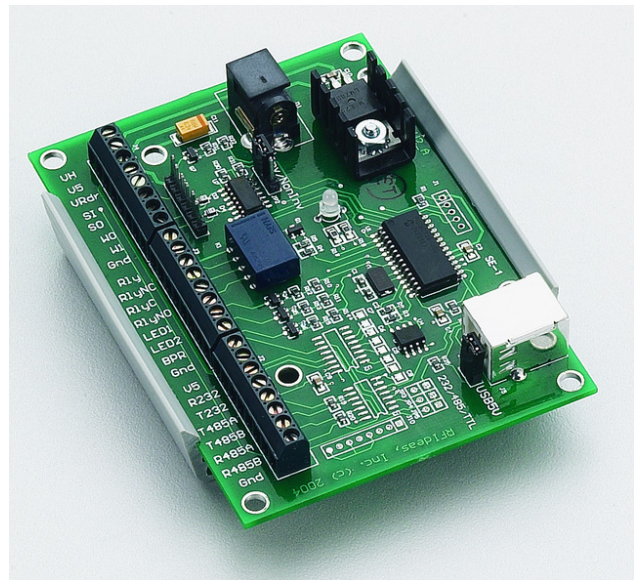

Gym Assistant Wiegand Access Control Setup for Proximity Readers and Numeric Keypads

Updated December 2010
www.GymAssistant.com/support/documents

Note: Please read this entire document before beginning your installation.



1. Introduction

The Gym Assistant Wiegand Door Controller included in your Access Control package provides an interface any Wiegand device (such as a Proximity Reader or Numeric Keypad) and a 9-pin serial port on your computer.

The Controller also includes a dry-contact relay that can trigger an electric door strike or magnetic lock. Note that the relay does not provide power to the lock, it merely operates as a switch to open or close a circuit allowing current to flow to the lock or stopping current from flowing to the lock.

Note: The Wiegand Door Controller requires Gym Assistant 2.0. If you do not have version 2.0 or newer, please contact Bio-Logic.

2. Before You Begin...

Please read this entire document before beginning your Door Controller installation.

Installing our Access Control system requires only a very basic knowledge of wiring and electronics. These instructions have evolved from over ten years of helping our customers setup and troubleshoot their systems.

We strongly recommend that you connect all of the hardware on the desktop or counter and test the system before installing. This will allow you to work out any technical issues much more easily than after you have run wires and mounted the hardware.

You should also perform any tests included in each step of the installation. Each test is intended to confirm that a part of the system is functioning correctly before moving onto the next part.

If you have any questions before or during installation, please don't hesitate to call us at 1-877-496-2778, x2 or email AccessControlHelp@GymAssistant.com.

3. Where to Locate the Controller

The **Proximity Card Reader** or **Wiegand Keypad** can be mounted anywhere outside near the door to be controlled. It does not need to be mounted on the door frame itself since you can specify the amount of time that the door is unlocked after the member swipes his/her card.

We recommend placing the **Wiegand Door Controller** near the computer (for example, mounted under the counter at the front desk). This will allow you to more easily diagnose any problems you may have.

4. Connect the Controller to your computer

Plug the Serial Cable into the Serial Cable” on the door controller as shown in the diagram below. Note that the **brown** wire on the serial cable should be aligned with the end labeled "Pin 1" on the board.

Connect the 9-pin serial cable to any available serial port on your computer. If you do not have any serial ports available, then you may need to purchase a USB/Serial Adapter. Be sure to confirm that the adapter is compatible with your version of Windows (XP, Vista or Windows 7). If you have a 64-bit version of Windows then confirm that the adapter is compatible with 64-bit Windows.

*Note: We recommend that you purchase a USB/Serial adapter that is **optimized for 24/7 operation**, as most consumer-level adapters will experience occasional loss of connection with your computer.*

Note: If you are using a USB/Serial Adapter you install the software drivers that came with the adapter before plugging the adapter into your computer. You must then restart GateKeeper in order to see the new port(s).

