Upgrade to 721EX Controller for Proximity Access

May 2020

Existing Proximity Controller   New 721EX Standalone Controller

This document will help you to upgrade an existing barcode access controller to our new standalone controller.

Upgrade for existing Barcode Access System

The new controller will directly replace your existing proximity controller.

Your existing proximity reader and door lock will connect to the new controller basically in the same way that they are currently connected to the existing controller.

For the new controller you are required to upgrade your Gym Assistant software to **Version 2.6**. Please contact Gym Assistant Support for help in performing the software upgrade.

Standalone Controller Specifications

Card Capacity: 3000 cards
Computer Connection: RS485

Need Help? Call us.

If you have any questions about your controller upgrade before or during the installation, please contact Support:

> **1-877-496-2778, ext 2**
> **1-510-865-1815, ext 2.**
> **support@gymassistant.com**

Contents

What is included in the box

- B-Id 721EX controller board
- Power Supply with pigtail connector
- USB/RS485 converter (connects controller to the computer)
- 4-conductor wire (to connect controller to the computer)
- Crimp connectors
- Thermistor (protects the relay, should be already installed in the controller)
- Screwdriver

Tools that you will need

- Wire cutters/strippers (for 24-gauge wire)
- Pliers (for crimping wire connections)
- Voltmeter (optional)

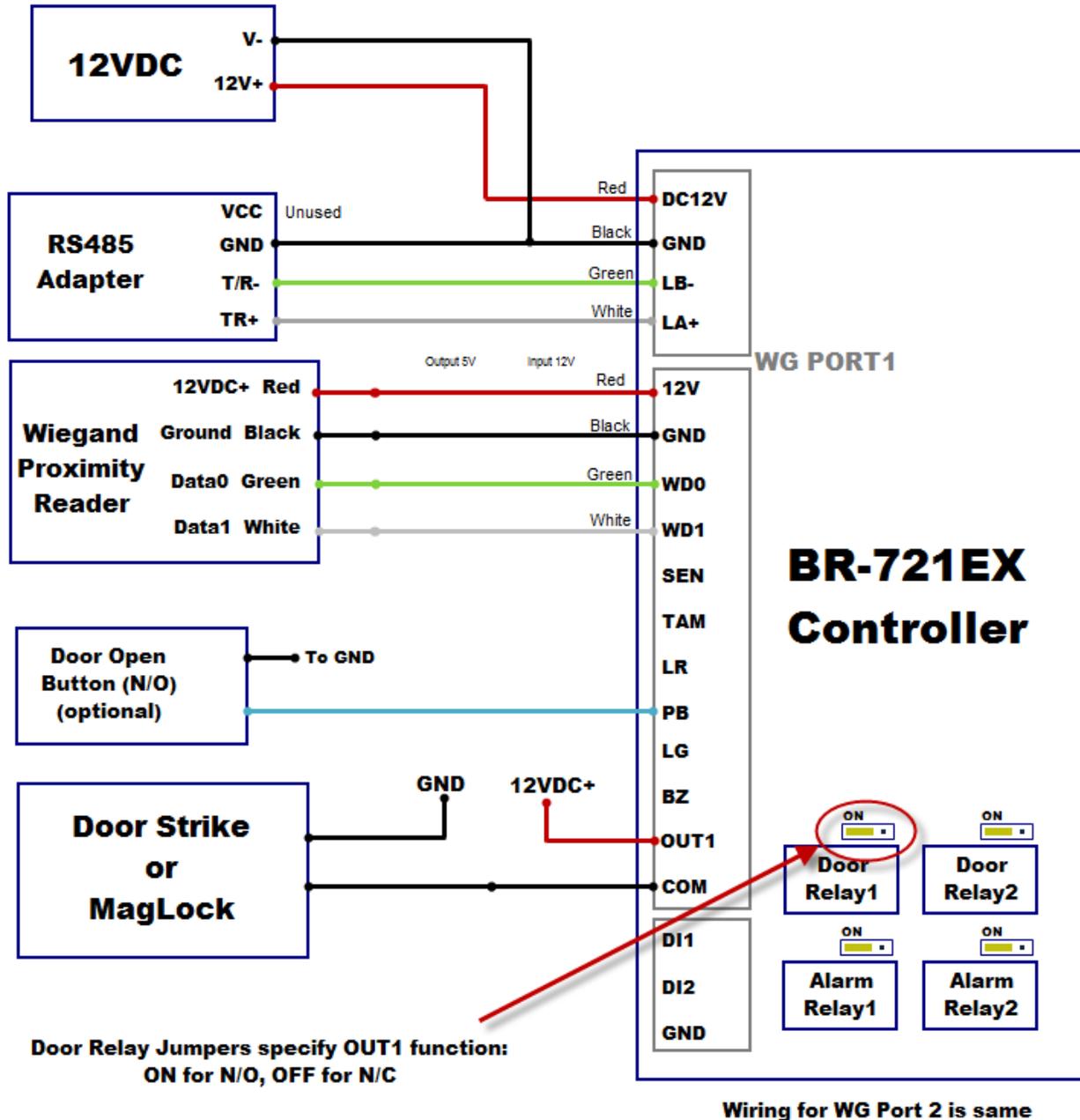| Components included with all 721EX controllers	
Controller Power Supply with female pigtail connector	**USB/RS485 Converter**
Crimp Connectors	Thermistor (pre-installed in controller)

