cellgate

2024

Quick Install Guide

AA1MLPE-ATT, AA1MLPE-VZN, AA1MLPE-INT, AA1MLPE-VPN, AA1MLPE-2X-ATT, AA1MLPE-2X-VZN, AA1MLPE-2X-INT, AA1MLPE-2X-VPN

CellGate Support: (972) 231-1999, Option 2

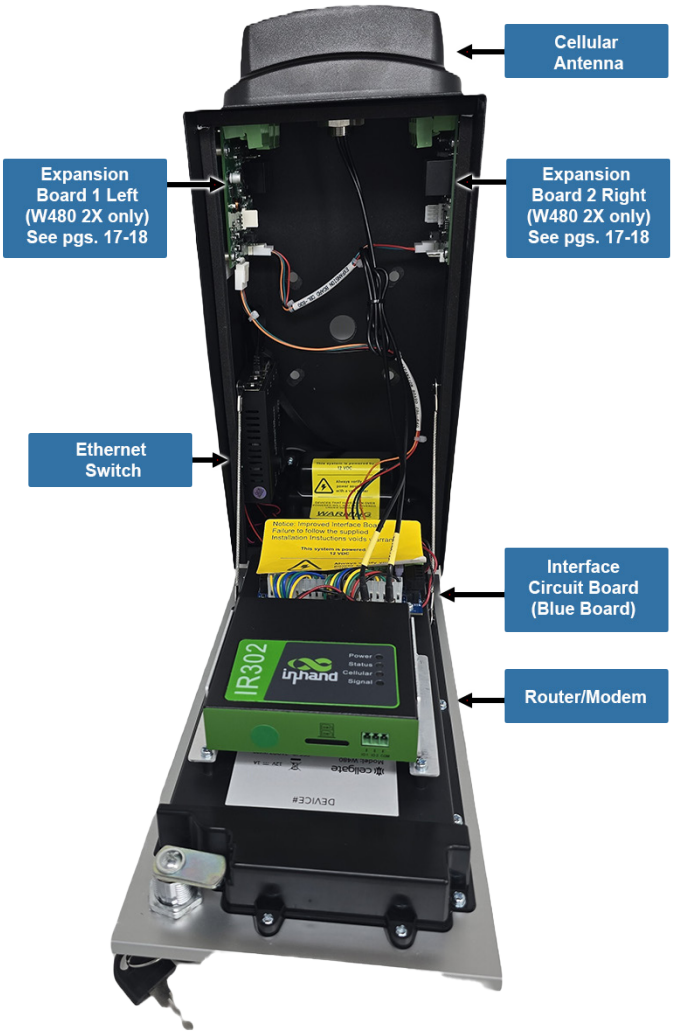
Table of Contents

Items Included in Kit

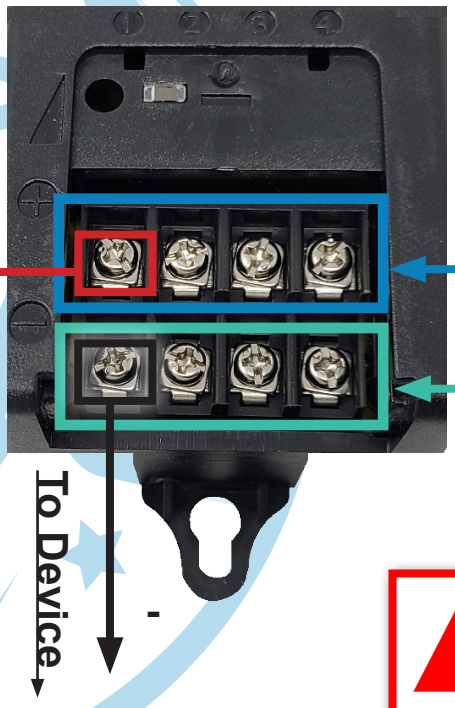
The following items are included in your W480 kit.

- Watchman 480 Unit (or W480 2X)
- Ethernet Switch
- Blue Board
- Router/Modem (InHand or Pepwave)
- 12 Volt DC Power Supply
- Gate Sensor
- Keys
- Nuts **X 4**
- Bolts **X 4**
- Installation Guide
- Customer Information Packet

Watchman W480 Unit



Power Supply Wiring



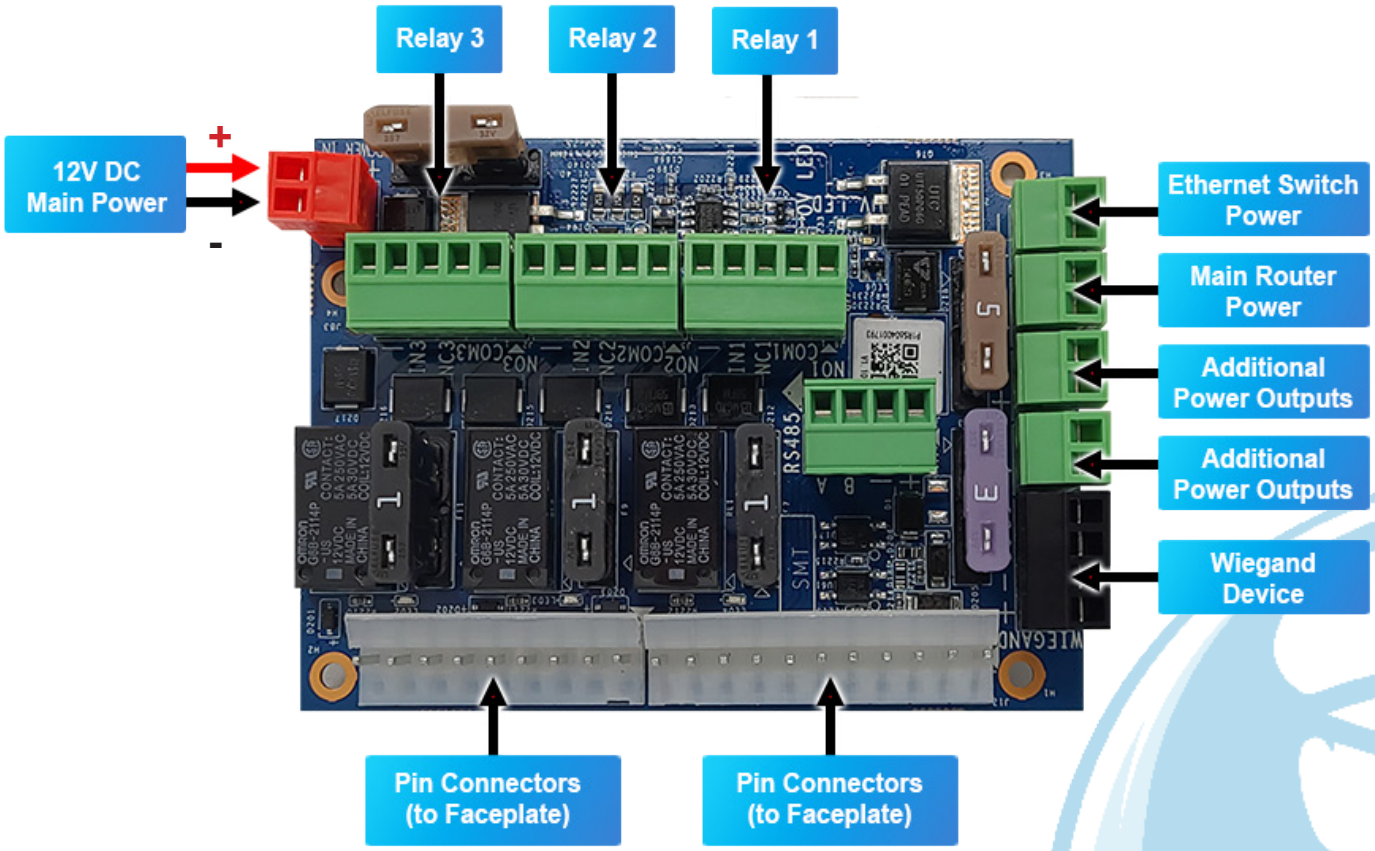
Pay attention to polarity.
The system uses DC power.

