exchanger on both supply and exhaust sides.



## PLUG FANS WITH ELECTRONICALLY COMMUTATED MOTORS (EC MOTORS)

Plug fans with EC motors are used for projects that require high energy efficiency. The advantages of this type of fan are: extremely low power consumption at any speed, no need for external speed control and compact size due to motor with external rotor.



## FRAMELESS DESIGN

Frameless casing design excludes thermal bridges, usual for aluminum or steel frame. This significantly increases thermal resistance and reduces heat loss, especially for outdoor installation. It also prevents condensation on the surface when air cooling is on. Casing is made of zinc-aluminum coated sheet steel heat- and sound-insulated with 1 9/16" mineral wool layer.

### Benefits of frameless casing:

- Better thermal resistance
- Lower weight of the unit
- No thermal bridges
- Suitable for outdoor installation in cold climate
- High mechanical strength

