ZA 102.01 Zehnder ComfoAir H/ERV Overview

40 minutes

Estimated duration to complete this Learning Segment

Zehnder Academy Learning Path

This segment is part of the training for:

Zehnder America Certified Comfosystems **SPECIFIER**

Zehnder America Certified Comfosystems **INSTALLER**

Zehnder America Authorized Comfosystems **TECHNICIAN**

Zehnder America Authorized Comfosystems **DEALER**

Zehnder America Authorized Comfosystems **DISTRIBUTOR**

Knowledge Level:

Introductory

Recommended prerequisites:

- Course ZA 101 (all learning segments)

LEARNING OBJECTIVE(S)

By the end of this course participants will be able to…

1. Identify the superior features that distinguish Zehnder H/ERVs
2. Review Zehnder's H/ERV product range
3. Highlight the key distinctions of each Zehnder H/ERV model

Learning Objective 1

Identify the superior features that distinguish Zehnder H/ERVs

Outstanding Efficiency and Comfort

Zehnder ComfoAir Heat/Energy Recovery Ventilators (H/ERVs) set the industry standard for energy efficiency and a comfortable user experience.

These priorities are built into every component.

Let's highlight some of the key features…

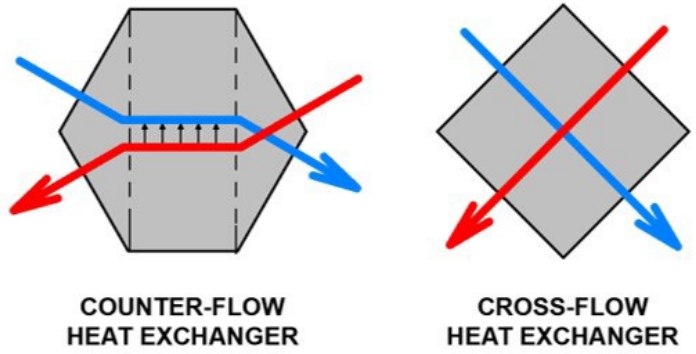
Heat Exchanger Core

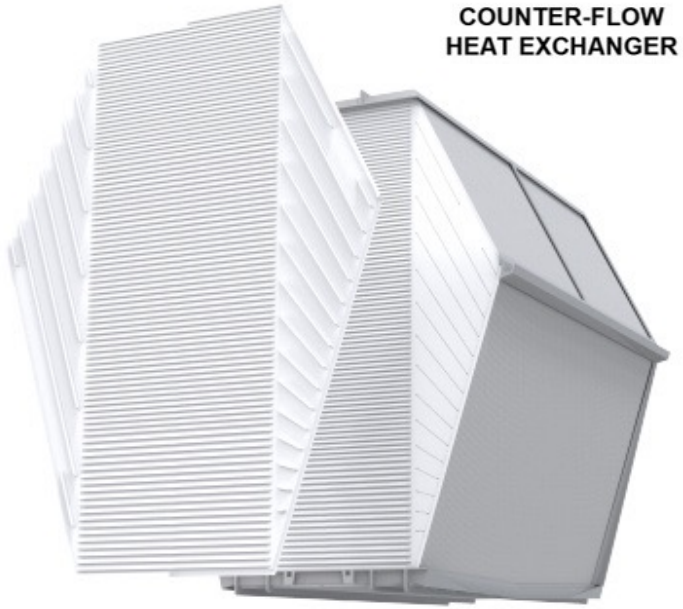
Zehnder designs and manufactures its own heat exchangers.

Hexagonal counterflow shape and proprietary membranes: the best energy recovery for lower heating and cooling costs.

Optimized internal flow grid: less pressure and lower fan speeds, reducing power consumption.

Results: a quieter unit with more comfortable Supply Air temperature.