Recommended wiring: 18/6 **stranded** for main device, and 18/4 **stranded** for optional Wiegand devices.

Main Board

Blue Board Version

Below is the Main Board located inside the device. It provides power to the router and other accessories such as cameras. It is also the central control interface between the faceplate and the router.



Wiring Guidelines	
Gauge Wire	**Wire Run (Distance)**
18 gauge	**25 ft**
16 gauge	**50 ft**
12 gauge	**60 ft**

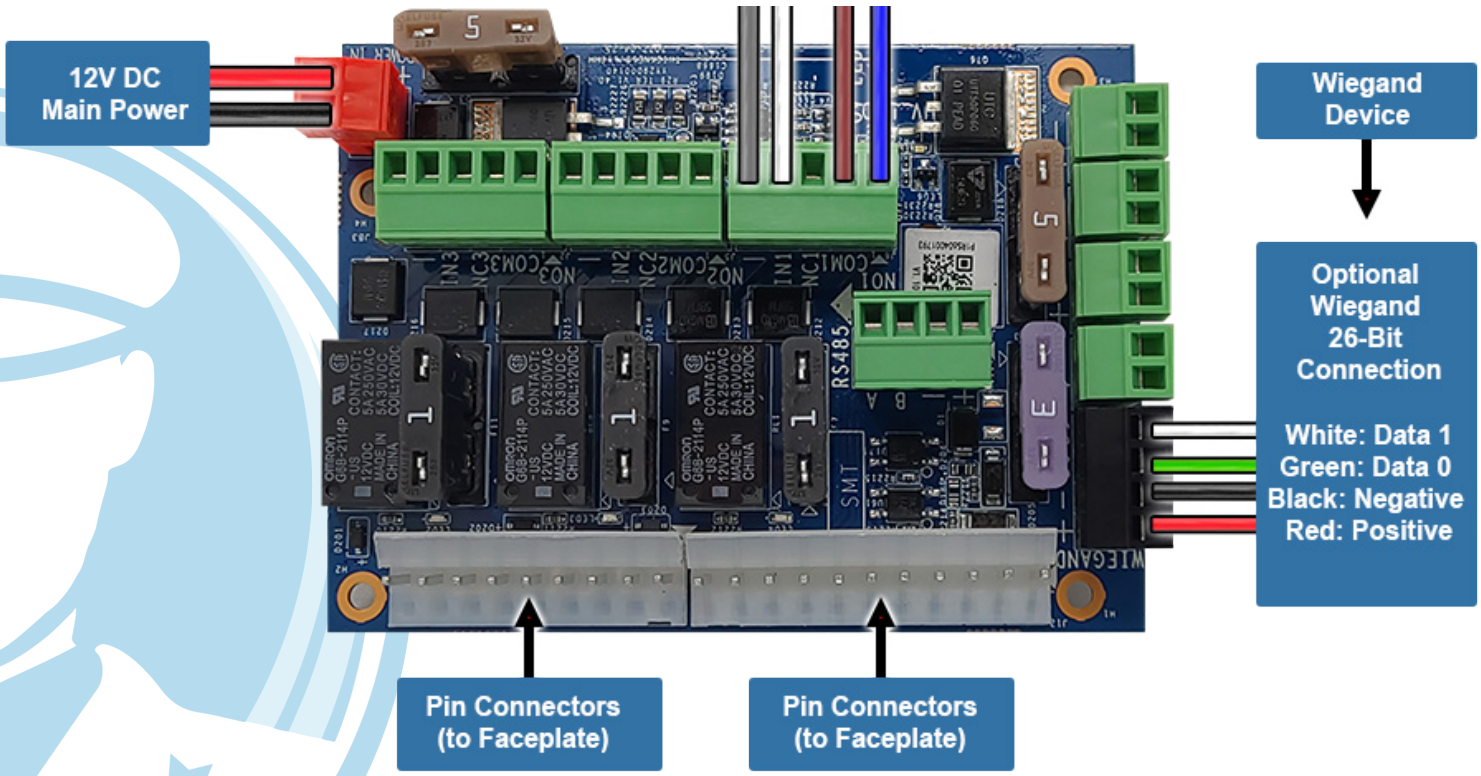
NOTE **12 gauge** wire will not fit in the screw terminal for the power supply. You will need to splice it down to a thinner wire.

Wiring Diagram

Blue Board Wiring Details

1. Wire main power from transformer to the power connector on the circuit board.
2. Connect gate trigger wires from the Normally Open (NO) and Common (C) to the free exit or exit terminals on the gate operator. See pages 11-14 for details.
3. Connect the gate status wires on the 6-pin connector on the main relay and input plug to the magnetic switch or Dry Contact, Normally Closed (NC) relay on the gate operator.
4. If using an optional 26-bit reader (keypad, card reader, RFID, or clicker), wire the device to the Wiegand connection on the interface circuit board.
5. Use Camera Guide if adding optional external camera.

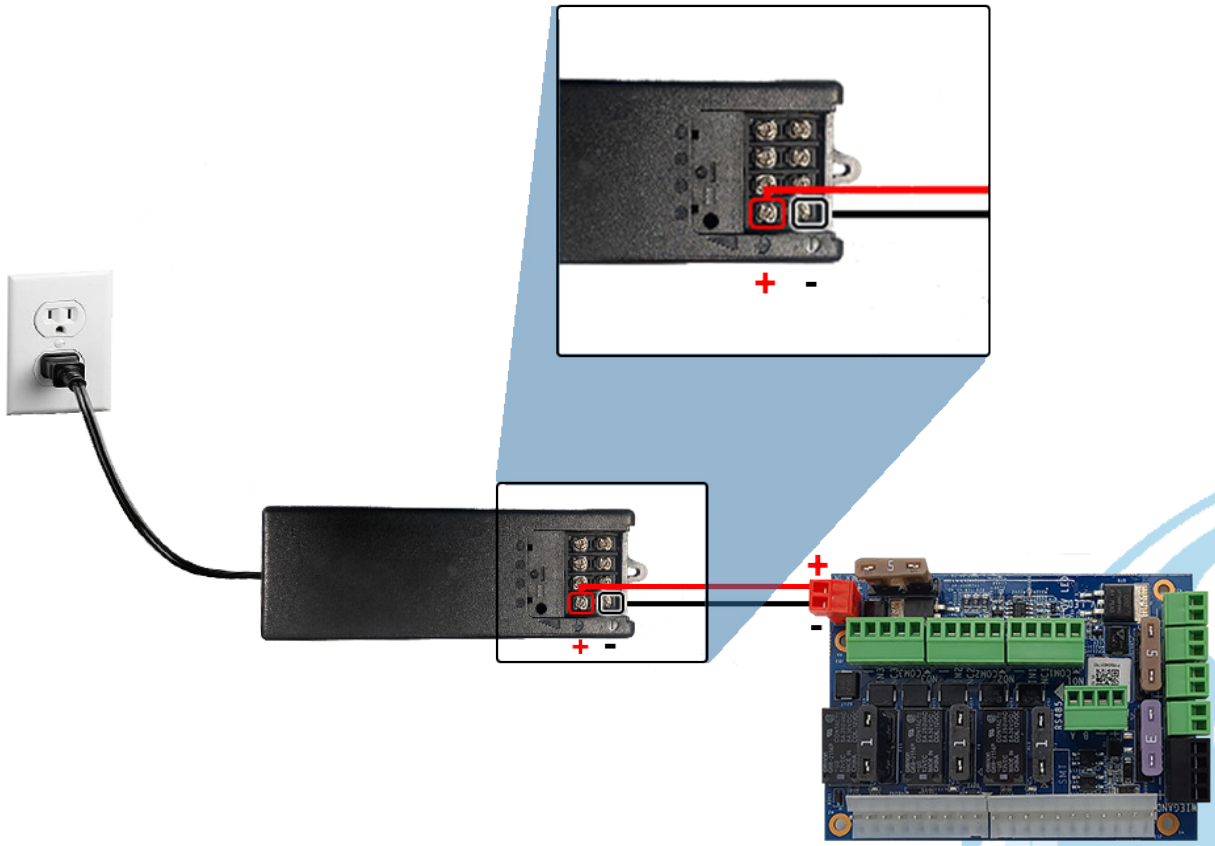
Activate using test credentials on the Activation and Test Process document.



