Wiring Diagrams

The following diagrams are commonly used for Lightcloud installations. If you’re planning on using a Lightcloud Device in a manner that isn’t covered by these diagrams, please contact us to ensure proper installation.

For additional wiring information or concerns, give us a call at 1 (844) - LIGHTCLOUD

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**Wiring Diagrams** — **Common Lightcloud Wiring Applications**

Lightcloud Controller Switch

Lightcloud Controller used to switch a load without dimming.

**Input:** 120-277VAC, 50/60Hz

**Switching Capacity (Magnetic, Electronic Ballast or LED)**
- **15.5A (120-277VAC)**
- **277VAC:** 20A Magetic/Resistive
- **240VAC:** 5A Tungsten/Electronic, 20A FLA/60 LRA, 2HP
- **120VAC:** 15A Tungsten, 1HP

**Switched Neutral:** The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

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*Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.*
Lightcloud Controller used to switch a load with 0-10V dimming.

**Input:** 120-277VAC, 50/60Hz
Purple: 0-10V positive
Grey: 0-10V common

**Switching Capacity (Magnetic, Electronic Ballast or LED)**
15.5A (120-277VAC)
277VAC: 20A Magnetic/Resistive
240VAC: 5A Tungsten/Electronic, 20A FLA/60 LRA, 2HP
120VAC: 15A Tungsten, 1HP

**Switched Neutral:** The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

**Note:** The National Electrical Code requires that low-voltage wiring use in the same enclosure as high-voltage wiring have an equal or better insulation rating. You may need to complete your low-voltage wiring in another enclosure or use a partition.
Lightcloud® Controller Repeater

Lightcloud Controller used to repeat Lightcloud mesh network signal without controlling a load.

**Input:** 120-277VAC, 50/60Hz

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Controllers can receive inputs or triggers from 3rd party switching devices such as outdoor motion or light sensors.

Sample Occupancy Sensor
RAB Stealth STL200

* A resistor or second fixture driver must be used between the Controller and Sensor. RESLC/120 for 120VAC applications or RESLC/277 for 277VAC applications. The driver must be greater than 10mA.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Input: 120-277VAC, 50/60Hz
Purple: 0-10V positive
Grey: 0-10V common

Switching Capacity (Magnetic, Electronic Ballast or LED)
15.5A (120-277VAC)
277VAC: 20A Magnetic/Resistive
240VAC: 5A Tungsten/Electronic, 20A FLA/60 LRA, 2HP
120VAC: 15A Tungsten, 1HP

Switched Neutral: The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

Note: The National Electrical Code requires that low-voltage wiring use in the same enclosure as high-voltage wiring have an equal or better insulation rating. You may need to complete your low-voltage wiring in another enclosure or use a partition.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Controllers can be used to control Emergency Lighting fed with “Always ON” Emergency Power. Upon loss of power, Emergency lighting will fail to “Full ON” light output.

Notes: In spaces where there is only one luminaire, and it is connected to emergency power, the Controller will need to be connected to a Normal Power Circuit for proper operation. Emergency fixtures with on-board battery backup don’t require special wiring.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Controllers can be used to control Emergency Lighting fed with “Always ON” Emergency Power. Upon loss of power, Emergency lighting will fail to “Full ON” light output.

Notes: In spaces where there is only one luminaire, and it is connected to emergency power, the Controller will need to be connected to a Normal Power Circuit for proper operation. Emergency fixtures with on-board battery backup don’t require special wiring.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Controller emergency fixture wiring with LCShunt for on/off operation.

**Note:** The LCShunt includes a 20A rated high voltage Form C (N/O+N/C) relay and is UL924 Listed for emergency lighting control applications. The LCShunt can bypass a line voltage switch or dimmer, ensuring that an emergency fixture illuminates at full brightness during a utility power interruption.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud® Emergency Backup Panel On/Off Dimming

Lightcloud Controller emergency fixture wiring with LCShunt/D10 for on/off and 0-10V dimmable operation.

Note: The LCSHUNT includes a 20A rated high voltage Form C (N/O+N/C) relay and a low voltage Form A (N/O) relay and is UL924 Listed for emergency lighting control applications. The LCSHUNT can simultaneously bypass both a line voltage switch and a 0-10V dimming signal, ensuring that an emergency fixture illuminates at full brightness during a utility power interruption.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Controllers can dim phase loads using a phase dimming adapter. For loads under 450W @ 120V and 1000W @ 277V, we recommend the Ecosense Ecospec adapter.