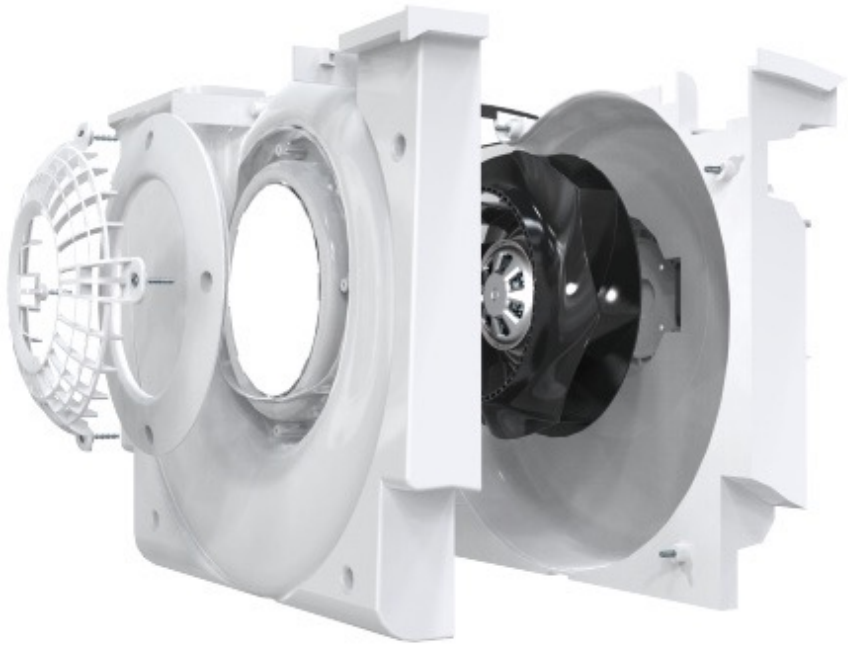
Efficient Fans

Electronically commutated motors (ECM) for superior performance.

Less energy wasted in the form of heat or noise.

Digitally controlled; adjust supply and exhaust fans to the exact speed necessary for balanced ventilation.

Pre-set fan speeds can be independently adjusted to any flow rate within the unit's range.

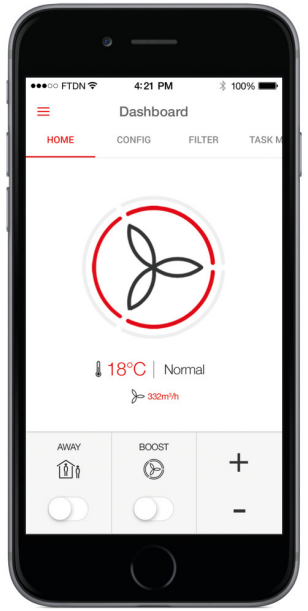


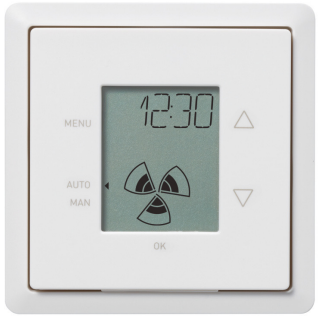
Flexible Control Options

Operating a Zehnder ComfoAir unit can be as simple as “set-it-and-forget-it” or use advanced programming features to be as specific to the user’s lifestyle as desired.

Fan speed settings, special modes and status indicators are all accessible through either a standard control device or optional gateways for access via phone or tablet.

All Zehnder ComfoAir H/ERVs can also be set up with air quality monitors that automatically increase ventilation when contaminant levels are higher.





Smart Seasonal Features

Zehnder ComfoAir H/ERVs include onboard sensors and seasonal features designed to maximize healthy, comfortable ventilation while minimizing energy consumption.

Bypass mode detects when it's better to ventilate without energy recovery to improve indoor comfort (like on a cool summer evening after a hot day).

Integrated modulating pre-heaters use just enough electricity in winter to maintain continuous, healthy ventilation while avoiding frost that could reduce energy recovery or damage the inside of the heat exchanger.