Power Wiring

Using the 12 Volt DC Transformer

Most devices will be powered using the (PWR-200) 12V DC 5 Amp Transformer. Below is a diagram of the wiring to the device. Polarity is labeled on the board and also on the transformer. Ensure you wire the positive to the + and negative to the -



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

Power Wiring

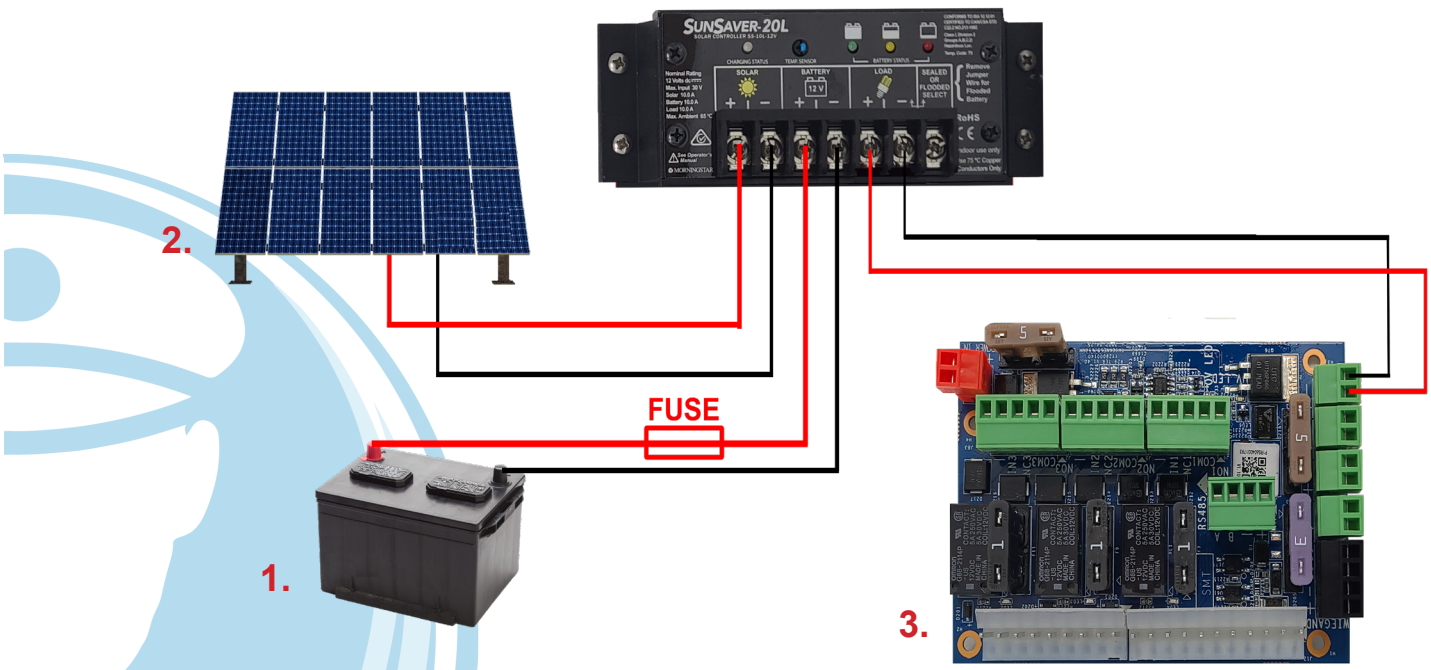
Using the 20L SunSaver Solar Charge Controller

If your device is being powered by solar panels, the installation process will be as shown below. Unlike the transformer power wiring, the SunSaver must be wired to the green plug on the top right of the blue board. The polarity is shown in the diagram.

Wiring Order

When wiring up the SunSaver, follow the order below for connecting each component.

1. Battery
2. Solar Panel(s)
3. Blue Board



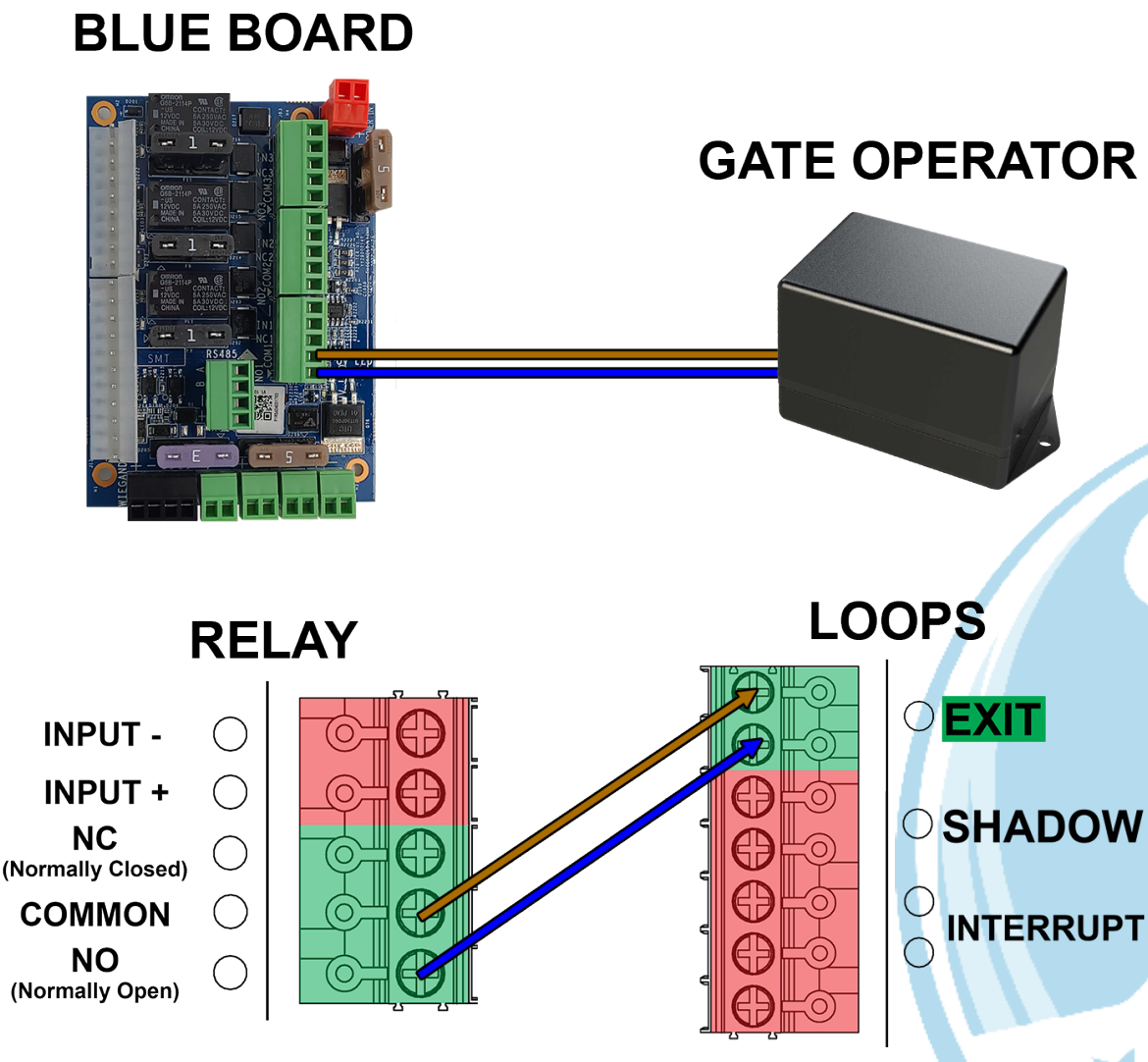
NOTE The power to the Blue Board **must** be wired to the green plug on the top right with a solar device.

