



Illumadoor® Power Supply

Installation & Reference Manual



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CONVENTIONS USED THROUGHOUT THIS MANUAL

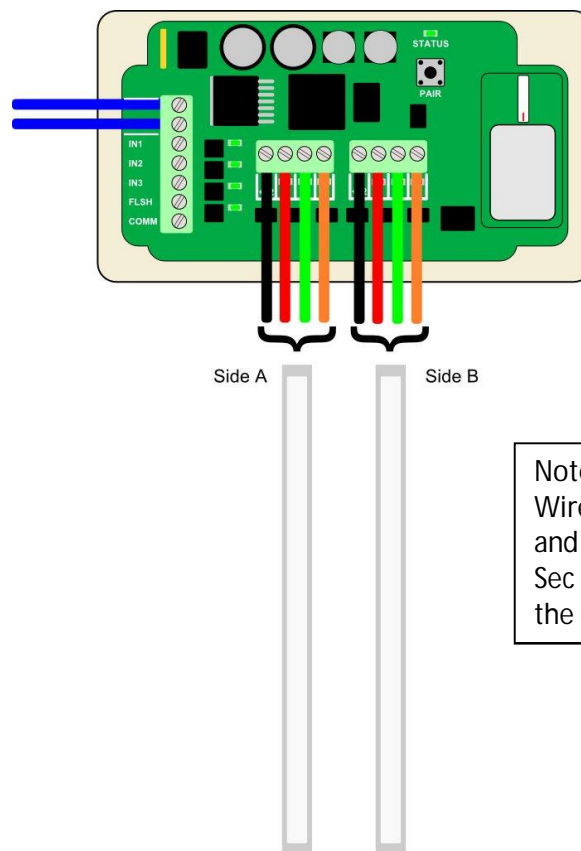
| | |
|----------------|---|
| WARNING | Items with this label must be carefully considered to avoid any damage to system components |
| NOTE | Items with this label should be considered for best results |

1.0 Device Overview

The Illumadoor combination power supply and junction box is designed to operate up to 6¹ individual LED strips and serves as the interface between the LEDs and the door controller. Control of the LEDs can be from either the hard wired inputs or through the on-board SeyWave® RF module when paired with a Digital Gateway II door controller. SeyWave® Technology is a proprietary low power consumption and reliable two-way RF communication system and is FCC and IC licensed, operating in the 2.4 GHz spectrum for global compliance. The RF communication has a maximum range of 150 ft and is capable of operating in harsh environments typically found in industrial facilities.

It is powered by 24 volts AC/DC. The inputs can be isolated from the incoming power and have a range of 12-24 volts AC/DC. Two output terminal blocks are provided for connection to the LEDs.

1.1 Interface Diagram






Note:
Wire colors depicted are LED colors
and not cable wire colors. Please see
Sec 1.3 for associated wire colors in
the cables provided by BTR.

1.2 Operating Characteristics

| Standard Operating Conditions (unless otherwise stated) Operating Temperature -10C to 50C | | | | |
|--|-----|---------|-------------------|--------|
| Characteristic | Min | Typical | Max | Units |
| Supply Voltage | 19 | 24 | 30 | VAC/DC |
| Operating Current | 20 | 50 | 1100 ¹ | mA |
| RF Frequency | | 2.4 | | GHz |
| Range | | | 150 (LOS) | ft |
| Output Voltage | | 12 | | V |
| Output Current | | | 2100 ¹ | mA |

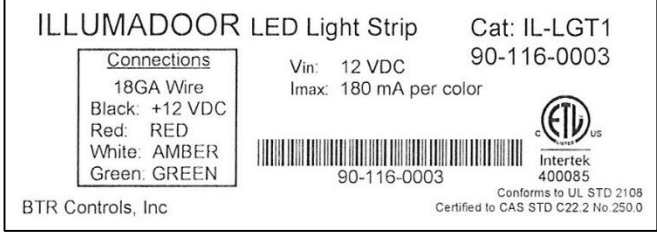
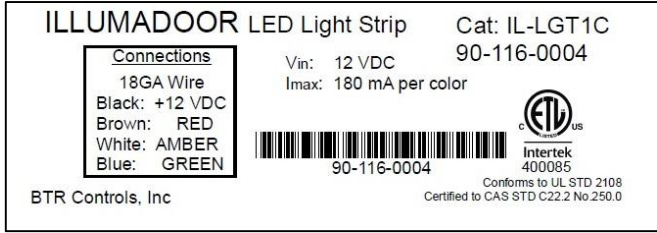
1 – 6 LEDs connected with all colors enabled

