

# Lighting Control

- Overview
- 5 Things to Consider
- Frequently Asked Question

## Lighting Control Overview

Lights are a necessity in any new home, and require as much, if not more, thought and consideration as any other amenity. Of course, you'll need to decide where to mount each light switch for convenience. Then there's the tough job of selecting a style of fixture that'll complement the home once it's finished. But more fundamental than these choices is the way in which you will control the lights of your home. And there's no better way to do that than with a lighting control system. There are scads of lighting control systems available, the more advanced and elegant being ones that you install into your home while it's under construction. While the walls of a home are open, a professional home systems installer can run the low-voltage wiring that ties the pieces of a lighting control system together.

These pieces include keypads that transmit commands to light fixtures and a controller that is programmed to cue the lights automatically based on certain conditions, such as the time of day.

## Planning Issues

### What You Need to Consider

#### - Prewiring

In a lighting control system that utilizes low-voltage cabling for controlling the lights, you need to decide which fixtures should be included on the network. For example, you could keep fixtures in the guest rooms, closets and utility areas off the system. However, given that it's significantly more expensive to run cabling in a home when the walls are closed, our recommendation is to route the low-voltage cabling to every single switch. The exception being if you are certain you desire a more convenient way to manage the lights in only one or two rooms. In this case, opt for a single-room lighting control system rather than a system designed to operate and automate the lights of the entire house.

#### - Keypads

One of the most important pieces of a lighting control system is the device used to brighten and dim groups of lights. Most manufacturers of lighting control systems offer a variety of keypads. Although most keypads are designed to mount flush with the surface of a wall, their styles, shapes and sizes vary widely. Some keypads, for example, might hold nearly a dozen buttons; others might contain only four buttons. Some buttons might illuminate when engaged; others might offer no feedback whatsoever. Make sure the keypad you select is easy for everyone in the family to understand and use.

## Add-Ons

#### - Occupancy Sensors

A lighting control system needs the input of other devices on which to base its commands. An occupancy sensor, or motion detector, is typically used as part of a security system to detect intruders. However, it can be just as useful to a lighting control system. Whenever a motion sensor notices that someone has walked into a room, for example, it can trigger on the room lights. When the room is unoccupied, the sensor can signal the system to turn off the lights.

#### - Light (Photocell) Sensors

In a similar manner, but in response to daylight and dusk, light sensors can automate the switching of lights.

#### - Home Control

Some lighting control systems are so smart that they can operate nearly every electronic component in a house, including motorized drapes, thermostats and cueing up an entertainment system.

## Installation Issues

Just as furnishings, artwork and paint can impact the overall appearance of a room, so can its lights. While an interior designer takes care of the upholstery, paint and decorative pieces, a lighting designer patterns the lights by carefully positioning and setting precise illumination levels to enhance the room's appearance.

How the lights are ultimately arranged depends on the architectural and design elements. A lighting designer will need to know, for example, where a prized piece of artwork will hang and the dimensions of the columns in order to set the lights appropriately.

Based on decisions rendered by the lighting designer, a lighting control installer routes the low-voltage cabling, mounts the keypads, and programs the lighting scenes into the system controller. Often, the installer of the system may be knowledgeable of lighting design, so you need use only him to both design and install the system.

Depending on the system, the light switches and fixtures of your home may attach to the brains of a lighting control system via low-voltage wiring only, by electrical wiring, or by a combination of both. In one case, the electrical wiring might bypass the switch/keypad locations and instead run directly from each light fixture to dimming and relay modules located in closets and utility areas of the house. In another case, the electrical wiring might be run conventionally from each fixture to a switch/keypad location. Or a combination of the two wiring schemes might be employed. In any case, be sure your electrician is informed of the wiring plan designed by your lighting control installer.

## Wireless Lighting Control

A versatile way to illuminate a home

Even when a home's walls are exposed during construction, a lighting control system can be tricky for a professional installer to install and design. For this reason, manufacturers of wired lighting control systems have developed lighting control systems that require the addition of no special wiring to a home.