BR-721EX Access Controller
Wiring Schematic
(Wiegand Barcode Reader)

12VDC
- V-
- 12V+

RS485 Adapter
- VCC — Unused
- GND
- T/R-
- TR+

Red — **DC12V**
Black — **GND**
Green — **LB-**
White — **LA+**

WG PORT1

Wiegand Proximity Reader
- 12VDC+ Red
- Ground Black
- Data0 Green
- Data1 White

Output 5V   Input 12V
Red — **12V**
Black — **GND**
Green — **WD0**
White — **WD1**

- **SEN**
- **TAM**
- **LR**

BR-721EX Controller

Door Open Button (N/O) (optional) — To GND
- **PB**
- **LG**
- **BZ**

Door Strike or MagLock
- GND   12VDC+
- **OUT1**
- **COM**

- **DI1**
- **DI2**
- **GND**

ON — **Door Relay1**   ON — **Door Relay2**
ON — **Alarm Relay1**   ON — **Alarm Relay2**

Door Relay Jumpers specify OUT1 function: ON for N/O, OFF for N/C

Wiring for WG Port 2 is same

Installation Notes

- Use crimp connectors when connecting wires together.
- When connecting wires to the controller board terminals, be sure to loosen the terminal screw (counter-clockwise) completely before inserting the wire. This lowers the metal piece that will clamp onto the wire. Then tighten the screw to raise up the metal clamp against the wire. Note that the wire will be inserted above the clamp, not below.

Install Gym Assistant Version 2.6

The standalone controller requires Gym Assistant v2.6 or newer. You can download v2.6 at:

http://www.gymassistant.com/download/2.6.0

Note that you must exit Gym Assistant and GateKeeper before installing the new version.

You should also install ProShop v2.6 if you have purchased a ProShop license.

Connect Power to the Controller
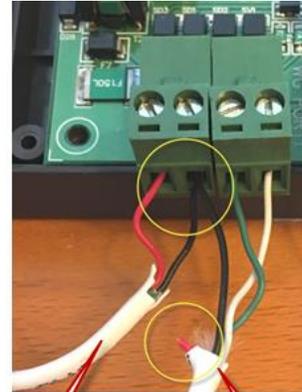
Connect the red wire to DC12V and the black wire to GND.

When you turn on power to the controller, a single green LED (labeled "Power") should light up on the controller.

