cellgate

Watchman 450
Installation Guide

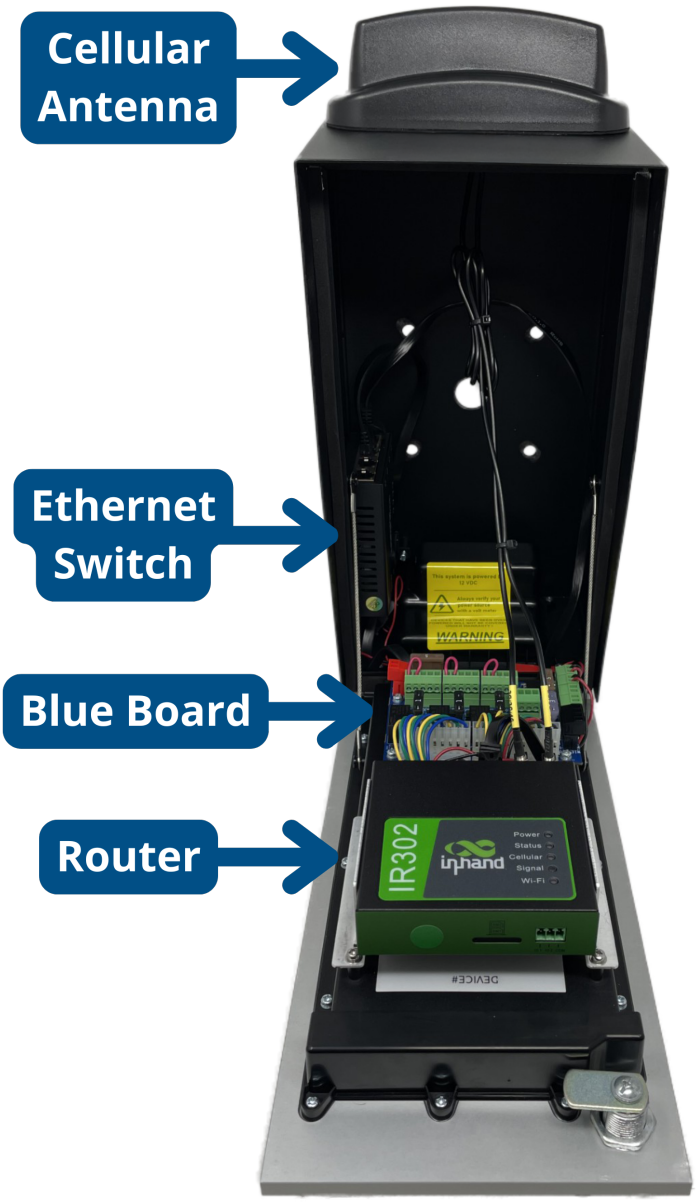
Created February 2025

NDAA COMPLIANT

Contents

Items Included

- Watchman 450 Unit
- Blue Board
- Ethernet Switch
- InHand Router
- 12 Volt DC Power Supply
- Keys
- Flangenuts 1/4” (x4)
- Carriage Bolts 1/4” x 1” (x4)
- Customer Information Packet