Wiring Diagram

Blue Board to Gate Operator

Make the following wire connections:

- Connect the W480 Common Ground to the Gate Operator Common Ground exit.
- Connect the W480 Normally Open to the Gate Operator Normally Open exit.



InHand Cellular Connection

For Use in W480 Version: AA1MLPE ATT, AA1MLPE VZN

Product ID: M780

Top of Cellular Router

LED Indicators

The LED lights shown below indicate crucial information about the router. For further details see the tables below.

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

POWER (Red)	STATUS (Green)	CELLULAR (Yellow)	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	Off	Reset

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

InHand Cellular Connection

For Use in W480 Version: AA1MLPE ATT, AA1MLPE VZN

Product ID: M780

Front of Cellular Router

Not for use with this device.

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

NOTE

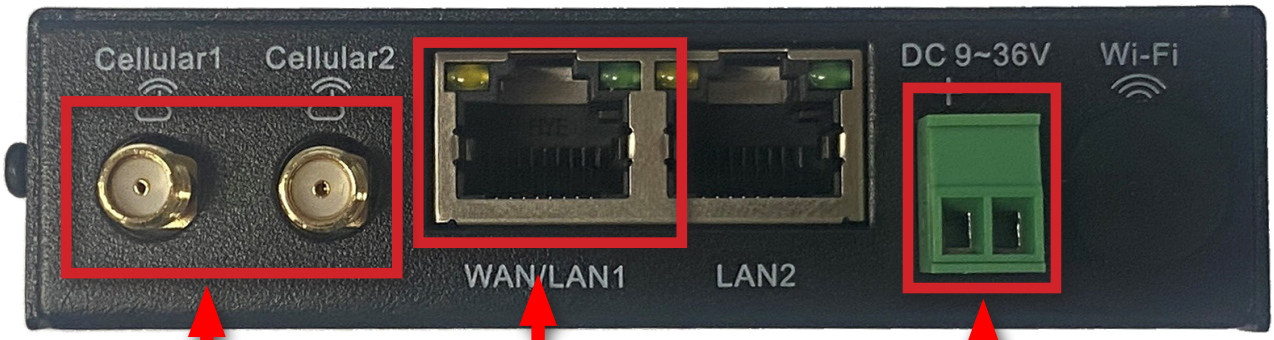
The SIM card tray contains both AT&T and Verizon SIM cards. They can only be swapped online by tech support.

InHand Cellular Connection

For Use in W480 Version: AA1MLPE ATT, AA1MLPE VZN

Product ID: M780

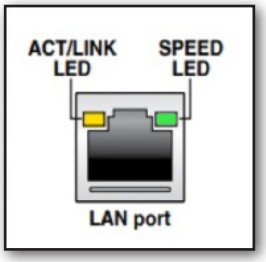
Back of Cellular Router



Cell1/2: Directly connected to antenna.

WAN/LAN1: Plugs into Ethernet switch.

Power Block: 12V DC is applied from main board.



Activity (Yellow)	Description
Off	No Network Connection
On	Network Connection
Blinking	Network Activity

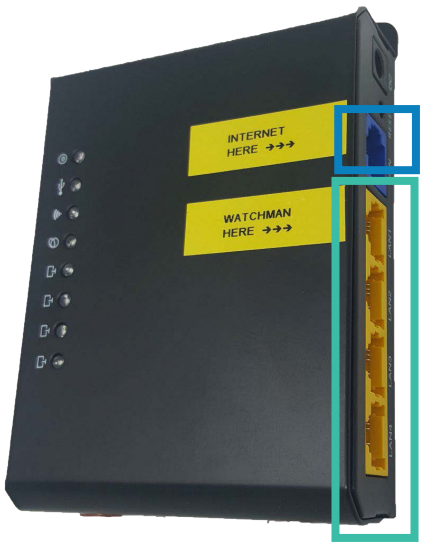
Speed (Green)	Description
Off	No Cell Connection
On	Cell Connection
Blinking	Cell Activity

Internet Router Connection

For Use in W480 Version: AA1MLPE INT

Product ID: M730

NOTE Internet Router supports external camera. VPN does not.



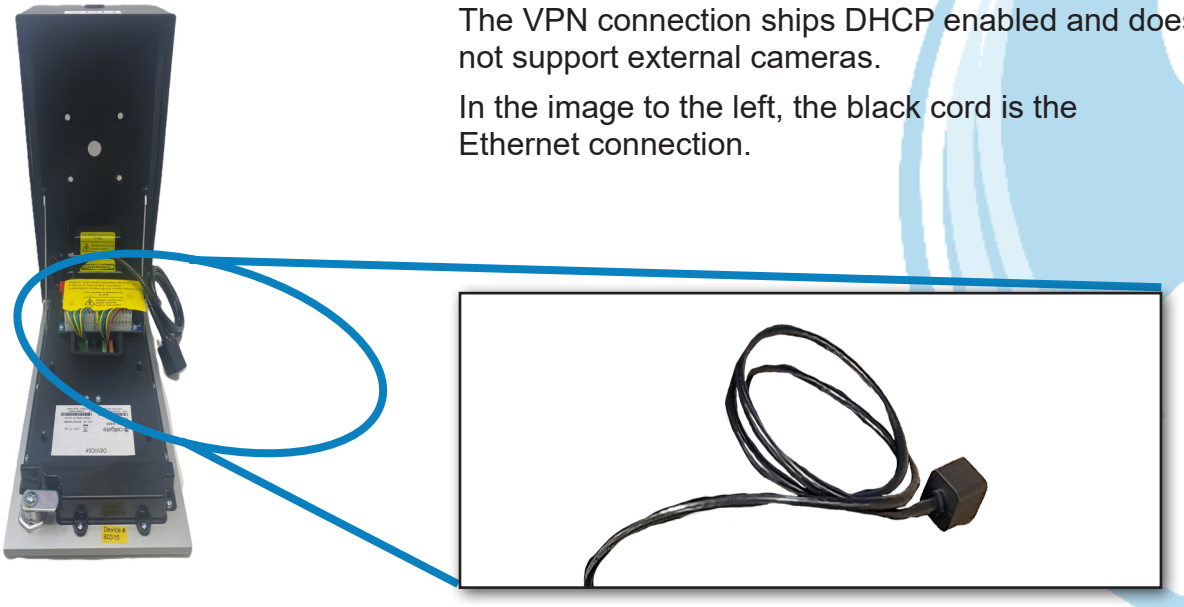
Plug customer's Internet into the blue port.

Plug Watchman into any yellow port.

Plug optional external cameras into any yellow port.