**Phase Dimmer**
Ecosense Ecospec Linear Dimming Control Module
450W MAX @ 120V
1000W MAX @ 277V

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Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud™ Phase Dimming 450-1800W

Lightcloud Controllers can dim phase loads using a phase dimming adapter. For loads between 450 and 1800W, we recommend the Lutron PHPM-PA-120-WH Phase Dimmer and BCI-0-10 Ballast Control Interface.

Phase Dimmer
Lutron PHPM-PA-120-WH
120 V @ 16 A

Ballast Control Interface
Lutron BCI-0-10
Control Input Voltage: 0–10 V-
Control Input Current: Source 500 µA
Compatible Voltage: 120–277 V~ 50/60 Hz

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.

Wiring Diagrams — Common Lightcloud Wiring Applications
Lightcloud® Plug Load Control

Lightcloud Controllers can control electrical outlets using a contactor.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Luminaire Controller Internal

Lightcloud Luminaire Controller fixture installation with Actuator Module inside fixture.

**Input:** 120-277VAC, 50/60Hz

**Switching Capacity (Magnetic, Electronic Ballast or LED)**
- LED, CFL, Tungsten 120/277VAC 500W;
- Magnetic 120VAC 264VA, 277VAC 500VA;
- Resistive/Inductive 120VAC 500W;

**Switched Neutral:** The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

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Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
**Lightcloud Luminaire Controller Junction Box**

Lightcloud Luminaire Controller fixture installation with Actuator Module inside a junction box.

Input: 120-277VAC, 50/60Hz

Switching Capacity (Magnetic, Electronic Ballast or LED)
LED, CFL, Tungsten 120/277VAC 500W;
Magnetic 120VAC 264VA, 277VAC 500VA;
Resistive/Inductive 120VAC 500W;

Switched Neutral: The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Dimmer must be hard-wired to AC power to wirelessly control zones, dimming, and scenes.

Input: 120-277VAC, 50/60Hz, 2W
18AWG grounding; terminals supporting up to 12AWG wire

Caution
Use only copper wire.
Do not operate with the faceplate removed.
This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
This product should only be installed in a UL-approved single or double gang wall-box enclosure.
Indoor use only.

Any wires not in use must be capped off or otherwise insulated.
This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
The Lightcloud Gateway must be hard-wired to AC power.

Input: 120-277 VAC, 50/60 Hz 60-45mA

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
The Lightcloud Gateway must be hard-wired to AC power.

*Input*: 9-30 VDC or 12-24 VAC

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
**Lightcloud® Sensor Switch**

Lightcloud Sensor used to switch a load without dimming.

**Input:** 120-277VAC, 50/60Hz

**Maximum Switched Load Ratings**
- Incandescent: 250VAC, 12A
- Standard Ballast: 120/277VAC, 6A/4A
- Electronic Ballast: 277VAC, 11A

**Switched Neutral:** The "Switched Neutral" white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Sensor 0-10V Dimming

Lightcloud Sensor used to switch a load with 0-10V dimming.

**Input:** 120-277VAC, 50/60Hz
**Purple:** 0-10V positive
**Grey:** 0-10V common

**Maximum Switched Load Ratings**
- Incandescent: 250VAC, 12A
- Standard Ballast: 120/277VAC, 6A/4A
- Electronic Ballast: 277VAC, 11A

**Switched Neutral:** The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

**Note:** The National Electrical Code requires that low-voltage wiring use in the same enclosure as high-voltage wiring have an equal or better insulation rating. You may need to complete your low-voltage wiring in another enclosure or use a partition.

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Sensor Without Load

Lightcloud Sensor not used to control loads.

Switched Neutral: The “Switched Neutral” white with red stripe wire is the neutral line for the load being switched. This enables power measurement.

Input: 120-277VAC, 50/60Hz

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Lightcloud Touch

Lightcloud Touch must be hard-wired to AC power.

**Input**: 120-240 VAC, 0.3-0.15A, 50/60Hz

Any wires not in use must be capped off or otherwise insulated. This product should only be installed by a qualified electrician and in compliance with local and national electrical codes.
Call For Additional Diagrams

lightcloud.com

1 (844) LIGHTCLOUD