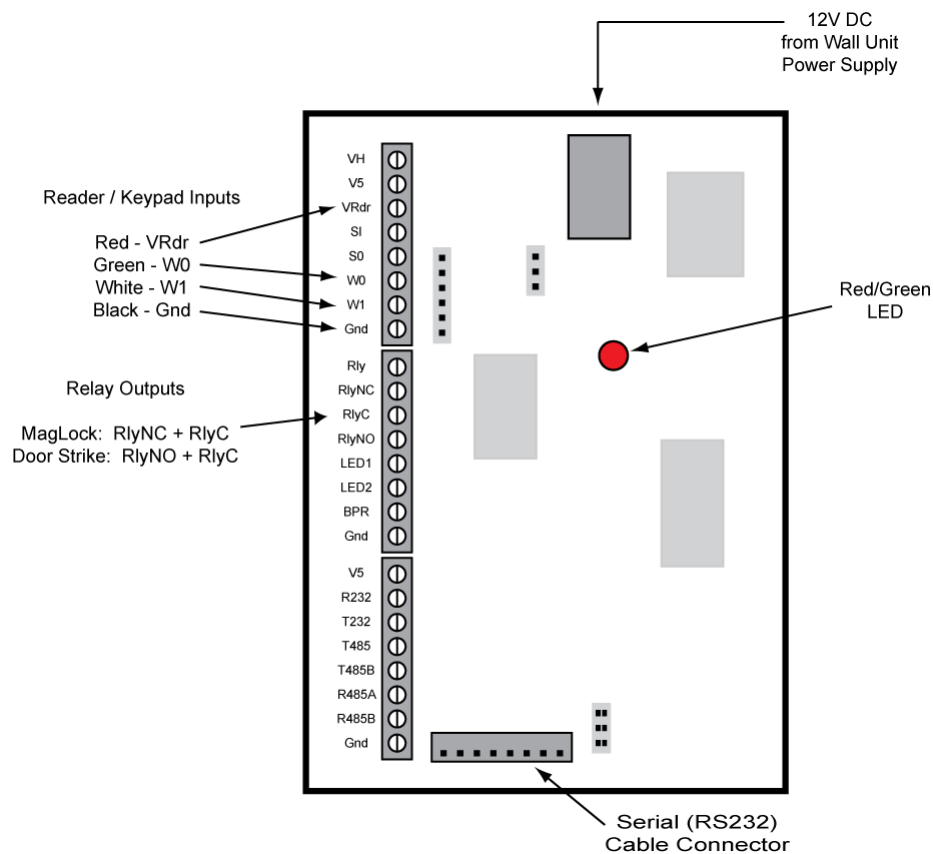


Fig 1 - Wiegand Controller Board Connections

Supply Power to the Door Controller

You can supply power to the Controller in one of two ways. **Note that you should only use ONE of these methods.**

1. The 9-pin end of the serial cable (with screws) has an additional 12-inch cable with a small round connector. This cable will connect to a PS2 keyboard port found on most older computers. If you also have a PS2 keyboard then connect the Controller PS2 power cable to the computer and then connect the keyboard to the back of the Controller cable.
2. A 12V DC wall mount power supply included in your package will connect directly to the Controller as shown in the diagram above. **This is the recommended method to power the Controller board.** Note that you may need to cut away some of the plastic mounting track (with a sharp knife) to make clearance for the power supply to plug into the Controller board.

When the Controller is powered up the LED on the board should light up red. If the red LED does not light, then check your power connections.

5. Connect the Proximity Reader to the Converter

Note: We recommend connecting all the Access Control components to confirm operation on the desktop before installing any wiring!

Wire sizes recommended for Wiegand interface (4-conductor) are as follows:

Distance	Size
Up to 200 ft	22 gauge
Up to 300 ft	20 gauge
Up to 500 ft	18 gauge

Below is the standard wiring for most HID proximity card readers and keypads. You will find the specific wiring configuration for your reader or keypad in the documents that came with the reader. Be sure to keep these documents in a safe place as you may need them at some point in the future.

Reader Wire Color	Controller Terminal	Description
Red	VRdr	5V DC (power to reader)
Black	Gnd	ground
Green	W0	Data 0 (data)
White	W1	Data 1 (clock)
Yellow (Reader only)	BPR (optional)	Beeper (see instructions below)
Brown (Keypad only)	LED1 (optional)	Flashes Green LED on successful number entry
Brown (Keypad only)	BPR (optional)	Lights Green LED while door is open (see instructions below)

Fig 2 - Wiegand Reader/Keypad Wiring Connections

Be sure to properly terminate the other unused wires coming from the reader.