VPN Connection

For Use in W480 Version: AA1MLPE VPN

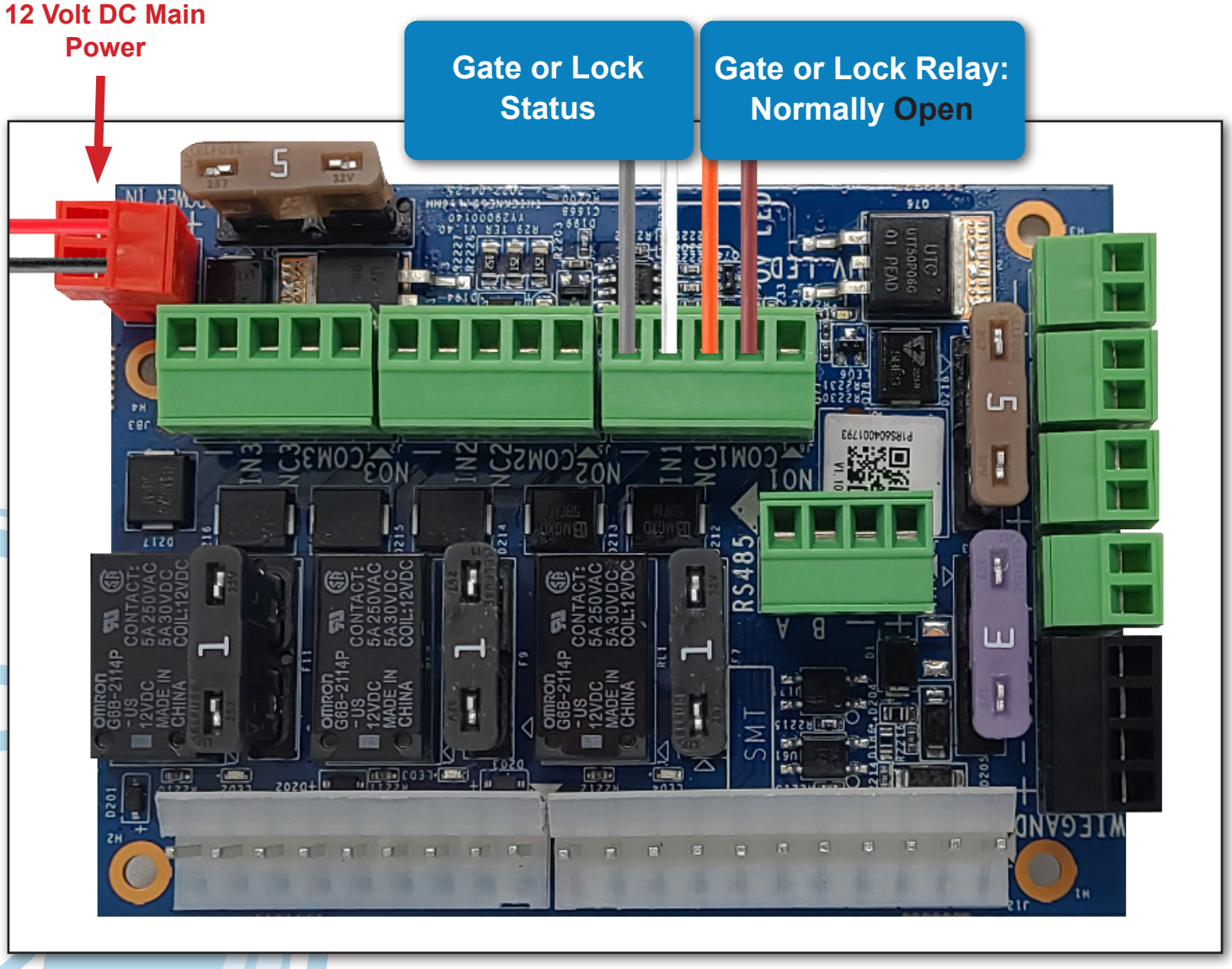


The VPN connection ships DHCP enabled and does not support external cameras.

In the image to the left, the black cord is the Ethernet connection.

