

# WIRELESS FLEX DIMMING

## APPLICATION NOTE

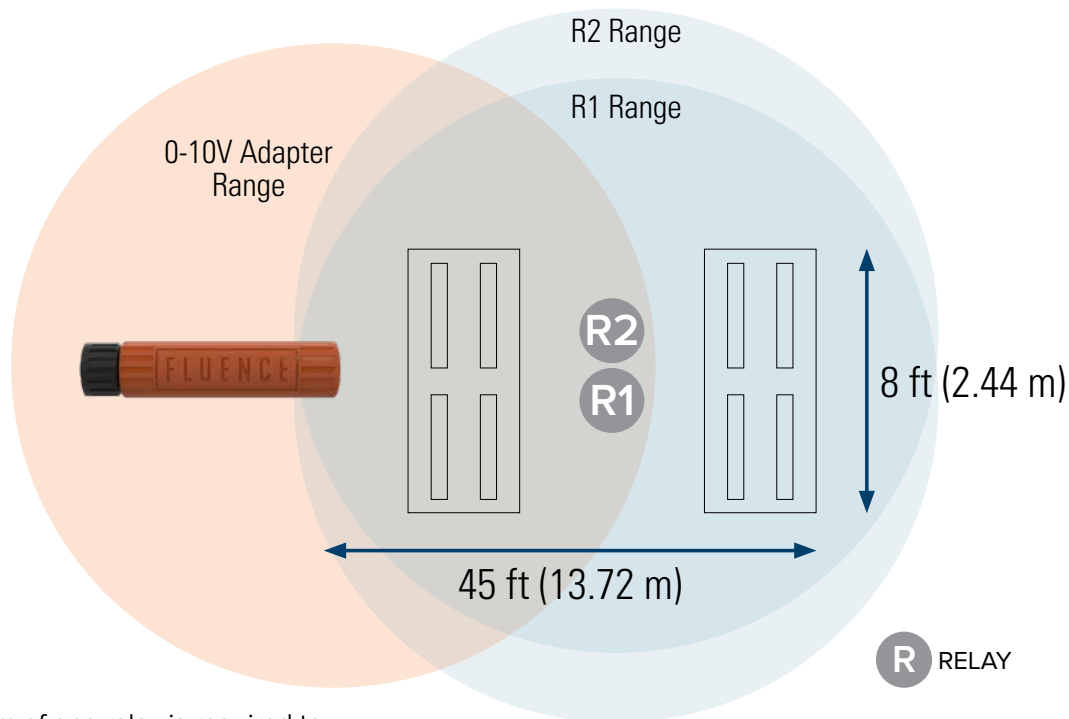
### EXTERNAL RELAY IMPLEMENTATION GUIDE



**Wireless Flex Dimming** uses relays to repeat messages throughout the network when the control zone is larger than the communication range of the Wireless Flex 0-10V Adapter (50 ft (15.24 m) line-of-sight, 10-30 ft (3-9.1 m) with obstructions like walls or metal posts).

Typically, some Wireless Flex Receivers in larger networks are designated as relays, repeating the control messages from one end of the control zone to the other. However, in some facility layouts, there may be a large space between luminaires, e.g., if the control zone spans adjacent rooms or houses. An external relay is a Wireless Flex Receiver which is installed in a standalone configuration, not directly connected to a Fluence luminaire. It is used to bridge a gap between luminaires, enabling messages to be heard throughout larger control zones.

Example layout, where R1 and R2 are external relays (R1 is the primary external relay and R2 is a second relay for redundancy to avoid a single point of communication failure):