Connect the Controller to your Computer with USB/RS485 Adapter

Cut 4-conductor wire to an appropriate length to go from the USB/RS485 Adapter to the controller.
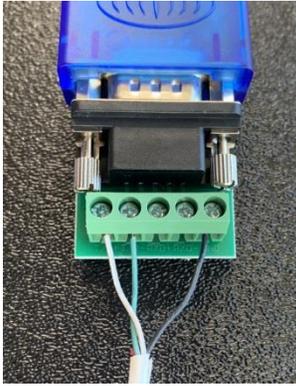
USB/RS485 Adapter
Connections

Controller Connections

RS485 / Controller Wiring

Notes:

- The black GND wire will be joined together with the black wire from the power supply, as shown above.
- The Red wire from the RS485 adapter will not be used, so it is best to cut that red wire very short just past the cable sleeve.

Connect USB to computer

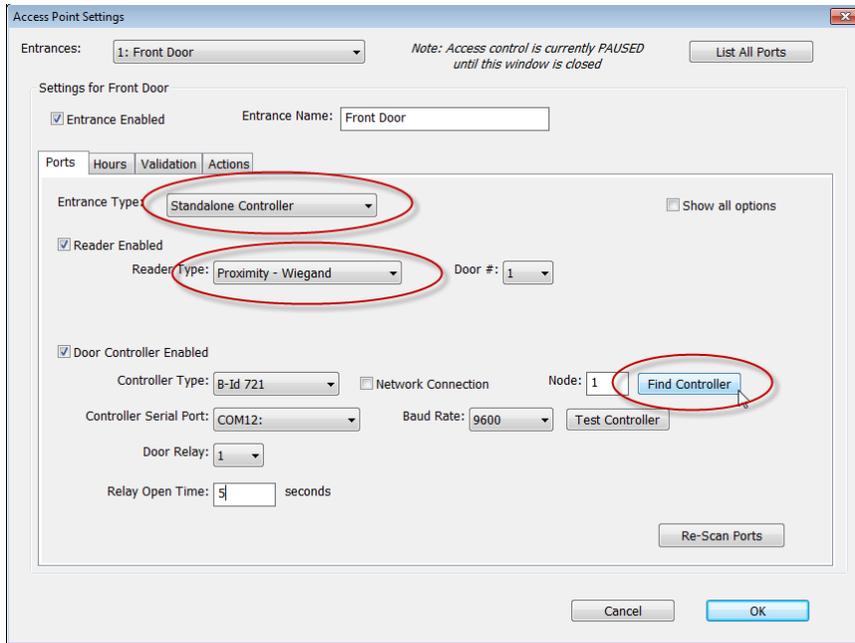Connect the USB/Serial adapter to the computer and wait for Windows to install the drivers automatically.

Test the Computer/Controller Connection

In GateKeeper select **Access Points / Ports** from the **Settings** menu.

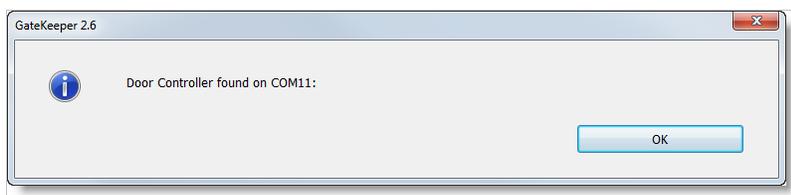Check both the **Reader Enabled** and **Door Controller Enabled** boxes.

In the Ports tab set the **Reader Type** to **B-Id 721**.

If **B-Id 721** does not appear in Reader Type list, then you must install Gym Assistant v2.6. See "Install Gym Assistant 2.6" above.

Click the **Find Controller** button.

After a few seconds GateKeeper should report that it found the controller.


If the controller is not found, then:

- Confirm that the controller Power LED is lit.
- Confirm that the USB/RS485 adapter is connected to the computer.
- Confirm your wiring connections both on the USB/RS485 adapter and on the controller.

Click **OK** to close the **Access Point Settings** window.

