



## INSTALLATION INSTRUCTIONS IMPORTANT SAFEGUARDS

FOR MODELS: ACI-H7-A1, ACI-H10-A1, ACI-H25-A1, ACI-H35-A1, ACI-H50-A1,  
ACI-H80-A1, ACI-H100-A1

Emergency Lighting Inverter

# INSTRUCTION MANUAL IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS:

1. **Caution:** High voltage may be present on the output wires if AC power is supplied or if the battery connector is engaged.
2. **Caution:** Ensure that the load voltage requirements of the intended load are compatible with the output of this inverter unit.
3. To reduce the risk of electrical shock, do not engage the battery connector until installation is complete and AC power is supplied to the unit.
4. To reduce the risk of electrical shock, disconnect both the normal power and the battery connector before servicing.
5. This is a sealed unit. Replace the entire unit when necessary.
6. Installation and servicing should be performed by qualified personnel only.
7. This unit must be grounded. See the wiring diagrams for details.
8. This unit must be connected to the unswitched normal source of power with a nominal voltage of 120 – 277 Vac, 50/60 Hz.
9. This unit must be fed from the same branch circuit as the load during normal mode.
10. This unit should be mounted in locations where it will not readily be subjected to tampering by unauthorized personnel.
11. This unit is suitable for mounting externally to lighting fixtures. It is suitable for factory or field installation.
12. This unit is suitable for use in dry and damp locations where the ambient temperature is in the range of 0 °C minimum to 50 °C maximum.
13. This unit is not suitable for heated air outlets, wet, or hazardous locations.
14. Use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, void the warranty, or result in non-compliance with regulations.
15. Do not mount near gas or electric heaters. Do not use this product outdoors or for any use other than its intended use.
16. Install in accordance with the National Electrical Code and local regulations.

## SAVE THESE INSTRUCTIONS



AUXILIARY LIGHTING EQUIPMENT



THIS PRODUCT CONTAINS A RECHARGEABLE LITHIUM-ION BATTERY.  
THE BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.



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# BE SURE TO READ ALL INSTALLATION INSTRUCTIONS

**CAUTION: TO PREVENT HIGH VOLTAGE FROM BEING PRESENT ON THE OUTPUT LEADS BEFORE INSTALLING, MAKE CERTAIN THE AC POWER IS OFF AND THE BATTERY CONNECTOR IS NOT ENGAGED. DO NOT ENGAGE THE BATTERY CONNECTOR UNTIL THE INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED TO THE UNIT.**

**NOTE:** Ensure that the necessary branch circuit wiring is available. An unswitched source of power with a nominal voltage of 120 – 277 Vac, 50/60 Hz is required. The emergency lighting inverter must be fed from the same branch circuit as the load.

Check the following items to determine if the lighting load is compatible with the emergency lighting inverter.

- A:** Verify that the emergency lighting load's input voltage is compatible with the emergency lighting inverter's output voltage.
- B:** This inverter features 0 – 10 V Auto Dimming to reduce the total power draw of the connected load(s); thereby, (a) preventing the total load power from exceeding the inverter's output capability, and (b) enabling multiple connected loads to share the total delivered power equally. Use the table below and the wiring diagrams to verify compatibility and to ensure proper operation.
- C:** Ensure that there will be sufficient emergency egress lighting illumination levels per national, state, and local codes. Use the following guidelines.
- 1.) Determine the efficacy (lm/W) of the luminaire. This information is typically given by the luminaire manufacturer in lumens per Watt (lm/W or LPW), or by direct measurement or published by a 3rd party such as Design Lights Consortium ([www.designlights.org](http://www.designlights.org)).
  - 2.) The light output of the luminaire in lumens can be calculated by multiplying the power (W) drawn by the luminaire by the efficacy of the luminaire given in (lm/W). This will provide an estimate of light output in lumens as a beginning point for the emergency lighting design. Use the following equation and example as a guide:

**Example Calculation:**

**Given:**

- The Luminaire power drawn in emergency-mode = 10 Watts
- The Luminaire efficacy = 120 lm/W (also called LPW)

**Then: The emergency-mode light output = 10 X 120 = 1200 lm**

**NOTE:** The above serves only as an example, actual results will depend on the specific data for the specific application.

- 3.) Once the light output (lm) is determined, use industry standard lighting design tools to estimate the illumination levels for the emergency egress path based on mounting height and other factors.

