



A Caldwell Company

**AUTOMATION INSTALLATION
INSTRUCTIONS**
(ELECTRICAL INSTALLATION ONLY)

G2 AUTOMATION PANEL

Y:\Automation Service\Docs\Series 500 Motor with G2 Controller\ G2 Automation Installation Instructions.pptx

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Disclaimer: The information provided here is a general guideline. The representations and drawings included show typical placements and configurations. Refer to shop drawings and building documents for information specific to individual applications.

SAFETY TIPS

Safety is number one priority here at Caldwell. Certified Installers only, should be installing this product. Please be cautious of your surroundings during installation and use tools the proper way.

Electrical Safety:

Whenever you work with power tools or on electrical circuits, there is a risk of electrical hazards, especially electrical shock. We recommend that all workers pay special attention to electrical hazards while installing this system. Coming in contact with an electrical voltage can cause current to flow through the body, resulting in electrical shock and burns. Serious injury or even death may occur.

Note: Incorrect installation can lead to injury. Read and follow instructions contained in this manual carefully.

Safety Tips:

- Do not wear rings, watches or any loose clothing when installing or servicing the automation system.
- **Safety glasses** must be worn at all times
- Door system must be installed correctly before any automation is installed
- Watch for nails, sharp edges/corners, splintered wood, and uneven surfaces

Recommended Safety Equipment:

- Safety Glasses



- Heavy Duty Gloves



- Hard Toe Shoes



- Knee Pads



- First Aid Kit



Safety First!

PRE-INSTALLATION CHECKLIST

Prior to installing the automation system verify the following:



Does the door open AND close smoothly and easily?

Make sure the door moves freely over its entire length of travel.



Is the sill track in good condition and allows smooth door travel?

Make sure the track clear of construction debris.



Is the door level?

Make sure the track does not sag or rise excessively over the run.



Is the door plumb?

Verify the door is square “panel to panel” AND “panel to jams”.



Do we have the required $\frac{3}{4}$ " clearance in the head track for the belt and hardware?

Measure and record the distance between the top of the door and head track in several locations over the length of the doors travel.



Ensure that a 110V, 60Hz, 15A circuit is located at the automation panel.

A dedicated circuit is recommended.



If the above are not correct, have the installation corrected!

TOOL LIST

In addition to safety equipment, standard framing contractor or carpenter tools are required.

- Power Drill



- Drill Bit Kit



- 1/8" Shim Spacers



- Tape Measure



- 6' Jamb Level



- Alan Wrench Set



- Precision Screw Driver Kit



- Ladders



- Screw Driver



- Hammer



- Pulley Jig



- RJ 45 Crimper Tool



- Wire Cutters/Strippers



- Electrical Tape



- Black Permanent Marker



- 2 1/8" & 1" Hole Saws



- Conductor Crimpers



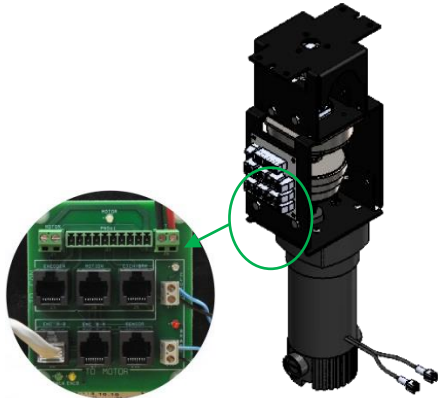
- Paddle/Spade Bit Kit



- Cable Tester (optional)



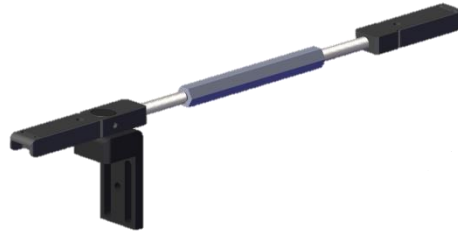
PART IDENTIFICATION



**Motor Assembly &
motor Break Out Board (BOB)**



Drive Belt



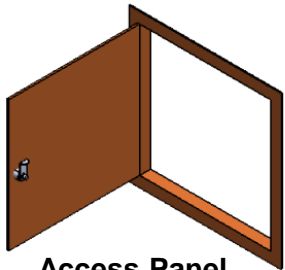
**Turnbuckle Belt Clamp &
Mounting Bracket**



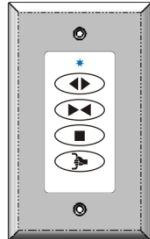
**6 Foot 10 Pin
Connector Cable**



**Infrared Sensor
System
(Optional)**



Access Panel



Wall Switch



Return Pulley



26-8 Flat Wire



Power Cable



Automation Panel



**900MHz Wireless Motion
Receiver & Remote**



**RF Wireless
Motion Receiver &
Remote**



**PN: 20K0006
Adaptor for Motion Sensor**



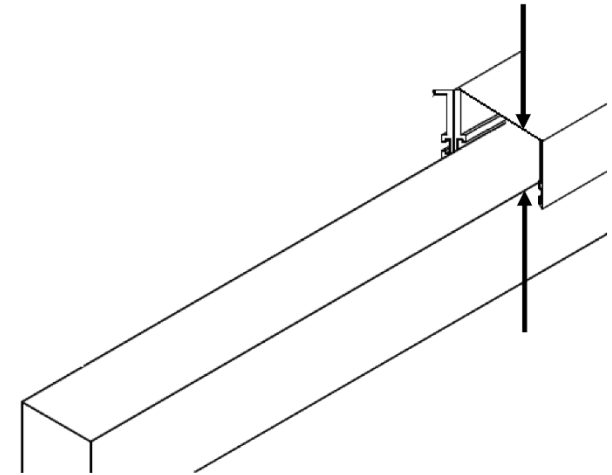
**Overhead Motion
Sensor (Standard)**

PRE-INSTALLATION CHECKS

- Before beginning, some things need to be checked to ensure a smooth installation.
- Ensure that a 110V, 60Hz, 15A (dedicated is preferred) circuit is within 6ft of; the Automation Panel.
- Pre-installation door checks:
 - Door Movement - Make sure that the door moves freely over its entire length of travel, and that it is square panel to panel and panel to jambs. If any problems are detected, contact the door installer or job superintendent to correct them.
 - Head Track Clearance - Sagging or distortion in the door head track may cause an interference with the drive belt or belt clamp assembly. Therefore, before beginning installation, measure and record the distance between the top of the door and the head track. This should be done at several locations over the length of the door travel.

* Note: When a 3/8" belt is used the minimum head track clearance will be somewhat less than 3/4".

**3/4" Head Track
Clearance
is Required (minimum)***



STANDARD COMPONENT PLACEMENT

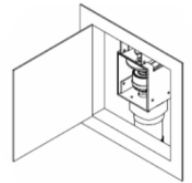
When determining component locations, consider the visual impact on the end customer, ease of installation, and future serviceability. Figure below shows the typical location of components.



Note: 1 - Wall switches shown are for illustration and are available in multiple colors and button configurations.

STANDARD COMPONENTS

- **Automation Panel** – The automation panel is an electrical enclosure box that measures 4 1/4" x 2 1/8" x 14". To ensure proper system operation, the automation panel, needs to be mounted within 6 feet (wire length) of the motor assembly. This panel needs to be accessible. The Automation Panel comes with an electrical cord, so it can be plugged into a normal 110V, 60Hz, 15A, dedicated circuit.
The panel features a 24V battery backup to allow the door to be operational for several hours without AC power. A fully charged battery will be able to keep a closed door's magnetic lock engaged for at least 4 hours without AC power.
- **Motor Assembly Access Panel** – Access to the motor assembly is required. Typically this is done with a 12" x 12" Access Panel supplied by Doors In Motion.
- **Motor Assembly** – On a single pocket door or stacked door, the motor assembly is typically located opposite the lock side jamb or in an extended pocket.
- **Return Pulley** – The return pulley is located on the opposite end of the door from the motor assembly and in many instances can be installed within the head track. The return pulley comes in 2 sizes, 3/8" and 1/2"(shown) based on the belt size.
- **Wired Multi-Button Wall Switch** – A low voltage multi-button wall switch, which fits into a single-gang switch box, is typically installed 54" above the floor to control the door. This is an wired interior switch.
- **Overhead Motion Detector** – For doors that do not have opposing locations for a through beam sensor, an overhead motion detector is installed. The motion detector is located where the first and second operating doors meet and should be installed no more than 14' above the floor. If properly installed and adjusted, when the door is closing and the motion detector senses motion, the door will come to a stop.



OPTIONAL COMPONENT PLACEMENT

When determining component locations, consider the visual impact on the end customer, ease of installation, and future serviceability. Figure below shows the typical location of components.



- Notes: 1 – RF wireless receiver must be connected to a wired keypad, wired motion detector or the controllers keypad port.
2 – The 900Mhz Wireless Overhead Motion Sensor / Infrared Sensor System replaces the standard wired motion detector.
3 – Wall switches shown are for illustration and are available in multiple colors and button configurations.

OPTIONAL COMPONENTS



- Wired Security Wall Switch – A low voltage multi-button dual-gang wall switch and is typically installed 54” above the floor. This is an exterior switch with 2 panels, one is used to enter the access code while the second is used to operate the door.

- Wired Infrared Sensor – An infrared sensor is used to detect obstructions. The infrared sensor consists of a controller, transmitter and receiver. The transmitter to receiver range is 32’ and both should be mounted 8-12” above the floor. For ease of connection purposes, the controller is typically installed near the motor assembly. The transmitter is installed in a wall on one side of the door and the receiver is installed in a wall on the other side of the door closest to the motor assembly. Note: Options available for larger openings. This option replaces the standard wired motion detector.



- 900MHz Wireless Receiver & Remote– A single 900MHz receiver supports multiple wireless components including remotes, keypads and a motion detector. The operator can open, close, stop and lock/unlock their door remotely. The 900MHz receiver mounts in the wall and attaches directly to the controller via the special 900MHz interface port (near the dual DIP switch on the side). It does not connect to the regular flat cable keypad circuit as the RF remote does. The remote is rechargeable with the included micro USB cable.

