

AXXESS INDUSTRIES INC.

PRIVACYSERVICE Guest Room Management System

INSTALLATION INSTRUCTIONS

Rev. Aug 2012

The Axxess PrivacyService System consists of 2 main components, the Guest Room Switch ("GRM") serving as the Master Unit of the system, which mounts inside the guest room, and the Indicator Panel, which mounts in the hallway. In the vast majority of installations, the Indicator Panels are integrated into the Room Number Signs. PrivacyService ships with a standard 24" long Wiring Harness, which connects the Guest Room Switch and the Indicator Panel with a simple RJ45 style plug-in connection. Mounting is with standard 6-32 screws, length depends on the depth from wallboard surface at which the mudring is located. In its most effective implementation, the system will be networked through the hotel and is capable of sharing data with other hotel technology systems.

The customer must determine the exact location of both the Switch and the Indicator Panel (Room Number Sign) in consultation with the architect and the authority having jurisdiction. The 2010 federal ADA guidelines set a maximum reach height of 48" for operable parts (which would apply to the doorbell) and the height of the room number sign at between 48" and 60" (the bottom of the numerals must be between 48" and 60" from the finished floor level). Thus, it would appear to be reasonable to set the height so that the doorbell is at 48" and the tactile sign elements anywhere above that up to 60" AFF. However, as these requirements may differ from location to location and from time to time, customers are advised to confirm the requirements that apply in the place where the hotel is located before installation.

The standard connecting wiring harness has a length of 24" or optionally 42". If the Guest Room Switch and Indicator units are located farther apart, a special order wiring harness is required, which can be supplied at additional charge (or the rough-in installer may install Cat 5 wire with RJ45 style male connectors for which special pin-out instructions must be obtained from Axxess. Computer patch cables will not work and may damage equipment).

Rough-in Requirements: (Sketch Drawing supplied)

1.0 Guest Room Master Switch

1.1 Electrical

- 1) Standard 4 square electrical box (2 ½" deep) with single gang mud-ring (1/2" deep) to be mounted in the guest room; (single gang electrical box possible in some circumstances, but this needs to be discussed with Axxess technical staff); any less depth requires factory authorization. It is assumed that the device mounting tabs on the mudring come to within 1/8" of the finished wall face. If they are significantly deeper (because of double sheetrock or the like) you must advise us, since extra long mounting screws may be required. Even more important, the face of the mudring cannot protrude out of the wall board as this will cause damage and problems. Please ensure that the

electrical box is mounted as plumb as possible, else the final fit of the PrivacyService Switch will be out of plumb. The electrical box MUST be grounded.

- 2) If the Axxess Master Unit is to be mounted in a multi-gang electrical box with other switch devices, special care must be taken to ensure that:
 - a) the Axxess device is mounted in one of the 2 outboard locations of the multi-gang electrical box;
 - b) the multi-gang electrical box is (over)sized so as to fit the micro-transformer;
 - c) the separation between line voltage wires and devices and the Axxess low-voltage device is observed by
 - (i) not running line voltage wires through the low-voltage device cavity;
 - (ii) installing the separator plate required by code;

- 3) The Axxess GRMs are powered by a Low Voltage circuit with min. 233mA at min. 12VDC available to each device;

2 alternative power supply options are typical:

First, Axxess can supply a micro-transformer for each room, with 110VAC primary and 15VAC secondary; these transformers are small enough (size approx 1.51" x 1.36" x 1.1") to fit into a 4 square box with other wiring. (In some instances even single gang electrical device boxes are possible but installation into single gang boxes must be approved by Axxess first);

Second, Axxess can supply 24 VDC supplies to be installed in a utility space, supplying up to 25 rooms in parallel connection. Wiring should be sized to ensure that each unit receives voltage and available current within the Device Specifications. NOTE: Ideally, wiring for these units should not be daisy-chained, but rather be home-run to the power supply. If power supply daisy chaining is required, please consult with Axxess technical staff. NOTE also, that significant length of DC wiring causes voltage drop. The minimum voltage at the PrivacyService unit should be 12VDC at 233 mA.

