Introduction

Installation is in accordance with the National Electrical Code, ANSI/NFPA 70.

The Integrated Wireless Access Controller (IWAC) controls access to one door or access point. The IWAC comes with a 12V power supply and a Wireless Access Controller prewired and installed in an enclosure (See Figure1). There is no battery backup supplied with this product.

Electrical ratings
Input	120VAC, 0.6A at 60Hz
Relay switching capacity:	1A at 27V DC max.
(relays located on WAC)	(2 relays on board)

Certification
UL 294, 6e performance levels for destructive attack, line security, endurance and power standby.

UL 294 Performance Ratings
Access Control Line Security: Level I
Destructive Attack: Level I
Endurance: Level IV
Standby Power: Level I

Figure 1 — Integrated Wireless Access Controller (IWAC)
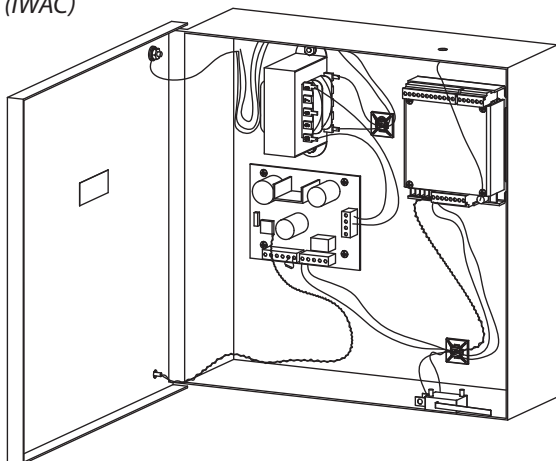
Site Survey

A site survey needs to be conducted by BEST personnel to determine the best location for a IWAC for optimum wireless coverage.

IWAC Installation and Setup Procedure

Components checklist

The following components are necessary to install the WAC:

- ❑ Integrated Wireless Access Controller (WAC) with antenna
- ❑ 120 AC line capable of supporting 0.6A AC load
- ❑ User guide to assist in programming the WAC

Optional components

- ❑ Indoor ceiling mount omni-directional antenna
- ❑ Indoor/Outdoor wall mount directional antenna
- ❑ Outdoor mount omni-directional antenna

1 Mounting the IWAC

The standard WAC comes with a small antenna, but you may need a supplemental antenna for your application. See the *Site Survey Tool Quick Reference Guide* for more antenna information.

1. Determine the appropriate location for the IWAC, making sure that the antenna will have maximum exposure for signal transmission. A site survey should be conducted to help identify an appropriate location.

2. Mount the IWAC using the mounting holes on the IWAC enclosure. See Figure 2 for mounting holes location and overall size of the IWAC to ensure proper mounting.

Figure 2 — IWAC Mounting
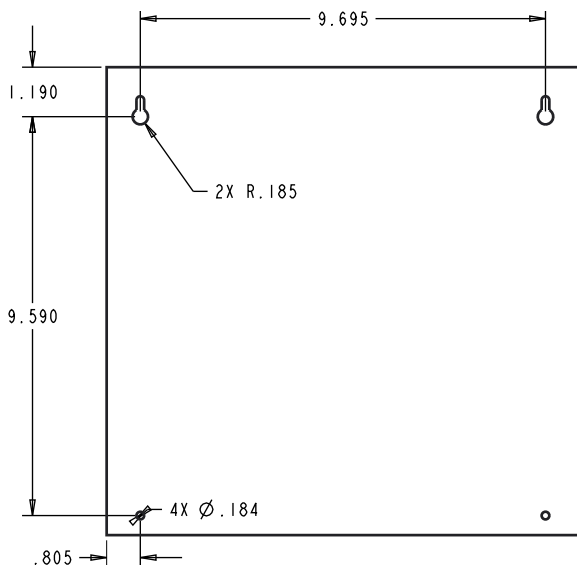
3. Attach antenna to port on top of enclosure.

2 Make the Connections to the Wireless Access Controller

1. Connect the transformer black wire to the hot wire of incoming AC line and connect the white wire to the neutral wire of the incoming AC. The green wire must be connected to the incoming earth ground wire (See Primary Wiring Diagram). Incoming AC wiring must enter the enclosure through the left side knockout.
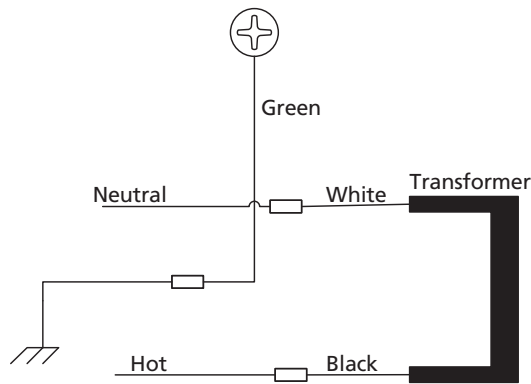

Primary Wiring Diagram

2. Wire up the WAC inside the IWAC using the reference wiring diagram, page 3. (Refer to Table 1 for WAC terminal descriptions). Use the right side knockouts for field wiring from the WAC.