- 900MHz Wireless Keypad – Wireless keypads can be installed anywhere the customer needs remote door access or can be used as wireless direct replacement for the wired keypad. The wireless keypad mounts in a single gang J-box and operates on 2 x CR123 lithium batteries. Any number of keypads can be paired to a single receiver. Wireless keypads do not have a reset button.



- 900 MHz Wireless Motion Detector– Like the wireless keypad, this motion detector is paired to the same receiver and operates on 2 x CR123 lithium batteries. The unit is mounted above the door entrance and provides the same functionality as the wired version. The sensor module can optionally be moved from the front face to the lower edge for better sensitivity on large door installations.



- RF Wireless Remote & Receiver– The RF wireless remote control connects to the controller using the same flat wire bus as the wired keypad. Like wired keypads, the receiver has 2 RJ45 ports, either of which can be daisy-chained to wired keypad’s connectors. RF remotes must be matched to their receivers with identical DIP switch setting on both devices. RF remote kits shipped from the factory are pre-matched. From the remote the operator can open, close, stop and lock/unlock their door.



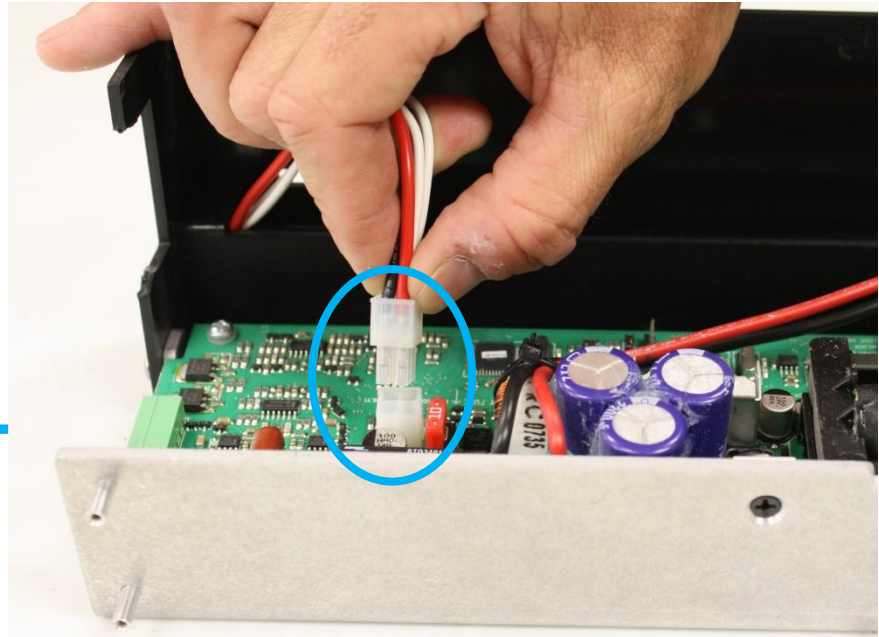
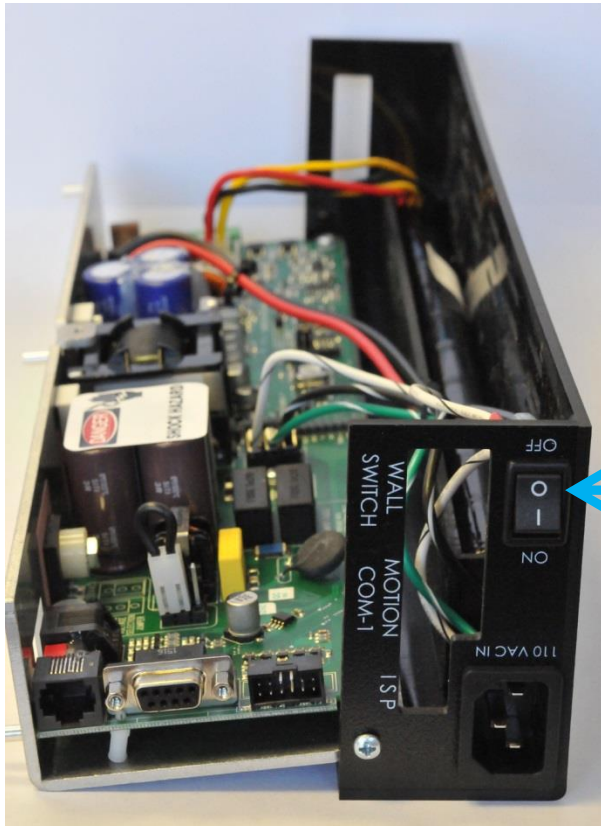
AUTOMATION SYSTEM INSTALLATION

- Mechanical Installation Complete:
 - Before beginning the electrical installation, check for rubs and interferences by manually moving the door over the entire length of its travel. Make sure that the door moves freely over its entire length of travel, and that it is square panel to panel and panel to jambs. If any problems are detected, contact the door installer to correct them. Everything must be working properly mechanically before beginning electrical installation.
- Electrical Installation Begins:
 - To avoid confusion and to prevent damaging system components, all wires must be labeled with a black marker.
 - For ease of installation and to avoid damaging connectors, wires should be run first and then the connectors should be applied. (Connector Application Instructions Follow Wiring Steps.)
 - **Do not connect motor or control panel to power before instructed.**

AUTOMATION SYSTEM INSTALLATION

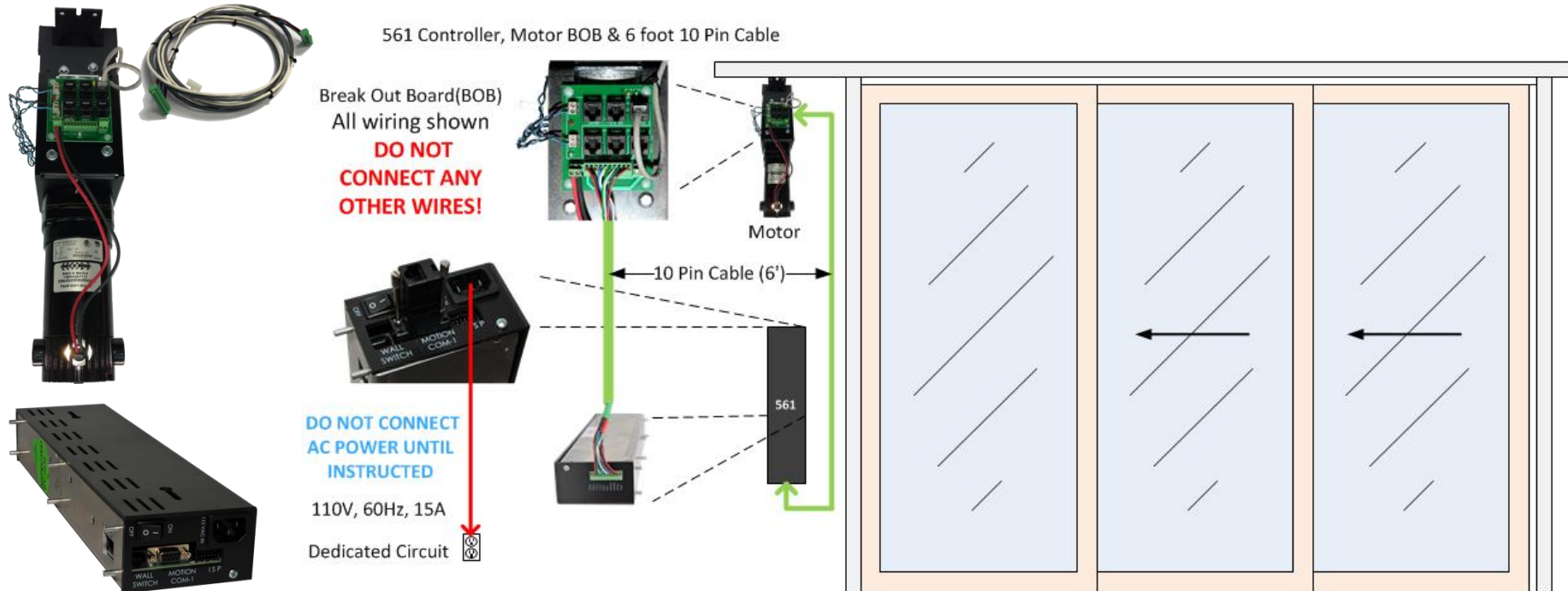
Connect the Battery

- Begin with nothing connected, unit open and OFF ("O" pressed in).
- Connect the battery (red and black wire). Close controller cover.



AUTOMATION SYSTEM INSTALLATION

Motor Wiring



Important Note: To avoid confusion and to prevent damaging system components, **all wires must be labeled with a black marker.** For ease of installation and to avoid damaging connectors, **wires should be run first and then the connectors should be applied.**

- Automation Panel to Power Supply – DO NOT PLUG IN UNTIL INSTRUCTED. When instructed, the automaton panel will be connected to a 110V, 60Hz, 15A, dedicated circuit and should be within 6 feet of the automaton panel. A power cord is supplied.
- Motor Breakout Board to Automation Panel Main Circuit Board – Use the provided 6 foot 10 pin cable to connect the motor breakout board, on the side of the motor assembly, to the automation panel main circuit board.

AUTOMATION SYSTEM INSTALLATION

Applying Connectors

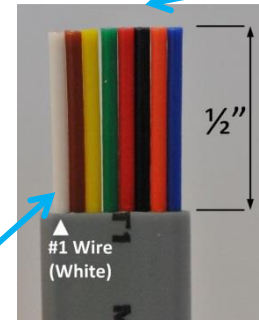
Wall Switch to Automation Panel

Terminated 26-8 Flat Wire should be verified with a data cable tester!

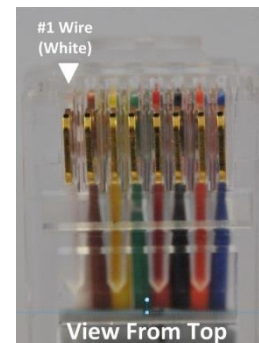
- Applying RJ45 Connectors – When applying RJ45 connectors, first make sure that all wires are properly identified. Use a high quality 26-8 data/phone cable stripper (shown Right) to create a clean and even end on the 26-8 flat wire cable.
- Then strip-off about $\frac{1}{2}$ " of the outside jacket (only the outside jacket will be stripped). The 8 individual wires should have their relative shields intact.
- While holding the cable, identify the outermost colors of the 8 wires. Choose the left extreme white wire to be the #1 wire.
- Insert the stripped cable into the connector so that the #1 wire lines up with the connector position #1. Make sure to push the cable all of the way into the connector.
- Insert the wire/connector assembly into the correct crimper opening and crimp to form a permanent wire/connector assembly.
- Repeat this process for all wires making sure that the #1 (white) wire/connector position is the same for all wires.