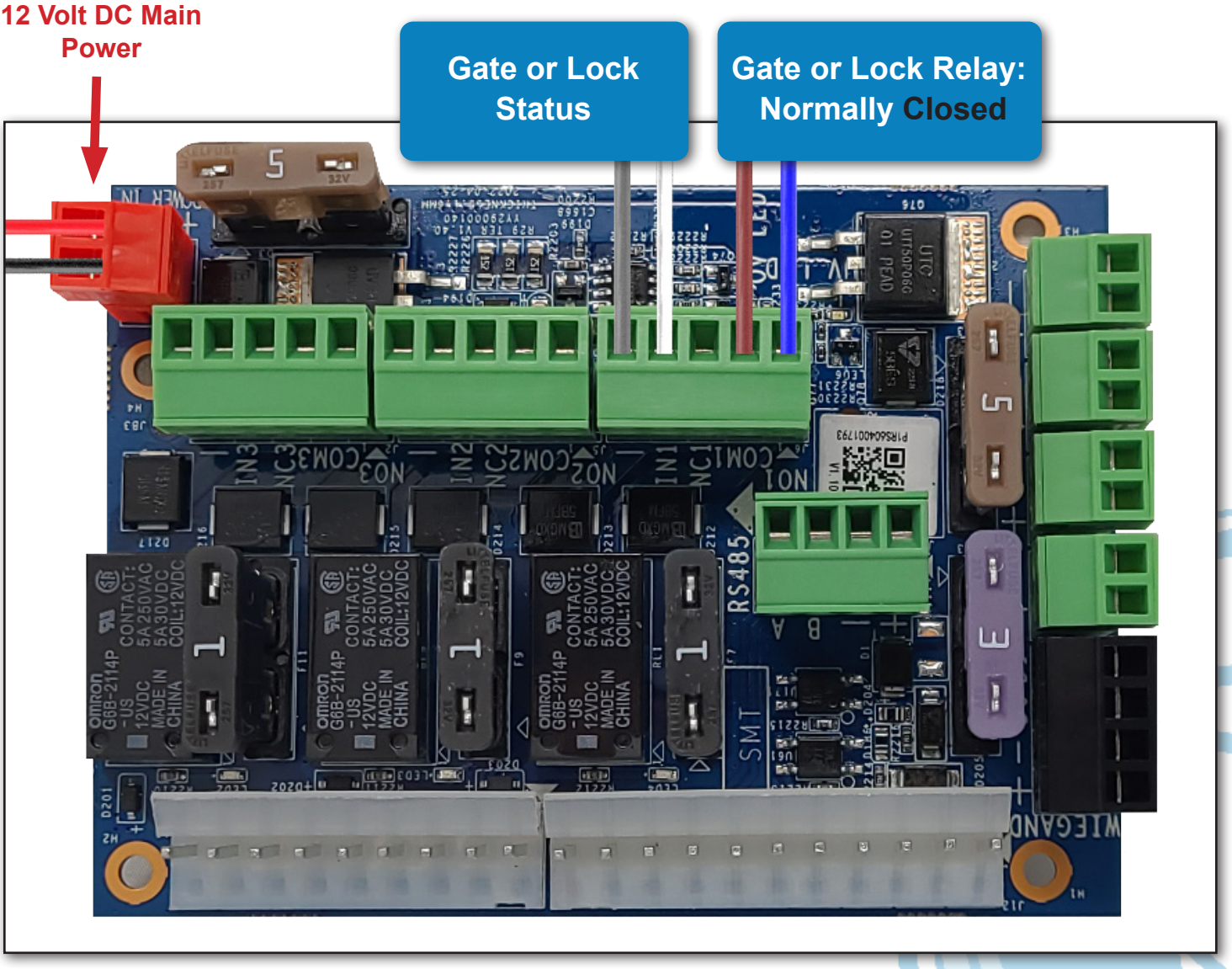
Dry Contact Relay: Normally Open

No Voltage to Lock or Gate



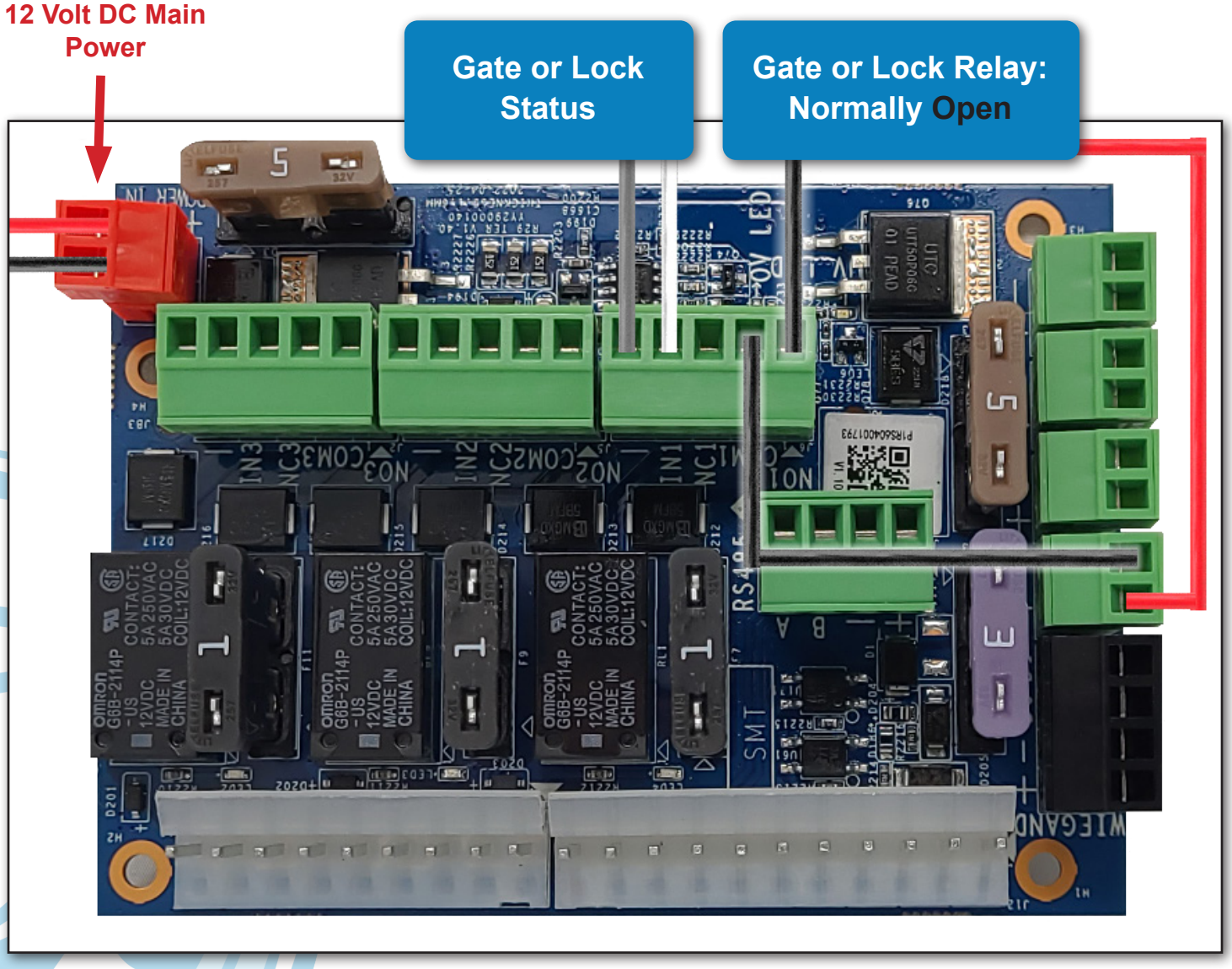
Dry Contact Relay: Normally Closed

No Voltage to Lock or Gate



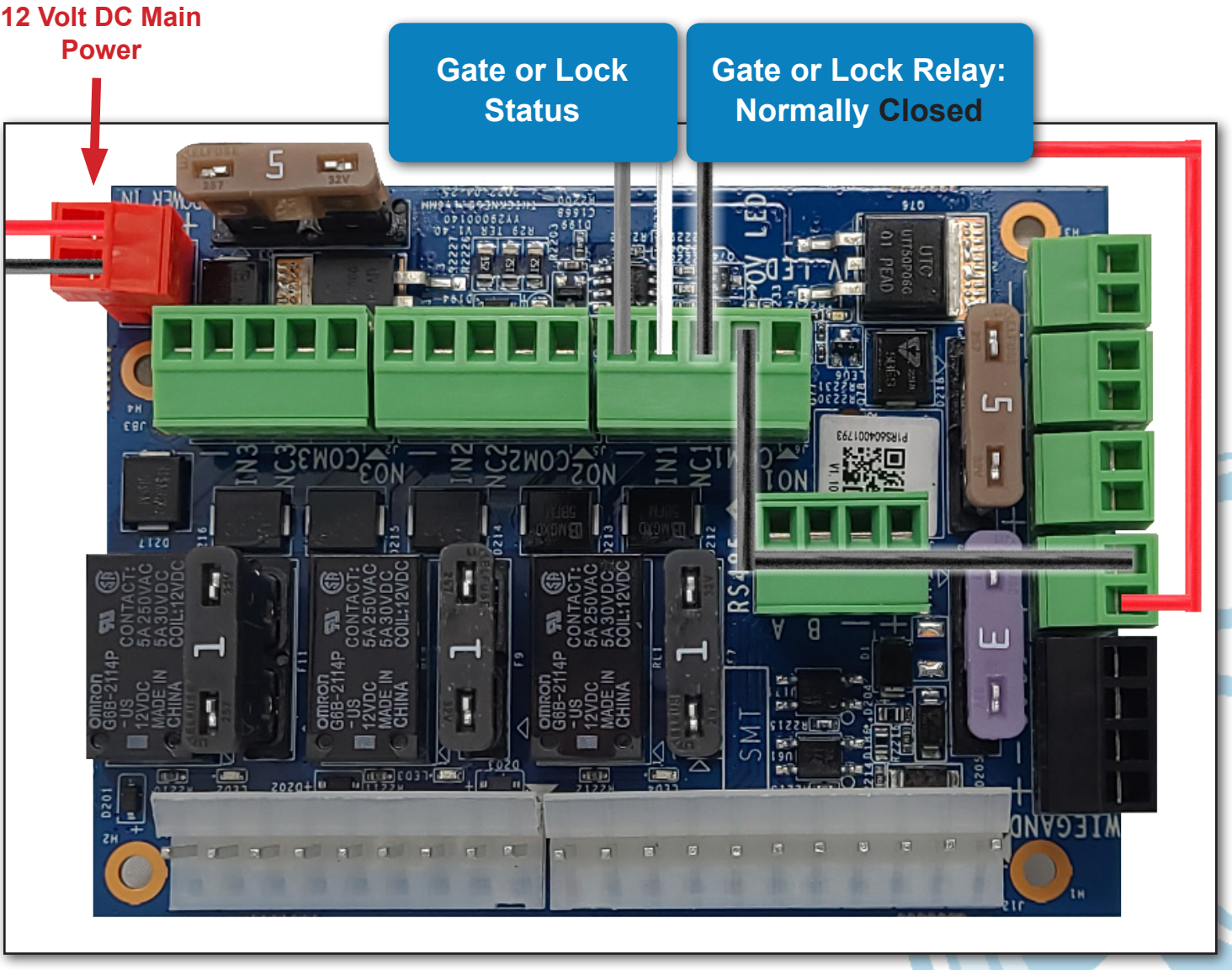
Lock Requiring Constant 12V: Wet Contact Relay, Normally Open