The red and green Communications LEDs on the controller should now be blinking rapidly to indicate that GateKeeper is communicating with the controller.
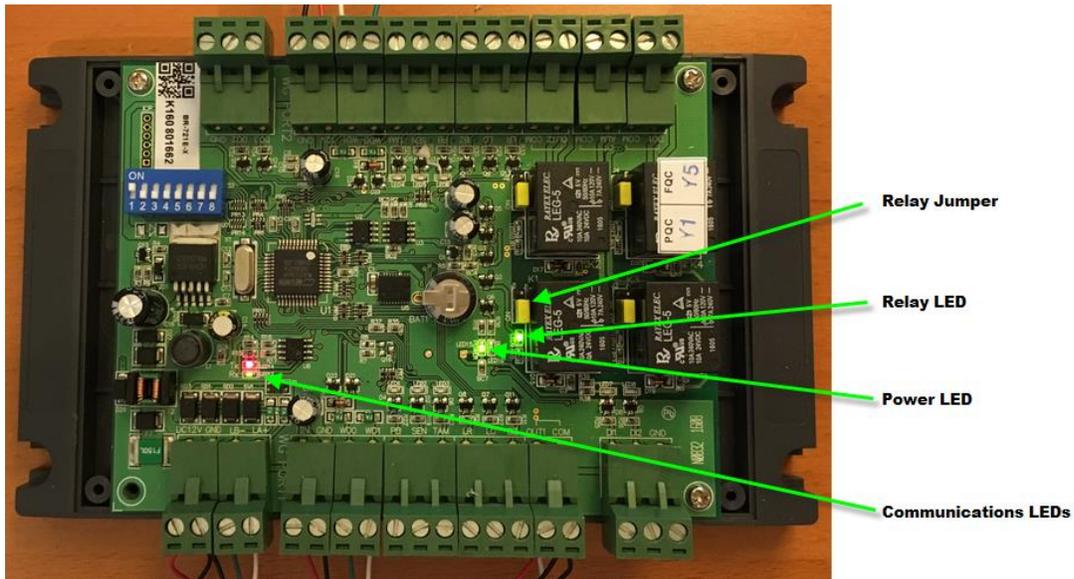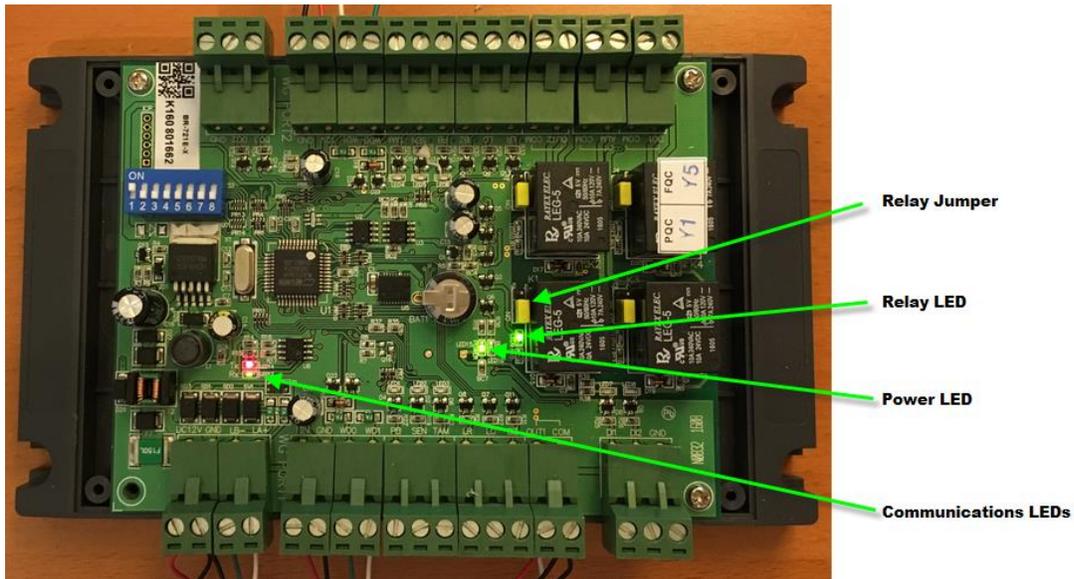
In GateKeeper the Access Point status should now show as "Locked and Active".
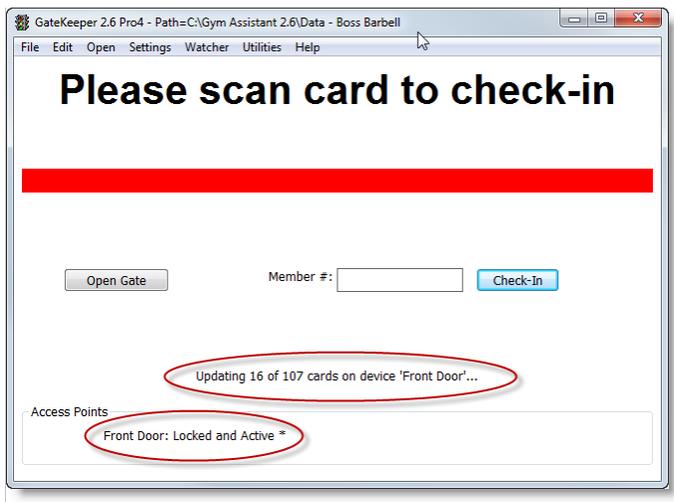
GateKeeper will also indicate that it is uploading cards to the device. This is the software uploading into the controller all of the card numbers that should be allowed access.

