

Why it is important to disconnect existing line switches and contactors when installing Avi-on wireless controls?

Wireless controls create a number of advantages to users controlling the lights:

- Switches can be placed anywhere
- Motion sensors can be integrated with switches
- Users can control the lights from multiple locations including remotely
- It allows integration with building control systems for two way control and data exchange

Traditional lighting controls use fixed switches or panel contactors that disconnect the power to the lights when off. Sometimes users want to retain usage of those power switches when installing wireless lighting controls. This might be to save money or because users are accustomed to the location and function of the switches. Avi-on does not recommend this, because when the switches are turned off, it fully disconnects power to the lighting controllers, radios, schedule clocks, etc. This has several important consequences for the reliability and functionality of the wireless control systems.

When devices are not powered the system becomes non-functional in many important ways:

- If behind a disconnected switch, a light will not turn on when controlled from Avi-on switches, mobile app, remote API, or building control interface. In addition to not working as expected, the user and any support personnel cannot determine if the device is broken, and cannot diagnose what the problem might be, especially remotely
- A remote user will not find the system to operate reliably, as a group of lights may not respond when turned on
- Any building control system integration will not function reliably with devices behind power switches. Device status and motion triggers will not be sent to the BCS, and BCS control commands will not function if the devices are behind a switch that has been turned off
- It is easy for a user pressing a switch inadvertently to disable portions of the system in a way that is hard to diagnose, especially remotely
- Schedules will not function as expected if the lights are turned off during the schedule trigger times

When devices are not powered the system becomes non-functional in many important ways: (cont.)

- All motion sensors powered from fixtures in those circuit will not function
- Once powered back on, the schedules will not have the correct time. Our network time manager and RAB are designed to immediately reset the time after a building power outage (and periodically as well), but since these devices are not on the same control legs as the lights they will not sense when a device is reset with a circuit switch and so there may be a delay before the schedule clock time is reset. In the meantime the schedule will not run
- In rare circumstances a users power switching button press sequence can simulate an intentional device hard reset cycle, leading to some or all fixtures and sensors on that circuit losing all their programming and needing to be recommissioned

There are many easy ways to disconnect wired switches in any installation while preserving the current control functionality:

- Avi-on Battery wall stations with 10+ year battery life that require no wiring and fit in any standard switch location or cut into drywall with no conduit or wiring needed
- Avi-on AC powered wall stations include a power bypass (and required air gap disconnect) to leave the circuit powered at all times while still using the switch
- Surface mount battery switches with 2+ year battery life that can be mounted on top of existing switch boxes or in any surface mount location
- Rely on motion sensors and/or schedules as the primary control strategy, and simply remove the switches from the system

Avi-on STRONGLY discourages any lighting control installations that do not bypass or replace all switches and panel contactors that disconnect power to the fixtures.

Avi-on's lifetime software diagnostics and support does not apply to networks where hard power switching is retained. Any diagnostic or decommissioning work performed on those systems will be billed at Avi-on standard services rates, regardless of the underlying issue eventually discovered.



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