Operating Temperatures
-20° to 55° C
-4° to 131° F

Wiring Guidelines	
Gauge Wire	**Wire Run**
18	25 feet
16	50 feet
12	60 feet

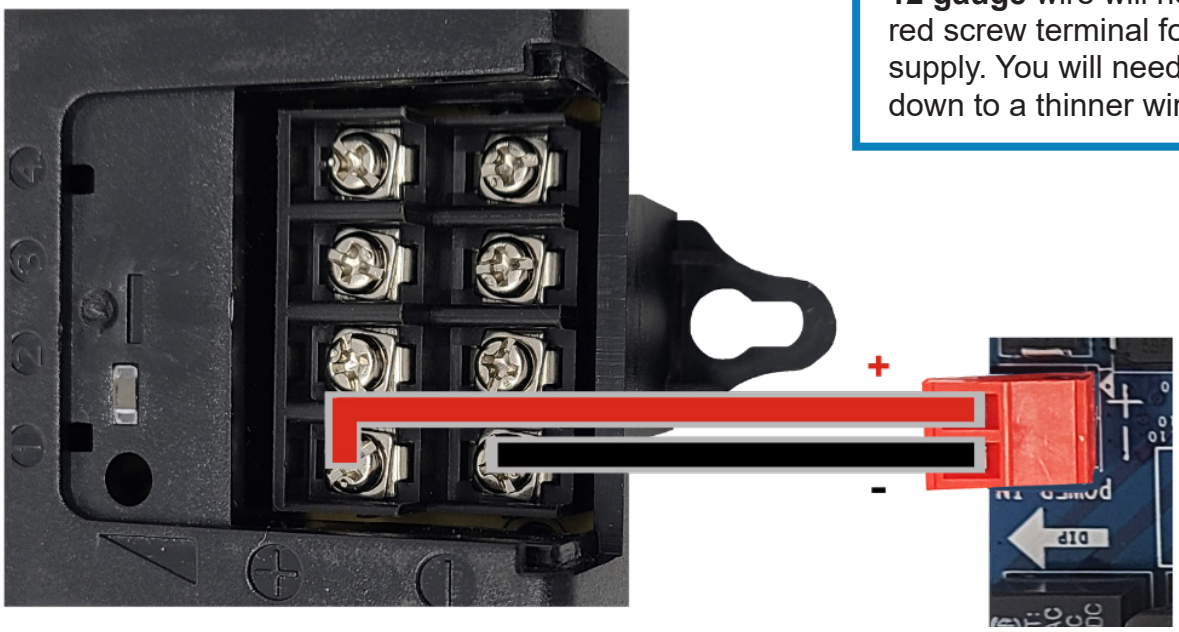
We do not recommend running wires over 60 feet.

Required wiring: 6 conductor stranded and shielded for main device, and 4 conductor stranded and shielded for optional Wiegand devices.

Pay attention to polarity. The system uses DC power.

Standard Power Wiring

Most devices will be powered using the (PWR-200) 12V DC 5 Amp Transformer.
Ensure you wire the positive to the + and negative to the -



12 gauge wire will not fit in the red screw terminal for the power supply. You will need to splice it down to a thinner wire.

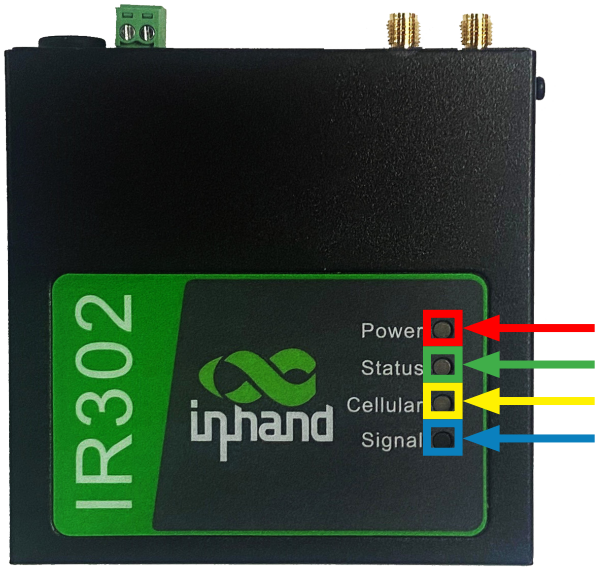
Use the Type-B *grounded* plug that is supplied with the transformer.

For solar power wiring instructions, please contact CellGate.

InHand Router

For Use in W450 Version: AA1WPE-ATT / AA1WPE-VZN

Product ID: M780



Power: Indicates the device is on
Status: Indicates device state/troubles
Cellular: Indicates device communication
Signal: Indicates strength of signal

