



BAS Application Note 010

Combining Equipment Schedules 41 & 42 on 1 RSC

Note: This description only applies to RSCs set to ES-41 with EPROM version 4.0b or later.

The purpose of this procedure is to allow 1 RSC to perform a job normally requiring 2 RSCs. This will generally translate into a cost savings, but due to the complexity of this procedure can result in increased costs. This should only be attempted by experienced Dealers. Due to the non-standard nature of this setup, it is also very important to fully document all changes made and make this documentation available at the Site.

Most Duct Static Pressure control applications will also have a need to control Building Static Pressure. Both of these devices can be controlled from a single RSC, but some special provisions have to be made. All standard Dual Zone operation requires both Zones to have an identical control sequence. This is not true when a duct static pressure controller (an A Zone) is connected to the same RSC as a building static pressure controller (a B Zone). The duct SP control needs to modulate in the negative direction (reduce speed of the fan motor) with a positive PID (increasing static pressure). The building SP control needs to modulate in the positive direction (increase speed of the fan motor) with a positive PID load (increasing building static pressure). Special provisions have been made at the RSC to allow for this combination.

This procedure will only work when ES-42 is not being used anywhere else on the Site in a standard Dual Zone configuration (i.e. both Zones on an RSC configured to ES-42). This is because changes have to be made to ES-42 with the Equipment Schedule Editor that will affect all Zones using ES-42.

Installation

1. Set the dip switches on the RSC to ES-41.
2. Wire and install the RSC using standard ES-41 (for the A Zone) and ES-42 (for the B Zone) wiring schematics, except that the AO for the B Zone (ES-42) should be connected to AO4.

Setup at the Command Center

1. Edit ES-42 using the Equipment Schedule Editor. Change Actuator 1 type to Heat (default is Cool) and the Icon to Inverted Viewpoint.
2. Manually create a new Zone at the B Zone address using ES-42.
3. Change the Actuator setup of the B Zone to Initialize to Open.
4. Manually configure the A Zone to ES-41 or energize and Auto-Configure. Use standard default settings for the A Zone.

Operation at the RSC

Note: The operation is the same at both the A Zone and the B Zone.

1. The RSC will use the commanded position for AO1 and internally calculate a position for AO2.
2. The calculated position for AO2 will be the inverse of AO1. For example, if the commanded output for AO1 is 85%, then the RSC will position AO2 to 15%.
3. AO2 position can not be directly controlled by the User, even with the Handheld Tester. AO2 will always follow the commanded position for AO1.
4. All screens at the Command Center, including the Troubleshooting screen, will display the commanded position for AO1 and AO2. The commanded position for AO1 will always equal its actual position. The commanded position for AO2 will always be 0%, since it is not normally controlled by this schedule.
5. The AO position display screen of the Handheld Tester will correctly display the output being sent to the AO card for AO1 and AO2.