If a home-run Cat 5 wire is run from each Guest Room Master to a punch-down panel on that floor, then 1 pair of that Cat 5 wire may be used for the network communication and 1 pair may be used for power. In that case, somewhat adjacent to the punchdown, provision should be made for placing/mounting of the number of central power supplies required on that floor. (number of rooms/25). A shelf-unit on which desktop style supplies can be strapped down works well. The power supplies do require some ventilation space.

Wire size is in the discretion of the LV electrical contractor in order to meet minimum Device Specifications, HOWEVER, the wire ends terminating the power supply at the GRM units MUST be Solid Core Wire (not stranded) no larger in diameter than 22ga. If stranded wire or larger gauge wire is used for the run from the power supply, a solid wire pig-tail no larger than 22ga must be attached for termination as part of rough-in.

1.2 Networking (optional) Wired

1.2.1 Wiring Specifications:

Wire Required: 1 Twisted Pair Cat 5 type or better; shielding is optional;
 (120 Ohm characteristic impedance wire is acceptable) wire size at GRM unit connector cannot exceed 22ga diameter and must be solid core;

Job Layout Specs:

- Each room should have a home run from the GRM to a punch-down panel in the utility room of that floor;
- All the positive and negative wires at the punch down will be connected in parallel;
- From the Utility Room we require 1 Cat 5 wire to the dedicated server computer location (usually the Network Operations Center);

Any wiring configuration requiring more than 1 repeater port for each 64 units will incur additional charges for additional repeaters, which will be charged to the customer.

1.2.2 Recommendations:

- A more sophisticated network can be built by adding 1 repeater per floor, or 1 repeater for every 32 or 64 rooms; also galvanically isolated repeaters are available; (unless requested, our quotes do not include such additional repeaters)

1.3 **Networking (optional) Wireless - ZigBee**

1.3.1 Description

Axxess' Privacy Service systems are available with ZigBee wireless networking capability.

1.3.2 Requirements

The basic Guest Room Switch installation remains the same; however, electrical box depth and loading considerations are more critical. Care must be taken to observe Axxess' electrical box size specifications at their maximum. Any reductions need to be approved by Axxess before rough-in.

In the IDF room on each floor, the owner must accommodate a ZigBee to Ethernet Converter with 110V wall plug;

Owner to supply:

- a) A shelf for placing and strapping a 4" x 7" device;
- b) A 110V power outlet with 24" of the shelf;
- c) An Ethernet port connected to the hotel network;

1.4 **Networking (optional) Wireless- Zigbee to Automation and Control System such as Control4, Crestron etc.**

1.4.1 Description

Axxess' PrivacyService systems are available with ZigBee wireless networking capability to integrate with various Automation and Control systems, including Control4 and Crestron;

1.4.2 Requirements

The Guest Room Switch installation remains the same with the same caution about electrical box depth as expressed in s.1.4.2 above. Electrical box depth and loading considerations are critical. Care must be taken to observe Axxess' electrical box size specifications at their maximum. Any reductions need to be approved by Axxess before rough-in.

Typically, Automation and Control systems will deploy Controller boxes in each room, which will be connected to the hotel's Ethernet network and which are capable of allowing ZigBee capable devices to join their ZigBee (or similar) network. Follow

Automation and Control system instruction for joining devices to their network and for setting up drivers etc.

Be sure to contact Axxess to confirm the compatibility between Axxess devices and the Automation and Control system of your choice before purchasing either.

2.0 Indicator & Doorbell Panel in the Hallway

2.01 A four square electrical box with single gang mud ring is to be mounted in hallway wall at the indicator location. Depth of 4 square box: 2" plus ½" deep mudring. Any less depth would require factory authorization. Single gang boxes can be used in some circumstances, but require factory authorization. If PrivacyService is incorporated into room number signs, ADA regulations require certain mounting parameters. Please consult with you local compliance authority. While in many sign/indicator panel designs the center of the doorbell button will be roughly in the vertical center of the electrical box, this should not be assumed. Communication between electrician and sign/interior designer and Axxess is critical on this point. General sign layout must be determined before rough-in.

The facing edge of the mudring must not protrude to the surface of the sheetrock; instead the facing edge of the mudring should be recessed by about 1/8".

Please ensure that the electrical box is mounted as plumb/level as possible, else the final fit of the Indicator/Doorbell Panel may be out of plumb.

The electrical box **MUST** be grounded. Signs must be mounted to the electrical box to avoid ESD damage.