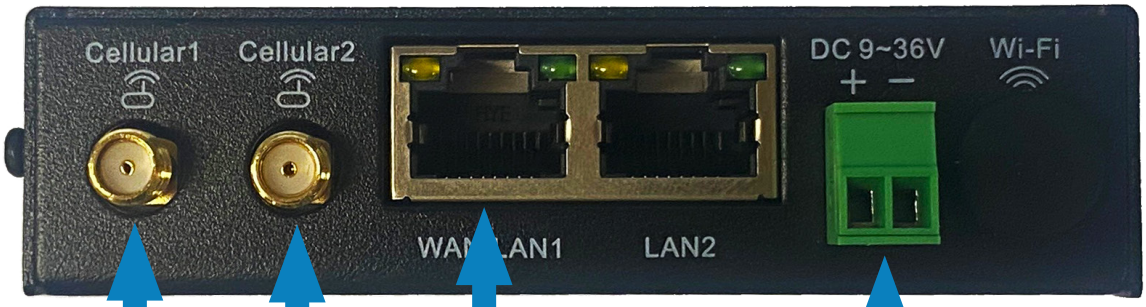
Power	Status	Cellular	Description
Off	Off	Off	Powered Off
On	Off	Off	System Failure
On	On	Off	Module or SIM Card Not Recognized
On	On	Blinking	Dialing
On	On	On	Dialing Success
On	Blinking	On	Upgrading
On	Blink > On	On	Reset

Signal	Description
Red	Signal 0 - 10 (Bad)
Yellow	Signal 11 - 20 (Decent)
Green	Signal 21 - 30 (Good)

Not for use with this device

Do not remove the SIM card tray unless specifically advised by tech support.

The SIM card tray contains both AT&T and Verizon SIM cards. They can only be swapped online by tech support.



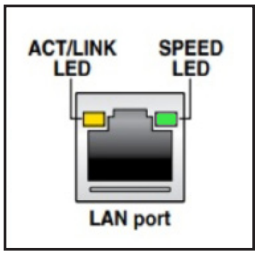
Cellular 1 & 2: Directly connected to antenna

WAN / LAN1: Plugs into the ethernet switch

Power Block: 12V DC is applied from the blue board

Activity	Description
Off	No Network Connection
On	Network Connection
Blinking	Network Activity

Speed	Description
Off	No Cell Connection
On	Cell Connection
Blinking	Cell Activity