Modulating Bypass

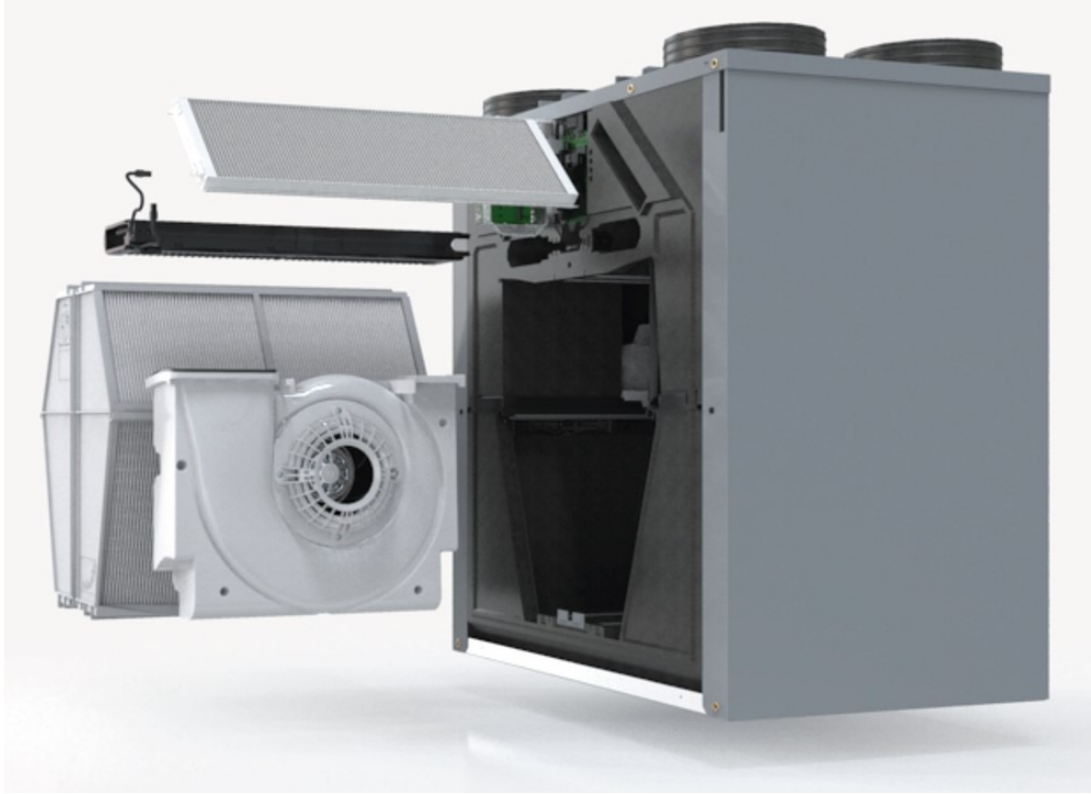
Modulating Pre-heater

Advanced Cabinet Design

Behind the crisp sheet metal casing, Zehnder ComfoAir interiors are carefully designed with rigid foam insulation to guide the supply and exhaust airstreams through the heat exchanger while minimizing both air pressure and heat loss.

This maximizes quiet comfort and efficiency.

The smart cabinet design also provides easy access to all the internal components for convenient maintenance and service.



Summary of Features

Much more could be said about the superior features of ComfoAir H/ERVs, but these examples help demonstrate the commitment Zehnder has made to raising the bar on comfortable indoor ventilation.

Energy nerds, multi-family tenants and pampered homeowners can all appreciate the benefits of Zehnder's leadership in the residential ventilation industry.

Learning Objective 2

Review Zehnder's H/ERV product range

H/ERV Product Range

Zehnder offers a wide range of H/ERVs for all types of residential applications.

There is a ComfoAir ventilation unit for everything from a small studio to a large custom home or even multi-family applications.