**NOTE:** This product is compatible with most LED fixtures, Fluorescent fixtures, and Incandescent loads that meet criteria A, B, and C above. However, interoperability and compatibility cannot be guaranteed. Compatibility and interoperability testing for the end-use application is recommended. Please contact the factory should there be any questions.

**NOTE:** After installation, it is necessary that the emergency egress lighting illumination levels be measured to ensure compliance with national, state, and local codes.

**Mounting Height:** This product meets or exceeds the NFPA minimum light requirements with all loads, down to the smallest rated lamp load, at heights up to 7.17ft (2.2m). Many factors influence emergency illumination levels, such as the lamp load selected, luminaire design, and environmental factors therefore end use verification is necessary. For field installations, when the attached luminaire is mounted at heights greater than 7.17ft (2.2m), the level of illumination must be measured in the end application to ensure the requirements of NFPA 101 and local codes are satisfied.

## INSTALLATION INSTRUCTIONS

Inverter model, maximum inverter output power in emergency-mode, and maximum total load power in normal-mode:

Model	Maximum Inverter Output Power* (W) (Emergency-Mode)	Maximum Total Load Power** (W) (Normal-Mode)
ACI-H7-A1	7	35 (Note: The maximum total load power must not exceed 35 Watts. <b>The inverter will only deliver a maximum of 7 Watts in emergency-mode.</b> )
ACI-H10-A1	10	50 (Note: The maximum total load power must not exceed 50 Watts. <b>The inverter will only deliver a maximum of 10 Watts in emergency-mode.</b> )
ACI-H25-A1	25	125 (Note: The maximum total load power must not exceed 125 Watts. <b>The inverter will only deliver a maximum of 25 Watts in emergency-mode.</b> )
ACI-H35-A1	35	175 (Note: The maximum total load power must not exceed 175 Watts. <b>The inverter will only deliver a maximum of 35 Watts in emergency-mode.</b> )
ACI-H50-A1	50	250 (Note: The maximum total load power must not exceed 250 Watts. <b>The inverter will only deliver a maximum of 50 Watts in emergency-mode.</b> )
ACI-H80-A1	80	400 (Note: The maximum total load power must not exceed 400 Watts. <b>The inverter will only deliver a maximum of 80 Watts in emergency-mode.</b> )
ACI-H100-A1	100	500 (Note: The maximum total load power must not exceed 500 Watts. <b>The inverter will only deliver a maximum of 100 Watts in emergency-mode.</b> )

**\* Note:** The maximum inverter output power (emergency-mode) is defined as the maximum output power that the inverter can deliver in emergency-mode. For example, the model ACI-H25-A1 will deliver a maximum of 25 Watts to the connected load in emergency-mode.

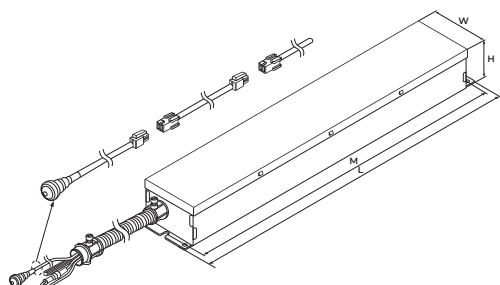
**\*\* Note:** The maximum total load power (normal-mode) is defined as the maximum total normal-mode steady-state long-term load power of all connected loads, while in normal-mode. For example, if the 0 - 10 V Auto Dimming feature is used, then the maximum total normal-mode power of all connected loads shall not exceed 75 Watts for the model ACI-H25-A1.

**Example:** If two 35-Watt LED fixtures are connected to the model ACI-H25-A1, then the maximum total load power (normal-mode) is 70 Watts. This total 70-Watt load does not exceed the 75-Watt limit; thus, it qualifies. If the system is configured to utilize the 0 - 10 V Auto Dimming feature, then in emergency-mode, the model ACI-H25-A1 will deliver a maximum of 25 Watts to the connected load, delivering 12.5 Watts to each of the two LED fixtures.

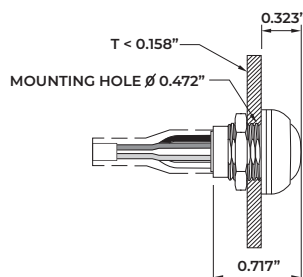
See individual specifications for the specific inverter model to determine the maximum total normal-mode steady-state long-term load power allowed when not utilizing the 0 - 10 V Auto Dimming feature.

