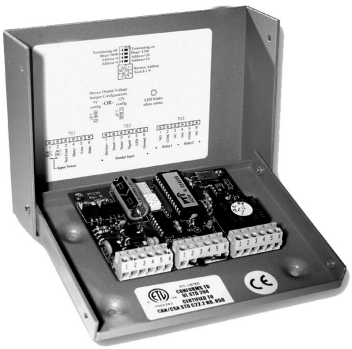
PTI SECURITY SYSTEMS

Wiegand & 2-Channel Relay Board
Installation and Operation Manual



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SECURITY **ACCESS** **CONTROL** **VIDEO**

114A3881 revision.D - July 2017

ETL LISTED US Intertek

Thank you for purchasing the Wiegand and 2-Channel Relay Board. While every effort has been made to ensure the accuracy of the information in this document, PTI Security Systems assumes no liability for any inaccuracies contained herein. We reserve the right to change the information contained herein at any time and without notice.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his/her own expense, will be required to take whatever measures may be required to correct the interference.

With the RS485 communication scheme, a keypad can be located as far as 4000 feet from the controller, therefore shielded twisted pair cable with ground wire is required for optimal operation. Additionally, larger gauge wire must be used the farther the device is from the controller,

Incorrect installation of electrical components can result in damage to electronics as well as personal injury.

Cross-wiring the AC power with the DC power will damage the electronics.

Cross-Wiring the Power wires with the Data wires will damage the electronics

Cross-wiring the positive and negative on the DC part of the system will damage the electronics.

Do NOT run low voltage system wires in the same conduit as high voltage wiring

The system will not operate properly if the voltage is below 12VDC. Extreme care should be taken when choosing a power supply voltage and current rating. Long distance runs may require a remote power supply to be installed in line with an RB5 relay to ensure proper operation.

Warning: The User should follow all installation, operation, and maintenance instructions. The User is strongly advised to conduct product and systems tests at least once each week. Changes in environmental conditions, electric or electronic disruptions and tampering may cause the product to not perform as expected.

PTI Security Systems warrants its Product to the User. The User is responsible for exercising all due prudence and taking necessary precautions for the safety and protection of lives and property wherever PTI Security Systems products are installed. PTI Security Systems does not authorize the use of its products in applications affecting life safety.

Contents

Technical Specifications

Input Power:

Voltage	12 - 18 VDC or AC
Current Consumption * Does not include reader power	300mA Maximum*

Relay Specifications:

Maximum Switching Voltage*:	30 VAC / 24VDC
Maximum Switching Current*: * Resistive Load	1A (NO / NC)

Environmental:

Ambient Temperature:	-40°C to +85°C (-40°F to 185°F)
Ambient Humidity:	0 to 85% non-condensing

NOTE: This product is note intended for outdoor use.

Introduction

This installation manual is for setting up the Wiegand & 2-channel relay board. This board has two functions — either to communicate with a Wiegand protocol device, and/or act as a 2-channel relay.

Wiegand protocol devices include proximity card readers and key fob devices. The 2-channel relay can be used to control gates, doors, lighting zones, or an elevator in a multi-story building; as a secure interior relay for UL installation; or as a shunt for alarms or photobeams.

The Wiegand & 2-channel relay board is powered by a **minimum 12V — maximum 18 VDC or AC power**. All remotes should be powered from our 12 VDC power supply. Please read the entire manual before proceeding and follow all steps in order.

PTI recommends that any installation and setup of any PTI Security Systems equipment be done by a certified, qualified technician. PTI can recommend local dealers and installers but it is the customer's responsibility to verify qualifications and negotiate any pricing or contracts (unless PTI Security Systems has been specifically contracted to do so on behalf of the customer)

Installation

Use the following procedures to install the Wiegand & 2-channel relay board.

For either application, communication and power wires must be connected to the controller terminal block using RS485 wire. RS485 is connected directly to the main terminal block and then to the terminal block(s) at other remote devices in-line.

Refer to the wiring diagrams on "Installation Wiring Diagrams – Wiegand Protocol Devices" on page 19 to page 25 for further clarification. RS485 wire must be 18 AWG, 4-conductor, shielded wire. To purchase this wire or to obtain specifications, contact PTI Security Systems.

If the Weigand input is not used, the jumper wires must be connected from **pins 2 to 3 and 3 to 6** of the center terminal block **(TS2)**. The board is shipped with these connected. Only remove these jumper wires when using the board with a Wiegand communications device.

Installation as a Wiegand Protocol Device

The following steps must be used for installation as a Wiegand protocol device. These devices can be used with the Wiegand board include proximity readers, key fob entry devices, card readers, etc.

The Wiegand board should be mounted in a secure location out of general reach of the public but easily accessible for maintenance (such as a maintenance closet or in an office).

- Never install a Wiegand device in a rental unit.
- The Wiegand board is **not** weather-resistant and should always be mounted in an interior location.
- Any devices connected to the Wiegand board should be mounted per the manufacturer's instructions.
- After the Wiegand device(s) has been sited, note their location and purpose on a site security wiring plan to save for future maintenance and service purposes.

PTI Security Systems uses a 26-bit, V1 Wiegand protocol; any Wiegand devices to be used must be compatible with this protocol.

1 After installing a proximity reader, fingerprint reader, or other third-party Wiegand device, run the Wiegand interface cable(s) from the Wiegand protocol device to the Wiegand access device. Most third-party devices limit this distance to 500 linear feet so refer to manufacturer instructions for Wiegand protocol device specifications.

2 Open the Weigand device by removing the four stainless steel button head machine screws on the sides of the housing using the hex key provided with the unit. The front and back half will separate. Mount the back plate to the desired location using the four holes.

