



ENERGY RECOVERY **Total Recovery Ventilators**

Balanced Ventilation for Residential and Commercial Buildings



THE INDOOR AIR QUALITY PROBLEM

With Americans spending 90% of their time indoors, finding the right ventilation strategy for a safe and healthy indoor environment is critical. As buildings have become more tightly sealed and energy efficient, they seal in indoor air pollutants, causing deficient indoor air quality (IAQ). Typical pollutants not only include VOCs released by cooking, cleaning, upholstery, furniture, and paint, but also humidity from showering and cooking—even breathing!

Americans spend
90%
of their time
INDOORS.

Indoor air can be
2-5x
MORE POLLUTED
than outside air.

The EPA ranks indoor
air pollutants as a
TOP FIVE
environmental
HEALTH RISK.

ADVERSE EFFECTS OF POOR INDOOR AIR QUALITY



HEALTH CONCERNS

Poor air quality can result in common health issues like allergies, headaches, coughing, asthma, skin irritants and breathing difficulties. Poor indoor air quality has also been associated with more severe impacts on health like cancer, liver disease, kidney damage and nervous system failure.



SPREADING DISEASE

Airborne contaminants from an infected person can easily spread throughout an indoor space through coughing and exhaling. These contaminants can also linger in the air hours after the person has left the room. Ventilation with outdoor air is crucial to lowering disease transmission rates.



LOW PRODUCTIVITY

Studies by the Harvard School of Public Health and the Lawrence Berkeley National Laboratory found that elevated levels of carbon dioxide (CO₂) negatively impacted brain functions and decision making, costing \$258 billion in worker performance and lost sick time.



THE BALANCED VENTILATION SOLUTION

The solution to pollution is dilution through increased and balanced ventilation with energy recovery. With enough outdoor air coming in to replace stale indoor air, IAQ will be enhanced.

The ASHRAE 62.2 *Ventilation and Acceptable Indoor Air Quality in Residential Buildings* standard outlines acceptable minimum ventilation rates for residential buildings. These continuous ventilation rates provide minimum ventilation requirements to help ensure occupant health.

Minimum Ventilation = .03 X sq. ft. + 7.5(# of bedrooms + 1)

Other standards like ASHRAE 62.1 set outdoor air ventilation rates (CFM/occupant) for commercial applications.

ASHRAE 62.2 VENTILATION REQUIREMENTS

FLOOR SPACE (SQ. FT.)	NUMBER OF BEDROOMS				
	1	2	3	4	5
<500	30	38	45	53	60
501-1000	45	53	60	68	75
1001-1500	60	68	75	83	90
1501-2000	75	83	90	98	105
2001-2500	90	98	105	113	120
2501-3000	105	113	120	128	135

GLOSSARY OF TERMS

AIR-TO-AIR HEAT EXCHANGER

Generic term for technologies designed to transfer heat (and sometimes moisture) between two airstreams.

BALANCED VENTILATION

A ventilation strategy using both an exhaust air blower and a supply or make-up air blower that does not pressurize or depressurize a building.

ENERGY RECOVERY VENTILATOR (ERV)

An air-to-air heat exchanger that transfers sensible heat and latent heat.

ENTHALPY

The total energy contained in air, the sum of sensible and latent heat.

HEAT RECOVERY VENTILATOR (HRV)

An air-to-air heat exchanger that transfers sensible heat only; no humidity (latent heat) transfer occurs between the two airstreams.

LATENT HEAT

The amount of energy associated with the humidity (or water vapor content) of an airstream. A drier airstream contains less latent heat and will impose a smaller latent load on the air conditioner.