## Step 1.) Installing the emergency lighting inverter

- Ensure that AC power is off.
- Mount the emergency lighting inverter with the mounting tabs using the supplied hardware.



Emergency Lighting Inverter unit



LED Test Switch

Model	Length	Width	Height	Mounting
ACI-H7-A1	15.36	2.25	1.3	15.04
ACI-H10-A1	15.36	2.17	1.26	15
ACI-H25-A1	20.67	2.24	2.05	20.28
ACI-H35-A1	20.67	2.24	2.05	20.28
ACI-H50-A1	20.67	2.24	2.05	20.28
ACI-H80-A1	19.49	3.35	2.2	19.09
ACI-H100-A1	19.49	3.35	2.2	19.09

All dimensions in inches.

## Step 2.) Wiring diagram selection: Select the appropriate wiring diagram.

Note: All wiring practices and connections should comply with the National Electrical Code and local safety guidelines and regulations.

**Step 3.) Wiring the AC power input section:** Connect the AC Input wires following the chosen wiring diagram and the wiring instructions for the selected fixture load configuration type per the given table.

**Step 4.) Wiring the output section:** Following the chosen wiring diagram, connect the ORANGE wire (AC Output Line) to the AC Line Input of each fixture, and connect the GRAY wire (AC Output Neutral) to the AC Neutral Input of each fixture.

**Step 5.) Wiring the 0 – 10 V Auto Dimming section:** Following the chosen wiring diagram, and the instructions, connect the dimming section as shown. If the 0 – 10 V Auto Dimming feature is not used, cap off the RED/WHITE, BLUE/WHITE, PINK, and PURPLE wires.

**Step 6.) Installing the LED Indicator & test switch:** After the wiring connections and installation are complete, supply AC power and engage the battery connector. With AC power connected, and with the battery connector engaged, the LED indicator should illuminate indicating that the battery is charging correctly.

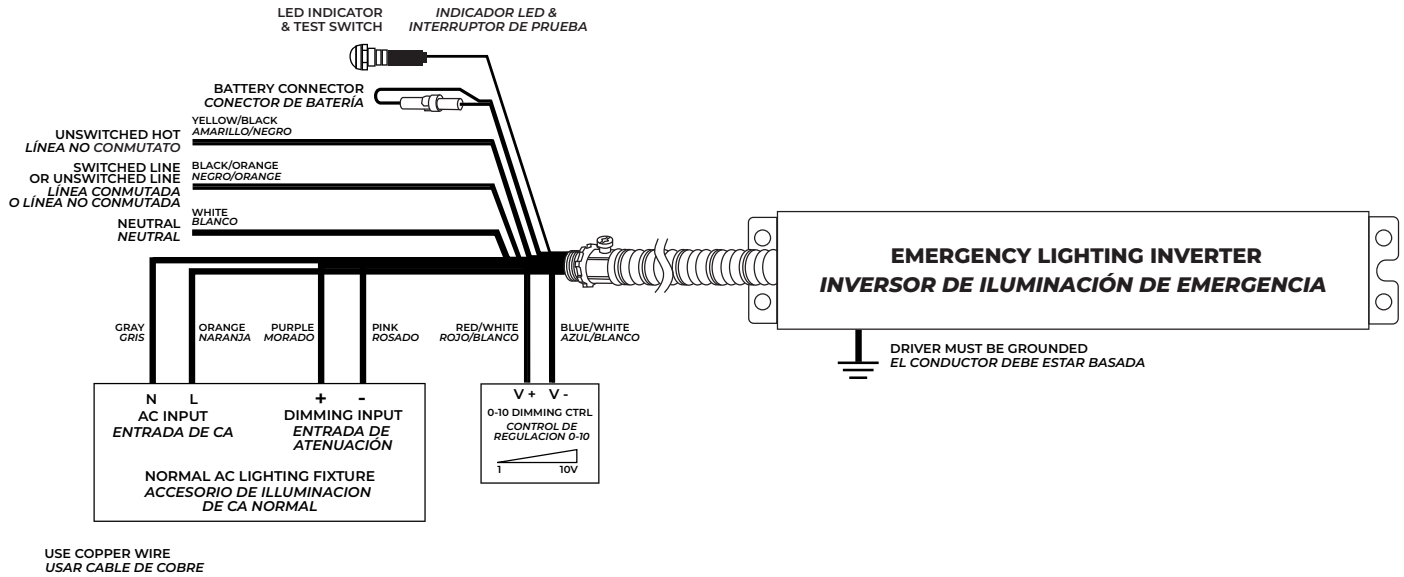
**Step 7.) Apply AC power:** After the wiring connections and installation are complete, supply AC power and engage the battery connector. With AC power connected, and with the battery connector engaged, the LED indicator should illuminate indicating that the battery is charging correctly.