Product Label

| | |
|---|---|
| <p>ILLUMADOOR Power Supply</p> <p>Input: 24VAC/DC, 1.1A, 50-60Hz Output: 12VDC, 2.1A Total Power: 25W max Temperature Range: -10 to +50C</p> <p> Installation by professional personnel only.  Risk of electric shock. Read instruction manual.</p> <p>BTR Controls, Inc</p> | <p>Cat: IL-PS1 90-116-0002</p> <p style="text-align: center;"><small>Contains</small> FC FCC ID: RDF-SEYWAVE IC: 108234A-SEYWAVE</p> <p style="text-align: center;"> 90-116-0003</p> |
|---|---|

| | |
|---------|---|
| WARNING | <p>Operating the IL-PS1 outside of these specified limits may cause damage and will VOID the Warranty</p> |
|---------|---|

1.3 Compatible LED Strips

| Catalog Number | Part Number | Product Label |
|----------------|-------------|---|
| IL-LGT1 | 90-116-0003 |  |
| IL-LGT1C | 90-116-0004 |  |

| | |
|-------------|--|
| NOTE | Use only Illumadoor LED strips produced by BTR Controls. |
|-------------|--|

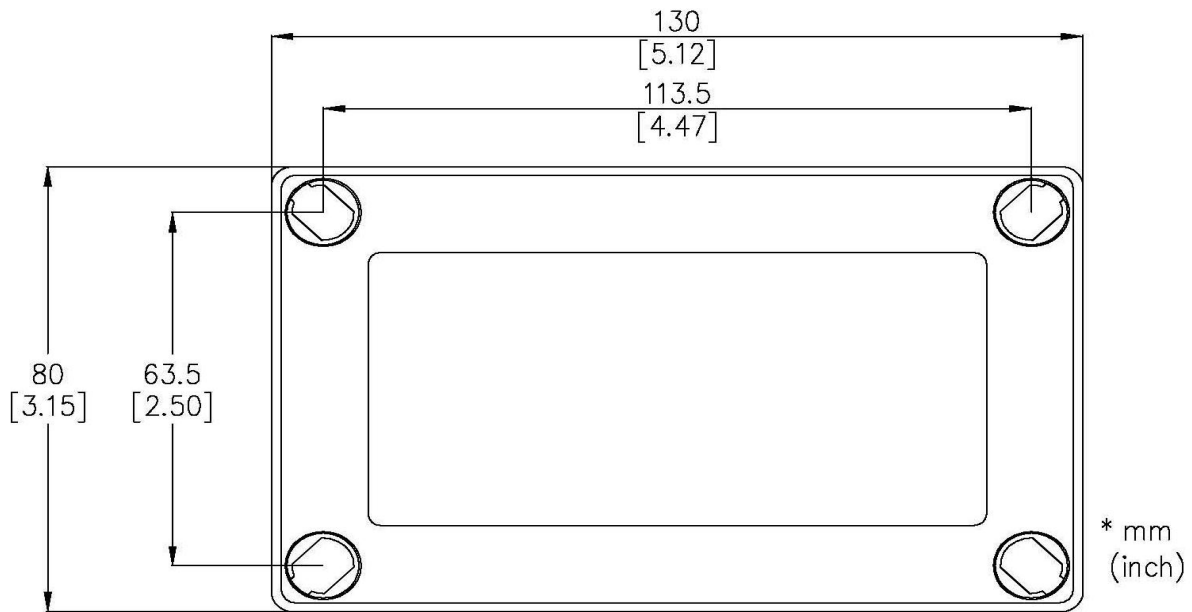
2.0 Installation

This section covers the Host installation.