3 Pull the necessary wires through conduit to the housing. Each device should have the following wires:

- One 18 AWG, 4-conductor, shielded cable coming in from the controller or from the previous AI device in line.
- One 18 AWG, 4-conductor, shielded cable going out to the next AI device in line (if there is another AI device down the line).
- One earth ground wire
- One 2-conductor cable coming from the door strike or maglock controlled by the device.

  The cable to the door strike (or gate operator) is only present if the relay inside that particular module is used to trigger a door/gate. The controller can be configured to use relays on the circuit board, a separate relay board, or almost any other AI device to trigger a gate or door.

  For security reasons, the relay in the keypad closest to a door/gate should not be the one used to directly trigger the door/gate.

- One cable coming from the HID proximity reader, fingerprint reader, or other Wiegand device.

4 Strip back the outer insulation and shield foil from both of the 18 AWG, 4-conductor, shielded cables (coming from the controller or previous AI device in line and going out to the next AI device in line), being careful not to cut the bare shield wire. Strip ¼ inch of insulation off the end of each of the individual colored conductor wires.

5 Remove the terminal blocks from the keypad circuit board by sliding them up and off. The terminal blocks may be somewhat difficult to remove as they are screwed on tightly. If they are tight, rock them slightly back and forth while lifting away from the board.

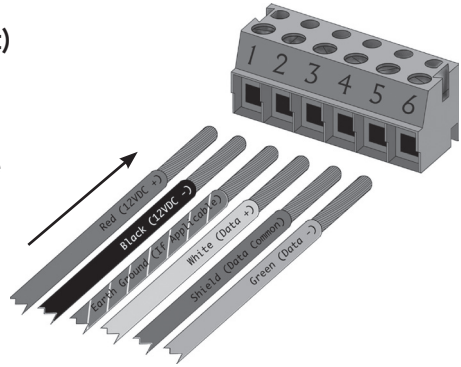
6 Insert both red wires (coming in from the controller and going out to the next AI device in line) into **terminal slot 1** on the first terminal block **(TS1)**. Ensure that both wires are seated all the way inside the slot. Use a flathead precision screwdriver to tighten down the terminal screw.

Verify that the terminal slot has tightened down on the copper wire and not on the rubber insulation. Repeat this process with each of the remaining wire connections. See "Drawing 1: Power and Data Communications Connections" on page 7.

Drawing 1: Power and Data Communications Connections

Terminal Block TS 1 (Left)

1. Red DC+ *
2. Black DC – *
3. Earth Ground, if applicable
4. White Data +
5. Shield**
6. Green Data –



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* If using AC power, place the AC wires in slots 1 and 2. PTI recommends using 12-18 VDC.

** Shield wire should be insulated with heat shrink or electrical tape.

7 In most cases, connect an earth ground wire. Particularly in situations where the device is mounted on a wall made of wood, stone, or other nonconductive material.

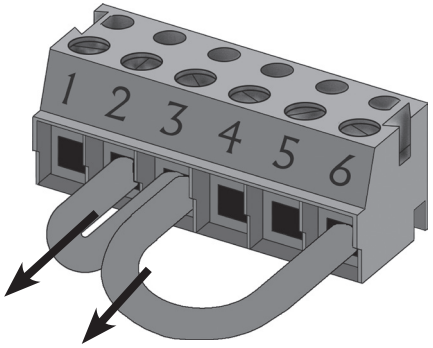
8 To connect the ground wire, run a copper wire from a grounded water pipe or a copper rod in the ground, to the keypad and connect the wire to **terminal pin 3 on TS1**. Install according to local code installation must meet applicable code as the type of wire, and depth and size of the rod may vary by municipality.

9 No copper wire should show outside the terminal slots. Gently tug the wires to verify that they are tightly held.

10 The center terminal block **(TS2)** connects with the Wiegand device. Remove and discard the jumper wires from **pins 2, 3, and 6** before installing the Wiegand device. See "Drawing 2: Remove Jumper Wires from TS2" on page 8

The wires will disrupt communication to Wiegand devices if left in. The jumper wires are only necessary when using the device as a 2-channel relay board.

Drawing 2: Remove Jumper Wires from TS2



11 For minimum connections on this device, strip the **Device Power +**, **Data 1**, **Data 0** , and **Ground** wires ¼ inch and connect as follows:

Wiegand Device Power +	pin 1 of TS2
Data 1	pin 2 of TS2
Data 0	pin 3
Ground	pin 6

Connect the wires by placing them into their terminal slots and tightening down with a screwdriver.

12 Some Wiegand devices have Signal and LED wires. They are often connected like this:

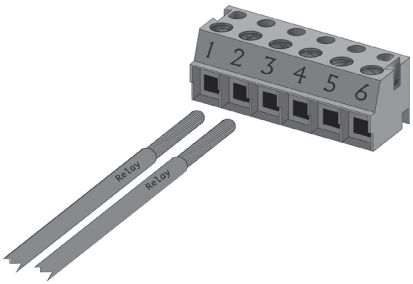
signal wire from card presence indicator	pin 4 of TS2
LED wire (activate a green LED when access approved)	pin 5 of TS2
other device LED	pin 5 of TS2
other device LED	pin 6 of TS2

13 The right terminal block (**TS3**) is used for the relay connection:

pins 1 - 3	door strike or gate operator
pins 4 - 6	second relay

If a gate operator or door strike is being triggered directly from this device, the wires will connect to two of these three pins on Relay 1. Refer to the gate or door strike manufacturer's instructions to determine whether it needs to be connected to the normally open and common or to the common and normally closed. See Drawing 3 on page 9.