Proximity Reader:

When the Controller is powered up the LED on the board should light up red. You should hear three short beeps from the reader and the reader LED should flash green with each beep and then stay red. (If you are using a numeric keypad you will hear no beeps from the keypad.)

Scan a card near the reader. The reader should beep and the reader LED should flash green and then turn back to red. The Controller LED should also flash green and then turn back to red. This means that the controller has received a successful scan from the reader.

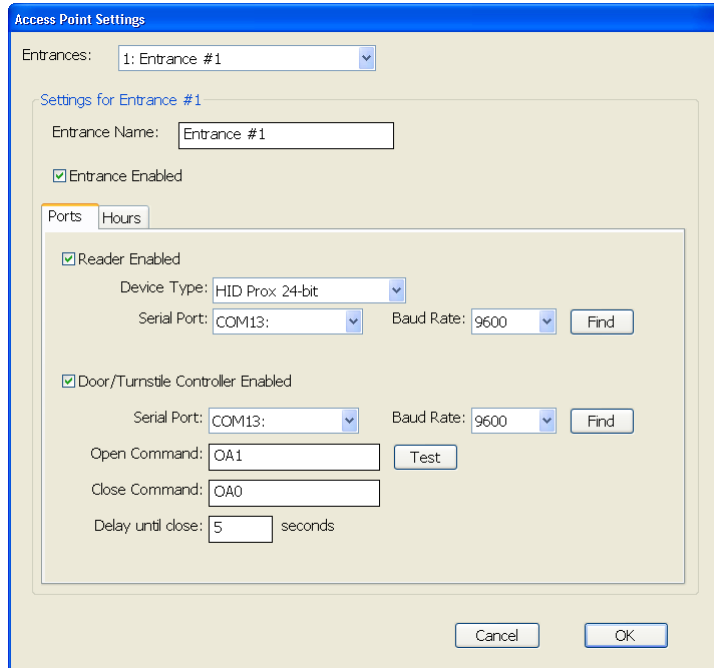
Numeric Keypad:

When the Controller is powered up the LED on the board should light up red and the red LED on the keypad should light up.

Press the keys for a number, then press # to send the numbers to the computer. **Note that the highest number allowed is 65534**. If you enter a number higher than 65534 then the keypad will return an error code of 65535.

Configure Settings in GateKeeper

- Start the **GateKeeper 2.0** application.
- Select **Access Points / Ports** from the **Settings** menu.
- Set the controlled entrance as Entrance #1.
- Check the **Entrance Enabled** box.
- Set the **Device Type** to **HID Prox 24-bit**.
- Set **Serial Port** to the port that is connected to the access reader. If you are not sure which port is connected to the reader click the **Find** button then scan a card through the reader. GateKeeper should report which port is connected to the reader.
- **Baud Rate** should always be set to 9600.
- Check the **Door/Turnstile Controller Enabled** box.
- Set the **Serial Port** to the same port as the Reader and the **Baud Rate** to 9600.
- Set the **Open Command** to "OA1" (Letter 'O' + A + One, without quotes)
- Set the **Close Command** to "OA0" (Letter 'O' + A + Zero, without quotes)
- Set the **Delay until close** to the number of seconds that you want the door to remain unlocked after a card scan.
- If you want to signal your members that the door is open with a buzzer (proximity reader) or green LED (numeric keypad) then add "OB1" (Letter 'O' + B + One, without quotes) to the Open Command and add "OB0" (Letter 'O' + B + Zero, without quotes) to the Close Commands above.
- Click the **Test** button to test the relay. You should hear a click as the relay opens. Then click OK. If the relay does not open then double-check the Open/Close commands.
- If you want to limit the hours during which the entrance is active, then click the Hours tab. Check the Limit Hours of Entry box and set the time periods during which you want the door to respond to card scans.
- Click **OK**



6. Test the Electronic Lock Operation

Most **door strikes** are unlocked by closing a circuit and applying a voltage to the lock. This is called a “**Normally-Open**” electrical circuit because in the normal state there is no power flow. The door strike is locked when there is no power to it, and the door strike releases when power is applied.