- Section 2.1 - Mounting
- Section 2.2 - Wiring
- Section 2.3 - Power Up

WARNING

- The power supply should be mounted on the same side as the interfacing door controller!



| FIGURE | LENGTH | WIDTH | HEIGHT |
|--------|------------|-----------|-----------|
| A | 130 (5.12) | 80 (3.15) | 35 (1.38) |

Product Dimensions

2.1 Mounting

WARNING

- Turn power OFF before making any connections to the Power Supply.
- Stay within Specified Operating Conditions as shown in 1.2 above.
- Failure to follow above may cause damage to the Power Supply.

1. Plan for the installation by laying out the LED strips in the desired locations.
2. Use junction boxes to join the cables together on the LEDs that share the same functions.
3. Mount the power supply on the same side as the interfacing door controller in a sturdy location away from any interfering objects (see troubleshooting for object list)

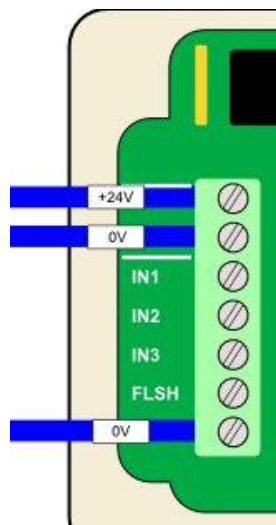
NOTE

- Do not mount the Power Supply in close proximity to other 2.4 GHz devices such as Wi-Fi routers or cordless telephones.
- The internal antenna must have a path for the signal to radiate.
- Contact BTR Controls if you are unsure of your installation environment.

2.2 Wiring

Power Connections

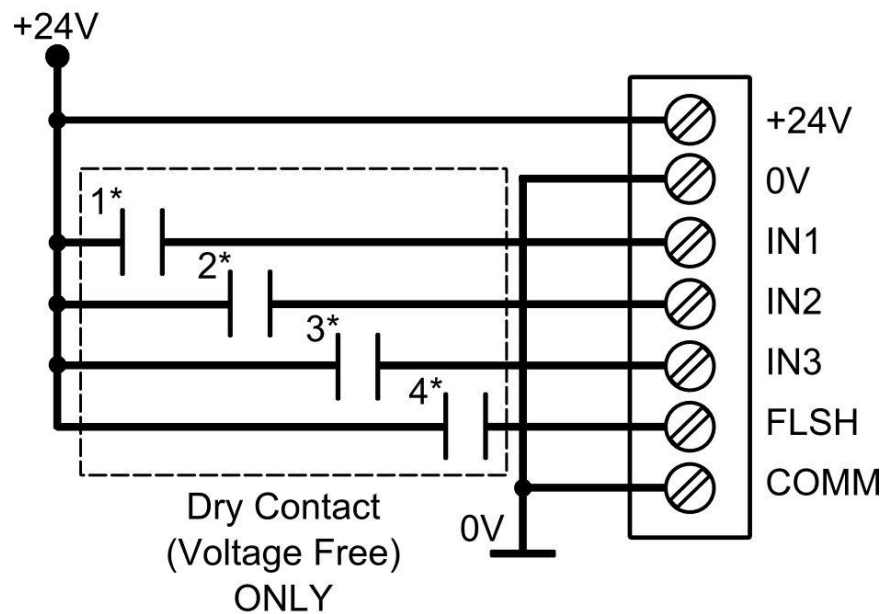
1. Run power cable from power source (24V AC/DC) to Power Supply
 - A. When connecting to a Digital Gateway II only a 2 conductor cable is needed
 - B. When connecting with other controllers, at least 6 conductors are needed
2. Connect +24V from the power source to the terminal labeled +24V
3. Connect 0V from the power source to the terminal labeled 0V
4. Connect 0V from the power source to the terminal labeled COMM



Input Connections for Non-Wireless Control

1. From the interfacing controller, connect one side of a dry contact to +24V and the other side to the power supply input. See I/O Table below for input to output mapping.
2. There are two ways to invoke an output to flash at 0.5 Hz.
 - a. Connecting a jumper from the Flash input to any other input (1, 2 or 3) will cause that input's corresponding output to flash each time it is enabled.
 - b. Connect one side of a dry contact (voltage free) to +24V and the other side to the Flash input. Each time this contact is enabled at the same time another input (1, 2 or 3) is enabled, that input's corresponding output will flash.