Crimper



26-8 Flat Wire Cable



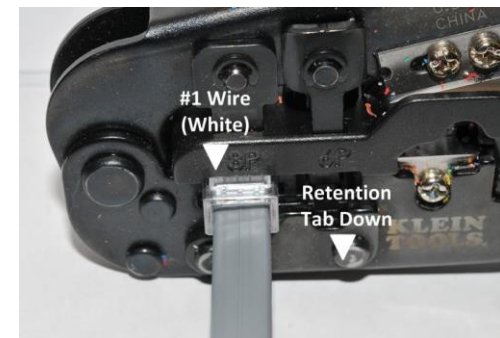
RJ45 with Cable Inserted

RJ-45 Wire Colors:

- #1 White
- #2 Brown
- #3 Yellow
- #4 Green
- #5 Red
- #6 Black
- #7 Orange
- #8 Blue



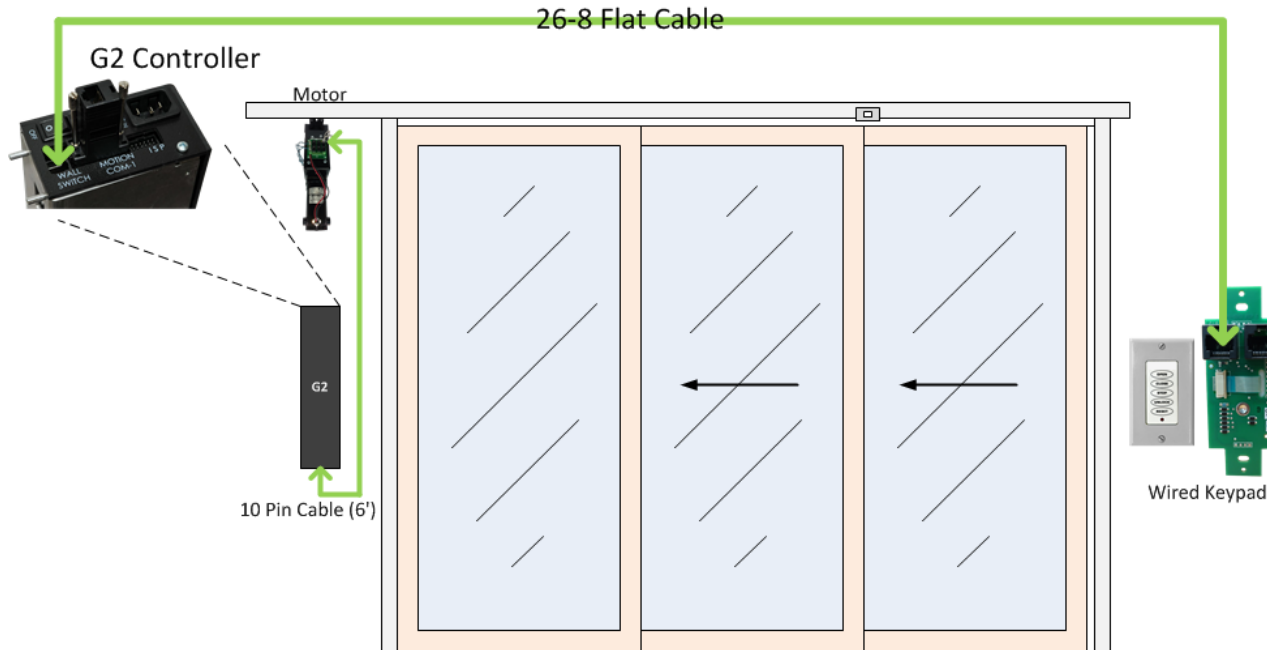
RJ45 Connector for 26-8 Cable Insertion



Crimping RJ45 Connector to Cable

AUTOMATION SYSTEM INSTALLATION

Wall Switch Wiring



Terminated 26-8 flat wire should be verified with a data cable tester!

Important Note: To avoid confusion and to prevent damaging system components, **all wires must be labeled with a black marker.** For ease of installation and to avoid damaging connectors, **wires should be run first and then the connectors should be applied.**

Important Note: For ease of installation and to avoid damaging connectors, wires should be run first and then the connectors should be applied.

- Multi-button Wall Switch to Automation Panel Circuit Board - There is one 26-8 flat wire cable, with male RJ45 connectors, that runs from the multi-button wall switch to the female connector on the G2 automation panel labeled "WALL SWITCH".
- 900 MHz Wireless Receiver (for Remote) - This will be plugged into the side of the G2 Automation System after initial programming.

AUTOMATION SYSTEM INSTALLATION

Initial Programming: 123 Set Up

1. Make sure the controller is turned **OFF**
2. Connect the 10pin cable assembly from the controller to the motor **AND** the AC power cord
3. Wired Setup
 - Connect a wired keypad to the controller's **WALL SWITCH** port with 26-8 flat wire.
 - **DO NOT** connect the motion detector/IR Sensor yet!

OR

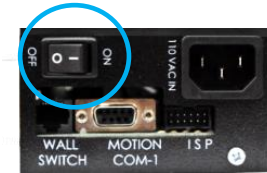
Wireless Setup (900 MHz)

- Connect a paired 900MHz receiver board to the 900MHz port on the controller using the provide 26-8 flat wire.
 - Install 2 x CR123 batteries in the back of the keypad.
- DO NOT** install batteries in the 900MHz motion detector yet!
4. Position the lead panel approximately two feet(single) or 4 feet(bi-part) from the fully closed position.

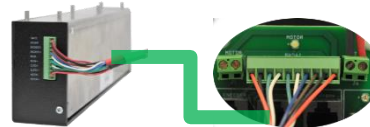
1



"Turn OFF"

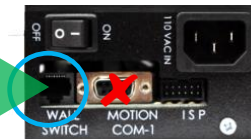


2



3

Wired



OR

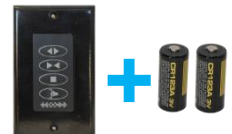
Wireless



"900MHz Receiver"

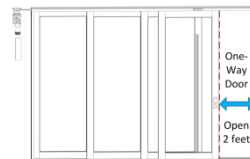


RJ45 Port

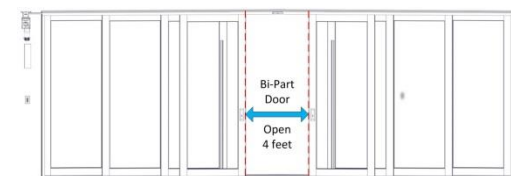


900 MHz Wireless Overhead Motion Detector **REMOVE BATTERIES**

4



One-Way...Open 2 feet



Bi-Part...Open 4 feet

AUTOMATION SYSTEM INSTALLATION

Initial Programming: 123 Set Up

5. Set DIP switch #1 & #2 to the **ON** position – Located on the side of the G2 Automation Panel.

5



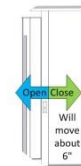
Both UP

6. Power on the G2 controller. The controller LED's will flash the program number, **1x Red, 2x Yellow then 3x Green.** Then the panel will either move 6-12 inches towards the **Open** or **Closed** position. The Yellow LED will illuminate.

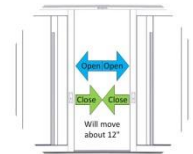
6



x1
x2
x3



One-Way moves 6 inches



Bi-Part moves 12 inches

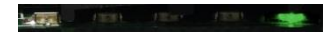
7. Wait **5 seconds** then press the keypad's **Open** OR **Close** button (depending the direction the door moved in step 6.) The Green LED will illuminate.

7

Wait 5
Seconds



Open
OR
Close



8. Slide the lead panel to the fully closed position and press the **CLOSE** button on the wall switch. The Yellow & Green LED's will illuminate.

8



Fully CLOSE door(s)



Close

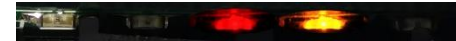
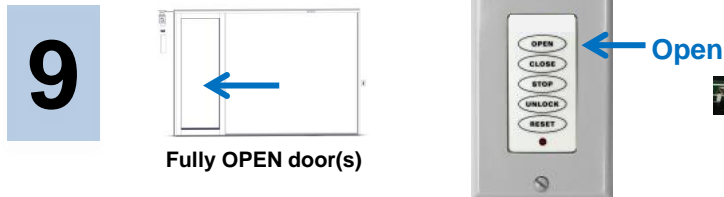


AUTOMATION SYSTEM INSTALLATION

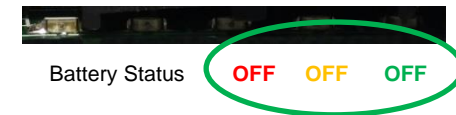
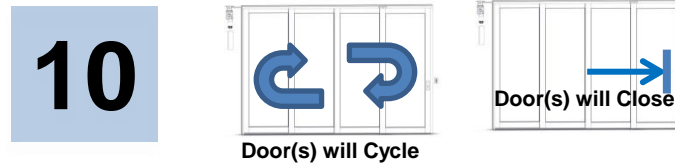
Initial Programming: 123 Set Up

For OPTIONAL manual Run & Crawl speed adjustments skip to step 9opt on [NEXT](#) page

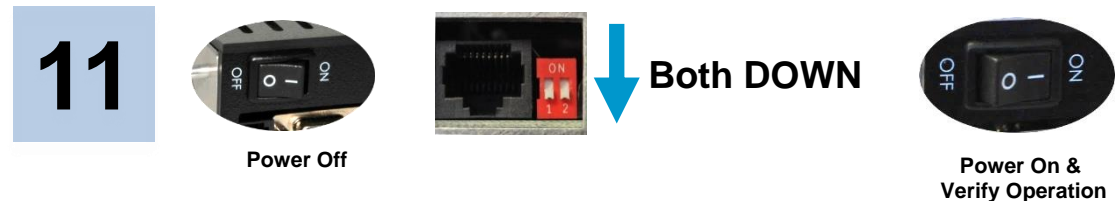
9. Slide all of the panels to the fully open position and press the OPEN button on the wall switch to continue with simple programming.
The Red & Yellow LED's will illuminate



10. The door(s) will cycle a few times and then fully close. All of the LEDs should be OFF and the door is programmed.



11. Power OFF the G2 controller.
Set DIP switch #1 & #2 to the **OFF** position.
Power ON the controller and VERIFY operation.