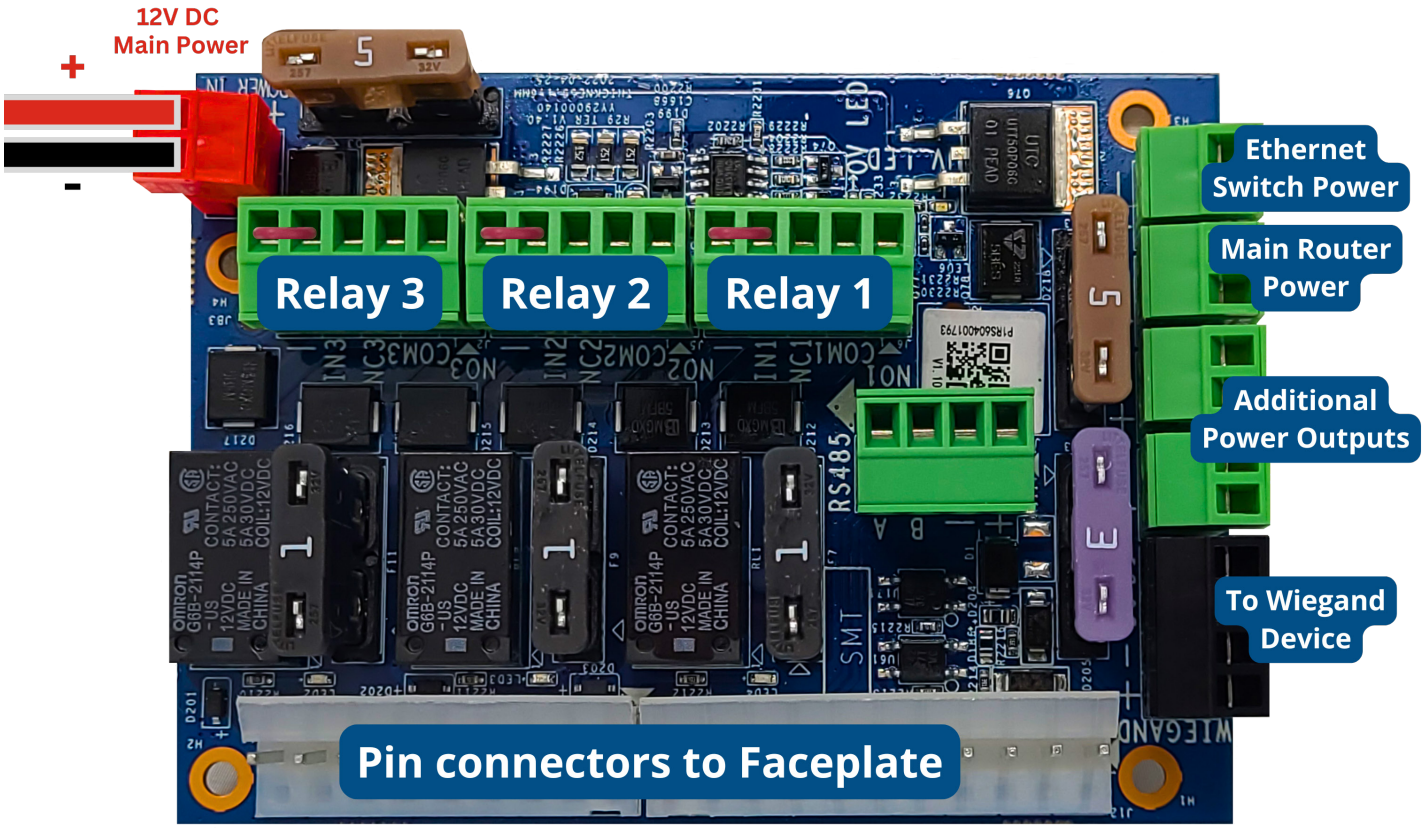


Blue Board

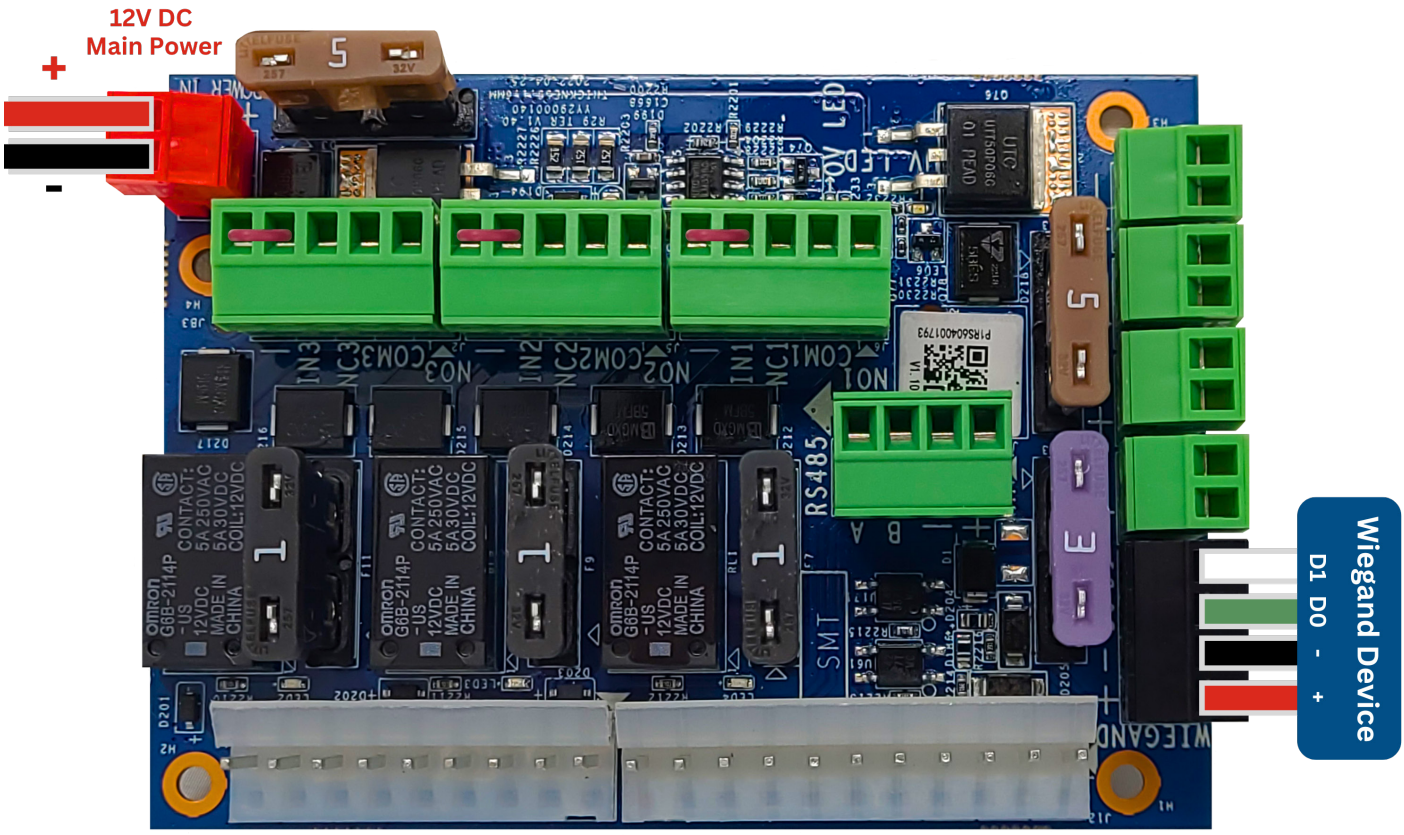
Below is the blue board inside the device. It provides power to the router and other accessories, such as cameras. It's also the central control interface between the faceplate and the router.

