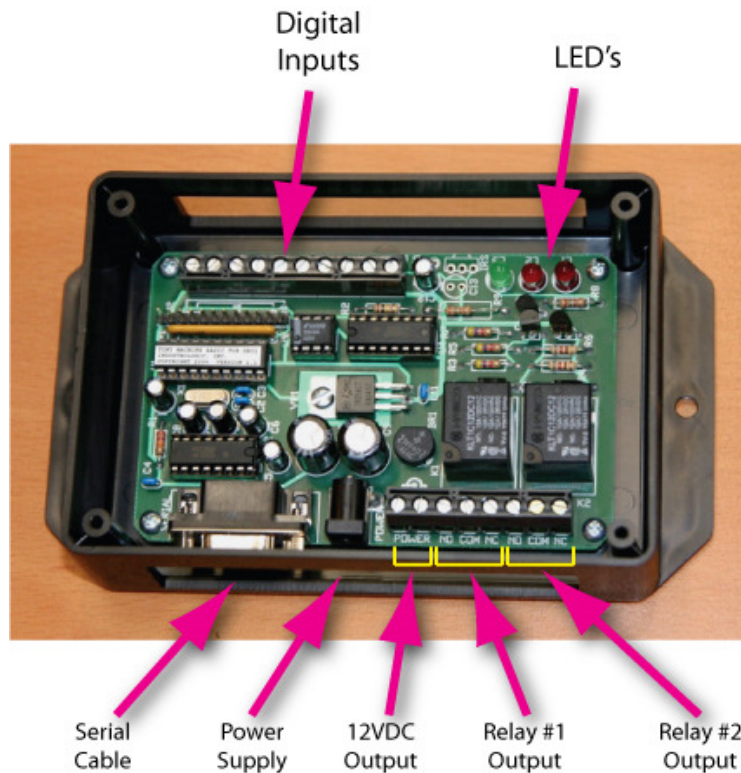


gym assistant™

Barcode Access Control Setup

Rev. 20130322



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www.GymAssistant.com

Contact Information:

Telephone: 1-877-496-2778 Ext. 2
Email: Support@GymAssistant.com

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I. Materials

A. Access Control System (Minimum Requirements)

- 1 - **Barcode Card Reader**
- 1 - **Electric Door Controller**
- 1 - **Computer Running** – Gym Assistant
– GateKeeper
- 1 - **Serial (RS232) Port** [Attached to the computer]

B. Wiring / Cabling

(Please see “**Wiring the Barcode Reader**” section below).

C. Optional Equipment

- 1 - **MagLock** + Power Supply
- 1 - **Panic Bar**

- 1 - **Door Strike** + Power Supply
- 1 - **Motion Detector**
- 1 - **Open Door Button** (w/ timer)

II. Introduction

The **Electric Door Controller** provides a dry contact relay (normally-open or normally-closed) that is controlled by a **Serial** (RS232) connection from the computer.

GateKeeper is the add-on software included with **Gym Assistant** that controls all access functions.

The controller relay is controlled either by the **GateKeeper** application or by a digital input (e.g. Door Open button).

Note: The **Electric Door Controller** does not provide direct input for an external emergency **Request-To-Exit button** or **motion sensor**. These devices must be connected directly to the electric lock circuit independent of the **Door Controller**.

The **Electric Door Controller** does not provide power to the **door lock**. Power for the door lock must be supplied by a separate power source.

III. Before You Begin...

Please read this entire document before beginning your Electric 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.