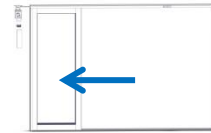
*The 123 Simple Setup Programming
is complete.*

AUTOMATION SYSTEM INSTALLATION

Optional Manual Run/Crawl Speed Adjustments

9. Slide all of the panels to the fully open position and press the **STOP** button on the wall switch.
The doors will start to close...

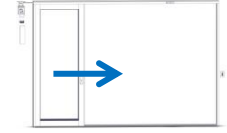
9_{opt}



Fully Open door(s)



Stop



Doors start to close

Run Speed Adjust:

Press **OPEN** to increase the speed or **CLOSE** to decrease the speed.
Adjustment is possible until about 1 foot of fully closed.

Run



As the doors close...



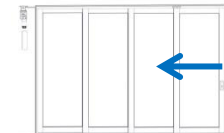
Open Increases Speed
Close Decreases Speed

After full closure, the door will start to open...

Crawl Speed Adjust:

Press **OPEN** to increase the speed.
Press **CLOSE** to decrease the speed.
Adjustment possible until about 1 foot of fully open.

Crawl



As the doors opens...



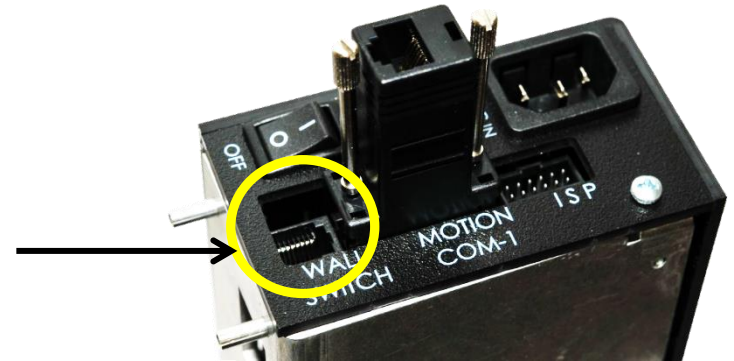
Open Increases Speed
Close Decreases Speed

Return to [Step 10](#) on the
previous page...

WIRED & WIRELESS COMPONENTS



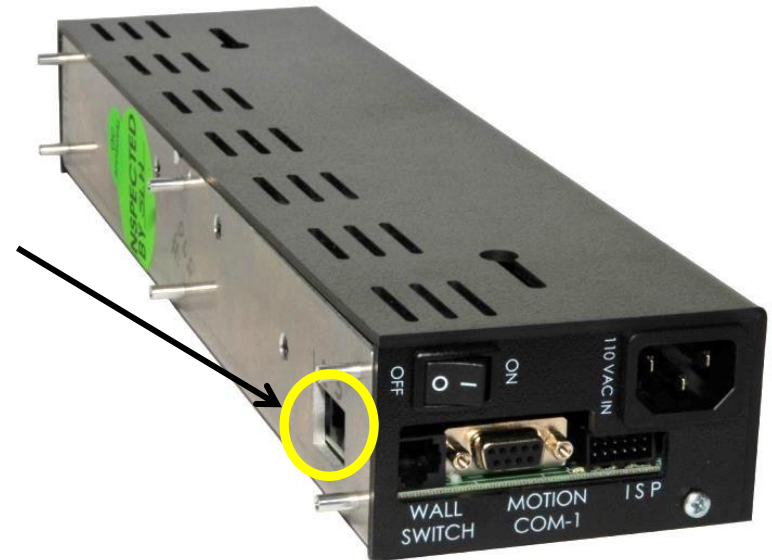
Wired Keypads and
the RF Remote
Connect to the Wall
Switch port with RJ45
cables



Side View of
Automation Panel
(Rotated)

**900Mhz Wireless
Receiver ONLY**

**for wireless
900Mhz keypads,
remotes and a
motion detector**

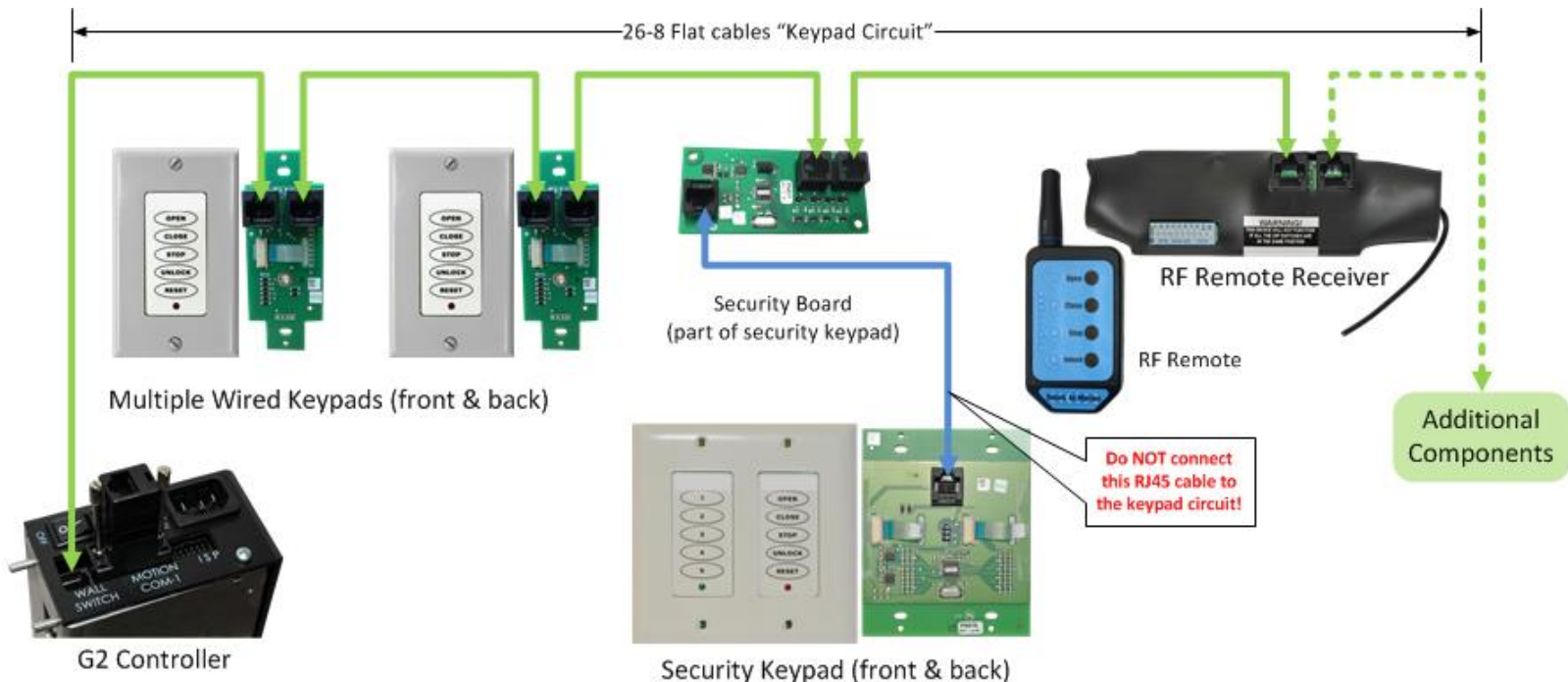


WIRED KEYPADS & RF REMOTE

The “Keypad Circuit”

- Each device is “daisy chained” to the next device in the line.
- The keypad circuit supports multiple wired keypads, security keypads and the RF remote control.
- Devices can be installed in any order as the particular installation requires.
- Devices that support this circuit will have 2 x RJ45 jacks positioned next each other.
- Either RJ45 can be used to daisy chain to the *next* component

Terminated 26-8 flat wire should be verified with a data cable tester!



900MHZ WIRELESS COMPONENTS



Pairing the 900MHz Wireless Remote

(only required if “added” to a previously installed system)

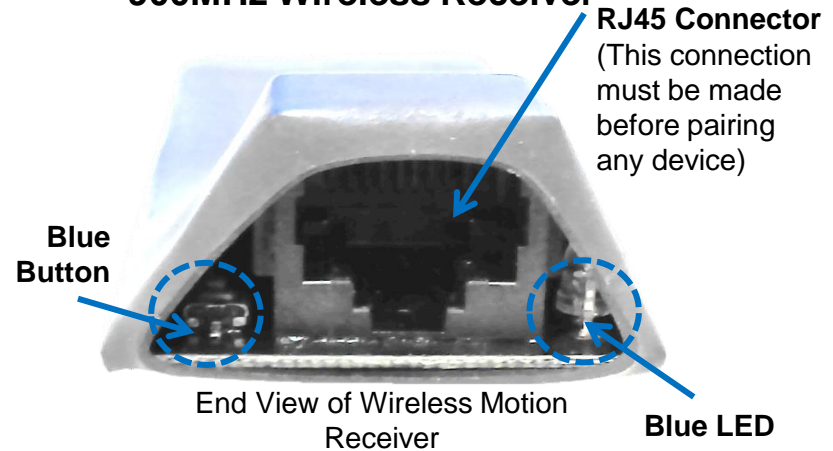
With all the connections made and the Automation Panel turned ON:

1. Insert batteries into the device to be paired.
2. Press the Blue Button on the Receiver and the Blue Button on the device to be paired.
3. The Blue LEDs will flash slowly, then flash fast then go out. (IF the LEDs never flash fast the receiver did not find the device, return to Step 1.)
4. The device is now linked to the receiver. The pairing process takes 5 seconds to complete per device.