Drawing 3: Relay Connection Settings



Terminal Block TS3 (Right)

1. 1. Relay 1 Normally Open
2. 2. Relay 1 Common
3. 3. Relay 1 Normally Closed

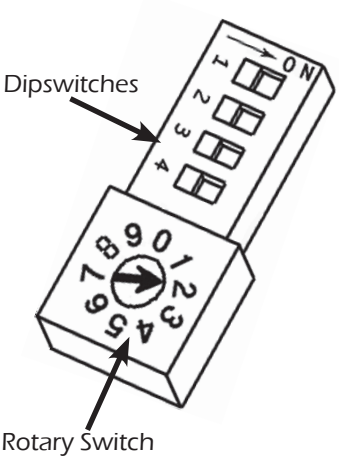
14 Further programming may be needed depending on the Wiegand protocol of the device connected to the Wiegand board, Refer to manufacturer's instructions for more information.

15 After all wires are connected, the unit must be addressed. See "Drawing 4: Dipswitch Settings" on page 11:

- Use a small precision standard screwdriver to turn the Rotary Switch to an address number from 0 – 9.
- Use dipswitches 2 – 4 to add 10, 20, or 30 to that number. This allows any address from 1 – 69 to be created.
- **DO NOT address the device to 22 as this address is reserved.**
- As with keypads, multiplexers, and other AI devices, the address must be unique with no duplication between devices.

16 When the unit is addressed, close the housing and screw it back together.

Drawing 4: Dipswitch Settings



Dipswitches	
OFF	ON
1 Terminating Off *	Terminating On *
2 Address + 0	Address +30
3 Address +0	Address +20
4 Address +0	Address +10

Rotary Switch
0 – 9 adds 0 – 9 to the Address

*** Dipswitch # 1 (the terminating resistor)** places a communication line terminating resistor across the RS485 data lines when turned on and should never be turned on unless instructed to by a Tech Support Representative.

Dipswitch #1 is only turned if the Wiegand & 2-channel relay board is the last remote device on a communication line that is more than 800 feet from the controller. On all other devices the terminating resistor should be turned off. If this is turned on at more than one AI device or on a healthy system with no signal reflection, it can cause communications problems.

Note: There should only be one remote device (keypad, Wiegand, etc) in the entire access control system with a terminating resistor turned on.

Installation as a 2-Channel Relay Board

The following steps must be used for installation as a 2-Channel relay device. The relay function can be used for alarm shunts, secure relays, elevators, and lighting zones.

The 2-Channel board should be mounted in a secure location out of general reach of the public but easily accessible for maintenance (such as a maintenance closet or in an office).

- Never install it in a rental unit.
- The board is **not** weather-resistant and should always be mounted in an interior location.
- Any devices connected to the 2-Channel relay board board should be mounted per the manufacturer's instructions.

1 Open the 2-Channel board by removing the four stainless steel button head machine screws on the sides of the housing using the hex key provided with the unit. The front and back half will separate. Mount the back plate to the desired location using the four holes.

2 Pull the necessary wires through conduit to the housing. Each device should have the following wires:

- One 18 AWG, 4-conductor, shielded cable coming in from the controller or from the previous AI device in line.
- One 18 AWG, 4-conductor, shielded cable going out to the next AI device in line (if there is another AI device down the line).

- One earth ground wire

- One 2-conductor cable coming from the door strike or maglock controlled by the device.

  The cable to the door strike (or gate operator) is only present if the relay inside that particular device is used to trigger the door/gate. The controller can be configured to use relays on the circuit board, a separate relay board, or almost any other AI device to trigger a gate or door. For security reasons, the relay in the keypad/device closest to a door/gate should not be the one used to directly trigger the door/gate.

- One cable coming from the HID proximity reader, fingerprint reader, or other Wiegand device.

3 Strip back the outer insulation and shield foil from both of the 18 AWG, 4-conductor, shielded cables (coming from the controller or previous AI device in line and going out to the next AI device in line), being careful not to cut the bare shield wire. Strip ¼ inch of insulation off the end of each of the individual colored conductor wires.

4 Remove the terminal block **(TS1)** from the keypad circuit board by sliding them up and off. The terminal block may be difficult to remove as they are screwed on tightly. If they are tight, rock them slightly back and forth while lifting away from the board

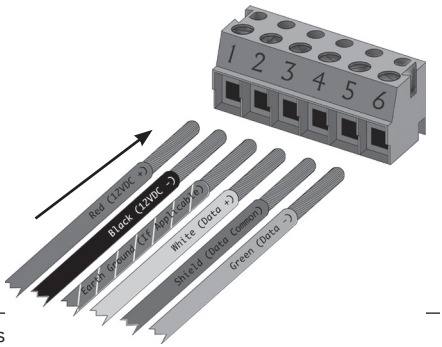
5 Insert both red wires (coming in from the controller and going out to the next AI device in line) into **terminal slot 1** on the first terminal block **(TS1)**. Ensure that both wires are seated all the way inside the slot.

6 Use a flathead precision screwdriver to tighten down the terminal screw. Verify that the terminal slot has tightened down on the copper wire and not on the rubber insulation. Repeat this process with each of the remaining wire connections. See "Drawing 5: Power and Data Communications Connections from Controller" on page 14.

Drawing 5: Power and Data Communications Connections from Controller

Terminal Block TS 1 (Left)

1. Red DC+ *
2. Black DC – *
3. Earth Ground, if applicable
4. White Data +
5. Shield**
6. Green Data –

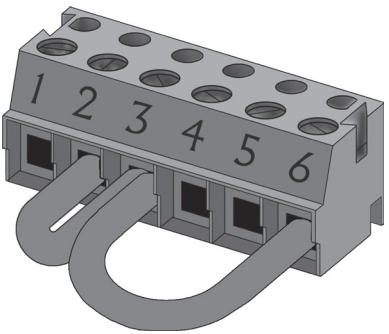


* If using AC power, place the AC wires in slots 1 and 2. We recommend using 12-18 VDC.