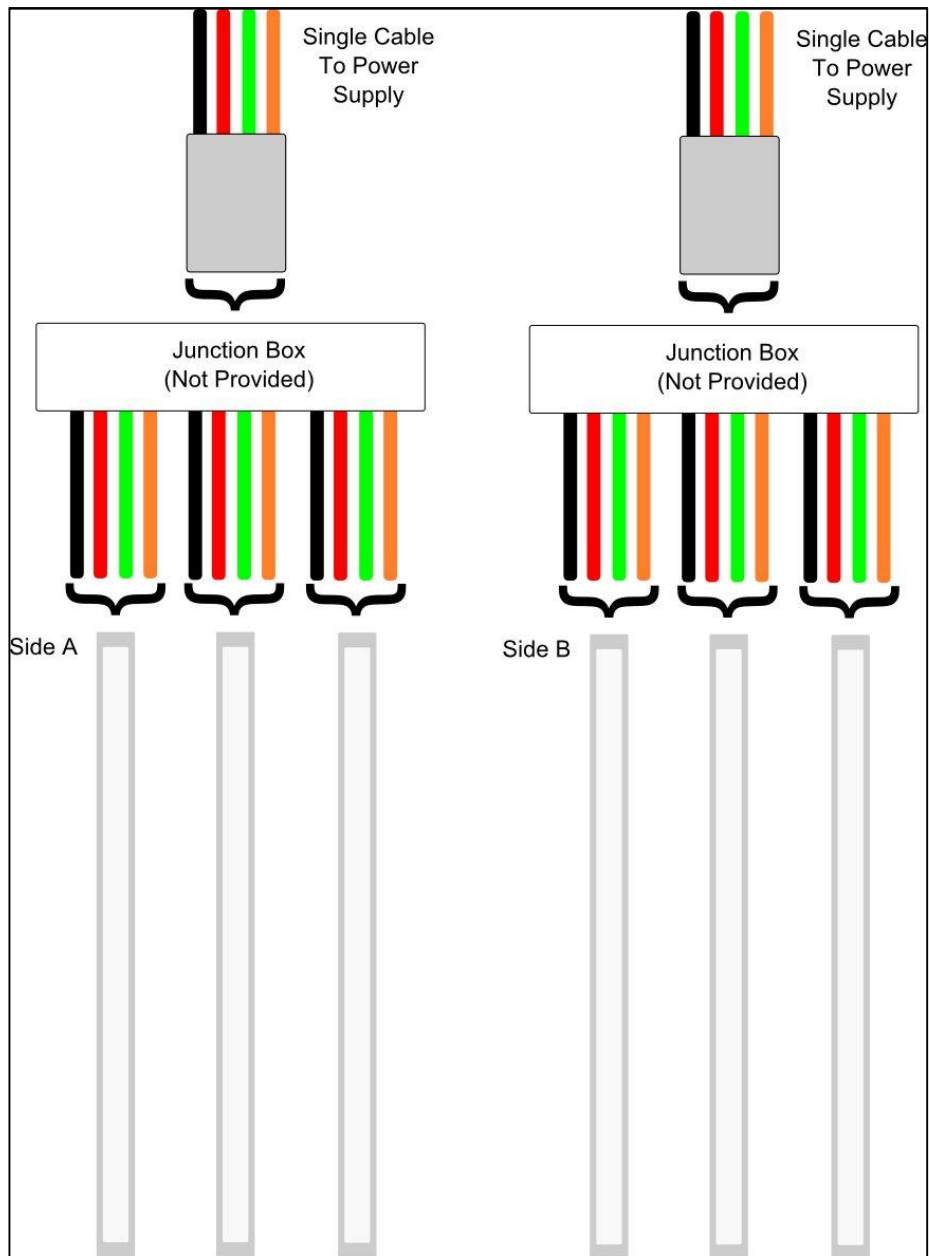
Inputs



Inputs (1-4) not required when paired with
Digital Gateway II

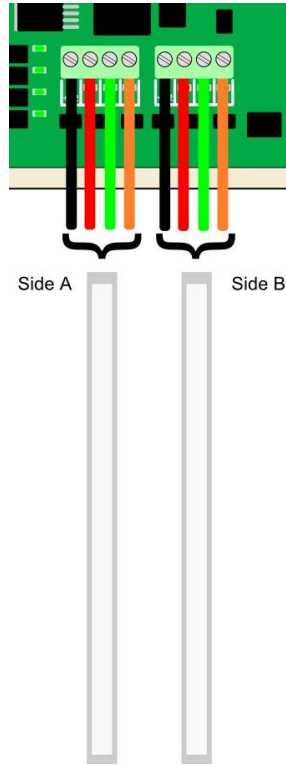
Output Connection to LED Strips

1. Connect up to three (3) LED strips to one - four (4) conductor cable using a junction box. The terminals in the power supply will only accommodate one cable per side.

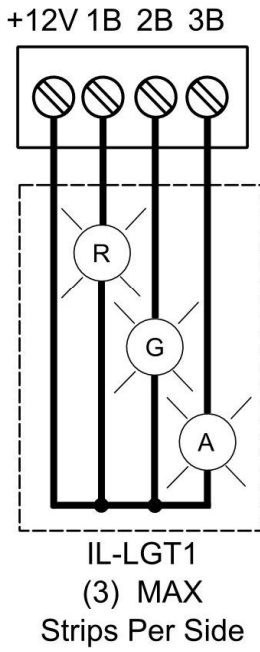
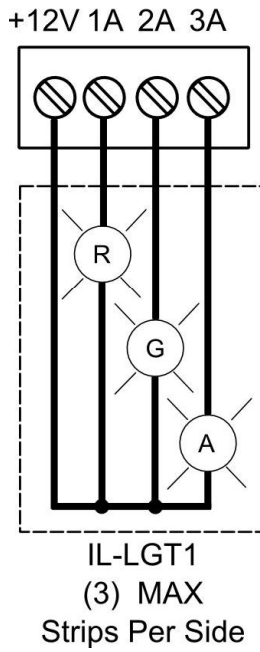


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2. Connect the single cable from each junction box to the output terminals "A" and/or "B" on the power supply.



Outputs



- IN1 (1*) activates Out 1A & 1B
- IN2 (2*) activates Out 2A & 2B
- IN3 (3*) activates Out 3A & 3B
- FLSH (4*) flashes activated Outputs

2.3 I/O Map

Standard I/O Map

| I/O Mapping | | | | | | |
|-------------|--------|--------|--------|--------|--------|--------|
| | OUT 1A | OUT 2A | OUT 3A | OUT 1B | OUT 2B | OUT 3B |
| IN1 | X | | | X | | |
| IN2 | | X | | | X | |
| IN3 | | | X | | | X |