A **magnetic** lock (or “Mag Lock”) is held locked by maintaining a current to an electromagnet. With the magnet energized a steel plate on the door is held very tightly, keeping the door closed. To unlock the door you must interrupt the power from flowing to the magnet, allowing the steel plate to move away from the magnet. This is called a “**Normally-Closed**” electrical circuit because in the normal state there is power flowing through the circuit.

The Proximity Door Controller can operate in either a **normally-open** or **normally-closed** configuration.

Whether normally-closed or normally-open, the door lock circuit requires its own separate **power supply** to provide voltage to the lock. ***Do not use the Controller power supply to power your lock.***

Note: It is very important to test the lock circuit independent from the Controller to ensure that the lock circuit is wired properly.

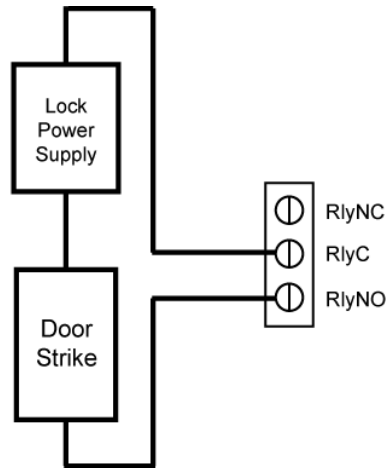
To test a Normally-Open lock operation, touch the two leads from the lock to the two leads (or terminals) on the power supply. The lock should click as power flows to the lock, causing the lock to release. When you break the connection the lock should click again as the power stops flowing to the lock, causing the lock to re-lock.

To test a Normally-Closed lock operation, connect the two leads from the lock to the two leads (or terminals) on the power supply. The magnet should be energized. If you disconnect any of the leads the magnet should release.

7. Wiring a Door Strike (Normally-Open Circuit)

To test that the Door Strike and power supply, connect the two wires from the strike to the power supply terminals. The strike should click unlocked. If you disconnect one of the wires from the power supply, then the strike will lock again.

- Connect **RlyNO** (“Normally-Open”) terminal on the **Controller** to one terminal of the **Lock Power Supply** (it doesn’t matter which one)
- Connect one **Door Strike** wire to other terminal of the **Lock Power Supply**
- Connect the other **Door Strike** wire to the **RlyC** (“Common”) terminal on the **Controller**.
- When you click the **Open Gate** button in **GateKeeper** the lock should click open and then close again after counting down to zero.



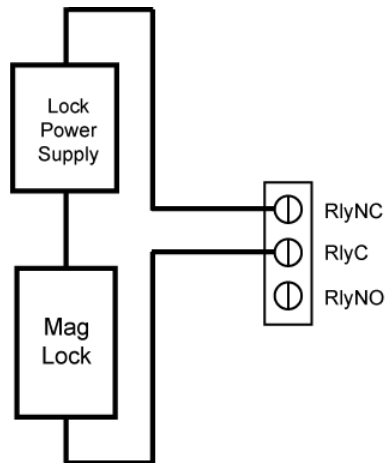
Door Strike, Normally-Open Circuit

Wiring a Magnetic Lock (Normally-Closed Circuit)

To test that the Mag-Lock and power supply, connect the two wires from the lock to the power supply terminals. The lock should be energized and locked. If you disconnect one of the wires from the power supply, then the lock should be released.

To connect the Door Controller to a Mag-Lock:

- Connect the **RlyNC** (“Normally-Closed”) terminal on the **Controller** to one terminal of the **Lock Power Supply** (it doesn’t matter which one)
- Connect one **MagLock** wire to other terminal of the **Lock Power Supply**.
- Connect the other **MagLock** wire to the **RlyC** (“Common”) terminal on the **Controller**.
- The magnet should be energized, and the door should be locked.
- When you click the **Open Gate** button in **GateKeeper** the lock should release and then lock again after counting down to zero.



Mag-Lock, Normally-Closed Circuit

8. Test the Door Controller

In GateKeeper, click the **Open Gate** button. You should hear the relay click. After counting down to zero you should hear another click from the relay.