** Shield wire should be insulated with heat shrink or electrical tape.

7 The center terminal block (**TS2**) comes with jumper wires as shown in "Drawing 6: Jumper wire settings for TS2" on page 14. If the board will be used as a 2-Channel relay, the jumper wires must be left in place as they ground any potential radio frequency interferance on the Wiegand circuit. The jumper wires are between **pins 2 - 3 and 3-6.**

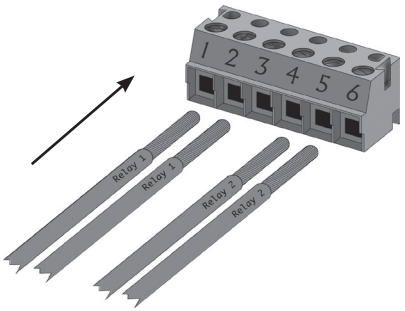
Drawing 6: Jumper wire settings for TS2



If the wires have been removed, they must be replaced during installation to prevent radio interferance.

8 The terminal block on the bottom right corner of the board (**TS3**) has two relays that are used for the relay connection as shown in "Drawing 7: Relay Connection Settings" on page 15.

9 Remove the terminal blocks from the board by sliding them up and off. The terminal blocks may be somewhat difficult to remove as a tight electrical connection is necessary. If they are tight, rock them slightly back and forth while lifting away from the board



Terminal Block TS3 (Right)

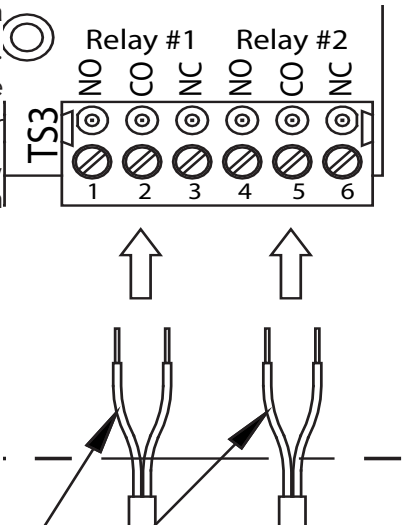
1. Relay 1 Normally Open
2. Relay 1 Common
3. Relay 1 Normally Closed
4. Relay 2 Normally Open
5. Relay 2 Common
6. Relay 2 Normally Closed

Drawing 7: Relay Connection Settings

10 To attach a device to the relay board, connect two incoming wires to **TS3** using two of the pins on **1 - 3**. Another device can be connected to two of the pins on **4 - 6**. See Drawing 8 on page 16.

Any device can be connected to the relay in this manner, but refer to the manufacturer's instructions for the device to determine if the device needs to be connected to the **normally open** and **common** pins or the **normally closed** and **common pins.**

The relay is often used to control a gate, lights, elevator, or door strike. Elevator connections should be completed by a licenced elevator technician, however door strikes, gate operators, and maglocks can generally be done by the installer.



Drawing 8: Wiring for two devices into the 2-Channel relay board

Connections to elevators should be completed by a licensed elevator installer. It is important to schedule installation with the elevator company in advance.
In some cases, connections to high voltage lights will require a licensed electrician as these connections (devices that switch over 30V) require use of a contactor block.

11 In most cases, connect an earth ground wire. Particularly in situations where the device is mounted on a wall made of wood, stone, or other nonconductive material.

12 To connect the ground wire, run a copper wire from a grounded water pipe or a copper rod in the ground, to the keypad and connect the wire to **terminal pin 3 on TS1**. Install according to local code installation must meet applicable code as the type of wire, and depth and size of the rod may vary by municipality.

13 The relays on this board are low voltage only and **must not exceed 30VAC or DC.** For gate motors and certain light connections using more than 30V, use a contactor block to handle the higher voltage.

14 An optional switch can be wired to **P2** in the upper right-hand corner of the circuit board. Closing this switch triggers both relays simultaneously and holds them as long as the switch is closed. This can be used for a manual override or for emergency fire department access.

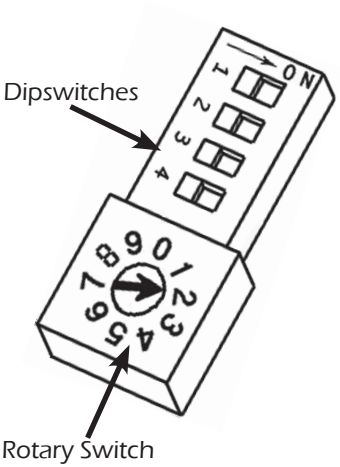
15 After all wires are connected, the unit must be addressed. See "Drawing 9: Dipswitch Settings" on page 18:

- Use a small precision standard screwdriver to turn the Rotary Switch to an address number from 0 – 9.
- Use dipswitches 2 – 4 to add 10, 20, or 30 to that number. This allows any address from 1 – 69 to be created.
- DO NOT address the module to **22** as this address is reserved.
- As with keypads, multiplexers, and other AI devices, the address must be unique with no duplication between devices.

16 When the unit is addressed, close the housing and screw it back together.

Note: There should only be one remote device (keypad, Wiegand, etc) in the entire access control system with a terminating resistor turned on.

Drawing 9: Dipswitch Settings



OFF	ON
1 Terminating Off *	Terminating On *
2 Address + 0	Address +30
3 Address +0	Address +20
4 Address +0	Address +10

Rotary Switch
0 – 9 adds 0 – 9 to the Address

* Dipswitch # 1 (the terminating resistor) places a communication line terminating resistor across the RS485 data lines when turned on and should never be turned on unless instructed to by a Tech Support Representative.