**Step 8.) Final Step, test the emergency lighting inverter:** After the battery has charged for at least one hour, a short-term discharge test may be conducted by pressing and holding the test switch. The emergency lighting inverter should be allowed to charge for 24 hours before conducting a 90-minute discharge test.

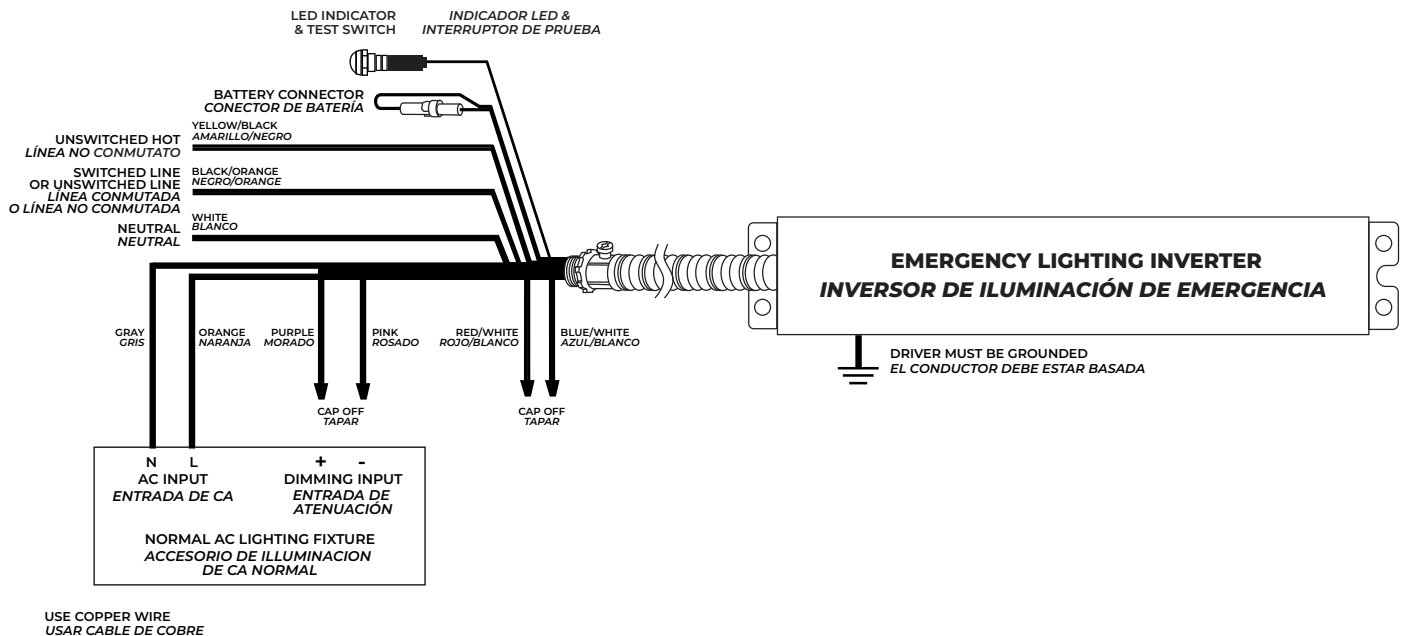
## TYPICAL WIRING DIAGRAMS

### WIRING DIAGRAM FOR OPERATING ONE SINGLE FIXTURE