

Airflow Balancing Instructions

Instruction Sheet: EV Series Premium+

1.0 BALANCING

Balancing an airflow is done by setting the OA airflow volume and then adjusting the RA airflow volume to eject the same or somewhat less air to the outdoors. EV Premium+ ERVs require the Touchscreen Control+ (TC1+), sold separately as an accessory, to change airflow values for setup. Refer to the unit submittal document for specifics on airflow and external static pressure operating ranges.

1.1 CONSTANT VOLUME

The Constant Volume control strategy is the easiest way to balance airflows. Set the Constant Volume setpoints on the TC1+ and the ERV controller will auto-balance the fans to the target CFM setpoint.

1.2 CONSTANT SPEED

If using Constant Speed (% of max speed), there are two ways to balance the airflows.

1.2.1 Touchscreen Control+

Set the supply and exhaust values to be the same and complete the unit setup. The live airflow values will be displayed on the home screen, allow the airflows to stabilize. If the airstreams are imbalanced, adjust the values in the unit setup to match the desired airflow(s). Do this for both the low and high speed setpoints.

IMPORTANT

It is important to understand and use the equipment airstream terminology as it is used in this manual. The airstreams are defined as:

- Outside Air (OA): Air taken from the external atmosphere and, therefore, not previously circulated through the system.
- Supply Air (SA): Air that is downstream of the enthalpic core and is either supplied to the occupied space or to an additional conditioner.
- Conditioned Air (CA): Air that is supplied to an occupied space.
- Return Air (RA): Air that is returned to a heating or cooling appliance from a conditioned space.
- Exhaust Air (EA): Air that is removed from a heating or cooling appliance and discharged.

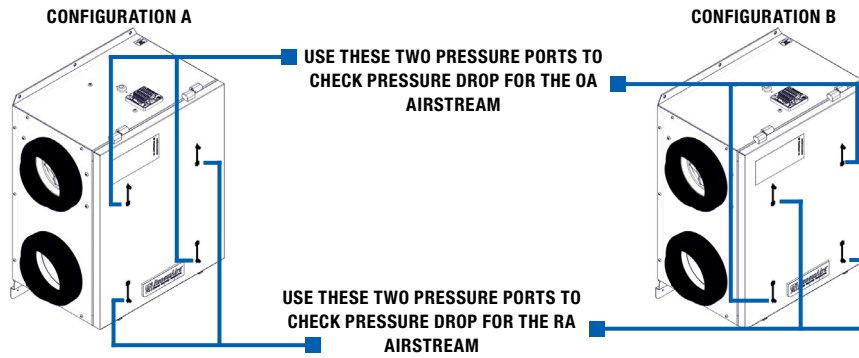
1.2.2 Manometer, Manual Measurements Across the Core and Filters

Equipment required for testing airflows:

- A magnehelic gauge (or manometer) or other device capable of measuring 0–1.0 inches water gauge of differential pressure.
- 2 pieces of natural rubber latex tubing, 1/8" I.D., 1/16" wall thickness works best.

Manometers are devices that are readily available from online retailers; accuracy within the range of 0–1.0 in. w.g. is the critical requirement. Water manometers generally have graduations of 0.1" that are difficult to accurately determine. For all manometers, there are two plastic tubes that connect at the manometer and then the other ends go to pressure ports on the ERV.

Individual differential static pressures (DP) are measured across the core and filters, using the installed pressure ports located on the removable door.



- Verify the unit has clean filters in place.
- Open the pressure port caps for the OA airstream and then insert the tubing into the openings about 1".
- Use the TC1+ or manually jumper the unit to operate the fans in low or high speed. To manually force the fans to run install a jumper between the 24VAC and LOW or 24VAC and HIGH speed terminals to power the fans.
- Take a differential pressure reading for the OA airstream by installing the “high” pressure side (+) of the measuring device to the OA port and the “low” pressure side (-) to the SA port. Compare the pressure drop to the chart on the unit or in the IOM to obtain the CFM. Adjust the fan speed to obtain the desired CFM. Record the CFM setting for future reference.
- Take a differential pressure reading for the RA airstream by installing the “high” pressure side (+) of the measuring device to the RA port and the “low” pressure side (-) to the EA port. Compare the pressure drop to the chart on the unit or in the IOM to obtain the CFM. Adjust the fan speed to obtain the desired CFM. Record the CFM setting for future reference.
- Repeat the process for low and high speeds.