If nothing happens, then select **Ports** from the **Settings** menu. Then change the **Serial Port** selected under the **Door/Turnstile Controller Enabled** item and try again.

9. Entering Card Numbers into Gym Assistant

Every proximity card is identified by an 8-digit number composed of two parts:

- A 3-digit Facility Code (found on the box your cards came in)
- A 5-digit card number

In order to guarantee that the proximity cards will work with Gym Assistant the software must have all 8 digits from the card.

To set the card number for a member in Gym Assistant, click the Barcode button while viewing the member's record.

If you scan the members card through the reader then the full 8-digit card number will appear.

If you enter the card number manually you must remember to add the 3-digit Facility Code before the 5-digit card number.

10. Other Important Topics

Adding serial ports to your computer

You may need to add one or more serial ports to your computer. You can easily add ports yourself by purchasing one or more USB-to-Serial adapters. These adapters plug into a USB port and provide a connector to plug in a serial cable. Make sure that you install the software that came with the adapter before plugging the adapter into your computer. You will find USB/Serial adapters at any computer store and most large office supply stores. Or buy from us at <http://www.gymassistant.com/store>

Windows Energy Settings

It is very important that you change your Windows energy settings to ensure that your computer does not go to “sleep”:

- Open the Control Panel (from the Start button).
- If the label Pick a Category appears, click on Performance and Maintenance.
- Open the Power Options icon.
- Set System Standby to Never.
- Click the Hibernate tab.
- Uncheck the Enable Hibernation checkbox.
- Click OK.
- Close the Control Panel.

Windows Automatic Update Settings

Windows XP is set by default to automatically download and install system updates. You should change these settings to ensure that your computer does not reboot during the night:

- Open the Control Panel (from the Start button).
- If the label Pick a Category appears, click on Performance and Maintenance.
- Open the Automatic Updates icon.
- Select the item labelled “Download updates for me, but let me choose when to install them.”
- Click OK.
- Close the Control Panel.

Backup power supply

You should purchase a battery backup (also called an Uninterruptible Power Supply or “UPS”) and power your computer through it. We recommend that you do not connect any devices other than your computer to the UPS in order to maximize the amount of time that the computer will run in the event of a power outage. Note that connecting your video monitor to the UPS will severely reduce the available battery time.

If you are using a Magnetic Lock then you should also have a battery backup for the lock itself. You should not use the same battery backup for the lock and computer, because the lock should remain powered even if the computer battery backup has failed.

Computer BIOS Settings

We recommend that you enlist the help of a computer-savvy person to access your computer’s low-level BIOS settings and set the configuration that will cause the computer to automatically

restart in the event of a power failure. The BIOS settings can usually be accessed by pressing the DELETE or F2 key when your computer first powers on.

Securing the Computer and your club

We recommend that you secure your computer in some way to prevent members from accessing your data or operating the computer. Consider one or more of the following methods to protect your equipment while you are away:

- Keep the computer CPU locked in a cabinet under the desk.
- Unplug the keyboard, mouse and monitor. Lock the keyboard and mouse in a secure place.
- Locate the CPU in a locked room and run a set of long cables (keyboard, mouse, video, speakers) to the front desk for daytime operation.
- Set a password on your system and set your screensaver to require the password.
- Install a video surveillance system to monitor activity at the facility while you are away.

If you have any questions about security, please call Bio-Logic.

Remote Access to Your Computer

Remote access solutions allow you to connect to your computer remotely, which is a very good thing to have when you get a phone call at 5am from a disgruntled member who can't get into the club. Many times the issue will be that the member has not paid, and with remote access you can open the door from home to allow the member to workout.

GoToMyPC.com and **LogMeIn.com** both offer excellent solutions for remote access. We have extensive experience with both products and highly recommend them both.

LogMeIn has a free version, and their "Pro" version costs less than \$100/year.

GoToMyPC is generally more robust, but it is also more expensive.

Online Backup

We highly recommend using an online backup service to backup not just your Gym Assistant data but any other documents that you value.

Mozy.com provides an excellent online backup product at a great price. We have extensive experience with their services and highly recommend them.