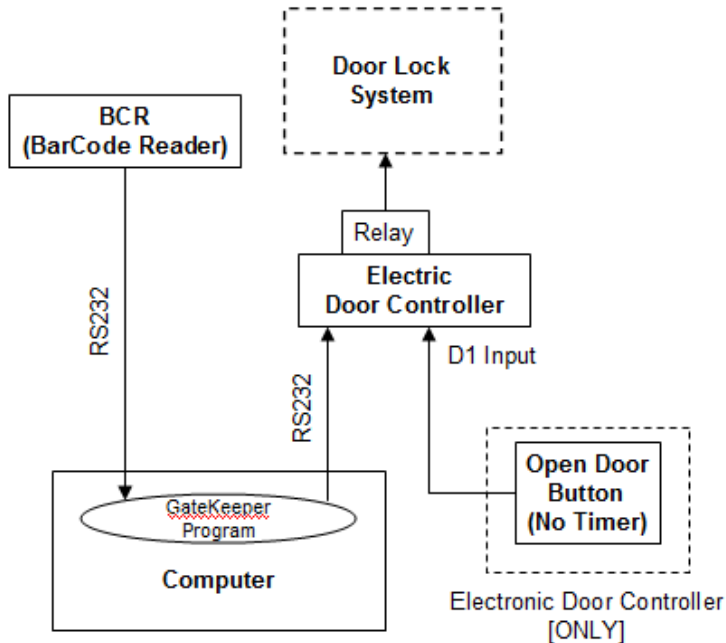
CONTACT INFO:

If you have any questions before or during installation, please don't hesitate to contact us:

Telephone: 1-877-496-2778 Ext. 2

Email: Support@GymAssistant.com

IV. Typical Barcode Reader Configurations



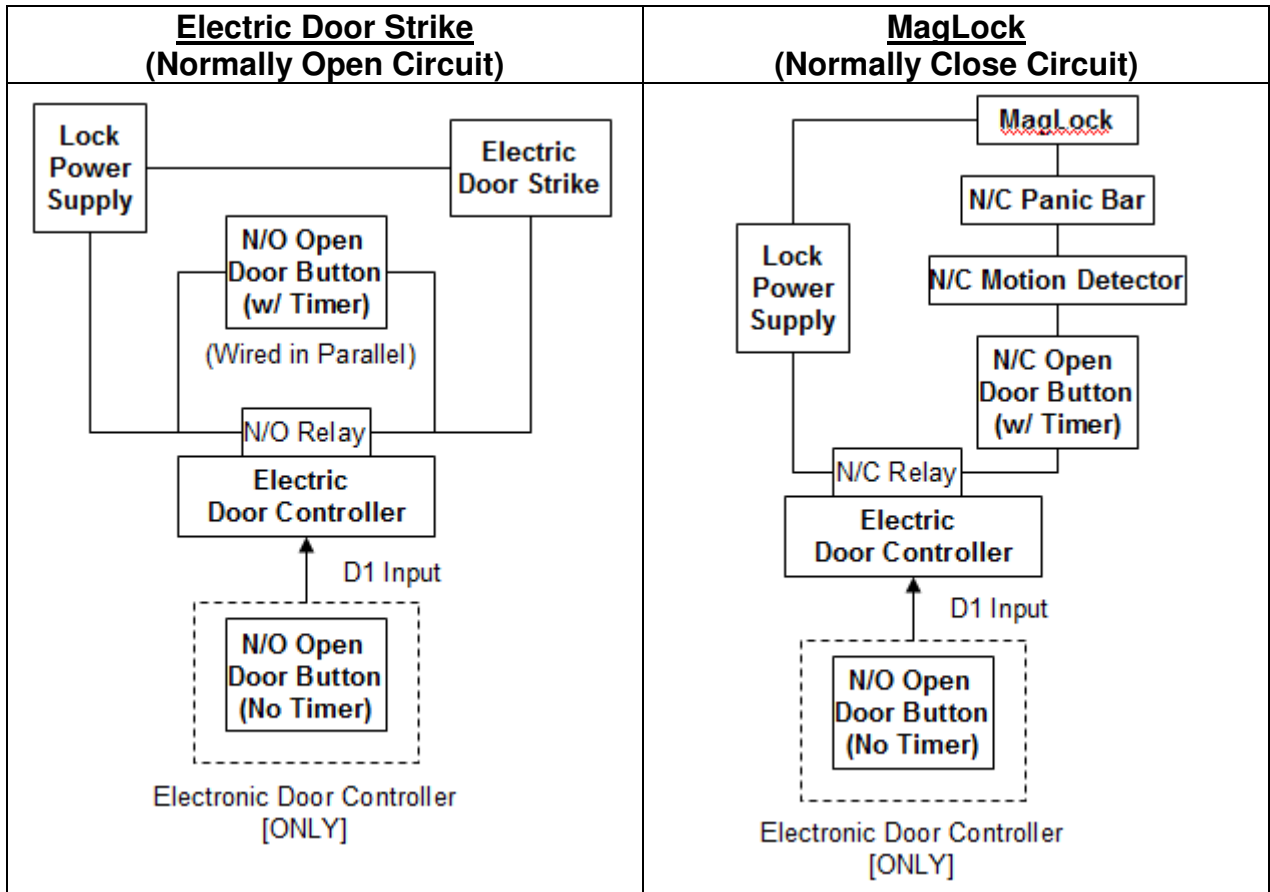
Access Control Process:

1. Member scans barcode on reader.
2. Input is read from the **Bar Code Reader**.
3. **GateKeeper** receives the Serial (RS232) signal.
4. **Gatekeeper** determines if barcode is recognized or not recognized.
5. **Gatekeeper** sends an "open door" signal to the **Electric Door Controller** via Serial (RS232) connection to activate / deactivate the dry contact relay.
6. **Door Lock System** opens.
7. Member enters entrance.
8. After the **GateKeeper** timer delay, it sends another "close door" signal to the Proximity Door Controller via Serial (RS232) connection to activate / deactivate the dry contact relay.
9. **Door Lock System** closes.

Electric Door Controller Characteristics:

- 2 – RS232 Serial Ports
- 2 – Relays
- 2 – Digital Inputs (w/ timers)

V. Additional Access Control Configurations



VI. Where to Place the Hardware

The **Slot Barcode Reader** should be mounted near the door. 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.

- Place the barcode reader in a location that will be protected from the elements, as much as possible.
- You might also consider placing it in a location that is not easily visible from passersby.
- If weather is a problem, then you might consider purchasing a hinged plastic cover from <http://www.gymassistant.com/store/proddetail.php?prod=BCR-COVER>

We recommend placing the **Electric Door Controller** near the computer (for example, mounted under the counter at the front desk). This will allow you to most easily diagnose any problems you may have and makes it easy to access the wiring for the controller.

VII. Wiring the Barcode Reader

The slot barcode reader included with your access control system is a **Serial** (RS232) device. Because the 9-pin RS232 serial cable has a very large connector, we have modified the cable to make it easier to pass through a wall and add length as needed.

- The 6-foot serial cable has been cut and spliced with an **RJ45** (Ethernet) connector on each end. This modification allows the barcode reader cable to pass through a half-inch diameter hole.
- This cable can be extended using a standard **Cat5 Ethernet** cable, the same cable that you would use to connect your computer to a network hub or switch.
- Total length can be increased up to 300 feet.
- No special consideration is required for distances under 80 feet.