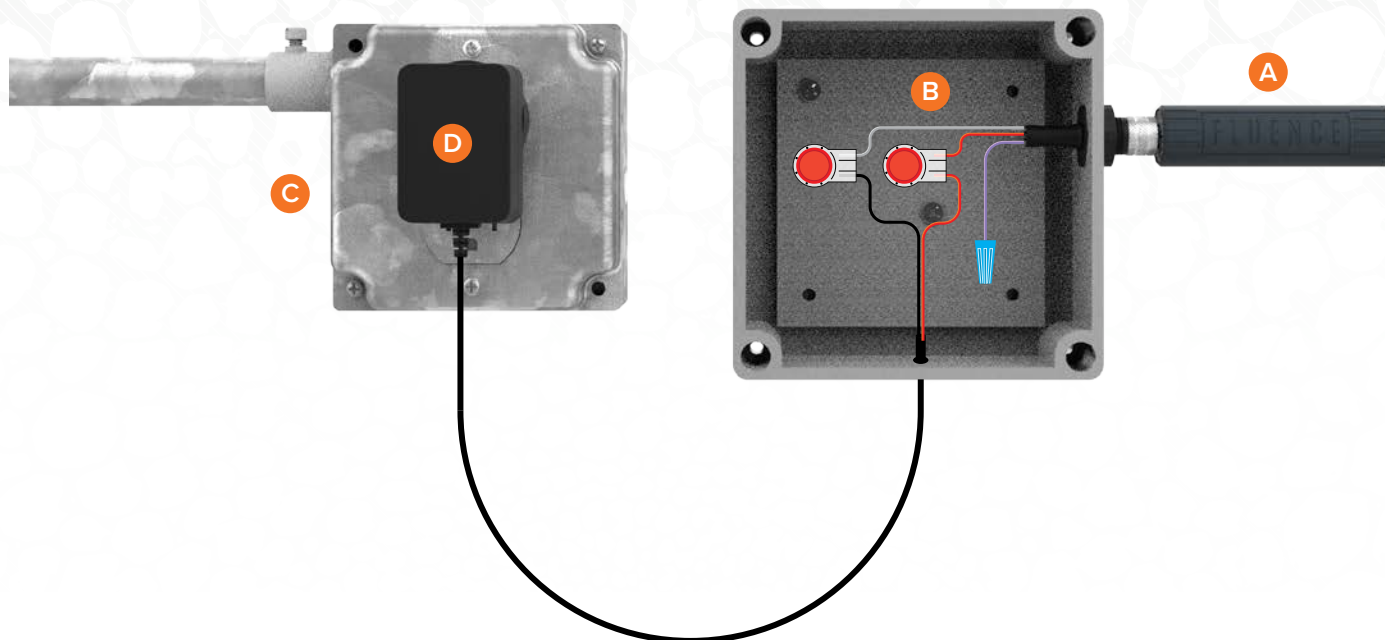
**NOTE:** A minimum of one relay is required to bridge the network gaps. However, 2-3 relays are recommended to avoid a single point of failure, depending on the size of the network. Please see the *Wireless Flex Hardware Installation Guide* for more details.

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## External Relay Implementation Guide



### INSTALLED EXTERNAL RELAY EXAMPLE






### WHAT YOU'LL NEED

(per external relay, sold separately. Junction box, power supply, and wire nuts/splicing connectors not available from Fluence):

- A.** (1) Wireless Flex Dimming Receiver (PN WFDM-10538-01 (with metal M12 connector) or WFDM-10537-01 (with plastic M16 connector))
- B.** (1) Wireless Flex Receiver Pigtail (PN WFDM-M12RXPIGTAIL for WFDM-10538-01, or PN WFDM-M16RXPIGTAIL for WFDM-10537-01)
- C.** (1) Electrical Junction Box. Select a waterproof junction box if desired for your application.
- D.** (1) +12V DC Power Supply, 6W or greater (example: Phihong PSAA12A-120L6). Ensure the power supply has adequate surge protection.
- E.** (3) Wire nuts or splicing connectors

### CHEMICAL EXPOSURE PRECAUTION

Fluence lighting systems are designed to be resilient against crop protection products. Many chemicals used in the Commercial Horticultural Industry are corrosive to electronic equipment. Care should be taken to ensure that only approved crop protection products, cleaning agents and/or other chemicals (e.g., pesticides, fungicides and insecticides) may come in contact with the device. If the device is accidentally exposed to a corrosive liquid or vapor (e.g. VOC –Volatile Organic Compound and H<sub>2</sub>S – Hydrogen Sulfide) the device must be rinsed with clean water as soon as possible. The product warranty will no longer apply if the product is repeatedly exposed or remains in the corrosive environment for a prolonged period. It is recommended the devices be removed and protected from the corrosive environment during all periods of aggressive disinfection or sanitization of the facility.

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support@fluence-led.com   
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## External Relay Implementation Guide

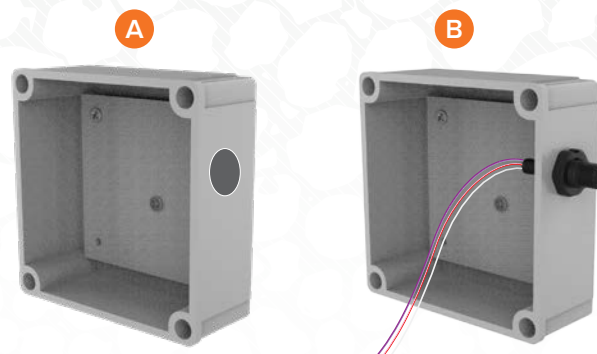


### INSTALLATION STEPS

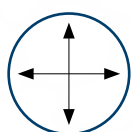
#### STEP 1:

(A) Open a mounting hole on the side of the junction box.

(B) Insert the pigtail connector leads through the hole, and tighten the lock nut.