2.02 The electrical boxes for the Guest Room Master and Hallway Indicator Panels are to be connected by a conduit with min 1/2" ID. The conduit must readily admit pulling through an RJ45 plug.

3.0 FINISH INSTALLATION/TRIM-OUT:

Please ensure the 110 power supply (plug in adapter or breaker) is disconnected/switched off during installation!

You cannot allow the PrivacyService components to dangle from the wire harness or power hookups!

3.01 Run wiring harness between GRM and Indicator Panel electrical boxes; (be careful not to damage the RJ45 Plug, particularly the release prong, it is best to wrap a piece of electrical tape around the plug to protect it while pulling it through conduit.

3.02 Connect Micro-Transformer (black and white to line voltage; secure secondary leads against shorting.

3.03 Insert yellow secondary wires into P1 & P2 terminals of GRM (polarity is irrelevant) Ensure that all wires are stripped to the right length (1/4" – 5/16") so that the conductor (not sheathing) makes contact with terminal contact, and so that exposed wire conductors **DO NOT** protrude from terminal block; it is best practice that a 1/16 – 1/8" length of sheathing enter the terminal block.

3.04 Plug GRM to Indicator Panel wiring harness into GRM.

3.05 Test switch functions of GRM and observe LED response;

3.06 If applicable, connect Network wires (N+ N-) polarity is important; Network wires **MUST** be solid core, not stranded, Cat 5/6 wires;

- 3.07 If applicable, connect Occupancy indicator leads (if feature was purchased) to O+ O- terminals; wires MUST be solid core, not stranded, no larger than 22ga;
- 3.08 Where applicable, connect ADA Hearing Impaired Flasher device (if feature was purchased)
- 3.09 Mount GRM temporarily for testing with one 6-32 screw turned in just a few turns.
- 3.10 In the corridor, mount the sign mounting plate supplied by Axxess to the electrical box with two 6-32 screws (supplied), or if unusual on-site conditions demand, mount the sign mounting plate to the wall with wall anchors. Use the mounting jig supplied by Axxess for hole-drilling and leveling.
All Axxess recommended mounting means would include some form of mechanical mounting in order for the electronics to be serviceable. Mounting of a sign containing Axxess electronics with adhesive only is not approved.
- 3.11 Be sure to level the sign mounting plate, as the sign will only mount as square as the sign mounting plate.
- 3.12 The Indicator Panel & Sign assembly must be mounted/connected to a grounded electrical box to protect it from ESD damage.
- 3.13 Failure to establish anti-static connection between the Indicator Panel & Sign assembly with building ground will void the warranty. If the Indicator Panel & Sign assembly cannot be mounted with anti-static connection to the grounded electrical box, then the customer must purchase and mount anti-static straps, available from Axxess at a small additional charge.
- 3.14 Plug Hallway-end of the wire harness into the Indicator Panel RJ45 jack.
BE SURE NOT TO LET THE SIGN DANGLE FROM THE WIRE HARNESS;
- 3.15 Finish-mount the Indicator Panel unit with mounting means supplied by Axxess (typically keyhole arrangement or chamfer hook & set-screw)
- 3.16 Test interactivity between the Guest Room Master and the Indicator Panel, including all switch functions and doorbell button function.
Please Note: Doorbell will not ring when the Do Not Disturb = Red LED is lit.
- 3.17 Finish mount GRM switch to the guest room electrical box/mudring with 6-32 screws (supplied);
- 3.18 Trim the switch with switch cover plate supplied by owner or installing contractor.
- 3.19 Record Indicator Panel & Sign mounting means and supply actual mounting information to the hotel operator for maintenance records. Supply one copy to Axxess.

Please Note: Doorbell will not ring when the Do Not Disturb red LED is lit.

4.0 Device Specifications:

Min. Operating Voltage (at the Device)	12VDC
Max Operating Voltage (at the Device)	36VDC
Minimum supply current available at each unit	233mA (at 12VDC)
Typical Operating Current	140mA (at 12VDC)

For technical questions please contact Axxess Industries Inc. Toll-free: 1-866-680-2457

MAINTENANCE

1) Cleaning:

Do Not Use any cleaners containing abrasives, solvents, spirits (including Isopropyl Alcohol) to clean the signs. The only approved cleaners are those cleaners specifically safe for LDC screens or for acrylic plastics surfaces.