A. Wiring for distances over 80 feet

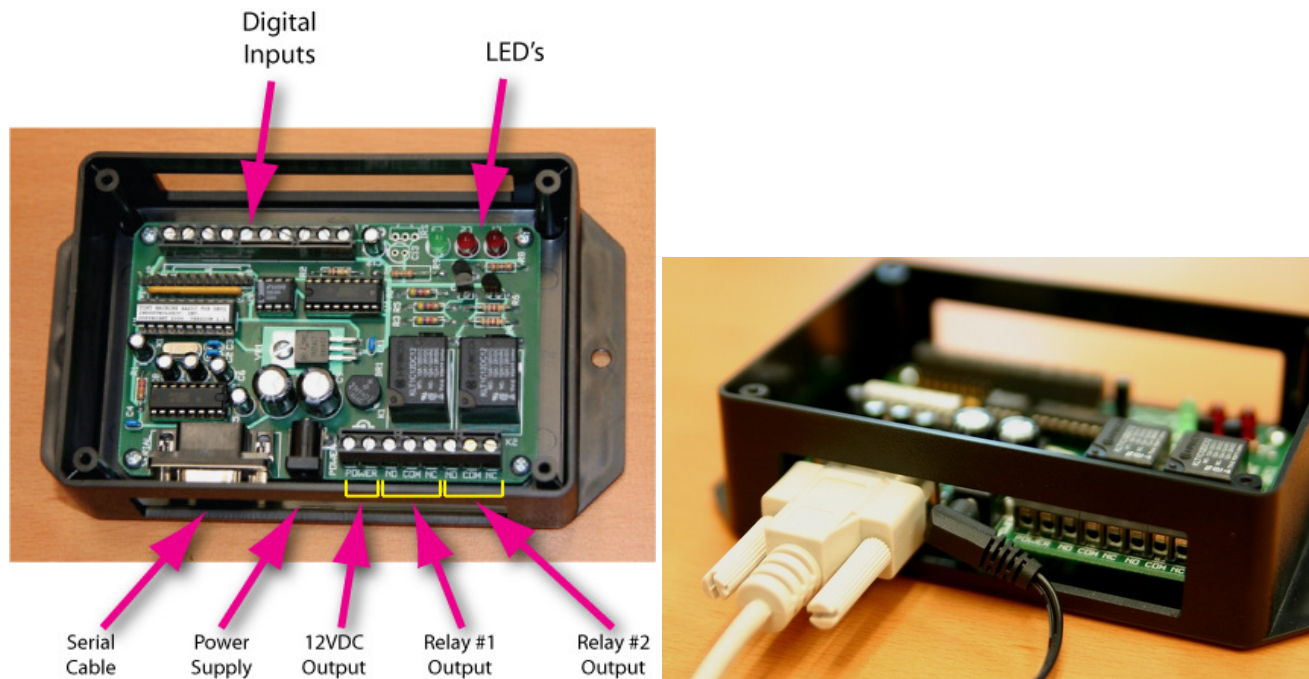
For distances over 80 feet the reader power supply voltage must be increased to compensate for voltage loss over the wire.

- The Cat5 cable carries not only the serial (RS232) signal from the reader but also the 5VDC power to the reader.
- At longer distances, the voltage drop along the length of the cable will cause problems for the reader, so a higher-voltage DC power source will be required.
- We recommend that you purchase an adjustable voltage DC power supply and increase the voltage as needed until the reader functions correctly.
- Increasing the voltage on the power supply to 6VDC should provide enough power for the reader to function properly at distances up to 200 feet.
- Longer distances (up to 300 feet) may need the voltage increased to 7.5V or higher.

Note: If the reader is not receiving enough voltage then the **GREEN** light on the reader will **blink on/off** constantly and barcodes will not be read successfully.

Please call Gym Assistant if you have any other questions about wire length or power supply requirements.

VIII. Connecting the Electronic Door Controller to the Computer



1. Connect one end of the 9-pin serial cable to the **Electronic Door Controller** and the other to any available serial port on your computer.

Note: If you need to add serial ports to your computer, please refer to “**Adding Serial Ports to your Computer**” section below.

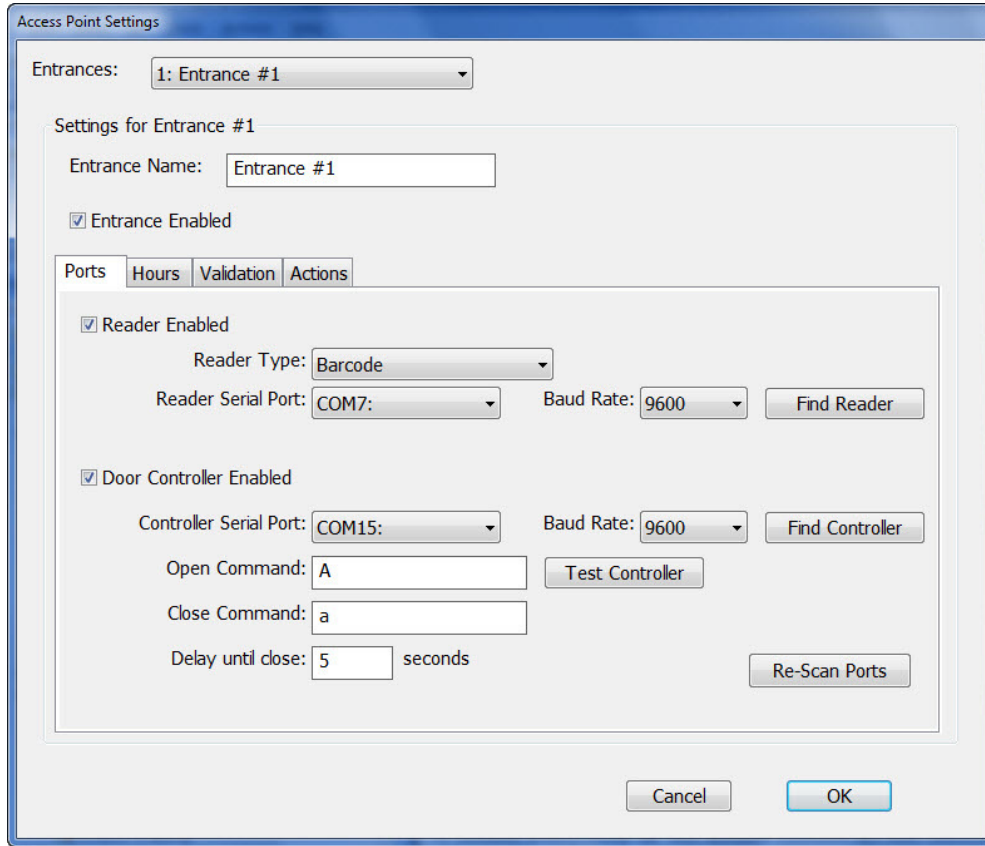
2. Connect the included power supply to the **Electronic Door Controller** as shown above.
3. The **GREEN LED** in the **Electric Door Controller** should blink two times and then remain **ON**.