Dipswitch #1 is only turned if the Wiegand & 2-channel relay board is the last remote device on a communication line that is more than 800 feet from the controller. On all other devices the terminating resistor should be turned off. If this is turned on at more than one AI device or on a healthy system with no signal reflection, it can cause communications problems.

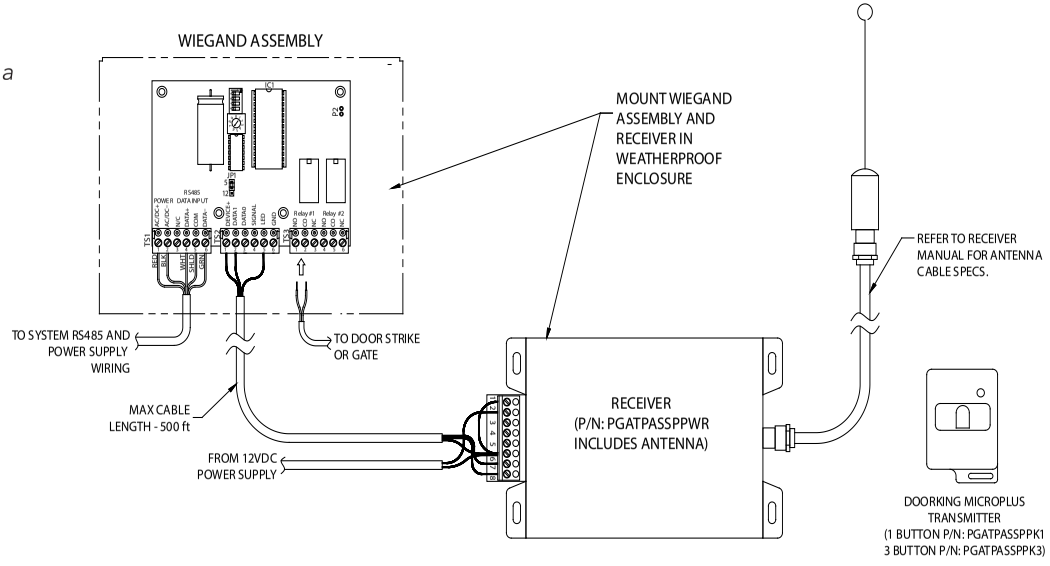
Installation Wiring Diagrams – Wiegand Protocol Devices

WIRING TABLE	
FROM (WIRE COLOR)	TO (ON WIEGAND)
+DC (RED)	TS2-1
DATA1 (WHT)	TS2-2
DATA0 (GRN)	TS2-3
CARD PRESENT (VIO)	TS2-4
LED (ORN&YLW)	TS2-5
GROUND (BLK)	TS2-6
SHIELD GND (SHIELD)	

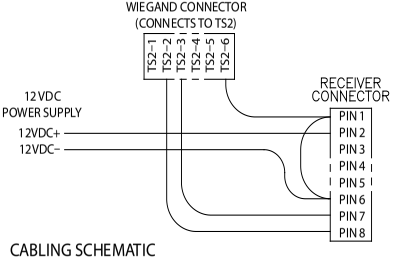
Drawing 10: Installation as an HID Proximity Reader

The Wiegand & 2-channel relay board can be installed with a proximity reader to allow access through a door or gate. In most cases, up to two readers can be installed to the same Wiegand & 2-channel relay board (as long as there is sufficient power for each reader). The wires from each reader go into the same holes on TS2. See Figure 9. Typically, this can be used to control a door with a Proximity reader on each side of the door connected to the same Wiegand & 2-channel relay board.

Drawing 11: Installation as a Wireless Key Fob Access



Similar to the proximity reader, the key fob reader can be installed to allow access through a gate or door. Depending on the placement of the antenna, you may only need one Wiegand & 2-channel relay board and receiver, however, two receivers may be used if needed.