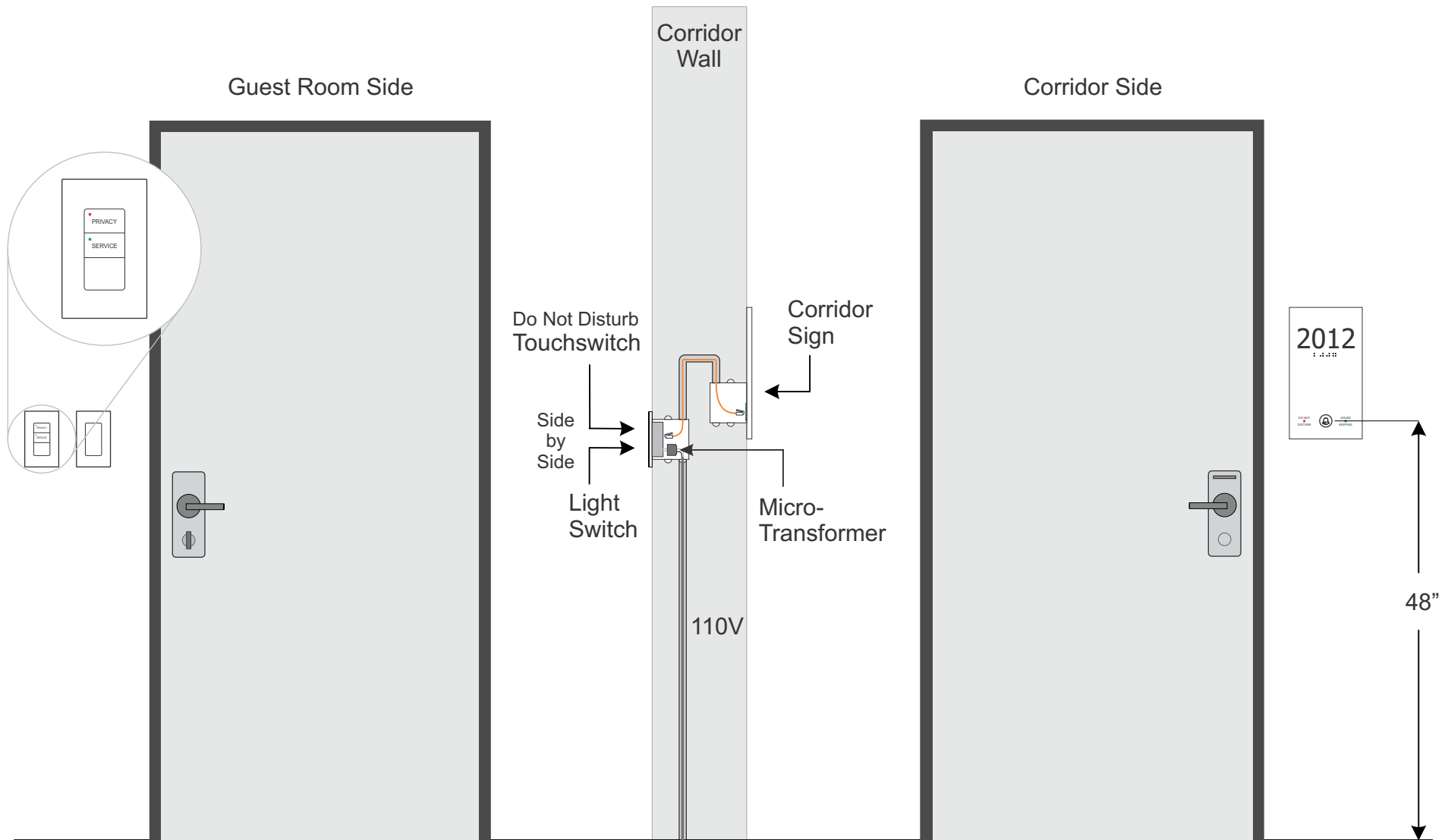
Do Not Spray any cleaners (or water) at the sign. Instead, apply cleaning liquid to a soft 100% cotton rag to moisten the rag, (but don't make it sopping wet), and wipe the sign.

