



***Unitary Products  
Technical Services  
Service Tips Letter***

Letter: **ST-010-2017**

Date: September 14, 2017

To: All Unitary Products Branch Service Managers  
All Unitary Products Distribution Service Managers

Subject: SSE Control – ERV Setup and Sequences

Product: Commercial Products Equipped with SSE Control and ERV

Summary: This letter is intended to explain the various applications of ERV's and the setup and sequences on the SSE control.

The Smart Equipment (SE) controller is capable of interacting with both non-pivoting and pivoting ERV's. There are two (2) required functions that need to be performed when an ERV is attached. The first, which is common to both non-pivoting and pivoting ERV's, is to get the wheel turning when the unit's supply fan is on. The second, unique to pivoting ERV's, is to pivot the wheel when the SE controller is using the economizer as free cooling. Both of these functions utilize outputs on the SE economizer controller:

EX FAN binary output that is used to get the wheel spinning  
EX VFD analog output used to pivot the wheel. This output is used to energize a solid state relay.

- Notes: 1. Outputs on the economizer module are used to spin and pivot the wheel, therefore, economizers must be installed on all ERV applications.  
2. Exhaust Type must be set first to expose the ERV Enabled parameter

**Non-pivoting ERV on Constant Volume Units**

Parameter Setup	Fan Control Type	Single Speed or Fixed Variable
	Exhaust Type	Non-modulating
	ERV Enabled	Yes

Sequence                    When the FAN output is ON the EX FAN output is also ON. Harnesses provided with the ERV allow connection from the EX FAN output to the ERV wiring. When the EX FAN output is ON the wheel turns.

Note: If the ERV Unoccupied Fan Enabled parameter is set to NO the EX FAN output will not be turned ON when the FAN output is ON during the unoccupied mode. If the ERV Unoccupied Fan Enabled is set to YES the sequence is the same for both occupied and unoccupied modes.

### **Pivoting ERV on Constant Volume Units**

Parameter Setup	Fan Control Type	Single Speed or Fixed Variable
	Exhaust Type	Modulating Damper
	ERV Enabled	Yes

Sequence                    When the FAN output is ON the EX FAN output is ON. When free cooling is available with a call for cooling the EX VFD output is 10 vdc (100%). Harnesses and a solid state relay are provided with the ERV to allow connection from the EX FAN and EX VFD outputs to the ERV wiring to both spin and pivot the wheel.

Note: If the ERV Unoccupied Fan Enabled parameter is set to NO the EX FAN output will not be turned ON when the FAN output is ON during the unoccupied mode. If the ERV Unoccupied Fan Enabled is set to YES the sequence is the same for both occupied and unoccupied modes.

### **Non-pivoting ERV on 25 to 40 ton VAV Units**

Parameter Setup	Fan Control Type	Variable Speed
	Exhaust Type	Variable Frequency Fan
	ERV Enabled	Yes

Sequence                    When the FAN output is ON the EX VFD output tracks with the analog VFD output for the unit blower. The EX VFD output in this application is used as a speed signal to the vfd's that control the speed of the ERV exhaust blower. The VFD's are installed in the unit at the factory. The correct power exhaust option must be ordered for these applications.

### **Non-pivoting and pivoting ERV's on 3-25 ton VAV Units**

The SSE control currently does not support these applications. However, for non-pivoting ERV's, a field fabricated wire can be spliced into the SSE FAN output and wired directly to the ERV to spin the wheel any time the FAN output is ON.

Currently we do not have a way to pivot a wheel for the 3-25 ton vav units. A future firmware release beyond 3.3 will add this functionality.

If you have any questions on this feel free to call Factory Direct Northeast Technical Services at 1-855-251-8267 and speak with a technical support representative.

Regards,  
Thomas Hoffmaster II  
York Factory Direct Northeast  
Area Service Manager