- Wire main power from transformer to the power connector on the blue board.
- Connect gate trigger wires from the Normally Open (NO) and Common (C) to the free exit or exit terminals on the gate operator.
- Connect the gate status wires on the 5-pin connector on the main relay and input plug to the magnetic switch or Dry Contact, Normally Closed (NC) relay on the gate operator.
- If using an optional 26-bit reader (keypad, card reader, RFID, or clicker), wire the device to the Wiegand connection on the blue board.
- Use the camera guide if adding an optional external camera.

Activate using test credentials on the Activation and Test Process document.

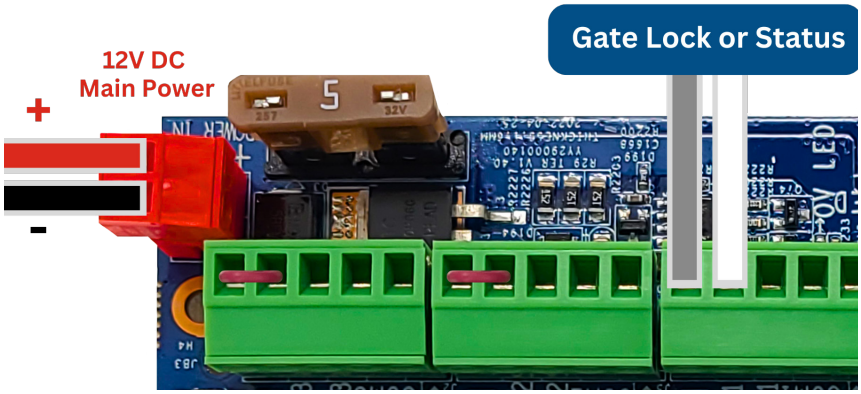


Wiegand Wiring



Gate Status from a Gate Operator

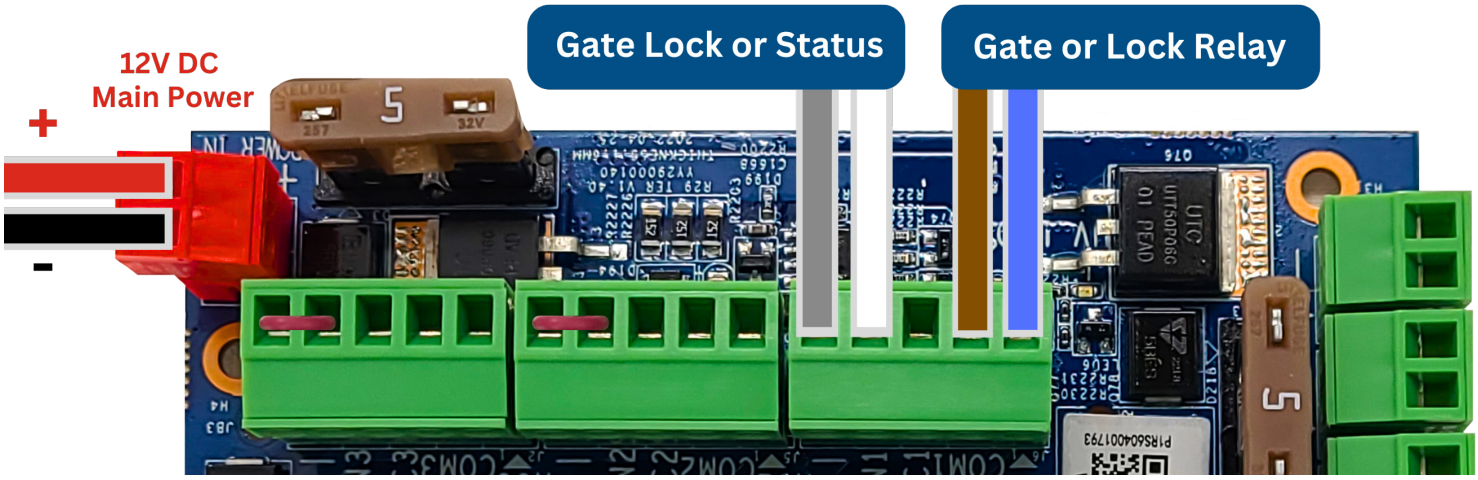
You can monitor the status of the gate by wiring a dry contact output from the gate operator into an input on the blue board. You will likely need to program the output of the gate operator.