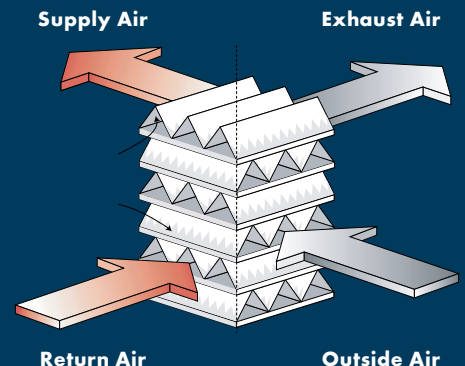
SENSIBLE HEAT

The amount of energy involved in raising or lowering the temperature of air not including any energy required to cause water vapor to change state.

THE S&P USA ADVANTAGE

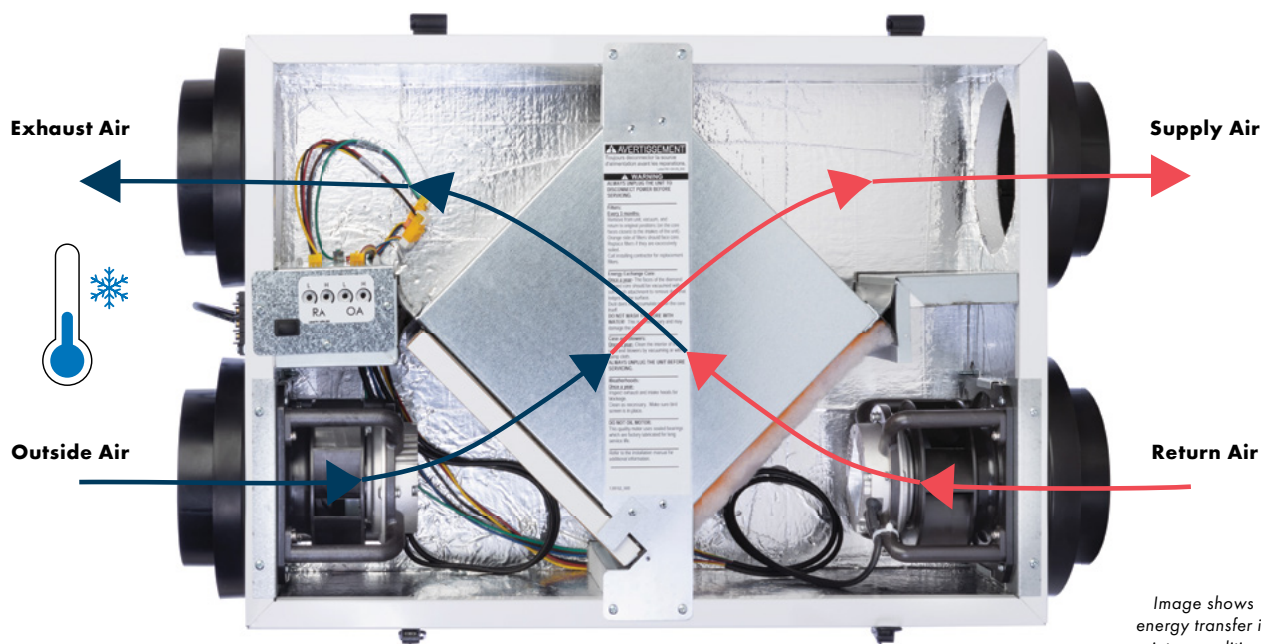
5TH GENERATION CORE

- Efficient transfer of heat and moisture
- No liquid is accumulated; no drain pan or defrost mechanism is required
- Contaminated air is exhausted from the building, while the static plate core regulates extremes in humidity
- An industry-leading 10-year structural and performance warranty for the static-plate core



ENERGY RECOVERY VENTILATORS (ERVs)

With S&P USA Ventilation Systems' TR, TRe, TRLPe & TRC (total recovery) energy recovery ventilators (ERV) Series, stale room air is exhausted and fresh outdoor air is brought back into the building. These two airstreams are directed through a highly developed enthalpic air-to-air energy exchange core. The airstreams are physically separated by many layers of plates so there is no mixing or contamination of the fresh air. The plates are made of an engineered resin material that simultaneously transfers heat by conduction and humidity by attracting and moving water vapor from one airstream to the other.