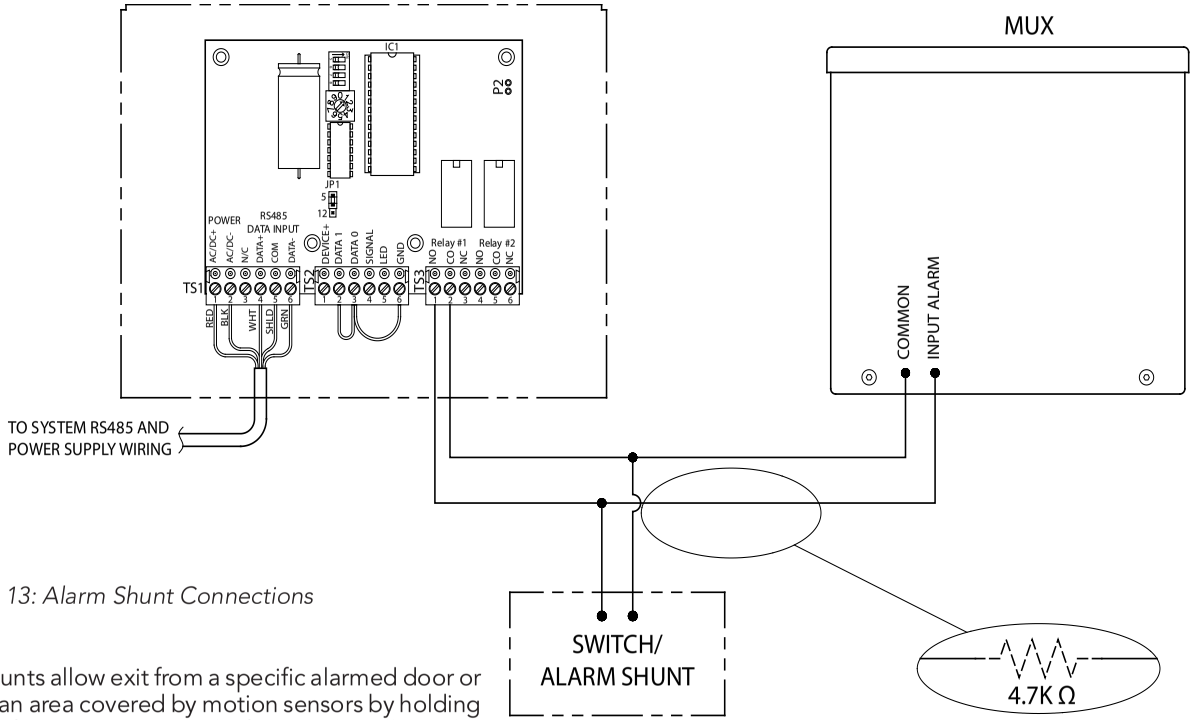
CABLING SCHEMATIC

WIRING TABLE			
TS2 (WIEGAND)	RECEIVER	POWER SUPPLY	SIGNAL NAME
TS2–2	PIN 8	–	DATA 1
TS2–3	PIN 7	–	DATA 0
TS2–4	N/C	–	–
TS2–5	N/C	–	–
TS2–6	PIN 1	–	COM (SHIELD)
	PIN 6	12VDC–	PWR –
–	PIN 2	12VDC+	PWR +

Installation Wiring Diagrams – 2-Channel Relay Device

Drawing 12: Installation as a 2-Channel Relay Device

The Wiegand & 2-channel relay board is useful where both relays are needed (such as lighting zones, elevators, multiple alarm shunts, etc.). In these situations, the Wiegand function is not be used and the Wiegand protocol Data1 and Data0 on pins 2 and 3 of TS2 must be tied to ground on pin 6 of TS 2. The relays must be set up in access control software.



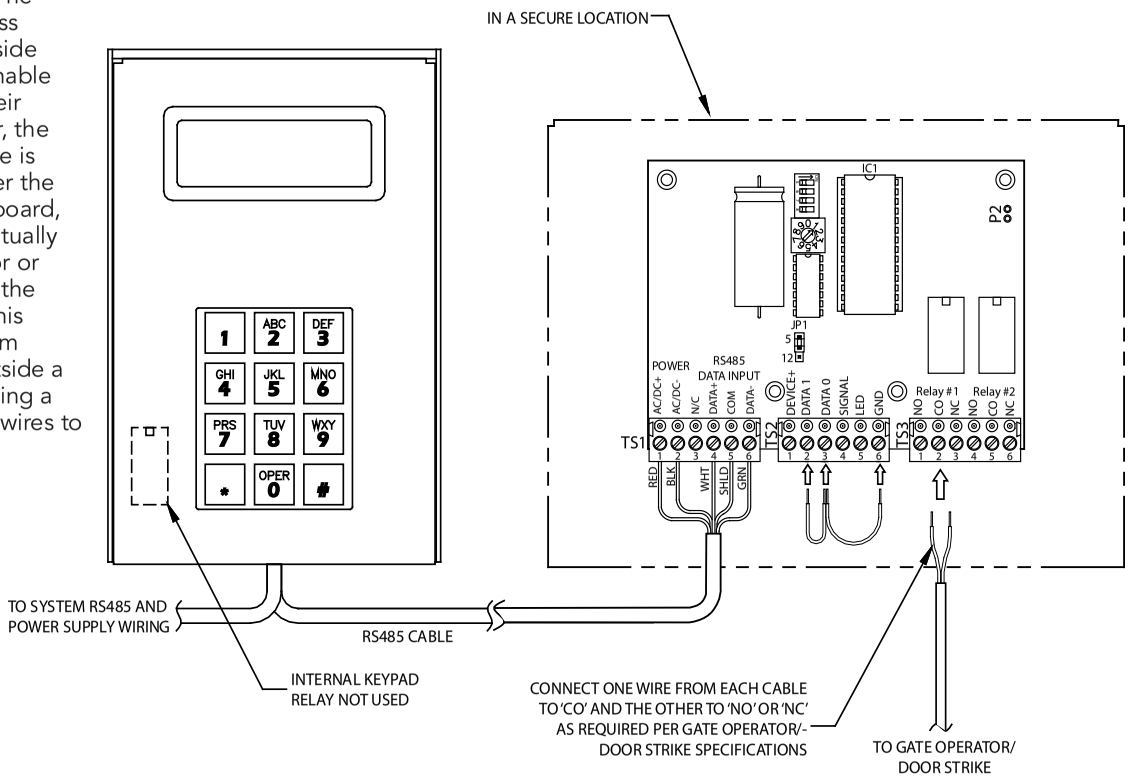
Drawing 13: Alarm Shunt Connections

Alarm shunts allow exit from a specific alarmed door or through an area covered by motion sensors by holding the relay for a certain period of time. This allows the manager to set a door alarm, photo beam, or motion sensor while inside the zone and still be able to exit the zone without triggering the alarm. The alarm will be set after the preset relay time has run out.

FOR SUPERVISED SWITCH
Break input line near the door switch/alarm shunt and insert a 4.7KΩ resistor.
NOTE: in most cases, the switch/alarm shunt does not require the 4.7KΩ supervised switch resistor

Secure interior relays are recommended for high security installations. The keypad (or other access device) is located outside the secured area to enable customers to enter their access code. However, the access control software is programmed to trigger the relay inside the relay board, or the controller, to actually open the secured door or gate. The relay inside the keypad is not used. This prevents someone from opening a keypad outside a secured area and placing a jumper over the relay wires to gain access.