Door/lock opens (releases) when power is added



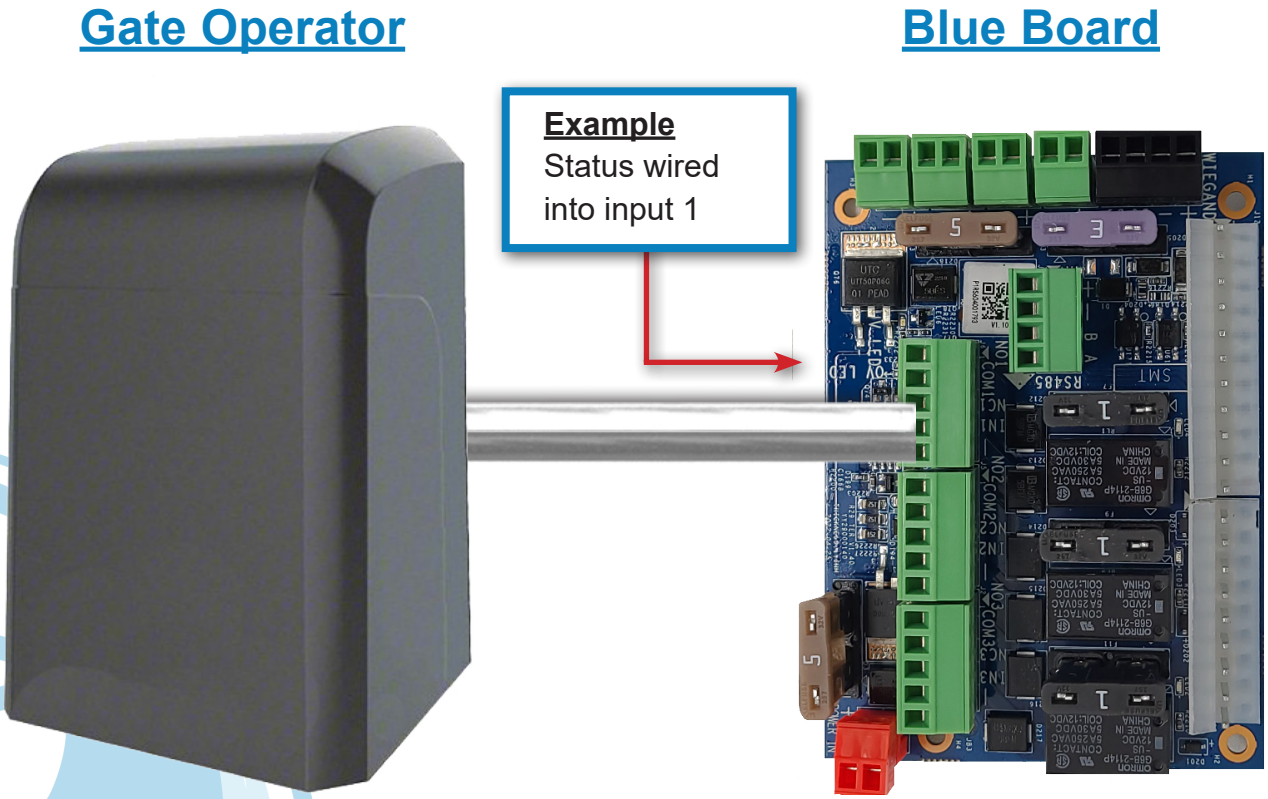
Lock Requiring Constant 12V: Wet Contact Relay, Normally Closed

Door/lock opens (releases) when power is removed



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.

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

Expansion Boards Overview

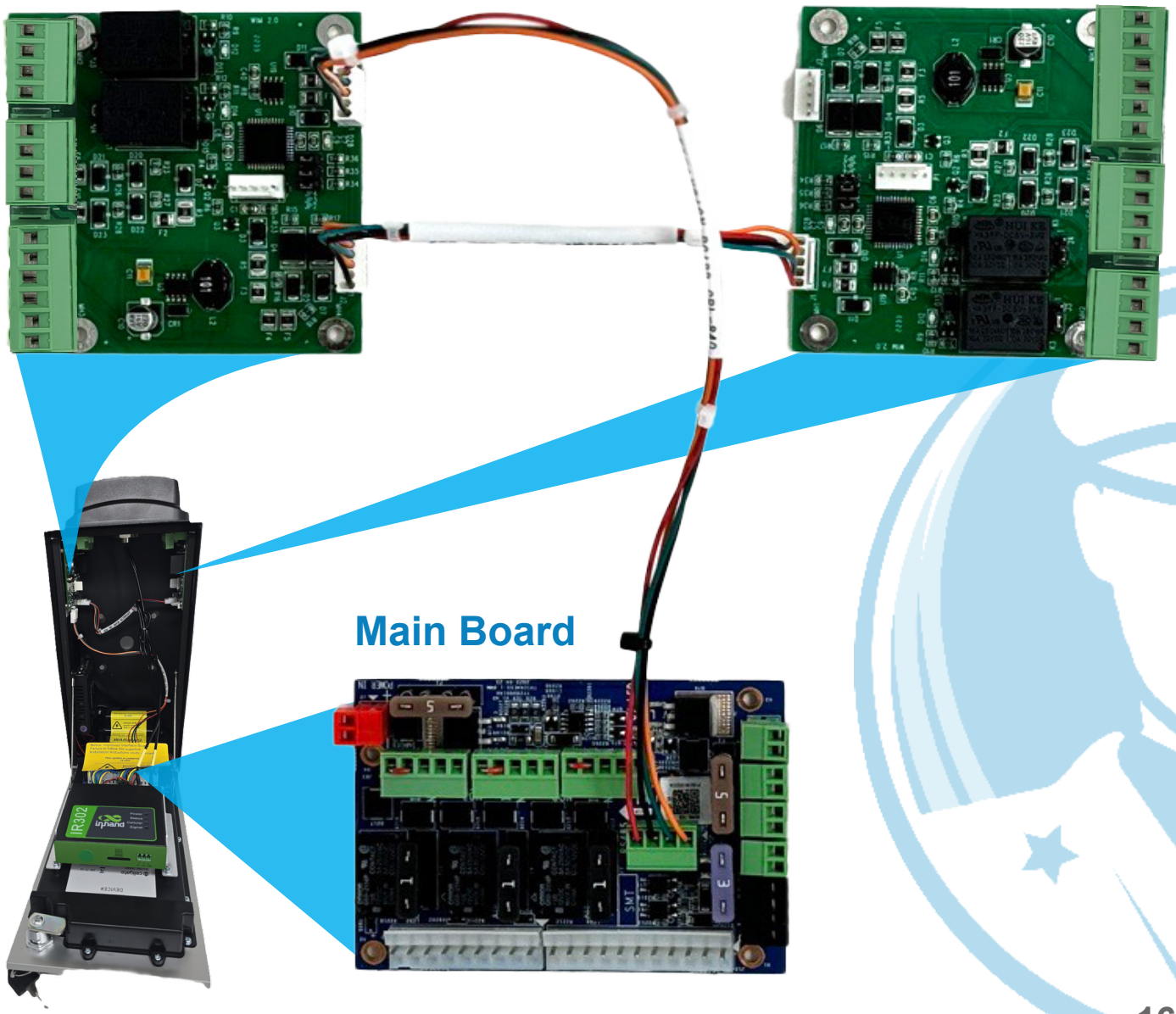
In addition to the main board, the W480 2X has two expansion boards. Each expansion board has:

- 2 additional relays
- 2 additional inputs
- 1 additional Wiegand connection

The expansion boards come pre-wired to the Main Board's RS485 port as shown below.

Expansion Board 1 Left

Expansion Board 2 Right



Main Board

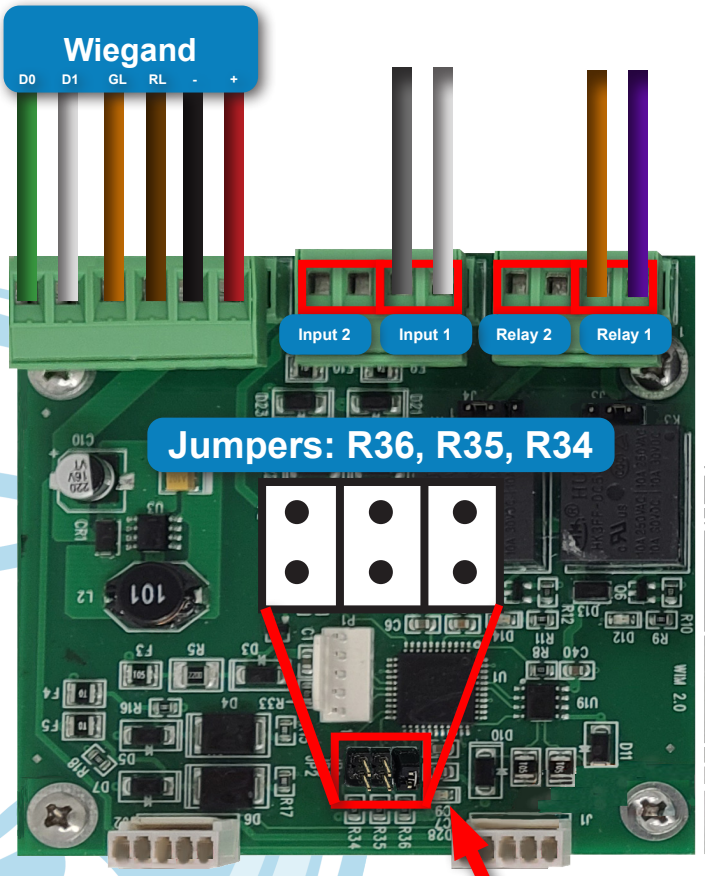
Expansion Boards Detail

The jumpers on each expansion will be pre-configured as shown below. ***DO NOT CHANGE JUMPER CONFIGURATIONS***.