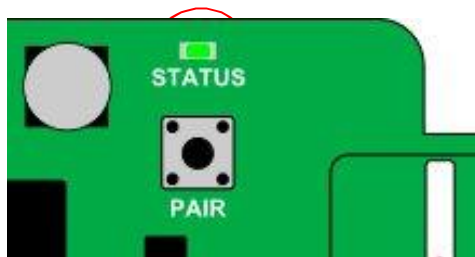
Standard I/O connections shown above. LED colors can be connected to different outputs to achieve different lighting/signaling needs.

2.4 Power Up

WARNING

Ensure that all connections have been made according to this Manual before applying power.

- 1) Check all connections to and from the power supply.
- 2) Apply power to the power supply.
- 3) Startup conditions:
 - a) Normal: **GREEN** status LED briefly turns ON then turns OFF.
 - b) Error: **GREEN** status LED remains ON.
- 4) The power supply is now ready to operate if in Normal condition.



3.0 Programming for Wireless Operation

This section provides the following information on programming with the DGII

- Section 3.1 – Pairing Power Supply to Digital Gateway II
- Section 3.2 – Programming Power Supply Outputs

NOTE

Only one (1) Illumadoor power supply can be wirelessly connected to a Digital Gateway II. Attempting to connect more than one (1) power supply will result in errors.

