Square Wireless Lighting
Wiring Guide for EU Two-way Switching

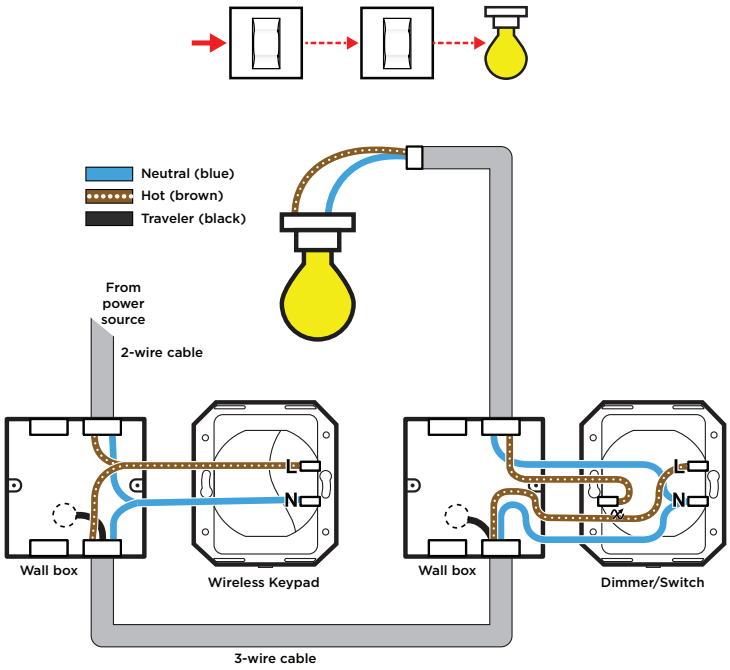
Two-way switched circuits can be wired in dozens of ways. This document explains some of the most common wiring methods, illustrated with EU standard wiring colors.

Overview

Generally, you will use a dimmer (or switch, if there's a neutral) to control the light, and a wireless keypad in each of the additional locations. The idea is to wire the dimmer/switch to the light, and then use the existing wires going between the two switch locations to get power to the keypad. Without a neutral, the load and neutral connections get jumpered on the dimmer, because the neutral wire is connected to the load.

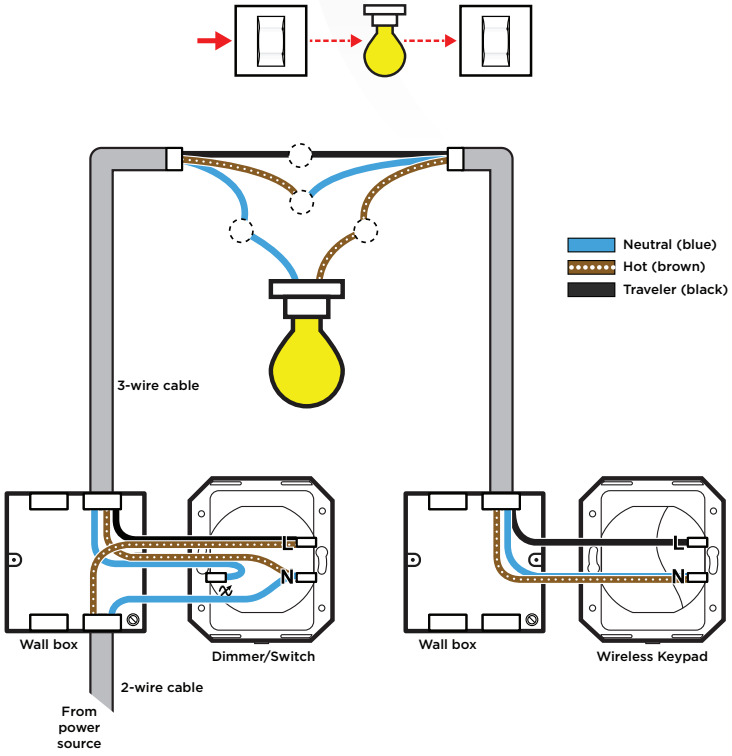
The first two scenarios have a neutral in at least one of the wallboxes. The second two have the neutral at the light.

Scenario 1: Power comes through one wall box, then the next wall box, then the light



This is by far the simplest scenario. You can just hook hot and neutral up to the keypad in the first location, send hot and neutral down to the second location and connect to the dimmer/switch which then gets wired to the light. One of the wires going between the two switch locations will not be needed and can just get capped off.