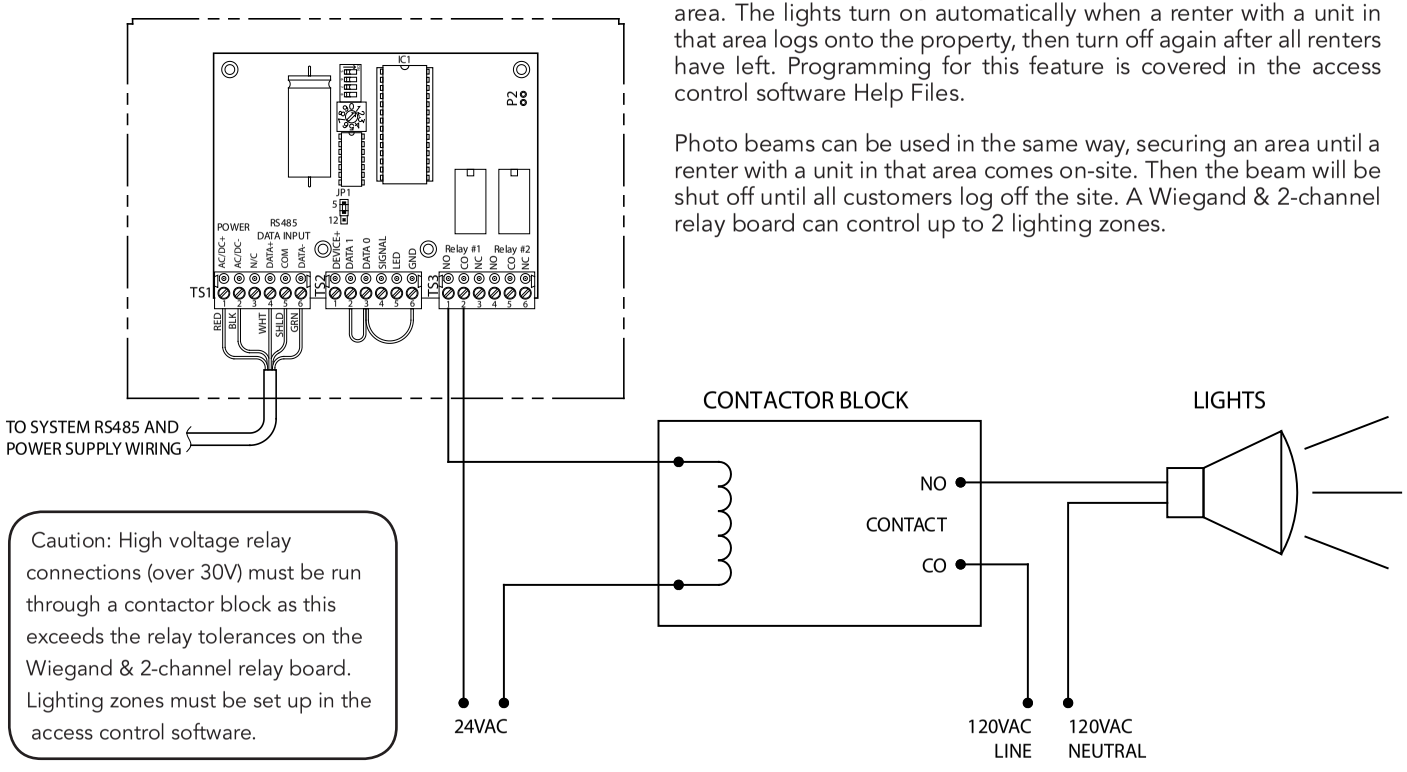
Drawing 14: Secure Interior Relay



Drawing 17: Lighting Zone Controls

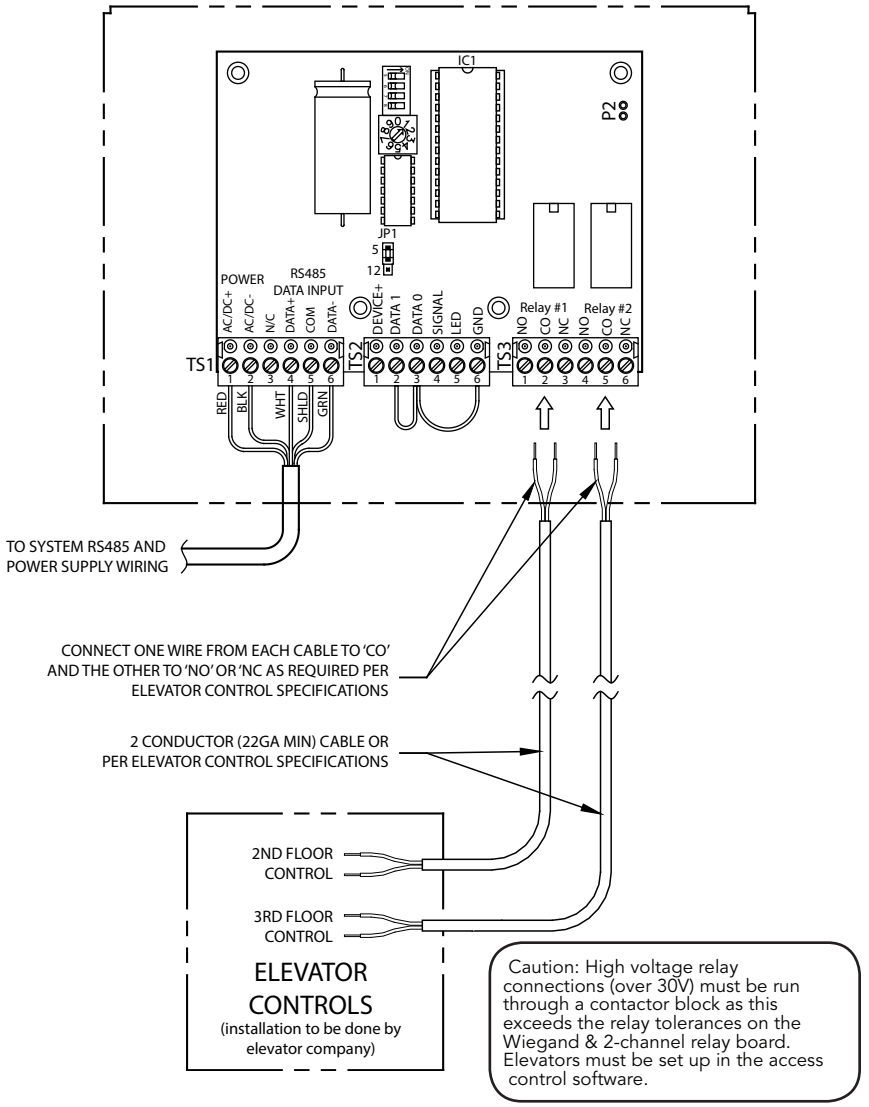
Lighting zones are used to control lighting for power conservation on a site, or as photo beams for access control. By connecting hallway lights to the Wiegand & 2-channel relay board via a contactor block, the lights will remain off when no one is in that area. The lights turn on automatically when a renter with a unit in that area logs onto the property, then turn off again after all renters have left. Programming for this feature is covered in the access control software Help Files.