Note: Do not connect any other power supply to the **Electric Door Controller**, as this can damage the electronics! The power supply is labeled “**Output: 12 VDC, 500ma.**”

IX. Configuring Settings in GateKeeper 2.0.2

Port Settings

1. Start **GateKeeper 2.0.2**.
2. Select "**Access Points / Ports**" from the "**Settings**" menu.



Multiple Entrances

3. If you are controlling more than 1 entrance, make the main access door "**Entrance #1.**"
 - Note:** The standard **GateKeeper** configuration can control up to two entrances. If you need to control more than 2 entrances (up to 8), please contact **Gym Assistant**.
4. Check the **Entrance Enabled** box.

Reader Port

5. Check the **Reader Enabled** checkbox.
6. Set the **Device Type** to **Barcode**.
7. Set the barcode reader **Baud Rate** to **9600**.
8. Click the "**Find Reader**" button and then scan a card through the reader.
 - a. If the reader is found, then the port will be set automatically.
 - b. If the reader is **NOT** found then click the "**Cancel**" button and refer to the "**Serial Port Troubleshooting**" document.

Controller Port

9. Check the **Door Controller Enabled** box.
10. Set the Door Controller **Baud Rate** to **9600**.
11. Click the **"Find Controller"** button. GateKeeper will test all of the available serial ports to find the controller.
 - a. If the controller is found then the port will be set automatically.
 - b. If the reader is **NOT** found then click the **"Cancel"** button and refer to the **"Serial Port Troubleshooting"** document.

Note: The **"Find Controller"** button will only find the **Barcode Door Controller** sold by **Gym Assistant**. It will not function for other types of controllers.

Door Control Commands

12. To control Relay #1:
 - Set the **Open Command** to **"A"** (without quotes)
 - Set the **Close Command** to **"a"** (without quotes)
 - Set the **"Delay until close"** to the number of seconds you want the door to remain unlocked.
13. To control Relay #2:
 - Set the **Open Command** to **"B"** (without quotes)
 - Set the **Close Command** to **"b"** (without quotes)
 - Set the **"Delay until close"** to the number of seconds you want the door to remain unlocked.
14. Set the **"Delay until close"** to the number of seconds that you want the door to remain unlocked.
15. Click the **"OK"** button to save the settings.

Testing the Barcode Door Controller Commands

16. In **GateKeeper**, select the entrance you want to test and click the **"Open Gate"** button.
17. You should hear a click from the Electric Door Controller as the relay activates.
18. After the time delay that you specified you should hear another click from the controller as the relay resets.
19. If nothing happens, confirm your **Port** and **Open/Close** commands and try again.

A. Limiting Entrance Active Hours

The “Hours” tab allows you to set the time, which this access point is active.