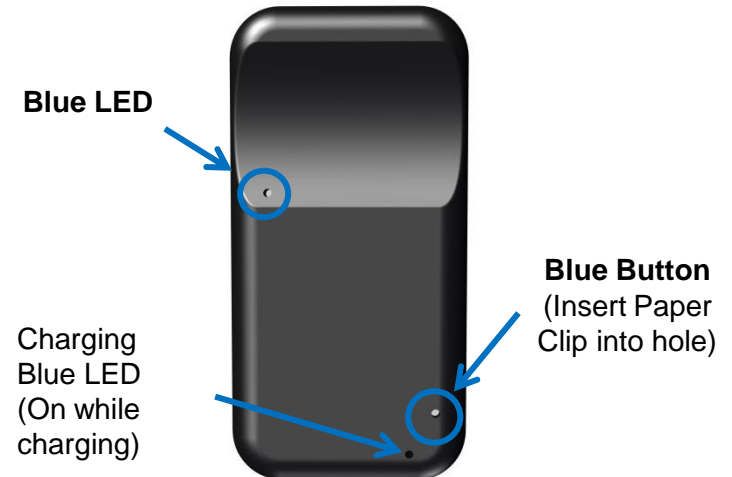
NOTE: When “pairing” is complete the door will OPEN.

NOTE: All Wireless devices ordered with a wireless receiver will be “paired” to that receiver at the factory

900MHz Wireless Receiver



900MHz Wireless Remote Control



900MHZ WIRELESS COMPONENTS



Pairing the 900MHz Wireless Keypad

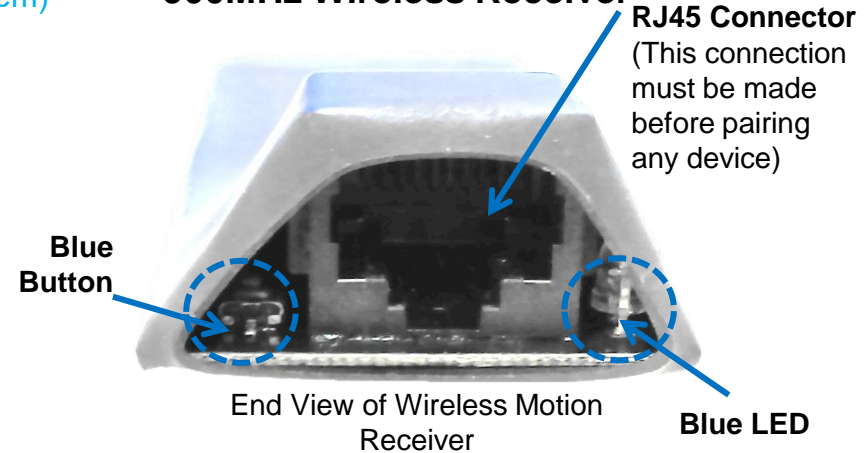
(only required if “added” to a previously installed system)

With all the connections made and the Automation Panel turned ON:

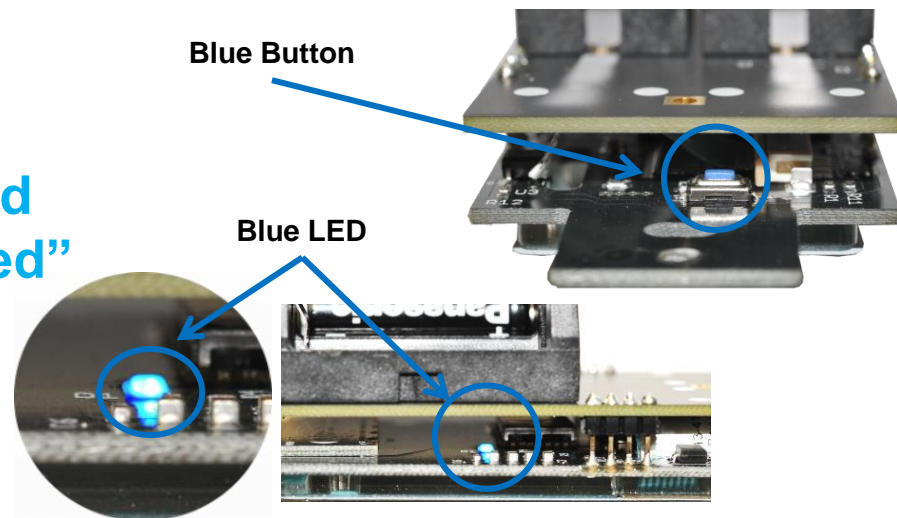
1. Insert batteries into the device to be paired.
2. Press the Blue Button on the Receiver and the Blue Button on the device to be paired.
3. The Blue LEDs will flash slowly, then flash fast then go out. (IF the LEDs never flash fast the receiver did not find the device, return to Step 1.)
4. The device is now linked to the receiver. The pairing process takes 5 seconds to complete per device.

NOTE: All Wireless devices ordered with a wireless receiver will be “paired” to that receiver at the factory

900MHz Wireless Receiver



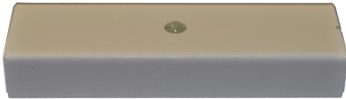
900MHz Wireless Keypad



900MHZ WIRELESS COMPONENTS

Pairing the 900MHz Wireless Motion Detector

(only required if “added” to a previously installed system)

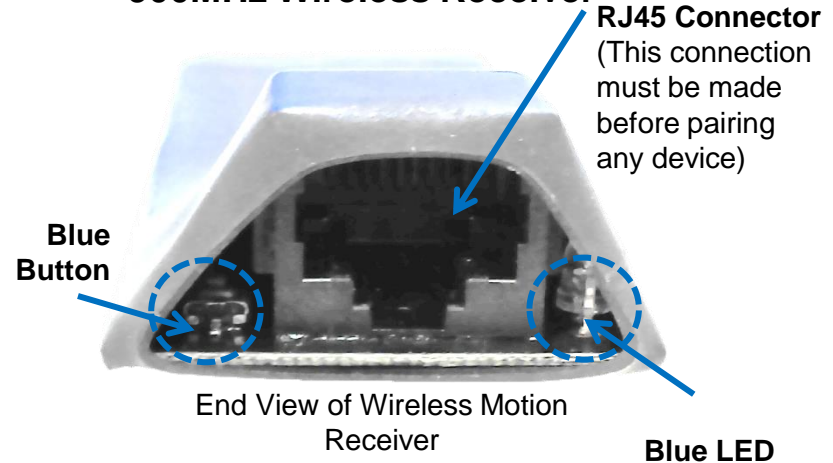


With all the connections made and the Automation Panel turned ON:

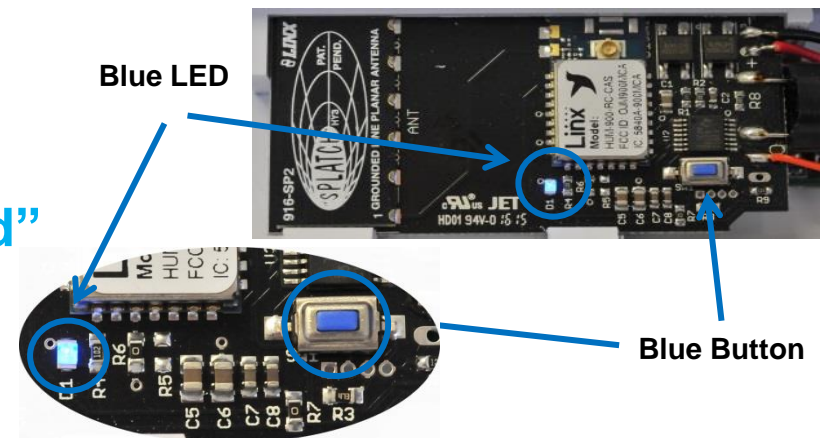
1. Insert batteries into the device to be paired.
2. Press the Blue Button on the Receiver and the Blue Button on the device to be paired.
3. The Blue LEDs will flash slowly, then flash fast then go out. (IF the LEDs never flash fast the receiver did not find the device, return to Step 1.)
4. The device is now linked to the receiver. The pairing process takes 5 seconds to complete per device.

NOTE: All Wireless devices ordered with a wireless receiver will be “paired” to that receiver at the factory

900MHz Wireless Receiver



900MHz Motion Detector



WIRED SAFETY COMPONENTS

Motion Detector OR Infrared Beam Wiring

After Initial Programming:

Once the controller has been programmed attach the wired motion detector OR infrared sensor with an RJ45 cable to the DB9-RJ45 adapter