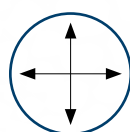
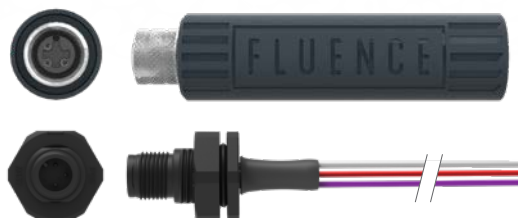


#### RECOMMENDED MOUNTING HOLE SIZES:



##### WFDM-M12RXPIGTAIL

5/8" (16mm)



##### WFDM-M16RXPIGTAIL

Waterproof application: 3/4" (19mm) hole  
Application not requiring waterproofing:  
standard 1/2" trade size (M20) knockout

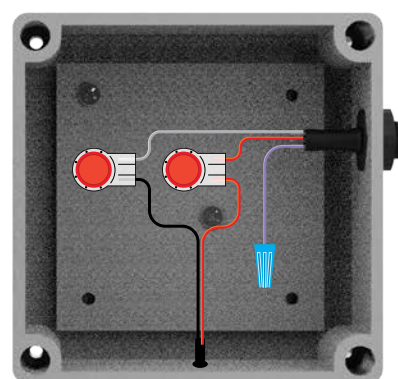


#### STEP 2:

Wire the panel mount lead colors to the +12V DC Power Supply per the Wireless Receiver Pin Assignments table below.

#### WIRELESS RECEIVER PIN ASSIGNMENTS (M12 or M16):

PIN	PIN Assignment	Lead Color	External Relay Connection
1	Ground/DIM-	Gray	Power Supply Ground
2	DC Input (12 V DC)	Red	Power Supply +12V DC
3	DIM+ (0-10 V DC)	Purple	No Connection; terminate with wire nut or splicing connector



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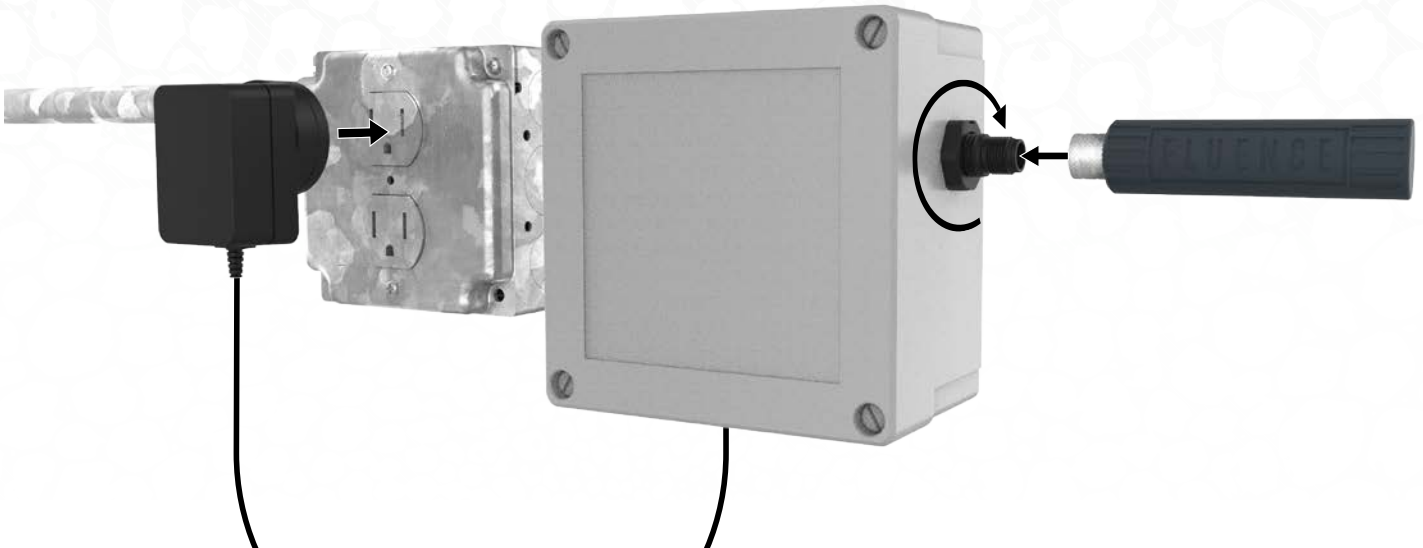
# WIRELESS FLEX DIMMING

## External Relay Implementation Guide



### STEP 3:

Install the external relay in its final location and connect the +12V DC Power Supply to an AC power source. The external relay must be placed in a location which is free from metal posts and other similar materials that can obstruct the wireless signal. A location which has a clear line-of-sight to the nearest Wireless Flex devices is ideal.



### STEP 4:

Verify that the Wireless Flex Receiver's blue LED is flashing fast. If the LED is not flashing, the Receiver is not powered.



### STEP 5:

Follow the steps in the Wireless Flex Apps Quick-Start Commissioning Guide to add the external relay to the zone. Enable the "Relay" radio button.