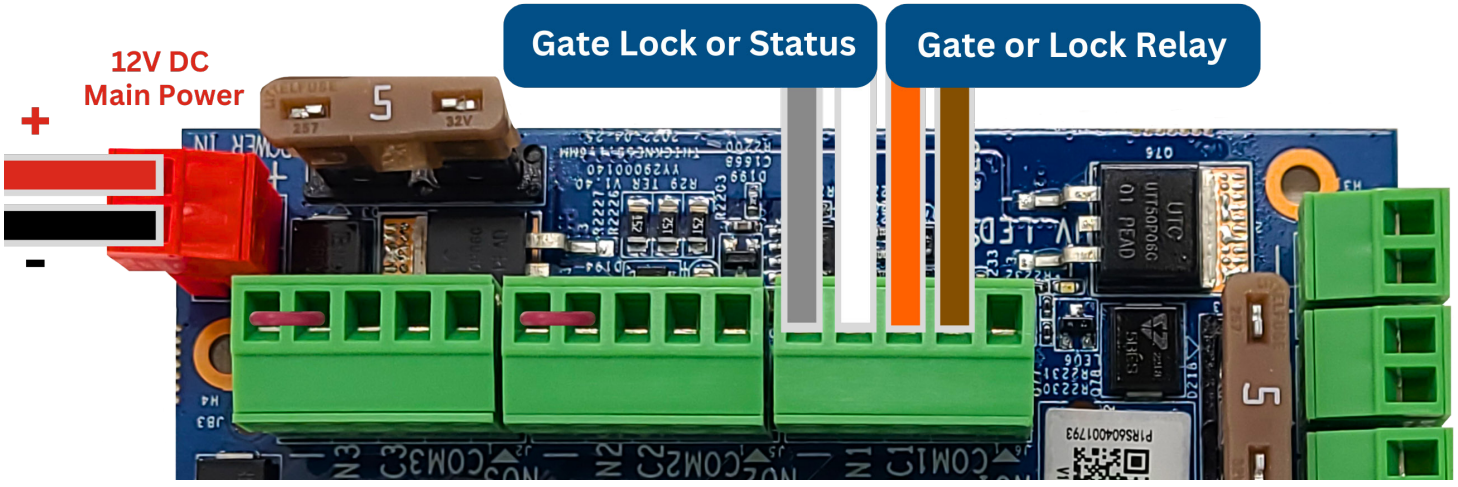
Warning: You must wire into a ***DRY CONTACT*** on the Gate Operator. Applying power to the input on the blue board will damage it.

Gate statuses can be inverted. If needed, please call CellGate to invert.