The screenshot shows a software window with four tabs: 'Ports', 'Hours', 'Validation', and 'Actions'. The 'Hours' tab is selected. Below the tabs, there is a section titled 'Limit Hours of Entry:' with a checked checkbox. Under this section, there are three rows for 'Weekdays:', 'Saturday:', and 'Sunday:'. Each row has two input boxes for time, separated by the word 'to'. For Weekdays, the first row shows '04:00A' and '10:00P', and the second row is empty. For Saturday and Sunday, the first row shows '06:00A' and '08:00P', and the second row is empty. At the bottom of the window is a button labeled 'Display Open/Close Hours'.

1. Click the “Hours” tab.
2. Check the “Limit Hours of Entry” box and set the time periods during which you want the door to respond to card scans.
 - a. You can specify up to 2 time periods each day.
For example, a club may allow access from **5am-10am** and then again from **10pm-1am**.
 - b. You can specify a time period that extends into the following day.
For example, weekday access from **8pm-2am** will allow access until 2am Saturday.
3. Click the “OK” button.
4. Click the “Open Gate” button to test that the door unlocks.
5. Clicking the “Display Open/Close Hours” will show exactly when the entrance is active/inactive during all hours for the upcoming week.
Note: This button is a good way to confirm that you have set the hours of entry correctly.

B. Validation

The “**Validation**” tab allows you to specify the members that are allowed access through this access point.

Note: The “**Validation**” tab will only appear with the Pro version of **Gate Keeper**. Please contact **Gym Assistant** if you need to add these features.

The screenshot shows a software window with four tabs: Ports, Hours, Validation, and Actions. The Validation tab is active. The window contains the following elements:

- A title bar with the tabs: Ports, Hours, Validation, Actions.
- A main area with the text: "Specify which members are allowed access to this entrance."
- A "Membership Status:" dropdown menu with "Valid Members Only" selected.
- A "Gender:" dropdown menu with "Ignore" selected.
- A "Membership Plans:" dropdown menu with "Ignore" selected, and a "Set" button to its right.
- A "Monthly Add-Ons:" dropdown menu with "Ignore" selected, and a "Set" button to its right.
- A checkbox at the bottom left with the text: "This is a Tanning Access - Limit Access for 24-Hours".

1. **Membership Status:**
 - “**Valid Members Only**” will allow entry only for members who are paid and up-to-date.
 - “**Ignore**” will allow entry for any members, regardless of membership status.
2. **Gender:**

This option allows gender control into an area, like locker rooms or gender-specific workout areas.

 - Can be set to “**Male Only**,” “**Female Only**” or “**Ignore**” (allow entry for any member).
3. **Membership Plans:**

If set to “**Selected**” will present a window to select which membership plans are allowed entry.
4. **Monthly Add-Ons:**

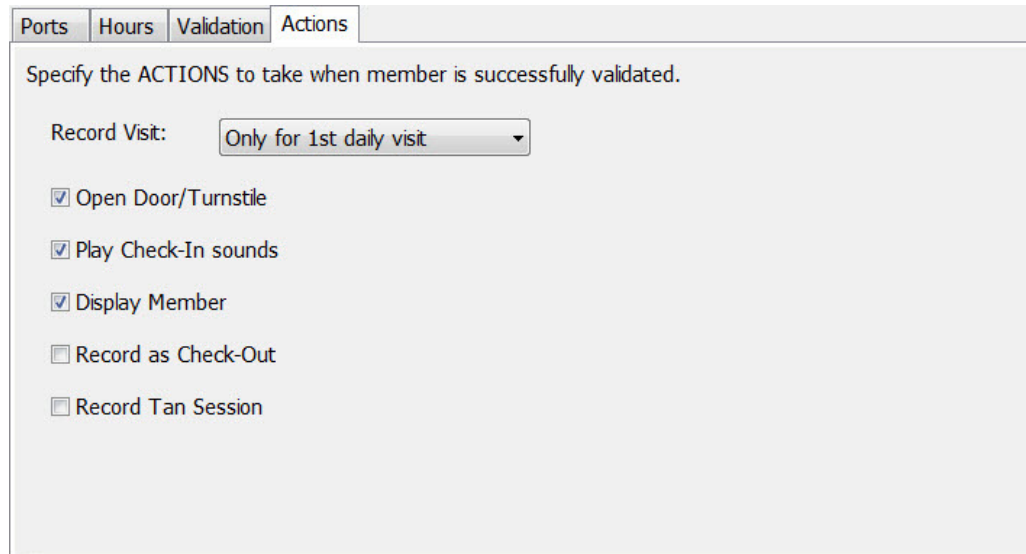
If set to “**Selected**,” this will present a window to select which monthly add-ons are allowed entry. Only members with one of the selected monthly add-ons will be allowed. For example, this setting might be used to control entry into a tanning room or swimming pool.
5. **This is a Tanning Access – Limit Access for 24-Hours:**