MODERATING TEMPERATURE AND HUMIDITY

Our TR & TRCs moderate extremes in both temperature and humidity, creating a comfortable indoor environment. The unique moisture transfer capability of the S&P USA Ventilation Systems core also eliminates condensation and frost build up in most applications.

UNIT MAINTENANCE

Our ERVs are low maintenance and never require washing. Instead, simply vacuum the core with a soft brush attachment to gently clean dust and debris.

UNIT CERTIFICATIONS

- Certified by the Home Ventilating Institute (HVI)
- Static-plate core certified by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
- Models are either UL-listed or ETL-listed



ERV MODELS & FEATURES

RESIDENTIAL ERVs

TRLPe110, TRLPe110H

30–130 CFM • Indoor • Four duct design

Variable speed with Boostmode • Dial-A-Flow easy balancing

EC motors • MERV 13 filter accessory • Certified light commercial

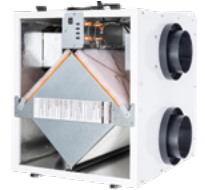


TRe90, TRe90H, TRe200, TRe300

30–280 CFM • Indoor • Four duct design

Variable speed with Boostmode • Dial-A-Flow easy balancing

EC motors • MERV 13 filter accessory • Certified light commercial



TR90, TR90G, TR130, TR200

30–225 CFM • Indoor • Four duct design

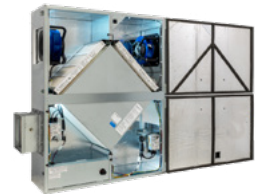


COMMERCIAL ERVs

TRCeN500, TRCeN800

166–2200 CFM • Indoor, Outdoor • Four duct design

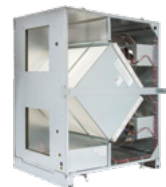
EC motors • MERV 13 filter accessory



TRC1200, TRCe1200

375–1575 CFM • Indoor, Outdoor • Four duct design

EC motors • MERV 13 filter accessory



TRC1600

500–2000 CFM • Indoor, Outdoor • Four duct design

MERV 13 filter accessory



FIND SPECIFICATIONS, SUBMITTALS AND MORE AT
[SOLERPALLAU-USA.COM/PRODUCTS/ERV.HTML](https://www.solerpallau-usa.com/products/erv.html)

ERV CONTROLS



PERCENTAGE TIMER CONTROL (SPTL)

- Runs unit an adjustable amount of time each hour
- Two wire, low voltage connection to TR and TRe
- Meets ASHRAE 62.2 continuous ventilation standards



PERCENTAGE TIMER CONTROL WITH FURNACE INTERLOCK (SFM)

- Furnace blower turned on by wires to TR or TRe ERVs and either thermostat or furnace control
- Six wire, low voltage connection
- Meets ASHRAE 62.2 continuous ventilation standards



PUSH BUTTON POINT-OF-USE CONTROL (SPBT)

- Push button control turns on unit
- 20 minute run-time with one touch
- Push 2 times for 40 minutes or 3 times for 60 minutes
- Two wire, low voltage direct connection to TRe series



WALL MOUNTED DIGITAL TIME CLOCK (STC7D-W)

- Up to 8 on/off cycles per day or 56 per week
- 24 VAC power requirement
- Battery back-up
- Fits any 4" x 4" electrical box



MOTION OCCUPANCY CONTROL (SMC-C, SMC-W)

- Passive infrared sensor
- Adjustable time-off delay from 30 seconds to 30 minutes
- 24 VAC power requirement
- SMC covers up to 1500 sq. ft. floor space, SMC-W covers up to 2500 sq. ft. floor space



WALL MOUNTED CARBON DIOXIDE CONTROL (SCO2-W)

- Adjustable control from 600–2000 PPM
- Digital display
- 24 VAC power requirement
- Computer/BAS interface for information and control
- Self calibrates during periods of low occupancy