Scenario 2: Power comes through one wall box, then to the light, then to the other wall box



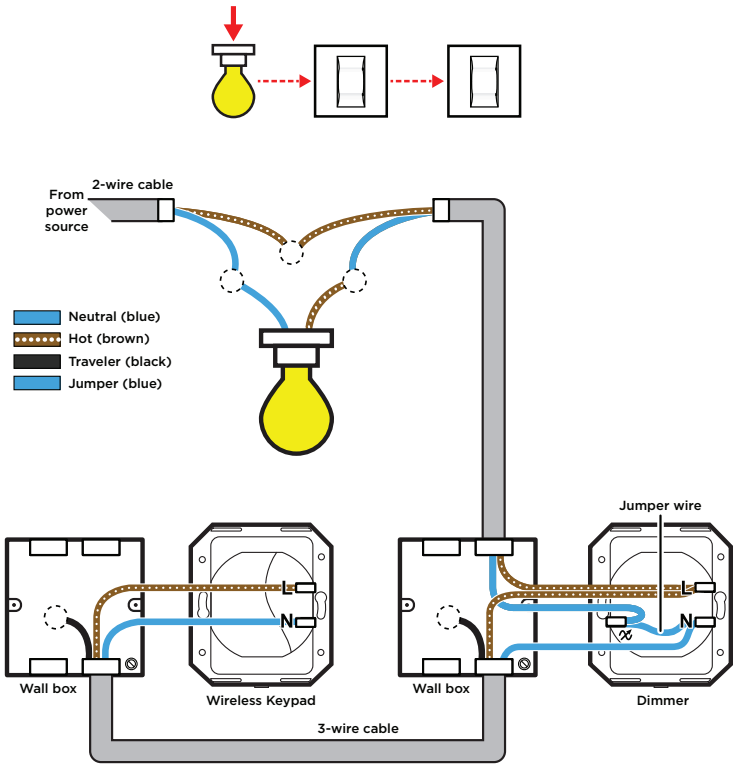
In this scenario, you can actually put the dimmer/switch at either location. The load connection on the dimmer/switch needs to get connected to the wire that is actually wired to the light. The two wires that essentially just pass through the light location get used to send hot and neutral to the other wallbox.

Control4

Scenarios 3 and 4 overview

The next two scenarios have the neutral at the light rather than in a wall box. In these cases, both the dimmer and the keypad will be stealing power from the light—unless you can rewire at the light in Scenario 4 as described below. Keep in mind that having both the dimmer and the keypad stealing power from the load increases the minimum wattage requirements for the load. This is where reducing the number of LEDs that can be on both the dimmer and keypad at any one time can make a big difference. With all backlight and status LEDs set to white (full brightness), the minimum load with an incandescent/halogen in this scenario is 40W (higher but unpredictable with LEDs lights). If you change the settings so that the dimmer and the keypad can have only one blue LED on at any one time, that minimum load drops all the way to 15W.

Scenario 3: Power comes through the light, then to the first wall box, then to the second wall box



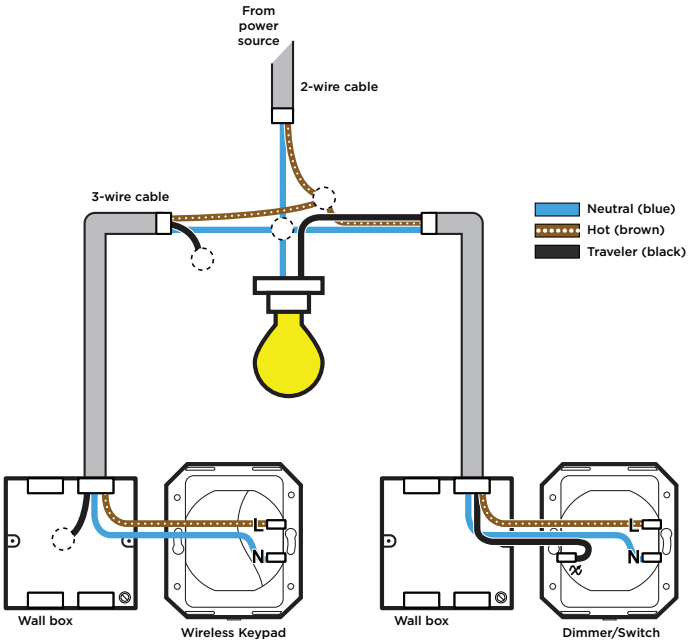
In this scenario, the dimmer is positioned closest to the light. In the diagram, the blue wire coming from the light would get connected to the Line (hot) connection on the dimmer. The Load and Neutral connections on the dimmer would get jumpered together using the included jumper wire, and the brown wire coming from the light would get connected to the Load connection on the dimmer.