Dry Contact Relay, Normally Open

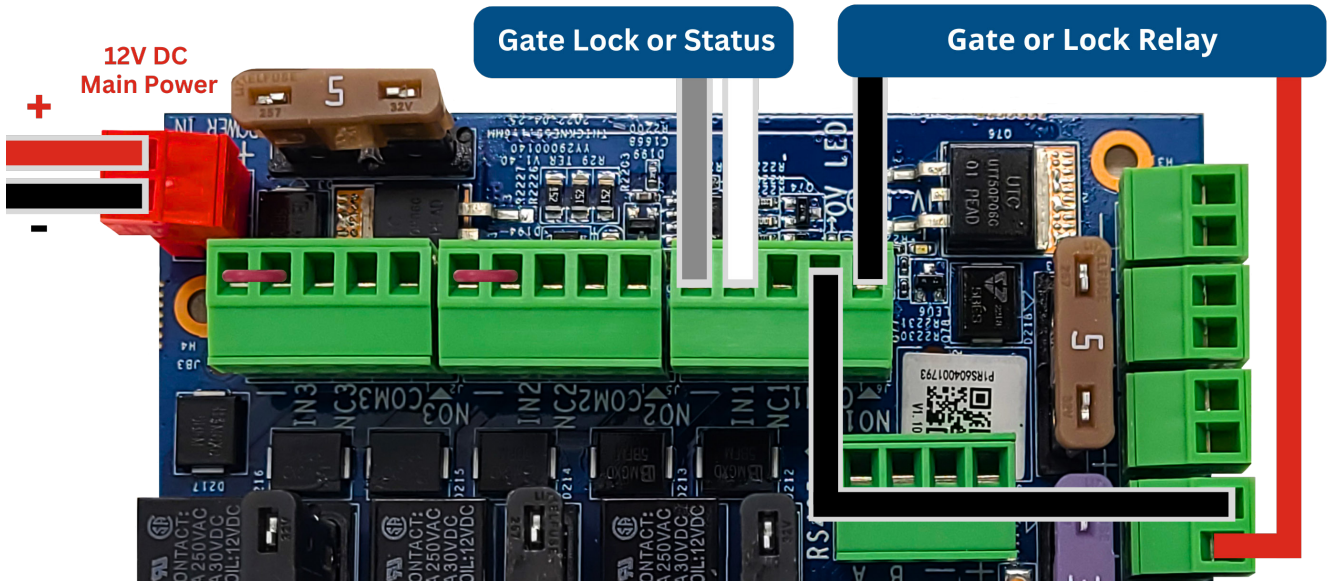


Dry Contact Relay, Normally Closed

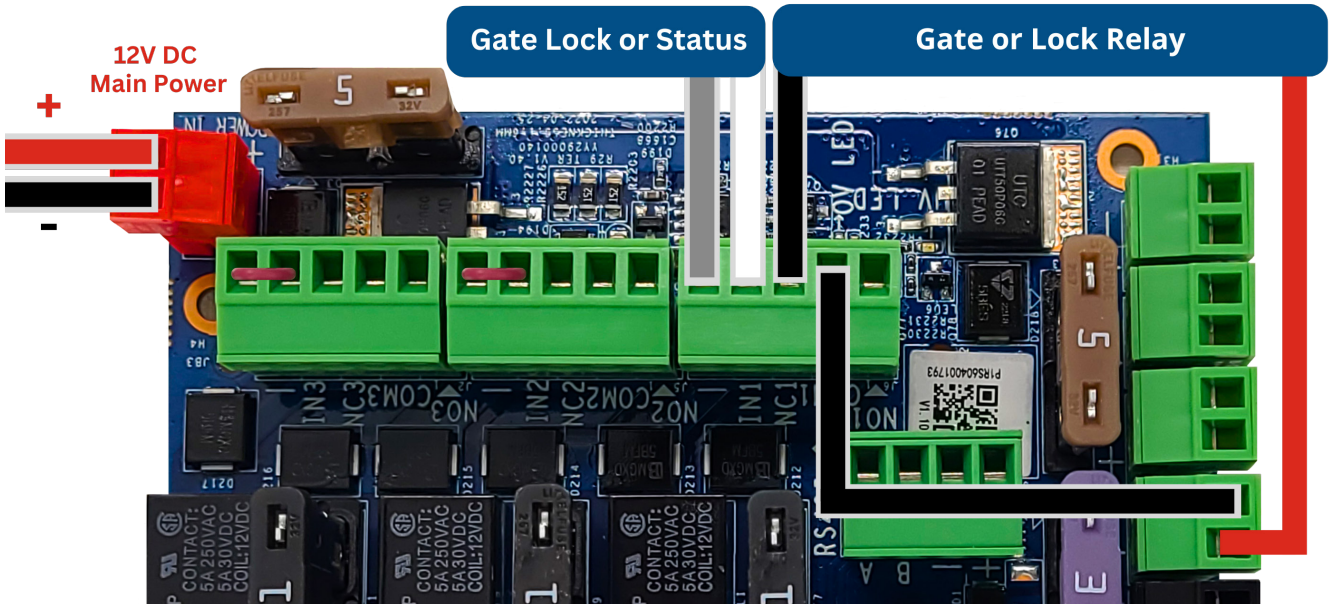


You must use a diode to maintain warranty. Contact CellGate for diode instructions.