Table 1 — WAC Terminal Description

Terminal	Description
Strike NC	Normally-closed terminal where the locking mechanism connects
Strike COM	Common return path for current through the locking mechanism
Strike NO	Normally-open terminal where the locking mechanism connects
SHUNT NC	Normally-closed relay terminal that shunts door force alarm if access is granted or RQE is activated
SHUNT COM	Return path for the shunt relay
SHUNT NO	Normally-open terminal for the shunt relay
Key	Detects and reports a key-override event

Terminal	Description
GND	Return path for the key-override switch and RQE
RQE	Request-to-exit input
DS	Door status input
GND	Return path for door status and latch status
LS	Latch status input
WIEGAND 0	Wiegand D0 terminal
GND	Ground (the wiegand reader must be grounded at this point)
WIEGAND1	Wiegand D1 terminal
RED	Red LED control input
GND	LED ground point
GRN	Green LED control input
ANT	Antenna connection
– DC 9–24V	Power connection
+ DC 9–24V	Power connection
– DC 9–24V	Power connection. Use the extra negative DC terminal to 'daisy-chain' power to another wireless access controller or reader.
+ DC 9–24V	Power connection. Use the extra positive DC terminal to 'daisy-chain' power to another wireless access controller or reader.
Tamper	Tamper monitor when WAC is in an enclosure with tamper switch
GND	Return path for tamper

Figure 3 — WAC Typical Wiring
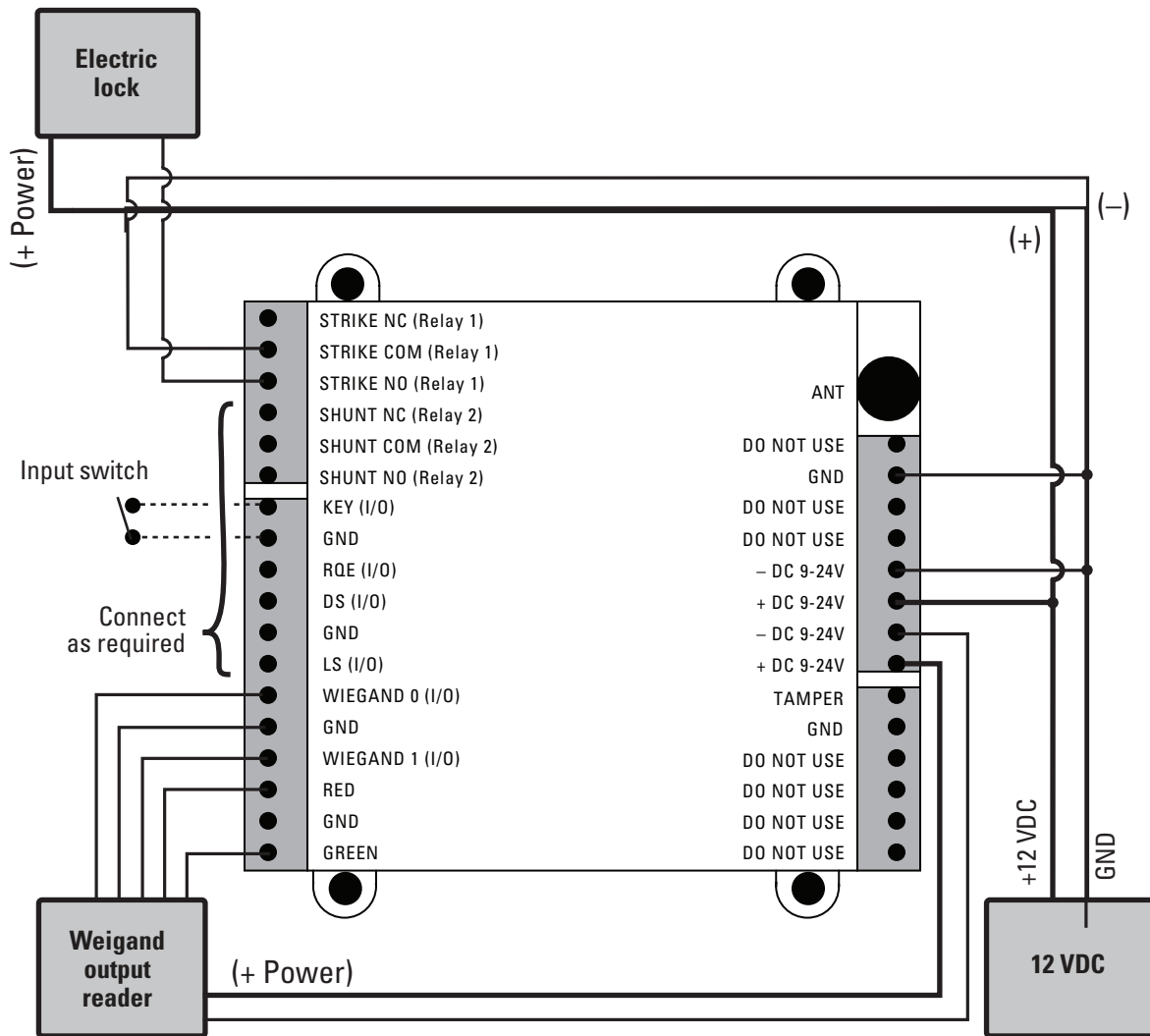
Below is a list of optional connections:

- **Key —** Connect this if your locking mechanism has a key override detect switch and want to monitor if a key is used.