3.1 Pairing Power Supply to Digital Gateway II

1. Begin by having the Digital Gateway II (DGII) powered and ready. See the Digital Gateway II User Manual for detailed instruction.
2. Open the cover of the power supply enclosure and locate the Pairing button.
3. Enter the SeyWave menu on the DGII.
4. Start pairing mode from within the SeyWave menu on the DGII (DGII will start searching for compatible SeyWave devices)
5. Press the PAIR button on the power supply. The GREEN status LED will now flash once a second to indicate that it is in pairing mode and searching for a DGII.
6. When the selected Remote has been discovered and correctly paired (a process that should only take a few seconds), the DGII will display “Illumadoor Paired” on the display.
7. If the DGII was unable to discover and pair with the power supply, a message will be displayed stating that no SeyWave devices were found. Refer to Section 4.0 Troubleshooting in this Manual for pairing issues.
 - a. Note that the power supply will remain in pairing modes until it has been successfully paired. If a pairing attempt fails, cycle power on the power supply before re-attempting the pairing process.
8. Once the power supply has been correctly paired, the DGII must be restarted in order for the Illumadoor to operate. This is done by cycling power to or performing a RESET on the DGII.
 - a. A RESET is performed by holding the UP and DOWN arrows together on the DGII. A confirmation message will be displayed before the controller is RESET.

3.2. Programming Power Supply Outputs

NOTE

When wirelessly controlled via a connected DGII, the power supply outputs can be individually programmed to any available output function listed within the Illumadoor menu on the DGII. Otherwise the outputs are enabled/disabled by their corresponding inputs.

1. Begin by having the Digital Gateway II (DGII) powered and ready and the corresponding power supply paired
2. Enter the DGII menu by pressing the ENTER button from the idle screen
3. Press the DOWN button until the "System Config" menu is reached
4. Press ENTER to enter the "System Config" menu
 - a. A passcode may be required to enter this menu
5. Press the DOWN button until the "Options" sub-menu is highlighted
6. Press ENTER to enter the "Options" sub-menu
7. Press the DOWN button until the "Illumadoor" sub-menu is highlighted
8. Press ENTER to enter the "Illumadoor" sub-menu
9. Using the DOWN button, scroll through the list until the desired output is highlighted.
 - a. Output 1A or 1B
 - b. Output 2A or 2B
 - c. Output 3A or 3B
10. Press ENTER to configure the selected output
11. Select the desired output attribute to edit
 - a. Function
 - i. Select desired output function by pressing the ENTER button. Press and hold the ENTER button to return to the previous output menu.
 - b. Flash
 - i. Select desired flash operation by pressing the ENTER button. Press and hold the ENTER button to return to the previous output menu.
12. When finished, press and hold the ENTER button until the menu has been exited and the DGII has returned to the idle screen.

4.0 Troubleshooting

This section provides troubleshooting information as well as possible corrective actions for the Illumadoor Power Supply.

4.1 Error Signals

Hardware Error

On power up, for normal operation, the GREEN LEDs should illuminate momentarily and then turn OFF. If the GREEN LED remains ON, a hardware error has occurred and BTR Controls should be contacted.

Operational Error (System has been setup and operating)

Operational errors will be indicated by a fast blinking GREEN LED. This occurs when one of the outputs is shorted or the incoming voltage is below operating level.

4.2 Possible Solutions

| Reported Operating Errors | | |
|---------------------------|--|--|
| Cause | Description | Possible Solutions |
| Output Shorted | One of the outputs is shorted (Output enabled but LED is off) | <ul style="list-style-type: none">• Check the wiring to the power supply and the wiring to the LED strip in question |
| Incoming Voltage Low | The incoming voltage is too low to operate (Output enabled but LED is off) | <ul style="list-style-type: none">• Ensure that the incoming voltage is within the specified operating parameters• Verify that none of the outputs are shorted or have more than the maximum number for LEDs connected to it. |

4.3 Other General Troubleshooting Ideas

1. Experiencing limited or degraded RF range.
 - Ensure that the Power Supply has been mounted according to section 2.1 of this manual.
 - Try to minimize the number of solid objects that the RF signal must pass through. Each intersection diminishes any RF signal.
 - Re-pair the power supply to the DGII.
 - Power supply should be positioned on the same side as a DGII for maximum signal strength.
 - Contact BTR Controls if additional assistance is needed.

4.4 Technical Assistance

Contact:

BTR Controls, Inc.
1570 Todd Farm Dr.
Elgin, IL 60123
(847)608-9500

"This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."*