DIAGRAMA DE CABLEADO PARA OPERAR UNA SOLA ACCESORIO DE ILLUMINACION

#### A. WITH 0-10V DIMMER A. CON ATENUADOR DE 0-10V



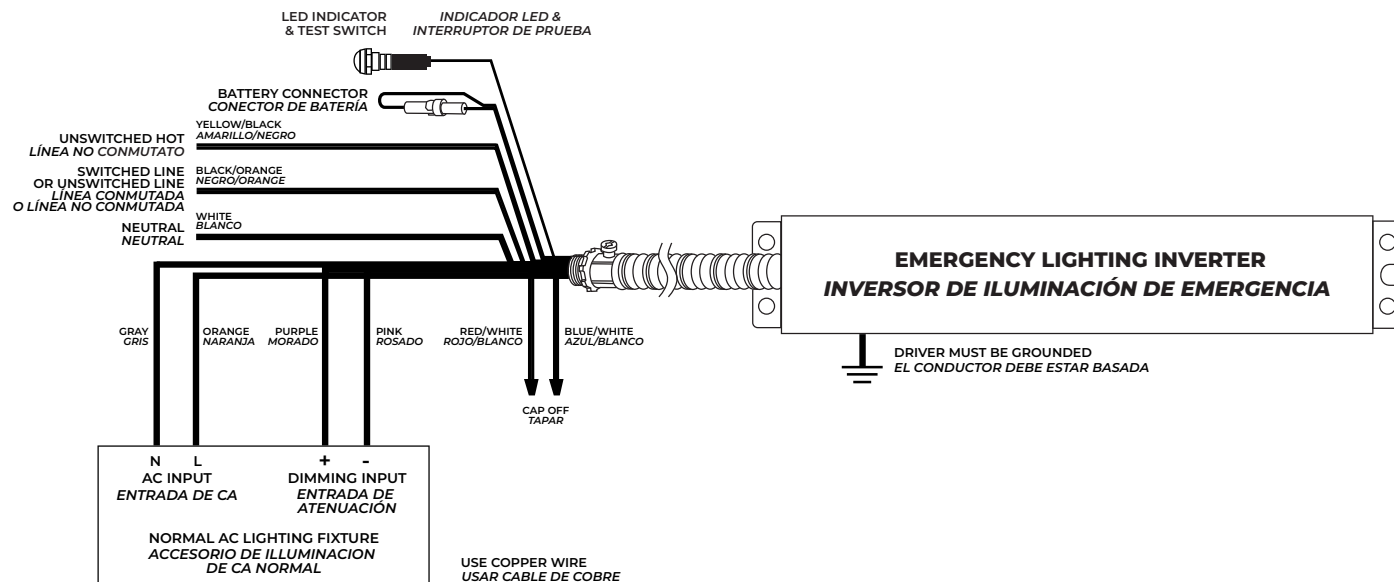
#### B WITHOUT 0-10V DIMMER B SIN ATENUADOR DE CA NORMAL



## TYPICAL WIRING DIAGRAMS

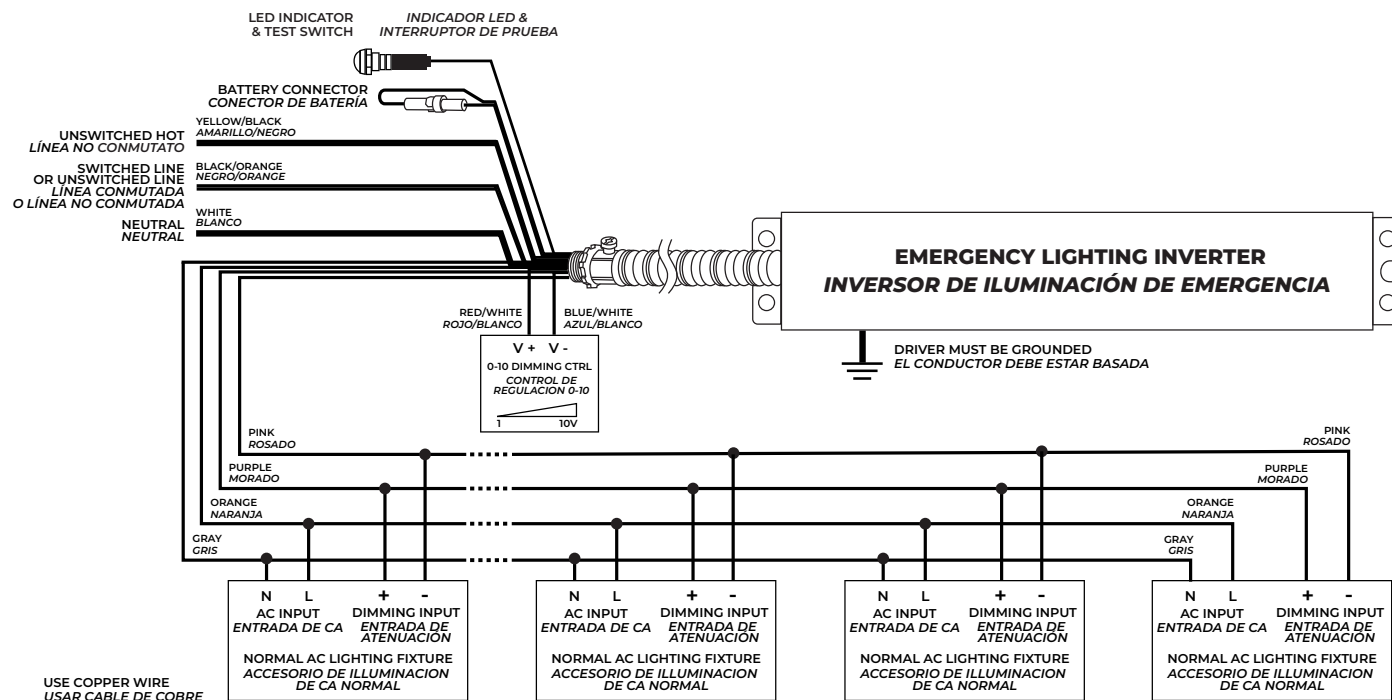
**C. IF THE 0 - 10 V AUTO DIMMING FEATURE IS USED, BUT EXTERNAL 0 - 10 V DIMMING CTRL IS NOT USED, THEN ONLY CAP OFF THE RED/WHITE AND BLUE/WHITE WIRES.**