ComfoAir H/ERV Product Range

CA 70

CA 160

CA 200

CA 350

CAQ 350

- 8 basic models
- Almost all are available as either an HRV or ERV
- Model number references the MAX air flow in m^3/h
- Different ways to categorize…

CAQ 450

CA 550

CAQ 600

Decentralized vs. Centralized

CA 70

CA 160

CA 200

CA 350

CAQ 350

CAQ 450

CA 550

CAQ 600

Vertical/Horizontal vs. Vertical-Only Installation

CA 160

CA 200

CA 70

CA 350

CAQ 350

CAQ 450

CA 550

CAQ 600

ComfoAir “Classic” vs. ComfoAir Q

CA 70

CA 160

CA 200

CA 350

CA 550

CAQ 350

CAQ 450

CAQ 600

Common Features of all Zehnder ComfoAir Centralized H/ERVs

240V 60Hz with NEMA 6-15 plug

Four preset fan speeds: 0, 1, 2, 3 (Away, Low, Normal, Boost)

Boost switch connectivity

0-10V control connectivity (CO2 sensor or building automation)

Learning Objective 3

Highlight the key distinctions of each Zehnder H/ERV model

ComfoAir 70

Decentralized ERV	
Recommended Airflow (continuous operation):	24 cfm
Maximum Airflow (boost mode):	35 cfm (+/-)
Common Applications:	1 or 2 room studio
Distinctive features:	• ERV only • Through-wall installation • Combined exterior grille • 2nd room connector option • No pre-heater option

ComfoAir 160

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	48 cfm
Maximum Airflow (boost mode):	94 cfm (+/-)
Common Applications:	1-2 bedroom apartment
Distinctive features:	• Vertical or horizontal installation • Potential for change from right-hand to left-hand unit • Fan power increases when static pressure increases

ComfoAir 200

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	72 cfm
Maximum Airflow (boost mode):	118 cfm (+/-)
Common Applications:	Apartment or small house
Distinctive features:	• Vertical or horizontal installation • One of the best performing units (92% SRE for HRV)

ComfoAir 350

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	110 cfm
Maximum Airflow (boost mode):	206 cfm (+/-)
Common Applications:	Average-sized 3-4 bedroom house
Distinctive features:	• Original iconic Zehnder workhorse • Trapezoidal top allows for rotation of duct connections • Vertical mounting on wall or stand

ComfoAir Q350

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	120 cfm
Maximum Airflow (boost mode):	206 cfm (+/-)
Common Applications:	Average-sized 3-4 bedroom house
Distinctive features:	• Newest generation • Better performance • Automatic balancing • Constant airflow • Left- or Right-hand selected at install • Rotating ducts

ComfoAir Q450

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	160 cfm
Maximum Airflow (boost mode):	265 cfm (+/-)
Common Applications:	Larger 3-4 bdrm house
Distinctive features:	• Same features as Q350, except for… • Larger fans and motors • 2.4kW pre-heater (more power than Q350)

ComfoAir 550

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	200 cfm
Maximum Airflow (boost mode):	324 cfm (+/-)
Common Applications:	Larger custom home or multi-family project
Distinctive features:	• Largest of the ComfoAir “Classic” models • Straight top with vertical duct connections only • 200mm (or 8”) ducts

ComfoAir Q600

Centralized HRV or ERV	
Recommended Airflow (continuous operation):	220 cfm
Maximum Airflow (boost mode):	354 cfm (+/-)
Common Applications:	Larger custom home or multi-family project
Distinctive features:	• Same core as Q350/450 • Larger fans and motors • 2.4kW pre-heater • Straight top • 200mm (or 8”) ducts

Knowledge Check

What is the primary goal of each of the key features of a Zehnder ComfoAir H/ERV?

A. To heat outdoor air.

B. To support a healthy, comfortable indoor climate that's efficient.

C. To win design awards.

D. To be completely independent from any controls/sensors.

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Knowledge Check

What are the appropriate factors to consider if selecting a unit for a 3-bedroom home?

A. The velocity of extract air would be highest in a Q600.

B. The nominal airflow and core performance of a CA350 are fitting.

C. A CA160 would require the least space in the mechanical room.

D. A CA200 could be mounted on the ceiling.

Knowledge Check

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Knowledge Check

What are the main differences between the Q350 and Q450?

A. The size and shape of the units.

B. The orientation of the units and ducts.

C. The fan motor capacity and pre-heater power.

D. The available case colors and ring tones.

Knowledge Check

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ZA 102.01 Zehnder H/ERVs

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