2) Dismounting the Sign

Should it be necessary to dismount the sign,

- a) Remember that the sign hangs on a mechanical mount (by 2 or 4 keyholes typically, for example). Levering the sign out will break out the keyhole(s). To disengage a keyhole mount, you must slide the sign up about $\frac{1}{4}$ to release the keyhole hold, then lift the sign off the screw(s);
- b) If the sign is mounted with a set-screw in the bottom edge, loosen the set screw with an Allen key, angle the bottom of the sign outward by $\frac{1}{4}$ " and slide the sign upward to release it from the top keyhole/hook/chamfer, then lift sign off.
- c) Unplug the network-style cable, DO NOT allow the sign to dangle off the network cable, as this would ruin the connector and the PCB.;
- d) If return to the manufacturer is required, be sure to wrap and package the sign so as to avoid all possible damage. These are custom made signs, which cannot be replaced from stock.

PrivacyService Installation



Note: This is one possible layout.
Combining Do Not Disturb switch in multi-gang box is possible.
Combining light switch in one single gang switch with Do Not Disturb and Make Up Room is possible.

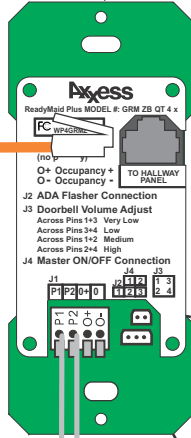
Hallway

Guestroom

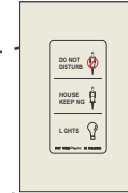


Cat 5 Wire Harness (Axxess Supplied)

Wireless Option Available



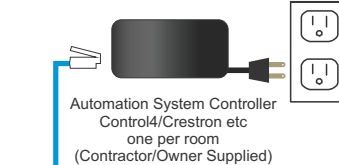
Optional Bedside Unit (Axxess Supplied)



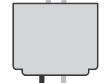
ADA Doorbell Flasher Wirelessly Actuated (Supplied by Axxess)



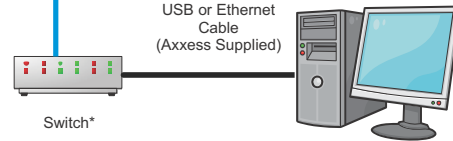
Mini-Bar Fridge* (Supplied by other vendor)



Automation System Controller Control4/Crestron etc one per room (Contractor/Owner Supplied)



110V Transformer (Axxess Supplied)



Wiring Legend

- Cat 5 Wire Harness (Axxess Supplied)
- Ethernet Cable (Axxess Supplied)
- Cat 5/6 Cable (Contractor/Field Supplied)*
- Single Pair Low-Voltage Cable (Contractor/Field Supplied)*
- 24 AWG Solid Wire (Contractor/Field Supplied)*

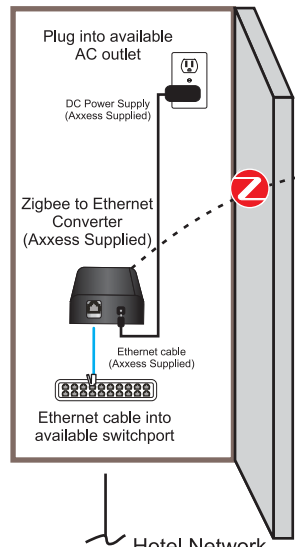
* All items marked with an asterisk are to be supplied in the field by the Contractor/Owner

Axxess
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TITLE: FIELD WIRING DIAGRAM - ZIGBEE - WITH OPTIONAL EQUIPMENT DATE: 25 FEBRUARY 2011 REVISION:

IDF Closet



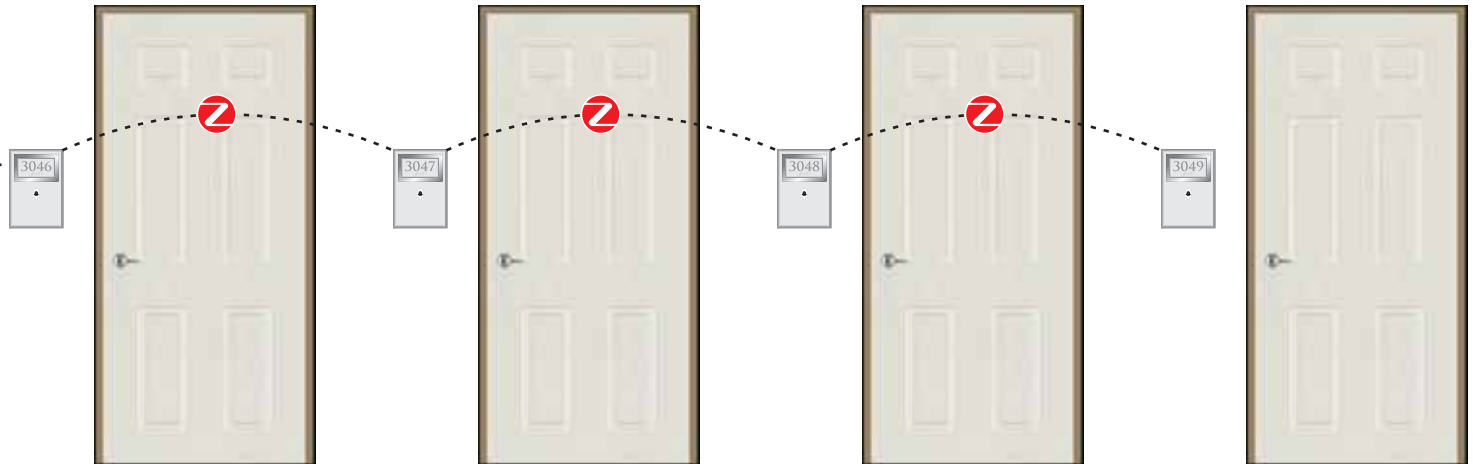
Hotel Network

MDF ROOM

Network Switch (From IDF closets)



Axxess PC Server
(Contractor/Owner Supplied)