Wet Contact Relay, Normally Open

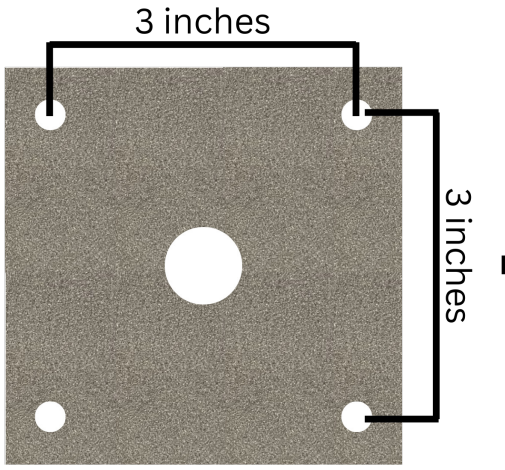


Wet Contact Relay, Normally Closed



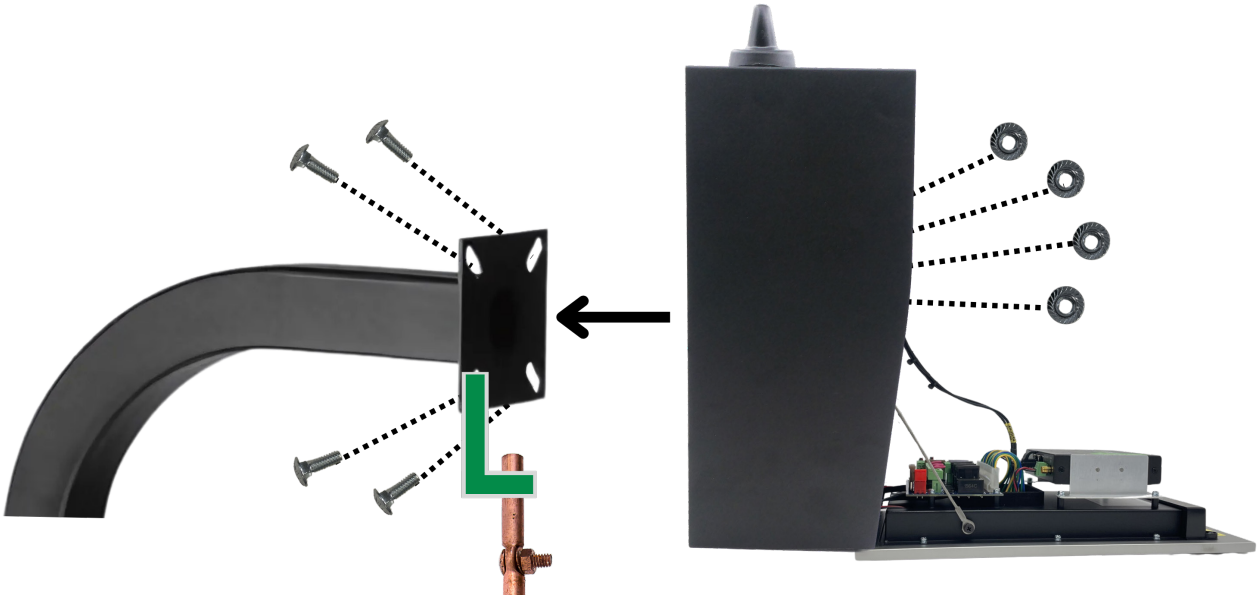
Mounting to a Pedestal

If a flush mount is preferred, please contact CellGate for instructions.



Corner holes are 5mm in diameter.

Gasket is already attached to the back of the device.



Attach a 14-gauge grounding wire from one of the carriage bolts to a grounding rod.