- **RQE —** Connect this if the locking mechanism has a Request to exit switch and you need to shunt door status event during egress.

- **DS —** Connect this IO if a door monitoring switch is installed.

- **LS —** Connect this if your locking mechanism has a latch monitoring switch and you want to monitor it.

- **Tamper —** Connect this if you have a WAC installed in an enclosure with anti-tamper switch.

- **Shunt Relay —** Second relay that is activated when access is granted.

Supported Prox readers

All Prox readers with a Wiegand output.

Supported Magstripe readers

MR5, MR10, MR20. All other readers need to be evaluated by BEST before they are used. Contact technical support for reader evaluation.

3 Testing the WAC

For Wireless Access Controllers with keypad

To test the WAC for proper operation before it's programmed, follow these instructions:

1. Press **1234**.

   The green light flashes and the locking mechanism unlocks and you should hear a relay click.

2. Operate the lock and open the door.

For Wireless Access Controllers wired to card readers

To test the lock for proper operation before the lock is programmed, use the temporary operator card that came with the device. This card is for temporary use only. After permanent cards have been programmed into the device, the temporary card will no longer unlock the lock (once users are programmed into the WAC).

1. Using the installed reader to access the lock, present the temporary operator card to gain access.

   The green light flashes and the locking mechanism unlocks.

2. Operate the lock and open the door.

4 Sign on WAC

The process of bringing a WAC into the BEST Wi-Q™ Access Management System (AMS) is known as signing on. If the connected reader doesn't have a keypad, a sign-on keypad is required. If no wired keypad is installed, a sign-on keypad is available as accessory WQD-WAC-PAD.

1. Once the WAC is wired, connect the sign-on keypad to the WAC reader terminal, if needed.

2. Enter **5678** on the keypad.

   This will cause the green LED on the WAC to blink three times.

3. Enter the sign-on key for the facility in the AMS database.

Note: *The sign-on key can be found under the facility sign-on credential field in the Wi-Q Technology™ Access Management System (AMS). Refer to the BEST Wi-Q AMS User Guide.*

You should see the red and green LEDs blinking and the blue light turns ON to indicate that the radio on the board is active.

Once the reader signs on to one of the portal gateways in your facility, the green LED on the WAC blinks three times. At this point the WAC should appear under the New Facility Item folder in AMS (it may take up to 2 minutes for this to occur). If Sign-on fails, the WAC LEDs will flash 3 times.

After a successful Sign-on to the system use WiQ user guide noted above to add users and perform other configurations as needed.

5 Resetting the WAC

The WAC has two reset functions:

Soft reset – restores previous functionality. Use this under normal operation. It will reset the WAC, but *does* **not** *erase users*.

Hard reset – restores factory settings and *erases all user data*. Use this reset only when moving the WAC or after exhausting all other troubleshooting options.

Using the soft reset function

Hold the reset button until the green LED flashes five times and then release. See Figure 4. Lights will alternate red/green rapidly. The WAC is restored to its previous functionality.

Using the hard reset function

Caution: *Use this procedure only to restore the factory default settings. Performing these steps will erase all user data that may have been programmed into the WAC.*

Hold the reset button for up to 30 seconds — until the green LED flashes and then the red LED flashes three times, then release.

All users are erased and the WAC is restored to its factory default settings.

Figure 4 shows the location of the reset button.
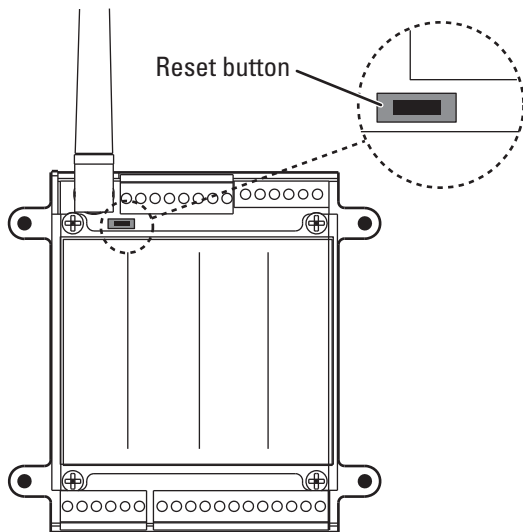
Figure 4 — Using the Reset Button

Table 2 — IWAC LED Indicator Definition

Event	Indicator LED State
No PIN Required	
Credential entered & accepted	Green flash
Credential entered & denied	Red flash
PIN Required	
Credential entered & denied	Red flash
Credential entered & accepted	Green flashes
PIN entered & accepted (immediately after credential accepted)	Green flashes
PIN entered & denied (immediately after credential accepted)	Red Flashes
Communication with PG	Blue LED flash
Deep reset in process	Red flashes
Deep reset complete	Green flashes
AC power is available	IWAC enclosure RED LED on