**Wired Overhead
Motion Detector
(standard)**

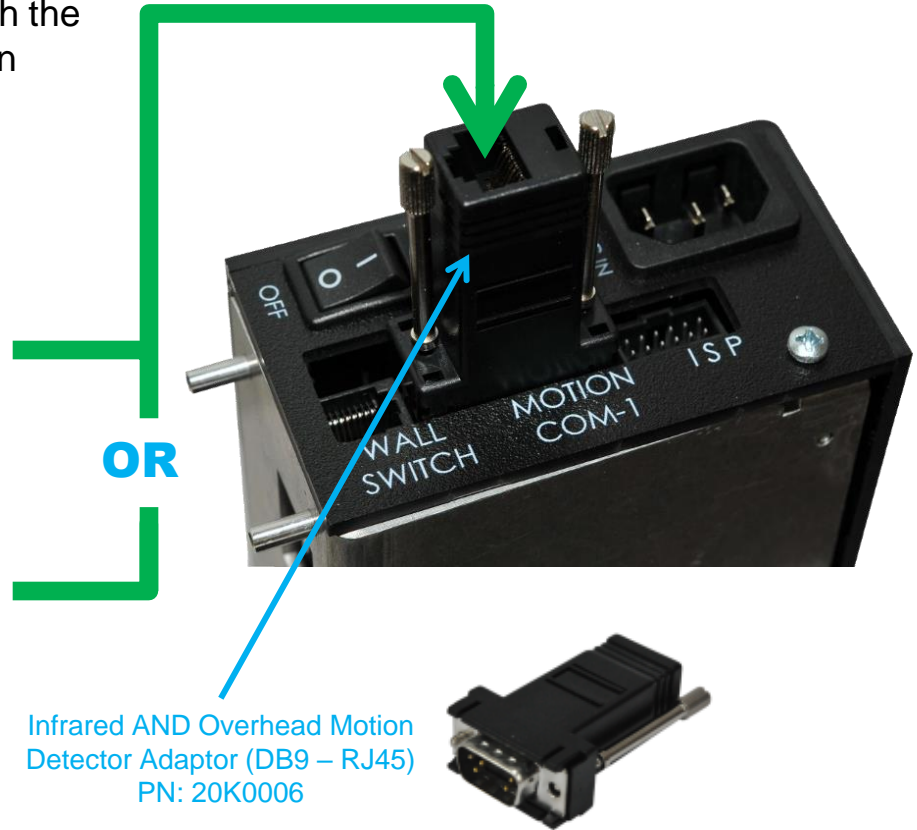


OR

**Wired Infrared
System
(optional)**



via RJ45 cable

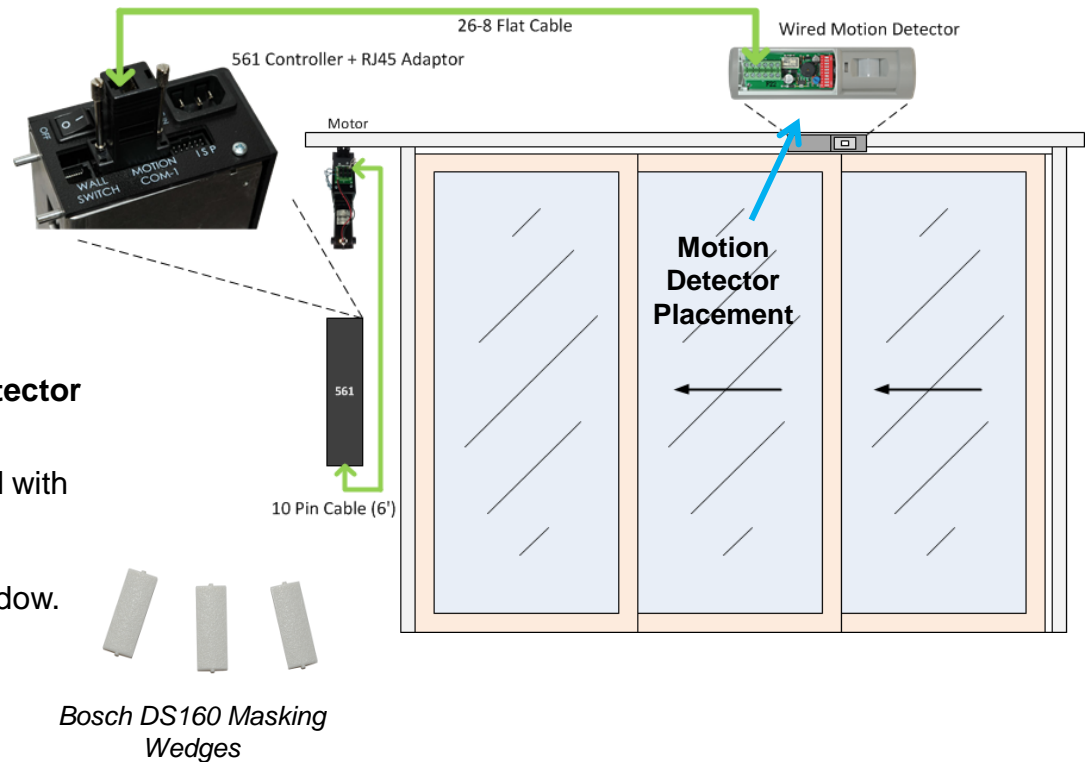


* Note: Overhead Motion Sensor is standard, but the Infrared Sensor System is an optional replacement. Either Device will plug into the Adaptor for the "MOTION COM-1" Port **AFTER** Initial Programming.

WIRED SAFETY COMPONENTS

Bosch DS160 Motion Detector Wiring (Standard)

- **Overhead Motion Detector Installation** – offered in black and white
- **Overhead Motion Detector to Automation Panel Circuit Board Wiring** - The motion detector uses 26-8 flat wire. The 26-8 flat wire cable runs from the motion detector to the Adaptor in the “MOTION COM-1” port on the automation panel.
- **(Note: Do not plug in Overhead Motion Detector until instructed- after initial programming**
- **Blinders or “masking wedges”** are included with the motion detector. They are used to block undesirable activation areas from the sensor. They mount in front of the opaque sensor window. Refer to the motion sensor manual for more information.



Note: The Wired Overhead Motion Sensor is standard, but an Infrared Sensor System is an optional replacement.

The motion detector plugs into the PN: 20K0006 Adaptor to the “MOTION COM-1” port on the automation panel.

Note: Just run the wires – **DO NOT connect to the G2 controller prior to completing initial programming.**

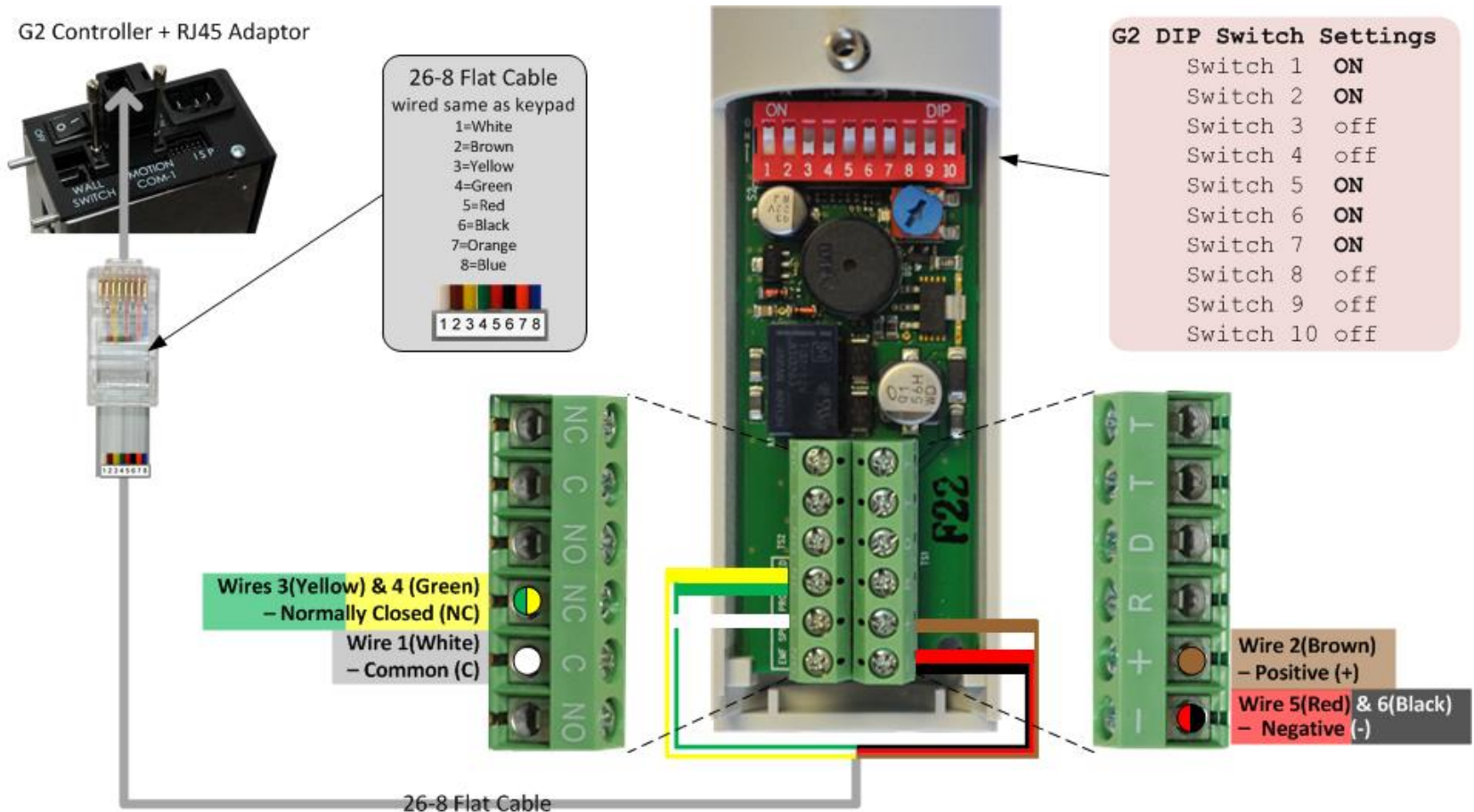
WIRED SAFETY COMPONENTS

Motion Detector Wiring (Bosch DS160)