Click the **Open Gate** button. You should hear the controller relay click, and green Relay LED should light up. After the specified delay the relay should click again and the Relay LED should turn off.

The red and green Communications LEDs on the controller should now be blinking rapidly.

In GateKeeper the door status should now show as "Locked and Active."
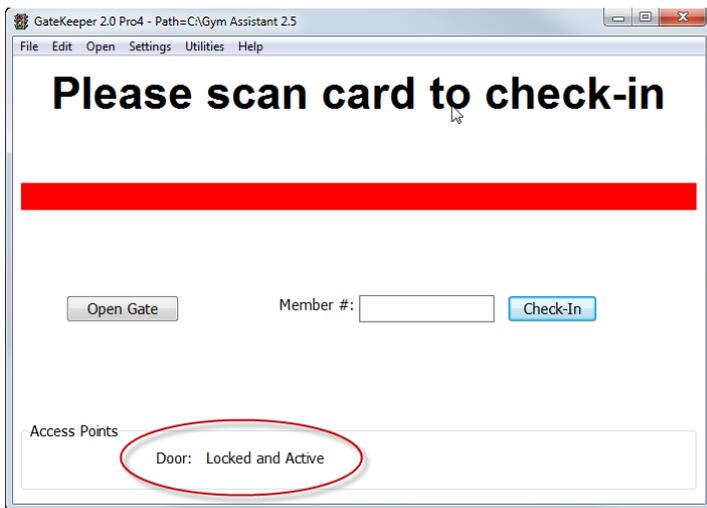
Click the Open Gate button. You should hear the controller relay click, and green Relay LED should light up. After 5-10 seconds the relay should click again and the Relay LED should turn off.

Test the Proximity Reader

Scan a proximity card at the reader. The reader should beep, which indicates that the reader saw the card scan. GateKeeper should report <u>something</u>, either displaying "Unknown Scan" or bringing up a valid member record.

If the correct member appears in GateKeeper and member is allowed entry, the relay should trigger. The reader is working correctly.

Troubleshooting the Barcode Reader

If <u>nothing</u> comes up in GateKeeper:

- Check that the reader has power. The LED on the outside of the reader should be on.
- Check that the reader beeps when you scan a card. The reader beeps to indicate that it successfully scanned a barcode.
- Confirm that all four wires on the Serial RS232/Wiegand adapter are firmly connected (give a tug on each), and that the colors are correct.
- Confirm that all four wires on the Controller are firmly (with a firm tug), and that the colors are correct.