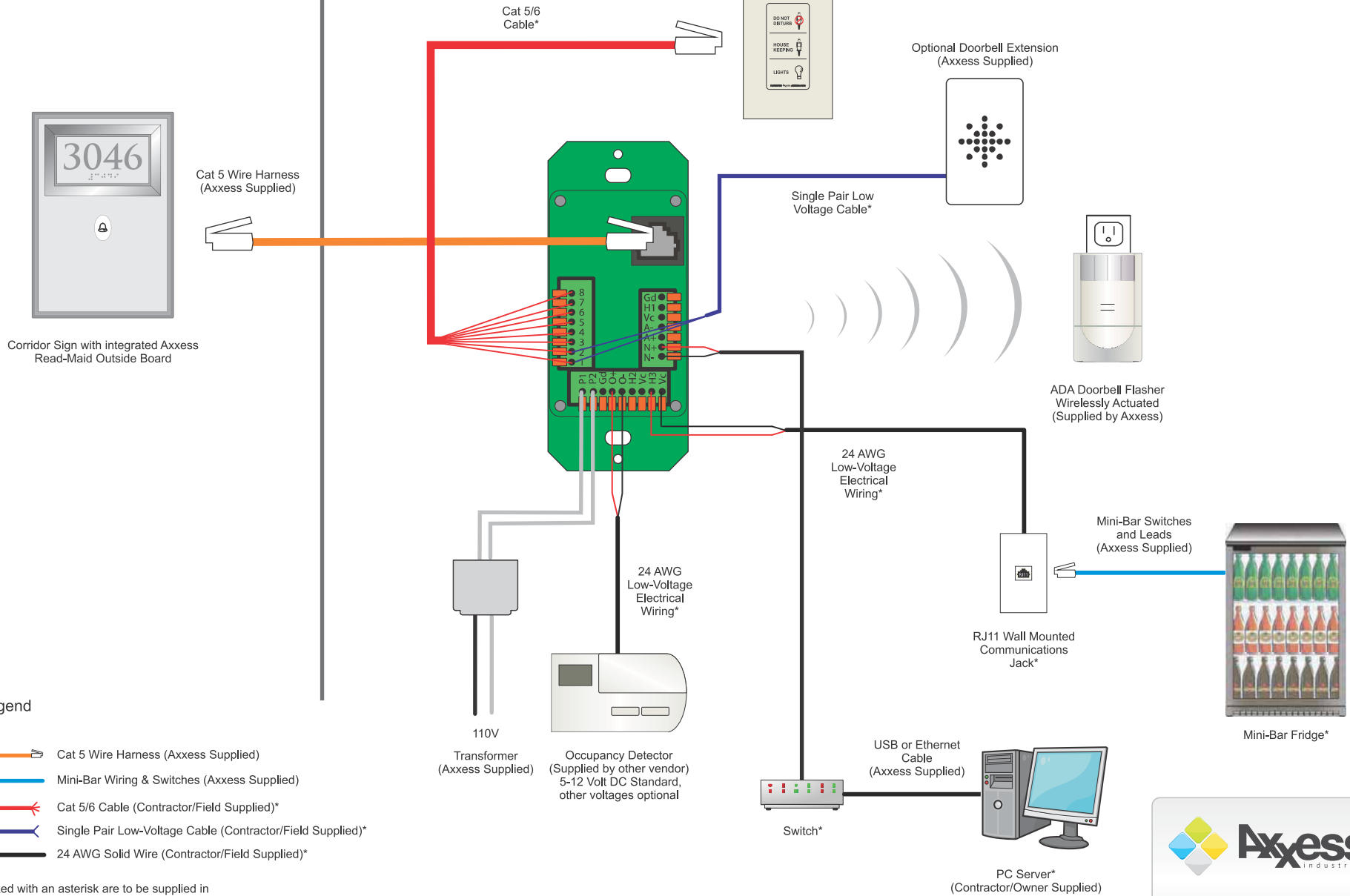


Typical wireless Zigbee Mesh Network routing from Axxess Guestroom Master to Guestroom Master to Zigbee to Ethernet converter at IDF.

 = Zigbee wireless communication

Hallway

Guestroom



Wiring Legend

- Cat 5 Wire Harness (Axxess Supplied)
- Mini-Bar Wiring & Switches (Axxess Supplied)
- Cat 5/6 Cable (Contractor/Field Supplied)*
- Single Pair Low-Voltage Cable (Contractor/Field Supplied)*
- 24 AWG Solid Wire (Contractor/Field Supplied)*

* All items marked with an asterisk are to be supplied in the field by the Contractor/Owner

TITLE: **FIELD WIRING DIAGRAM - WIRED**

DATE: **25 FEBRUARY 2011** REVISION:

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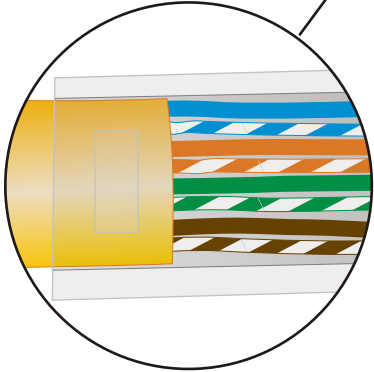
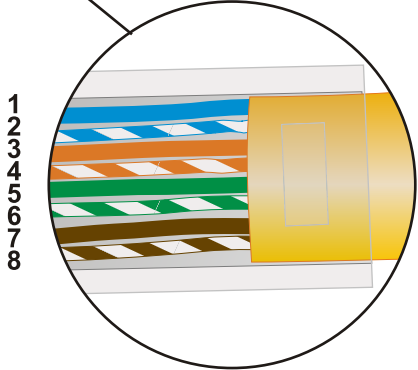
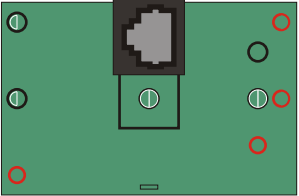
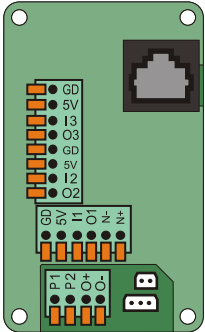
Wire Harness Pin-out

Guestroom
ReadyMaid Switch

Hallway Panel
PCB

RJ45 Plug 1

RJ45 Plug 2



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KELOWNA, BC, CANADA
V1Y 2M2 Tel 1 866 680 2457
WWW.AXXIND.COM

Title: Ready-Maid Plus Wire Harness Pin-out
Design Date: 25 March 2009

AXXESS INDUSTRIES INC.