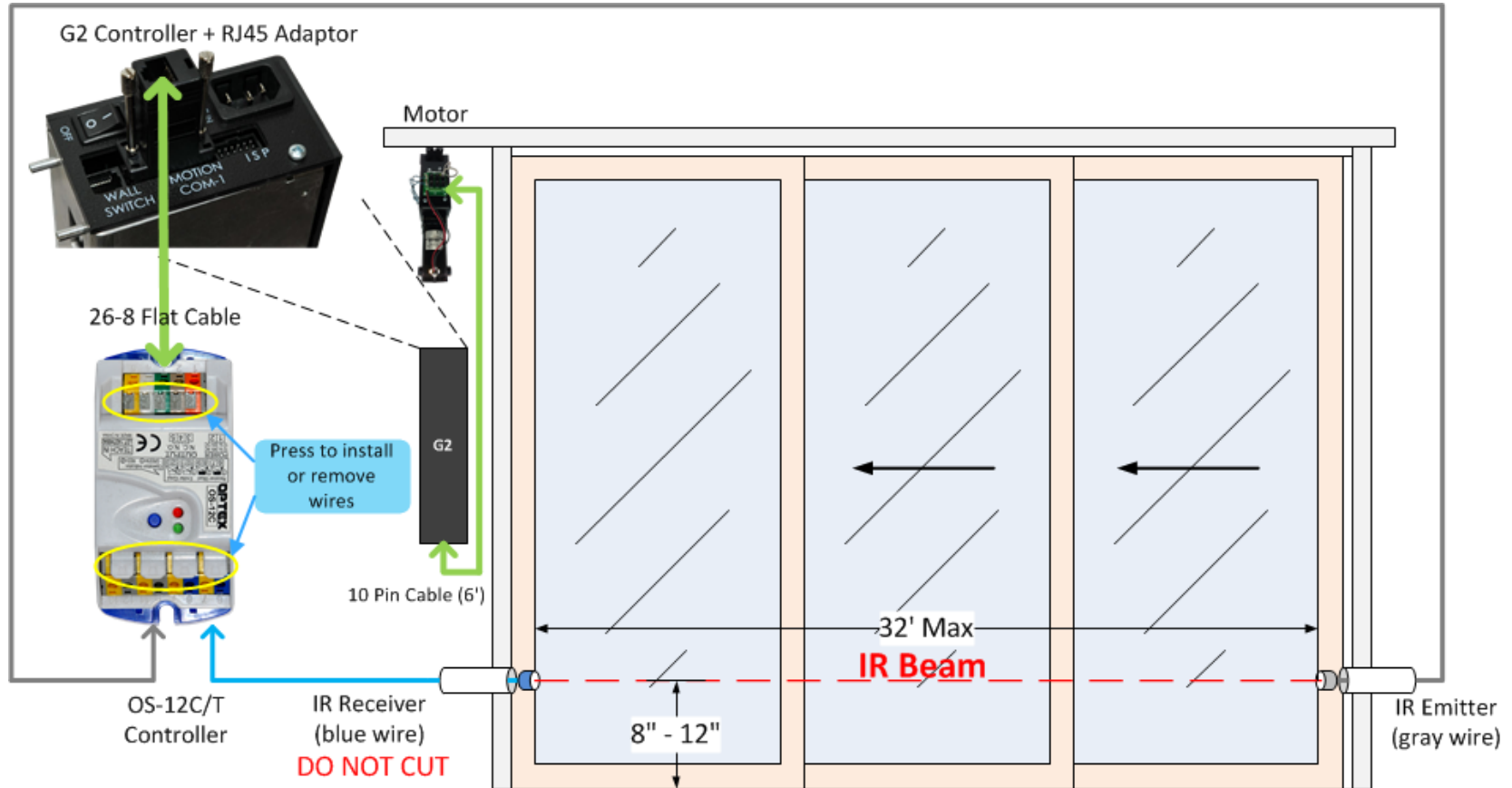
- Wire the DS160 as shown using 26-8 flat wire cable run from the motion detector to the Adaptor in the “MOTION COM-1” port on the automation panel.

(Note: Do not plug in Overhead Motion Detector until after initial programming)



WIRED SAFETY COMPONENTS

IR Beam Detector Wiring Optex OS-12C/T (Optional)



The IR Beam Detector controller plugs into the PN: 20K0006 Adaptor to the “MOTION COM-1” port on the automation panel.

Note: Just run the wires - **do NOT connect to the G2 controller prior to completing initial programming.**

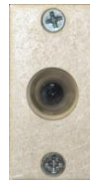
- Overhead Motion Detector to Automation Panel Circuit Board – The motion detector uses 26-8 flat wire. The 26-8 flat wire cable runs from the OS-12C/T Controller detector to the Adaptor in the “MOTION COM-1” port on the G2 automation panel.

WIRED SAFETY COMPONENTS

IR Sensor Installation



- The receiver is the **BLUE** wire while the emitter is **GRAY**.
 - The **BLUE** wire bundle cannot be cut or spliced so install the infrared receiver closest to the motor panel.
 - The **GRAY** wire can be extended or replaced with any common wire bundle with at least two conductors.
1. Drill a 5/8" hole on each side of the door span 8-12" from the base of the opening. The holes must be at the same height with a maximum span of 32".
 2. Mount the controller inside the motor access panel so that the LED's and push button on Optex OS-12 C/T controller are accessible.
 3. Remove the emitter & receiver heads via the connector on the cable to prevent damage.
 4. Route the **BLUE**(receiver) wire to the door edge closest to the motor access panel. Route the **GRAY**(emitter) to the opposing side of the opening.
 5. Push the provided 5/8" PVC tubes into each hole while feeding the sensor wire through it.
 6. Install the cover plates with the provided screws.
 7. If you are not ready install and test the system now, protect sensors with the procedure at the right.
 8. Re-attach sensor heads to appropriate cable runs. Snap them into place through the cover plates.



Delayed Install/Power-Up & Sensor Protection

If the system install is NOT to be completed immediately, you may want to remove the IR sensors until the system is ready for final initialization.

1. Pull the sensor cables from the wall and disconnect the sensor heads from the main cable on both sides.
2. Attach a short string or wire to both sensor cables remaining in the wall and place some tape over the exposed connector.
3. Carefully push the taped connector and wire back into the conduit while holding the string attached.
4. Secure the string to the with tape to the cover plate on each side.
5. Place both sensors in a bag and tape it to the inside of the motor access panel for installation later.



WIRED SAFETY COMPONENTS

OS-12C Setup Instructions

1. Power off the G2 controller.
2. Verify the controller is an Optex OS-12C not the OS-12CT.
3. Attach a single ended RJ-45 connector to the G2 + Adaptor.
4. Wire the other end to the OS-12C using the color codes shown.
5. Attach the IR Receiver(s) & Emitter(s) as shown. **Do NOT cut the BLUE IR receiver wire(s) shorter.**
6. Verify connections and power up the G2 controller.

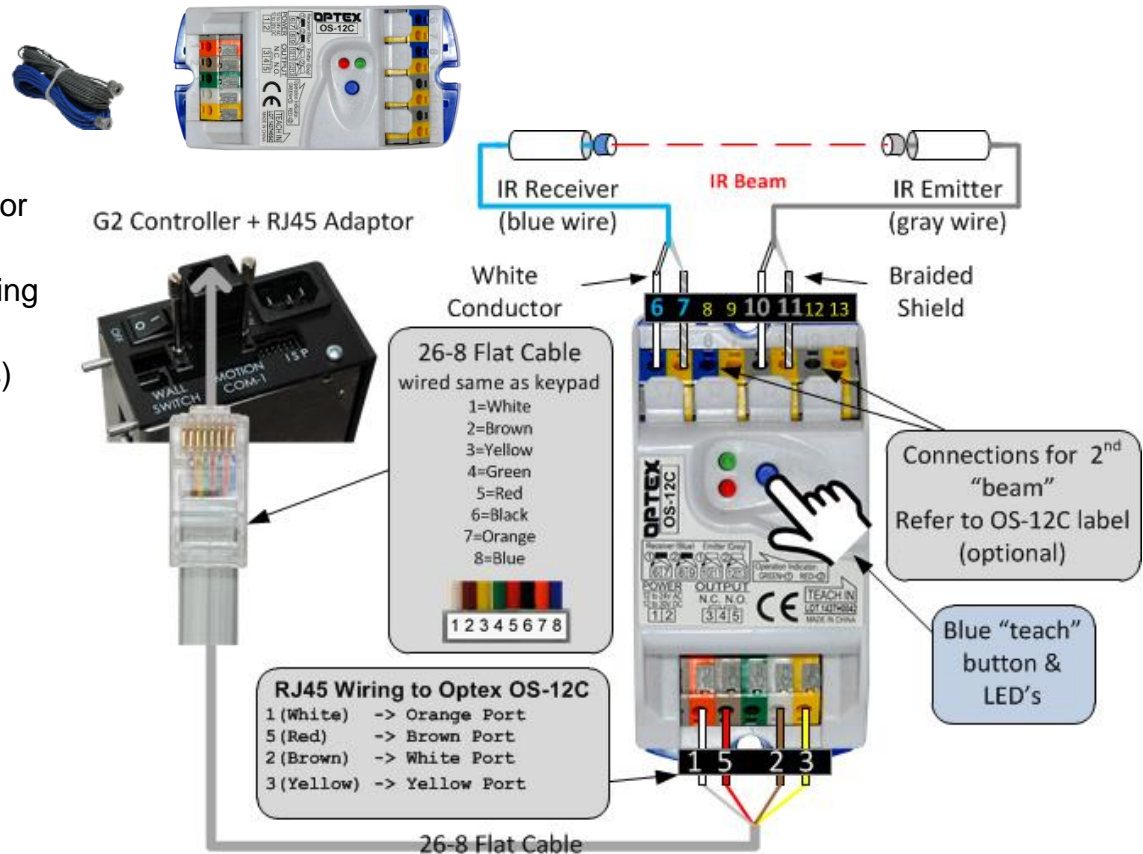
Adjustment & Checking

1. Make sure the beam path is clear of obstructions & aligned.
2. Press the **BLUE** "teach" button on the Optex controller for 1 second to auto adjust the sensitivity. Observe the LED's.

● **Green ON** – Successful for 1 beam.

● ● **Green & Red ON** – Successful for 2 beam installations.

● ● **Blinking Red & Green** – Error, check for obstructions, dirty lens, wire connections & alignment. **Repeat Step 2.**