If the number displayed in GateKeeper is different than the number displayed on the barcode:

- Confirm that the wire colors and connections are in the correct order. If D0/D1 or WD0/WD1 wires are reversed then the number will be scrambled.
- Go into Settings / Access Points, and confirm that the Reader Type is set to Proximity - Weigand.

If GateKeeper reports *Controller says 'Card Not Found'*, then you have connected the reader to the wrong door terminals on the controller. Either move the reader wires to the correct side of the controller (WGPORT1) or change the Door# selection in GateKeeper Settings / Access Points.

Connect to the Door Lock

Note that the controller does not supply power to the door lock. The controller provides a dry-contact relay that opens and closes a circuit. You should have a separate power supply for the lock and test the lock connected directly to the lock to ensure that the lock/power circuit is correct.

First, disconnect the door lock from the old controller terminals labelled NO/COM or COM/NC. Note whether you disconnected from NO (Normally-open, for a door strike) or NC (Normally-closed, for a maglock).

Test the two wires by touching the two wires together. If you are using an electric strike then the door should unlock when you touch the wires. If you are using a maglock then the door should lock when you touch the wires.

Connect the two lock wires to the OUT1 and COM terminals on the same side of the controller where you connected the reader wires.

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Make sure that you leave the red varistor also attached to those same terminals (as shown below), as the varistor will suppress voltage spikes that will shorten the life of the relay. The best way to attach the lock wires is to loosen one terminal screw, insert the door wire, and re-tighten the screw. Then repeat for the other wire/terminal. If you loosen both terminal screws at the same time then the varistor will fall out, and it can be difficult to get both the varistor and wire inserted at the same time.
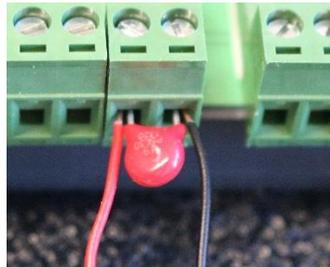
Attach door wires with the varistor

If you are using a Maglock, then you must move a jumper to tell the controller that the relay should operate as a normally-closed relay. Confirm that the Door Relay jumper is set to **NC** (Normally-Closed) position, with the **NO** jumper pin exposed as in the picture below.
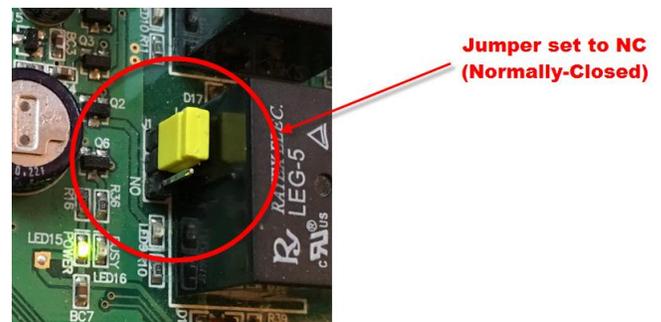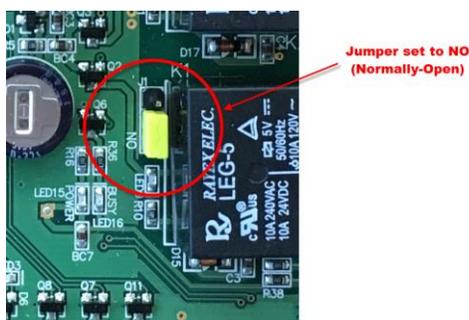
Confirm that door is locked.

Scan a valid card or click the Open Gate button, then confirm that the door unlocks and then re-locks after the specified delay time.

Troubleshooting the Door Lock

If a door strike does not unlock, or if a maglock does not lock:

- Confirm that the lock power supply is functioning. Disconnect the relay wires and touch them together. If the door does not lock/unlock by touching/untouching the wires together then check the lock power supply and wiring.
- Confirm that the lock wires are connected to the correct side of the controller (PORT1 or PORT2).

If the door is not locked but locks when the relay is triggered:

- move the jumper to the opposite position.