Photo beams can be used in the same way, securing an area until a renter with a unit in that area comes on-site. Then the beam will be shut off until all customers log off the site. A Wiegand & 2-channel relay board can control up to 2 lighting zones.



Caution: High voltage relay connections (over 30V) must be run through a contactor block as this exceeds the relay tolerances on the Wiegand & 2-channel relay board. Lighting zones must be set up in the access control software.

Drawing 18: Elevator Controls



Elevator controls are similar to lighting zones. When the elevator floor controls are connected through the Wiegand board, only customers with units on specific floors can gain access to that floor. The keypad or proximity reader is placed immediately outside the elevator (or inside the elevator car). The elevator buttons will not function until the user inputs a valid access code and then, only the button(s) to the floor(s) to which the user has permission to access to will become operational. Users are unable to operate buttons to go to any other floor. A Wiegand & 2-channel relay board can control an elevator on a 2 or 3 story building only.

Warranty & Disclaimer

PTI Security Systems warrants its products and equipment to conform to its own specifications and to be free from defects in materials and workmanship, under normal use and service, for a period of one year from the date of shipment. Within the warranty period, PTI Security Systems will repair or replace, at its option, all or any part of the warranted product which fails due to materials and/or workmanship. PTI Security Systems will not be responsible for the dismantling and/or re-installation charges. To utilize this warranty, the customer must be given a Return Materials Authorization (RMA) number by PTI Security Systems. The customer must pay all shipping costs for returning the product.

This warranty does not apply in cases of improper installation, misuse, failure to follow the installation and operating instructions, alteration, abuse, accident, tampering, natural events (lightning, flooding, storms, etc.), and repair by anyone other than PTI Security Systems.

This warranty is exclusive and in lieu of all other warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. PTI Security Systems will not be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties.

This warranty will not be modified or varied. PTI Security Systems does not authorize any person to act on its behalf to modify or vary this warranty. This warranty applies to PTI Security Systems products only. All other products, accessories, or attachments used in conjunction with our equipment, including batteries, will be covered solely by their own warranty, if any. PTI Security Systems will not be liable for any direct, incidental, or consequential damage or loss whatsoever, caused by the malfunction of product due to products, accessories, or attachments of other manufacturers, including batteries, used in conjunction with our products. This warranty does not cover the replacement of batteries that are used to power PTI Security Systems products.

The customer recognizes that a properly installed and maintained security system may only reduce the risk of events such as burglary, robbery, personal injury, and fire. It does not ensure or guarantee that there will be no death, personal damage, and/or damage to property as a result. PTI Security Systems does not claim that the Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire, or otherwise, or that the Product will in all cases provide adequate warning or protection.

PTI Security Systems products should only be installed by qualified installers. The customer is responsible for verifying the qualifications of the selected installer.

PTI Security Systems shall have no liability for any death, injury, or damage, however incurred, based on a claim that PTI Security Systems Products failed to function. However, if PTI Security Systems is held liable, directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, PTI Security Systems's maximum liability will not in any case exceed the purchase price of the

Product, which will be fixed as liquidated damages and not as a penalty, and will be the complete and exclusive remedy against PTI Security Systems

Warning: The User should follow all installation, operation, and maintenance instructions. The User is strongly advised to conduct Product and systems test at least once each week. Changes in environmental conditions, electric or electronic disruptions, and tampering may cause the Product to not perform as expected.

Warning: PTI Security Systems warrants its Product to the User. The User is responsible for exercising all due prudence and taking necessary precautions for the safety and protection of lives and property wherever PTI Security Systems Products are installed. PTI Security Systems does not authorize the use of its Products in applications affecting life safety.

Notice. Some PTI Security Systems products use 900Mhz wireless technology. Other devices at the site such as cordless telephones or alarm components may cause interference that will disrupt the operation of the system or may be interfered with by the system. PTI Security Systems assumes no liability for any problems caused by interference. It is the sole responsibility of the user to identify and correct such problems.

PTI SECURITY SYSTEMS


SECURITY


ACCESS


CONTROL


VIDEO

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