Some states regulate the frequency of tanning bed usage. If this box is checked then access will only be allowed to a member 24 hours after his or her last entrance, effectively limiting access to once-per-day.

C. Actions

The “**Actions**” tab allows you to specify what additional actions will occur when a member is allowed entry through this access point.

Note: The “**Actions**” tab will only appear with the Pro version of **Gate Keeper**. Please contact **Gym Assistant** if you need to add these features.



1. **Record Visit:**
 - “**Always**” will record a visit every time a member gains entry.
 - “**Only for 1st daily visit**” will only record a visit the first time each day that a member gains entry.
Note: This will prevent additional visits should a member enter through this access point multiple times in a day.
 - “**Never**” will not record entries through this access point. For example, you would not want to record entries into a locker room.
6. **Open Door/Turnstile:**
Check this box to trigger the door controller on each entry.
7. **Play Check-In Sounds:**
Check this box to play the **Entry Allowed/Entry Denied** sound(s) on the computer at each card scan.
8. **Display Member:**
Check this box to display the member in the **Gym Assistant View Member Info** window on each card scan.
Note: Member info will only appear in **Gym Assistant** if the **View Member Info** window is displayed in **Gym Assistant**.
9. **Record as Check-Out:**
Check this box if this access point is used for members exiting the facility.
10. **Record Tan Session:**
Check this box if entry is for tanning. This will set the “**Last Tan Time**” for the member upon entry.

X. Testing the Electronic Lock Operation

The **Electronic Door Controller** can operate in either a **normally-open** or **normally-closed** configuration. Whether normally-closed or normally-open, the door lock circuit requires a separate **power supply** to provide voltage to the lock.

Note: It is very important to test the operation of the door lock independently of the door controller and reader. This will confirm that the lock, lock wiring, and lock power supply are setup correctly before connecting to the door controller relay.

A. Electromechanical Locks (Electric Door Strikes)

Most **electromechanical** locks and “**Electric Door Strikes**” are unlocked by closing a circuit and applying a voltage to the lock.

- The electric door strike is **LOCKED** when there is no power to it.
- The electric door strike is **UNLOCKED** when power is applied.

This is an example of a “**Normally-Open**” electrical circuit because in the normal state, there is no power flowing through the circuit.

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

B. Magnetic Locks (MagLock)

A **magnetic** lock stays locked by maintaining a voltage to an electromagnet.

- A MagLock is **LOCKED** when the magnet is energized, causing the electromagnet to be attracted to a steel plate on the door to keep the door closed.
- A MagLock is **UNLOCKED** when the magnet is de-energized causing the electromagnet to release its attraction to the steel plate on the door, opening it.

This is called a “**Normally-Closed**” electrical circuit because in the normal state, there is power flowing through the circuit.

1. To test a **Normally-Closed** lock operation, connect the two leads from the lock to the two leads (or terminals) on the power supply.
2. The electromagnet should be energized, keeping the door closed.
3. If you disconnect any of the leads, the magnet should release, allowing the door to open.