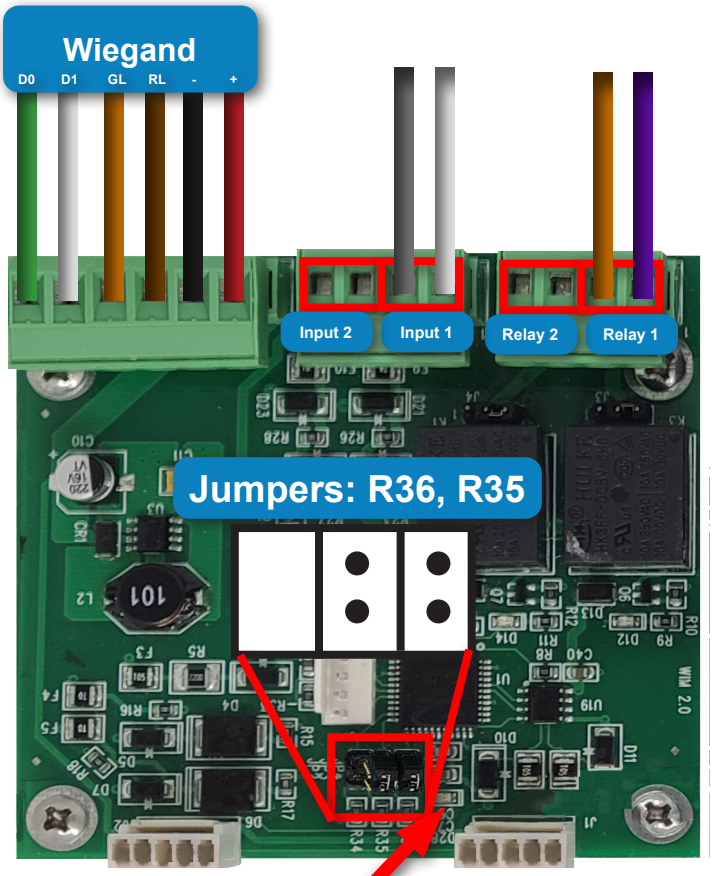
The relay wiring on each of the expansion boards is shown below. PLEASE NOTE: This is different from the Main Board configuration.

The Wiegand connection on the expansion board is shown below and is the same as the Main Board.

Relay configuration for Normally Open or Normally Closed is shown on the next page.



Board 1



Board 2

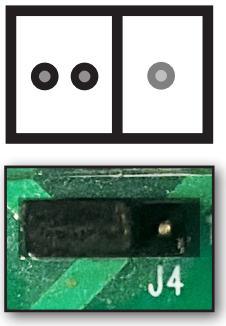
NOTE A flashing green light will indicate that the expansion board is receiving power.

Relay Operation Configuration (Normally Open / Closed Settings)

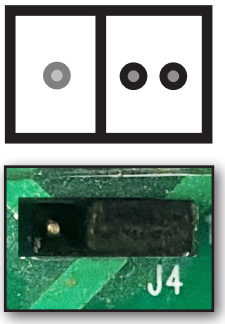
Jumper configurations for Normally Open and Normally Closed are shown below. The jumpers can be found directly above the relays on the board.

By default, relays are Normally Open.

Normally Closed

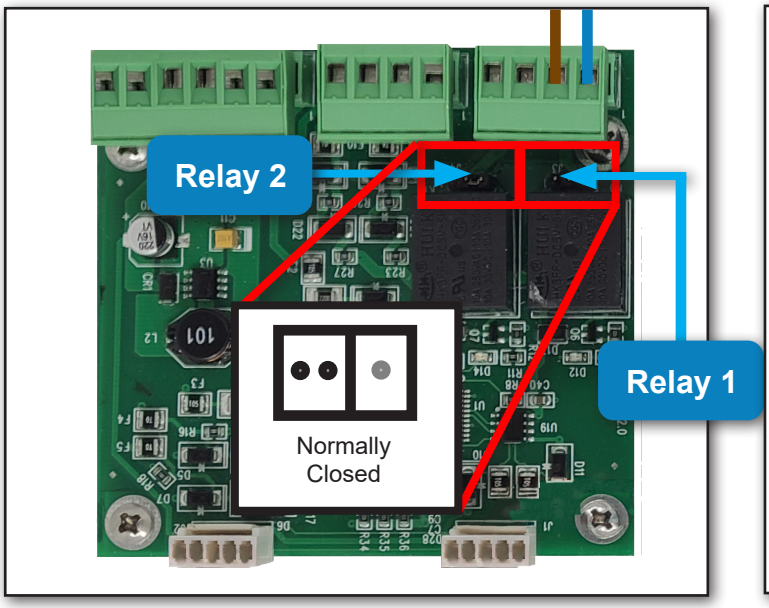


Normally Open

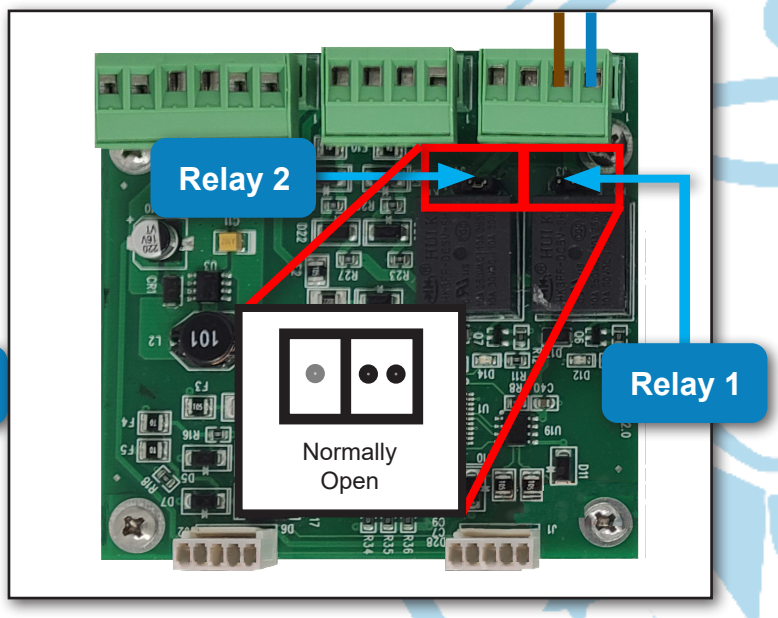


Normally Open and Normally Closed

Relay 1 and Relay 2 can be set independently. Their configurations are not dependent upon each other. When wiring the expansion board, pay attention to ensure the wiring matches the state of the relay.



For a 12V Magnetic Lock, Normally Open, set the jumper to the left as shown above.



For a 12V Magnetic Lock, Normally Closed, set the jumper to the right as shown above.

Mounting to Standard Pedestal Mount