These wireless systems utilize either standard electrical wiring or radio-frequency airwaves to carry on, off, brighten and dim commands from pushbutton transmitters, also called keypads, to smart dimmer switches.

The absence of special cabling and sophisticated microprocessors makes wireless lighting control systems less expensive than wired-in low-voltage lighting control systems. Putting every light in a 3,000-square-foot home on a wireless system might cost around \$1,500, compared to \$5,000 for a low-voltage lighting control system.

Another appealing feature of a wireless lighting control system is how few decisions and how little special treatment its design demands. When preparing for a wireless lighting control system, an electrician runs the home's electrical wiring normally (there may be a few minor changes).

After the electrical wiring is installed, a home systems installer (or electrician) inserts dimmer switches and transmitters/keypads into empty switch boxes that have been mounted into the wall. Then the switches and transmitters are connected to the electrical wiring. Finally, the home systems installer (or electrician) programs the switches and transmitters to communicate commands (via RF or via electrical wiring) to each other. A wireless lighting control system's ability to communicate without special wiring also makes the task of programming and designing the system much simpler for both you and your installer. Should you discover after the system is installed and configured that you'd like to weave a few more lights into a good night setting, for example, your installer can simply remove the regular light switches and replace them with new smart dimmer switches. While any light switch can be converted, choosing the transmitter is a decision that should be made right away. Some transmitters are sized to fit into a small single-gang switch box; others require more room. In either case, your installer or electrician will need to install the appropriate-sized switch boxes into the walls of your new home.

## Keypads

Attractive control points for your home

One of lighting control's primary functions is to enhance the appearance of a room by highlighting its architecture and design. Manufacturers of lighting control systems have gone to great lengths to design elegant keypads that enhances a room's décor.

With profiles as slender as one-eighth inch, the faces of lighting control keypads barely blemish the wall. Ask your builder to have them painted or wallpapered to match the wall surface.

Available in a variety of colors and finishes, a keypad can be ordered to blend into any room. In fact, the keypads of lighting control systems are so pleasing to the eye that many installers configure them to control other facets of the home, such as audio/video equipment.

And no matter how many lights and other devices a keypad controls, it's still a cinch to operate, in part because its buttons can be labeled however you like. For example, a button labeled movie could dim the family room lights and cue

the entertainment gear. Similarly, a button labeled dad could soften the lights in the den perfectly for an evening with the Wall Street Journal. Labeling can be custom-engraved in a variety of fonts and accent colors-just be sure to discuss your ideas with your installer. 5 Things to Consider-Lighting Control Need a few bright ideas? Lighting can set the perfect scene...

- Lighting accents
- Number of scenes
- Wall dimmers/controls
- Single-room vs. whole-house lighting
- Outdoor lighting

[Top of page »](#)

## Lighting Control FAQs

How many scenes do I need?

- A better question would probably be: How many do you want? A scene is an effect created when a number of lights dim and brighten to different intensities. You might have a "movie" scene or a "romantic" scene. This is something to think about when you look into purchasing a lighting product. Some products can handle one scene, while others can do up to 1,000 different scenarios.

- Can I add lighting control to my existing home?

There are many wireless options out there. Many of them use infrared (IR) or radio-frequency (RF) signals for control. There are also a lot of X10 products out there. The options really are endless. In fact, lighting control probably has the biggest potential when it comes to wireless technology. Adding wireless lighting products can be as easy as replacing your existing wallplates.

- Can I program lights to come on and off depending on the time or outside conditions?

Why of course! One of the benefits of having a lighting control system is that it doubles as a security system. So if someone walks up unannounced, you can be aware of their presence, and the intruder will know that they haven't gone unnoticed. Aside from security features, a lighting system programmed to react based on events or time of day, can also help you save on your electric bills. For instance, you no longer have to worry which lights you left on-the system can be programmed to do all of the thinking for you.