**C. SI SE UTILIZA LA FUNCIÓN DE ATENUACIÓN AUTOMÁTICA DE 0-10 V, PERO NO SE UTILIZA EL CONTROL DE ATENUACIÓN EXTERNO DE 0-10 V, ENTONCES SOLO TAPE LOS CABLES ROJO/BLANCO Y AZUL/BLANCO.**



**WIRING DIAGRAM FOR OPERATING MULTIPLE FIXTURES**  
**DIAGRAMA DE CABLEADO PARA OPERAR MÚLTIPLES ACCESORIOS**

#### **D. FOR OPERATING MULTIPLE FIXTURES** **D. PARA OPERAR MÚLTIPLES ACCESORIOS**



## TYPICAL WIRING DIAGRAMS

The wiring diagrams shown depict full functionality utilizing the 0 - 10 V Auto Dimming feature. If the 0 - 10 V Auto Dimming feature is not used, cap off the RED/WHITE, BLUE/WHITE, PINK, and PURPLE wires. If the 0 - 10 V Auto Dimming feature is used, but external 0 - 10 V Dimming CTRL is not used, then only cap off the RED/WHITE and BLUE/WHITE wires.

Fixture Load Configuration Type	Wiring Instructions
Switched: The Normal AC Lighting Fixture is utilized in both Normal-Mode and Emergency-Mode.	Connect the YELLOW/BLACK wire to the Unswitched Line, and connect the BLACK/ORANGE wire to the Switched Line
Normally On/always On/Unswitched	Connect the BLACK/ORANGE wire to the YELLOW/BLACK wire
Normally Off/Emergency-mode only	Cap off the BLACK/ORANGE wire

Los diagramas de cableado mostrados representan la funcionalidad completa utilizando la función de atenuación automática de 0 - 10 V. Si no se utiliza la función de atenuación automática de 0 - 10 V, cubra los cables ROJO/BLANCO, AZUL/BLANCO, ROSA y MORADO. Si se utiliza la función de atenuación automática de 0 - 10 V, pero no se utiliza el control de atenuación externo de 0 - 10 V, entonces solo cubra los cables ROJO/BLANCO y AZUL/BLANCO.

Fixture Load Configuration Type	Wiring Instructions
Conmutado: La luminaria de iluminación AC normal se utiliza tanto en modo normal como en modo de emergencia.	Conecte el cable AMARILLO/NEGRO a la línea no conmutada y conecte el cable NEGRO/NARANJA a la línea conmutada.
Normalmente Encendido/Siempre Encendido/No Conmutado.	Conecte el cable NEGRO/NARANJA al cable AMARILLO/NEGRO.
Normalmente Apagado/Solo en modo de emergencia.	Cubra el cable NEGRO/NARANJA.