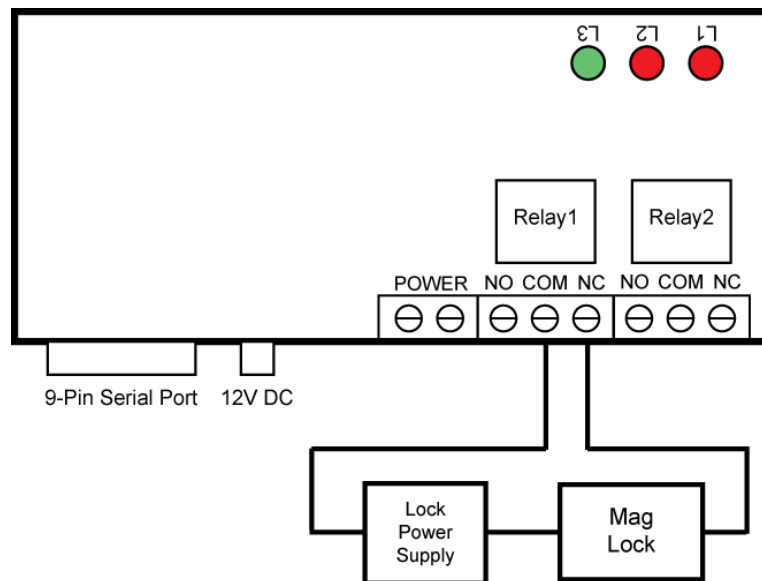
XII. Wiring a Normally-Closed Circuit (MagLock)

You must provide a separate **external power supply** for the lock.

1. To test 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.
2. If you disconnect one of the wires from the power supply, then the lock should release.

A. Connecting the Electric Door Controller to a MagLock

1. Connect **NC** terminal on the Door Controller to one terminal of the **power supply** (it doesn't matter which one).
2. Connect one **Lock** wire to other terminal of the **external power supply**.
3. Connect the other **Lock** wire to **COM** terminal on the **Electric Door Controller**.
4. The magnet should be energized, and the door should be locked.
5. When you click the “**Open Gate**” button in **GateKeeper** – the **RED** LED should light and the lock should click open and then close after the timer delay specified for **Entrance 1** in **GateKeeper**.



Normally-Closed circuit using external power supply

XIII. Testing the Door Controller with the Lock

1. In GateKeeper, click the “**Open Gate**” button.
2. You should hear the Electronic Door Controller click, the **RED** LED in the Electronic Door Controller should turn **ON**, and the lock for **Entrance 1** should open.
3. After the prescribed time you should hear the Door Controller click again, the **RED** LED in the Door Controller should turn **OFF**, and the door should be locked again.

XIV. Other Topics

A. Adding serial ports to your computer

Most new computers do not include built-in serial ports, so you may need to install one or more serial ports to your computer. While the easiest way to install additional serial ports is with a USB-to-Serial Adapter, we strongly recommend installing a **PCI Serial Card** in your computer. This installation is slightly more involved, but a PCI serial card will be far more dependable than a USB-to-Serial Adapter.

Make sure that you install the software that came with the adapter before plugging the adapter into your computer. You can purchase a PCI Serial Card from us at:

www.gymassistant.com/store/proddetail.php?prod=SerialUSBAdapter&cat=34

B. Windows Energy Settings

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

1. In Gym Assistant select “**Troubleshooting/Power Options**” from the **Help** menu.
2. For the selected power plan click “**Change plan settings.**”
3. Set “**Put the computer to sleep**” to “**Never**”.
4. Click “**Change advanced power settings.**”
5. Scroll down to “**Processor power management.**”
6. Set the “**Minimum processor state**” to “**20%**”.
7. Click the “**OK**” button.
8. Click the “**Save Changes**” button.

C. Windows Automatic Update Settings

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

1. In Gym Assistant select **Windows Automatic Updates** from the **Help** menu.
2. Click “Change Settings.”
3. Select the option “**Download updates for me, but let me choose whether to install them.**”
4. Click the “**OK**” button.

D. Backup power supply

You should purchase a battery backup (also called an “Uninterruptible Power Supply” or “**UPS**”) and power your computer through it. A UPS will keep your computer running through a power outage, usually for a few hours. 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.

Note: If you are using a **MagLock** 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.

E. 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.

F. 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 **Gym Assistant** at **1-877-496-2778**.

G. Remote Access to Your Computer

A Remote Access solution will allow you to connect to your computer remotely. This 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.