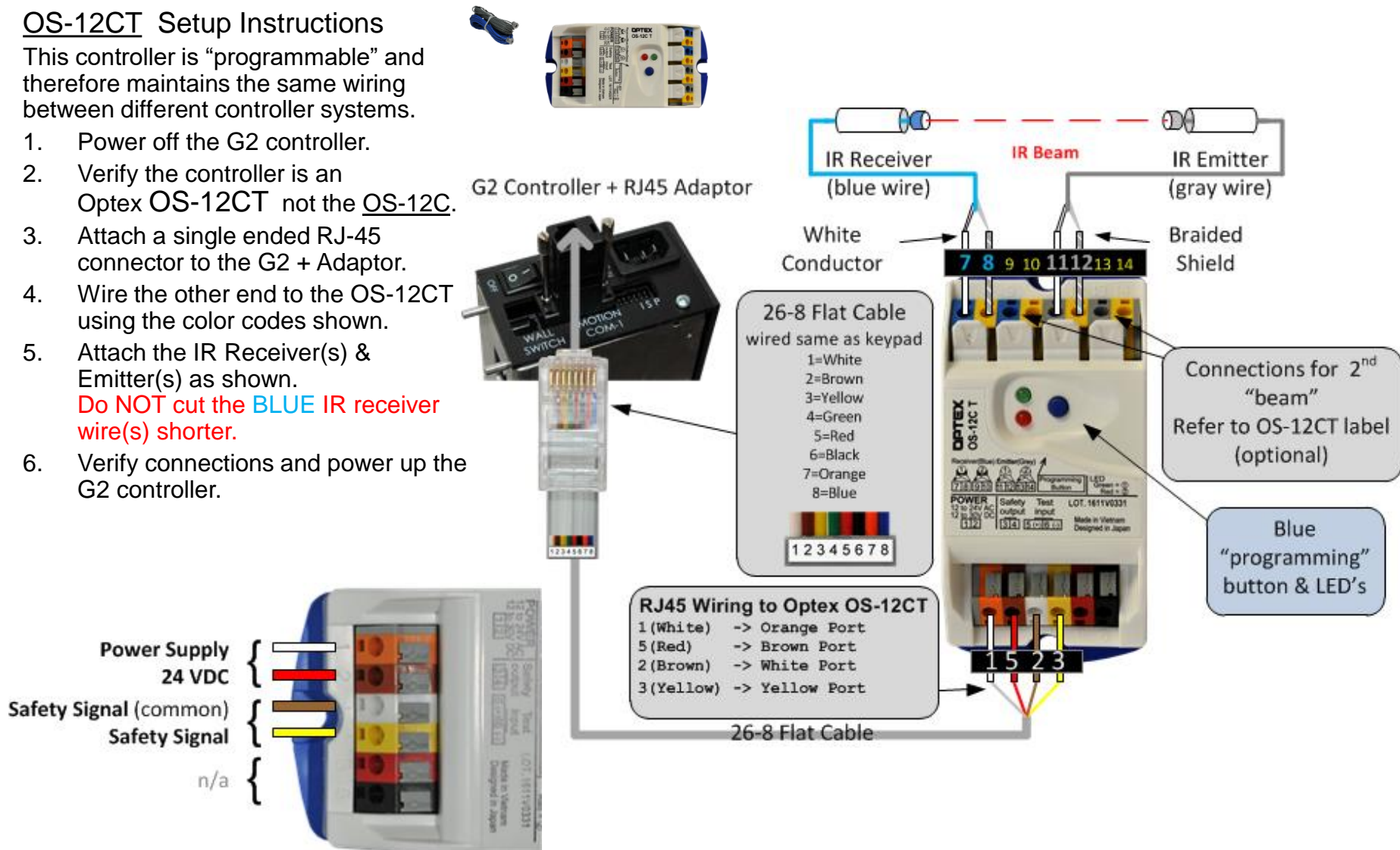
- The Optex OS-12C can be re-calibrated anytime by pressing the **BLUE** button for 1 second.
- During normal operations the **Green** LED indicates a sensor can "see" the emitter and NOT blocked.
- When the **Green** LED is **OFF**, the beam is blocked.

WIRED SAFETY COMPONENTS

OS-12CT Setup Instructions

This controller is “programmable” and therefore maintains the same wiring between different controller systems.

1. Power off the G2 controller.
2. Verify the controller is an Optex OS-12CT not the OS-12C.
3. Attach a single ended RJ-45 connector to the G2 + Adaptor.
4. Wire the other end to the OS-12CT using the color codes shown.
5. Attach the IR Receiver(s) & Emitter(s) as shown.
Do NOT cut the BLUE IR receiver wire(s) shorter.
6. Verify connections and power up the G2 controller.



WIRED SAFETY COMPONENTS

OS-12CT Sensitivity Adjustment

With the G2 controller powered on...

1. Make sure the beam path is clear of obstructions & aligned.
2. Press the **BLUE** “programming” button for more than 1 second and observe the LED’s.
3. When the Green & Red LED’s stop blinking and are solid ON, the auto adjust has completed.



Green ON – Successful for 1 beam.



Green & Red ON – Successful for 2 beam installations.



Alternately Blinking Red & Green – Error, check for obstructions, dirty lens, wire connections & alignment. Correct and repeat **Step 2**.



Red & Green Both Blink 2 Times Simultaneously – OS-12CT service is required.



Programming

1. Press the **BLUE** “programming” button until the **Red** LED starts blinking. This initializes the programming function.
2. Now press the **BLUE** “programming” button to select **Amplifier Mode “B”** for where the **Red** LED blink **2 times**.
3. To save the setting, press and hold the **BLUE** “programming” button until the **Red & Green** LED’s stop blinking.
4. The OS-12CT is now in normal operation mode.
5. **Verify the door, when closing, stops then opens when the beam is broken.**

Amplifier Mode					
✗	A	Green <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Red <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Active-Low/N.O.	Teach-in button One push One push One push One push
✓	B	Green <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Red <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Active-High/N.O. (G2 setting)	
✗	C	Green <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Red <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Active-Low/N.C.	
✓	D	Green <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Red <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Active-High/N.C. (G1/G1D setting)	

- The Optex OS-12CT can be re-calibrated anytime by pressing the **BLUE** button for 1 second.
- During normal operations the **Green** LED indicates a sensor can “see” the emitter and NOT blocked.
- When the **Green** LED is **OFF**, the beam is blocked.

SAFETY COMPONENT TESTING



Regardless of which device is installed on the door, the install must be tested prior to customer delivery. Both technologies are tested in the same way and provides a measure of safety when the door is closing.

Testing

1. With the G2 controller powered up and the door closed, press the “Open” button on a keypad or remote.
2. While the door is opening, press “Stop”, then “Close”
3. During the close operation, cause some detectable “motion” OR momentarily block the IR sensor beam(s).
4. The door should stop immediately, open a short distance and stop again.
5. If this does not occur, recheck all wiring and programming steps and repeat the test.
6. After a few moments the door can then be re-commanded to close if motion is NOT detected or the IR beams are not obstructed again.

Note:

- Neither technology has any safety purposes during an “open” operation and are essentially ignored.
- However, the IR Beam controller is self tested by the G2 controller just prior to performing any command including Open, Close, and Unlock. The self test will **pass** if the beams are **unobstructed and clear**. If the path is not clear these operations will NOT complete and the door will appear inoperative.
- If this occurs, locate and remove the beam obstruction.
- This does not occur with the motion detector.

CARE & TROUBLESHOOTING

Care During Construction:

- **Motors and Electrical Components MUST be protected after installation, before the home is finished being built.** It is recommended to cover the components after installation before the construction is complete.
- **Avoid Duct Tape-** Chemicals in the adhesives can remove finishes. 3M Blue Painter's tape is recommended.
- **Avoid rolling heavy objects over the track.** This can cause damage.
- To prevent clogging or damage to guide bearings, **tracks should be protected from construction debris** at all times.
- Do not leave door system open and exposed in wet weather conditions.

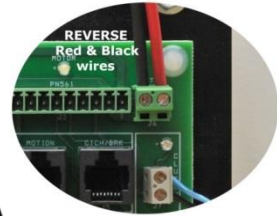
Maintenance:

The Doors In Motion automation system requires little or no maintenance; however, the best protection for the automation system is to keep the door in good working order by following the door manufacturer's recommended maintenance.

CARE & TROUBLESHOOTING

Troubleshooting:

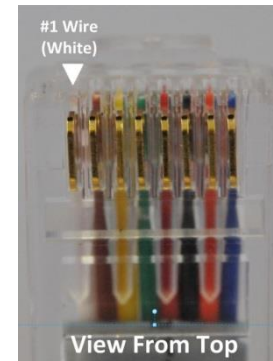
- **Door stops short of fully closed OR won't Open/Close:**
Reset the system.
 1. Manually close doors
 2. **WAIT 10 SECONDS**
 3. Press **CLOSE** on the keypad.
- **When the OPEN button is pressed the door closes:**
Hit the STOP button so the doors stop moving. Reverse the polarity on the Motor Break Out Board.
- **900MHz keypad works, but 900Mhz Motion Detector does not.**
The 900Mhz receiver is plugged into the keypad port. Plug the receiver into the 900MHz port instead.
- **Belt is sagging while the door is closing:** Detach belt from the lead door and tighten the belt using the turn buckle.
- **LED flashing on 900MHz wireless keypad or beeping from wireless motion detector:** Replace the CR123 batteries in the device.
- **900MHz remote does not work.** Charge the remote with the included micro USB cable. Same as an "Android" USB cable.



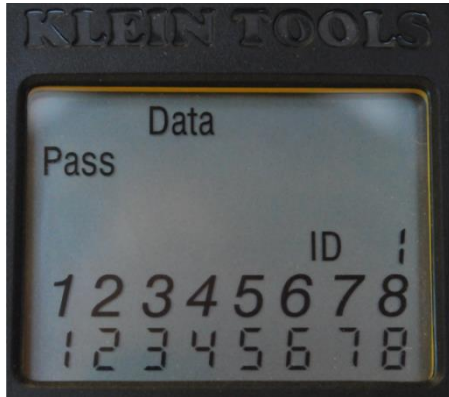
CARE & TROUBLESHOOTING

Issue: Component(s) connected via 26-8 flat wire do not function.

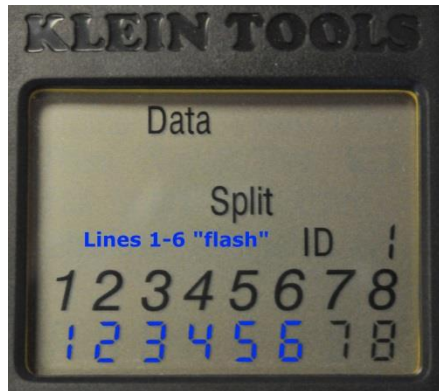
Solution: Possible miswire. Visually inspect RJ45 and make sure pin 1 is wired to pin 1 on each end. Use a cable tester to verify continuity or double check.



TROUBLESHOOTING TOOLS



**Short Cables (0'-5')
PASS**



**Long Cables(5'-75')
PASS**

- [Klein Tools VDV501-823 VDV Scout Pro 2 Tester Kit](#)
 - For Coax, RJ45, Twisted Pair & Phone cable testing
 - Tests cables in the wall using remote dongles included with kit
 - Available at Amazon.com for about \$80



Miswire - FAIL



Reversed - FAIL



**Open Wires – FAIL
(pins 1 & 2)**

CUSTOMER SERVICE

- Customer Service: For customer service, please call the toll free number **1-800-426-7113**.
- www.inmotion.company