



BAS Application Note 012

Lighting Control

Lighting control can be accomplished by any one of several available methods. All methods use a normally closed pilot duty relay between the RSC and the lighting contactor. The digital output of the RSC is then configured to be ON in the Unoccupied mode, which will activate the relay and de-energize the lighting circuit. This process will provide a virtually fail-safe method of ensuring that lighting is not lost in the event of a hardware failure. A brief description of each method follows:

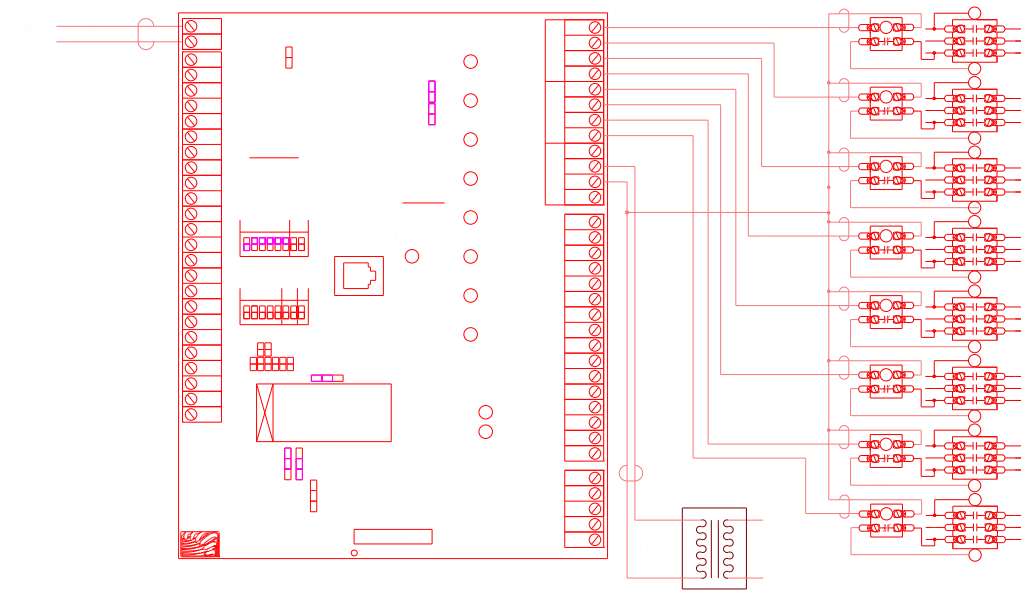
1. Use Miscellaneous Equipment to activate outputs any RSC that has DOs not being controlled by the selected Equipment Schedule of that RSC. This is a straightforward and economical method.
2. Use the Equipment Schedule Editor to modify an existing Equipment Schedule. This provides the advantage of tying the lights to the time-of-day mode of the HVAC equipment sharing that RSC.
3. Use any combination of Control Functions to energize the output under the desired conditions. This method provides the greatest flexibility.
4. Use Equipment Schedule 63. This ES has been dedicated to lighting control and has a few enhancements not available to other schedules. This schedule has all 8 DOs available for use as lighting outputs. One of the 3 methods listed above must be used for Occ/Unocc control of the outputs. What makes this schedule unique is what happens when the output is commanded to be ON by the Command Center. This would mean that the lighting zone has entered Unoccupied Mode. When the command is first received, the RSC will turn off the lights for 2 sec, wait 10 sec, and then turn off the lights for another 2 sec. The RSC will place the lights in Unoccupied 5 minutes after first receiving the command. This is intended to allow the tenant sufficient time to exit the space, or activate a setback override if necessary. ES-63 is available on any RSC using EPROM 4.1b or later. Contact BAS for an EPROM upgrade if necessary.

Note: When connecting lights to an unused output on an RSC, first verify that the output is not included in the default definition of the Equipment Schedule. An output may be unused in a given application and yet be defined by the Equipment Schedule as belonging to the equipment. This is not a problem when on-line, as the Command Center software will allow an output defined as Miscellaneous Equipment to override the Equipment Schedule definition. The problem occurs in default. The RSC will turn on and off all pre-defined outputs as necessary to maintain temperature in the space.

Setback override can be accomplished by:

1. Configuring the System to monitor to an existing HVAC zone sensor override button by using the Miscellaneous Equipment definition screen.
2. Installing a dedicated normally open push-button.
3. Activate a Master Alarm from any number of HVAC zones. Monitor the Master Alarm with a Control Function configured from Global Alarms. If the Master Alarm is activated, then use a specific action to turn on the light (i.e. 1-23 DO7 OFF). This method is useful when the lighting zone encompasses several HVAC zones.

The following schematic shows the recommended method of interfacing lights to an RSC. This drawing shows ES-63, but can be applied to any lighting control application.



Equipment Schedule 63 Wiring Schematic