You can then use any two of the three wires going between the two wall boxes to send power to the keypad. It doesn't matter which wires—just make sure that neutral on the keypad is connected back to neutral on the dimmer and Line on the keypad is connected back to Line on the dimmer.

Scenario 4: Power at light in the middle of two wall boxes

This is both the most interesting and most complicated scenario. What makes it interesting is that, if you have access to the wires at the light, you can fairly easily rewire things so that you have a neutral at both the dimmer/switch and the keypad. That's by far the best way to handle it (if you can), because having a neutral connection is always preferable. What makes it complicated is that, if you don't have access to the wires at the light, you have to really think about where each wire is going in order to make things work. Both situations are covered here.

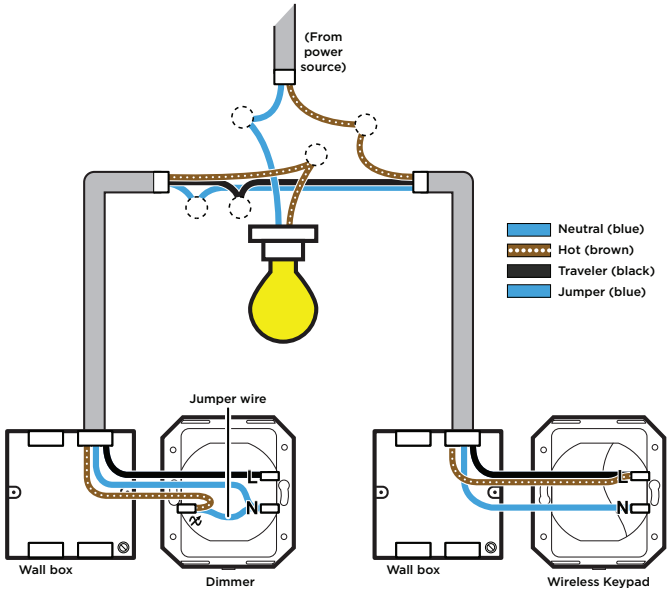
If you *do* have access to the wires at the light:



It doesn't matter which position has the dimmer/switch and which has the keypad. Which wire gets connected to what will obviously be different, but the concept is the same. In this example, we're assuming that the dimmer/switch is on the right and the keypad on the left. Up at the light, first break all existing connections. Leave the brown wire coming in from the power source connected to the brown wire going to the wall box on the right, but also connect the brown wire going to the wall box on the left. The blue wire coming in from the power source stays connected to the light as shown, but also gets connected to the blue wires going to both wall boxes. At this point, both hot and neutral wires are going to both wall boxes. Connect the black traveler wire in the wall box on the right to the Load terminal on the dimmer/switch, then connect that same black wire coming from the dimmer/switch to the light. Cap both ends of the black wire going from the wall box on the left up to the light, because it's not needed.

If you *don't* have access to the wires at the light:

In this example and illustration, the keypad is on the right and the dimmer on the left.



- Wall box on the right:
  - Brown and black wires get connected to the Line terminal on the keypad.
  - Blue wire gets connected to the Neutral terminal on the keypad.
- Wall box on the left:
  - Black wire gets connected to the Line In on the dimmer.
  - Load and Neutral terminals on the dimmer get jumpered using the included jumper wire.
  - Brown wire gets connected to the Load terminal on the dimmer.
  - Blue wire gets connected to the Neutral terminal on the dimmer.

Additional resources

The following resources are available for additional support:

- Control4 Knowledgebase and forums
- Control4 Technical Support
- Control4 website: ***www.control4.com***
- Composer documentation available at ***ctrl4.co/docs***.

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ctrl4.co/2waywiring

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