

Starter Guide

BASIC WIRELESS LIGHT SWITCH KIT (E8K-A11-XX)

Wireless Lighting Control

AHD0018C



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INTRODUCTION

Self-powered wireless controls make wireless lighting control simple and reliable. The light switches do not store power or use batteries; instead, the switches operate using energy from the motion of a switch press. When pressed, a wireless light switch sends radio signals to a receiver telling the receiver to turn lights/devices on or off.

Figure 1. Basic Components



Wireless Light Switch → Relay Receiver → Controlled Device

BENEFITS

- Add light switches quickly and easily
- Place switches anywhere
- Eliminate switch leg and traveler wires
- Avoid tearing into walls
- Install 3-way and 4-way switches with no hassle

FEATURES

120 V Relay Receiver

- Wires to 1 light or group of lights (up to 200W)
- Fits inside light fixture junction box or switch box
- Can be controlled by up to 30 wireless light switches
- Designed to switch various 120V electric loads such as: incandescent lamps, high voltage halogen lamps, electronic ballasts and inductive loads

Self-powered Wireless Light Switch

- No Batteries! No Wire! The switch provides its own power using a built-in microgenerator
- Fast, simple installation (No wire from lights to switch)
- Mounts on flat surface or in a switch box
- One switch controls an unlimited number of receivers
- Matches existing decorator style light switches
- Maintenance-free for 20+ years
- Each switch has a unique ID (the Relay Receiver memorizes the IDs of switches that are assigned to the receiver)
- Sends ON/OFF commands to Relay Receiver (capable of dimming when used with dimmer receiver)

Transmission Range. The signal strength of radio signals decreases with increasing distance between the transmitter and the receiver. Line of sight range is typically 98 ft. (30m) in corridors, 328 ft. (100m) in large rooms. Transmission range depends on the materials used in the building.

Material	Typical Range
Masonry	65 ft. (20m), through 3 walls max.
Reinforced concrete	32 ft. (10m), through 1 wall / ceiling max.
Wood walls / drywalls	98 ft. (30m), through 5 walls max.

INSTALLATION

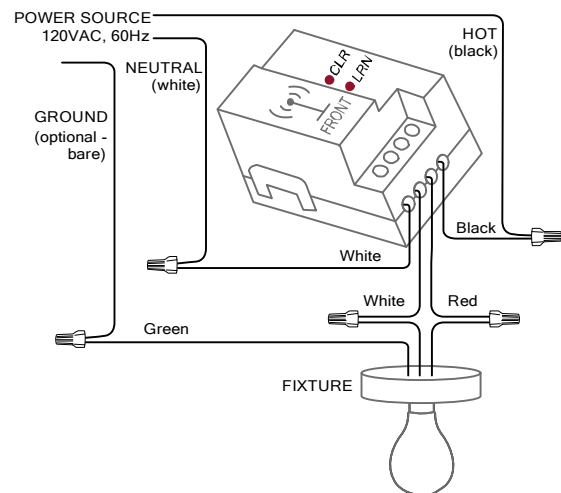
CAUTION: The 120V Relay Receiver is to be installed and/or used in compliance with relevant electrical codes and regulations. If you are unsure about any portion of these instructions, please contact a qualified electrician.

Wiring

The 120V Relay Receiver (E8R-R12BP-1) is wired between the light fixture and the power source.

1. **WARNING:** To avoid fire, shock, or death, TURN OFF POWER at circuit breaker or fuse and verify that it is OFF before installation begins. Make sure that it remains OFF until installation is complete.
2. For in-wall mounting, a wiring box must be used. For best performance do not mount the receivers close to the floor or near wall niches. Do not mount the receiver into a metal housing.
3. Prepare wires: Pull off pre-cut insulation from Relay Receiver leads. Verify wires are not frayed; cut if necessary removing 5/8" (1.6 cm) of insulation from each wire.
4. Connect wires as shown in Figure 2. Both white wires are coupled internally (N). Screw wire nuts on clockwise making sure no bare conductors show below the wire connectors. Secure each connection with electrical tape.
5. Position and stow all wires in the junction box, then restore power.

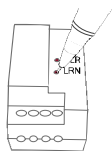
Figure 2. Wiring Diagram



Programming

In order for a wireless light switch to communicate with a Relay Receiver, the receiver must learn the switch's unique ID; this is accomplished by programming the receiver. Follow the steps below to program the Relay Receiver.

Figure 3. Entering the Relay Receiver into Learn Mode



Use a non-metallic insulated probe (e.g. plastic ballpoint pen) to press receiver buttons.

1. The receiver must be powered when programming [Figure 2]. Settings are retained when power is disconnected. To prevent learning unintentional switches, receiver sensitivity is reduced when in Learn Mode. Transmitting light switches should be within 5 meters of the receiver when programming.
2. Press and hold the LRN button for ~0.3 second. The load will begin toggling.
3. Press a self-powered wireless switch to transmit the switch's unique ID to the receiver. The load will stay on for 4 seconds. *
4. When toggling resumes, exit Learn Mode by pressing the LRN button. (The receiver automatically exits Learn Mode after 30 sec. of inactivity.) To create a multi-way switch, prior to exiting Learn Mode press additional switches (see step 3).

* **Selective Deleting.** To remove the unique ID of a switch from the memory of a receiver, press the programmed switch while in Learn Mode. The load will stay off for 4 seconds indicating the switch ID has been removed from memory.

Clear All. If the CLR button is pressed and held for ~2 seconds, the Relay Receiver's memory is deleted (condition upon delivery). The receiver then enters Learn Mode which is indicated by the load toggling.

SPECIFICATIONS

Built-in Relay Receiver

Radio frequency	868 MHz
Power supply	120V~ / 60 Hz
Relay output	Maximum 1100W resistive (Cos ϕ = 1.0) 200W Tungsten (incandescent lamp) 140W Ballast (fluorescent lamp)
Ambient temperature	-10° to +45°C
Storage temperature	-20° to +80°C
Certifications	FCC/IC, CSA
# of transmitters learnable	Up to 30 switches
Dimensions of housing	1.93" x 1.46" x 1.3" (49 x 37 x 33 mm)
Degree of protection	For indoor use only, for permanently installed fixtures only

Wireless Light Switch

Radio frequency	868 MHz
Power supply	Self-powered
Transmission Power Output	10 mW max
Range (Indoor)	100 ft. avg.
Switch Cycles	Min 50,000
Operating Temperature	-25° to +65°C in dry rooms
Relative humidity	0 – 95%

TROUBLESHOOTING

For a new or pre-existing system:

- Check if the receiver is connected as specified
- Verify that fixture operates without the switch in-line
- Delete all assigned transmitters in the receiver (press and hold the CLR button for 2 seconds), and reprogram the receiver

The receiver independently turns ON and OFF:

- This can occur when an unintended transmitter is activated within the receiver range when the receiver is in Learn Mode.
- Clear all transmitters in the receiver and reprogram the receiver

The receiver does not receive a transmitter command:

- Move the switch closer to the receiver. If the system works at closer distance, the transmitter was installed outside the reception range, or there was radio signal interference. Repeaters that extend the coverage range are available; please contact your dealer.
- Mount the switch or the receiver at a better location.

CONTACT AD HOC ELECTRONICS

Use any of the means listed below to gain access to Ad Hoc's wireless expertise:

Phone: (801) 225-2226
E-mail: support@AdHocElectronics.com
Web Site: AdHocElectronics.com

Refer to the respective product manuals for more information regarding receivers and transmitters.

Notice: Save this instruction sheet; it contains useful installation, testing, and troubleshooting information, along with important technical data.