READY MAID PLUS - SYSTEM 3.5 COMPUTER AND PERIPHERALS

Wireless ZigBee on Guest Room Floors, Ethernet Backbone to Hotel Admin Network
(Rev. Nov 2010)

The Devices that need to be accommodated in the MDF=NOC room include:

- 1) **PC Computer "Server"** (to be supplied by hotel), can be a Virtual Machine, but either way, the stand-alone box or Virtual Machine must be dedicated to hosting Axxess applications;
 - a) 3.0 GHz Core2 Duo or better (if stand-alone and dedicated to Axxess), 4Gb RAM, 10 gig Hard Drive space, Windows XP (Service Pack 3) or Server 2003, & MS Excel 2003;
 - b) Microsoft .Net Framework 3.5
 - c) Usually a rack-mount computer, can be Virtual Machine;
 - d) Screen and keyboard typically shared with other computers in MDF;
 - e) Networked to the Hotel Admin Network (to be configured by Hotel IT staff);
 - f) Configured for Remote Support with remote access via Remote Desktop, WebEx, LogMeIn, or similar; (we can supply/install LogMeIn if desired.)
 - g) For Mobile Applications, IIS Service to be enabled and needs to be accessible from Admin WiFi network where Mobiles will be used (ie guest room corridors and guest rooms).
 - h) Windows and MS Office CDs must be with Computer, in case missing components need to be installed.

The above set-up needs to be completed 2 weeks prior to our team coming out for commissioning and training, so that we can load all the software and prepare and check functionality as much as possible prior to arrival on site.

The Devices that need to be accommodated in the IDF=Comm Closet on each floor include:

- 1) **ZigBee to Ethernet Converter** (supplied by Axxess)
 - a) 4" x 6" Device with screw-mount holes;
 - b) Requires 110V outlet;
 - c) Requires available Ethernet port on Admin Network Switch in IDF, or equivalent;

Instead of an Ethernet connection in each IDF, we can establish the connection ZigBee to Hotel Network over WiFi, provided the WiFi connection at the WiFi Router location is stable and reliable.

The Client computers/workstations can be basic Windows machines (XP preferred).

- They do need network access to the Axxess server.
- Microsoft .Net Framework 2.0 min, better 3.5

For any technical or installation issues, please contact Corey Wagner at Axxess Industries Inc. Toll-free 866-680-2457 x 270 or cell 250-864-0409

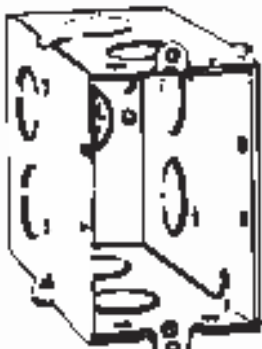
OLD WORK ELECTRICAL BOXES

Old Work electrical boxes require careful selection for a good installation.

Please observe the following criteria:

- 1) E-Box must have sufficient depth = 3.5" (Example: Steel City CYLE 1/2 or 3/4 depending on conduit used, with swing ears).
- 2) DO NOT use F-Brackets (aka battleship brackets) This will void the product warranty.
- 3) Use Swing Ears instead (see specs)
- 4) Ensure that the screws holding ears in place DO NOT protrude into the inside of the box by any significant amount; else device fit may be compromised.

Approved:



CYLE 1/2



CYLE 3/4



Side Mount Bracket

Steel City Box & Cover Accessories



[Click to Enlarge](#)

[table PDF](#)

T&B Catalog Number:

UPC Number:

Description:

Status:

OW SWING EAR

78599104044

Old work swing ears with self-threading screws.

Active

Features

Swing-ear mechanism easily turned with slotted or Phillips screwdriver for quick, simple installation



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Steel City[®]

T&B Catalog Number:7020-8

UPC Number: 78635852430

Description: Single gang phenolic outlet box with ears and #8 swing brackets, 10 cu.in. For use with non-metallic sheathed cable.

Status: Active

General

Material	Reinforced Phenolic
Wiring System	Non-metallic sheathed cable
Volume (cu.in.)	10
Work	Old or manufactured housing
Ears	Yes
Mounting Method	Ears, #8 snap-in bracket
Number of Gangs	One

Dimension Information

Length (inches)	3 1/4
Width (inches)	2 3/16
Depth (inches)	2 1/4

Packaging

Package in Units	50
T&B Sold in UOM	Each
T&B Weight Per UOM	33 lbs. per 100

Notes

*Note Classified for two-hour firewall/fire ceiling

Certifications

RoHS Compliance No

Certifications



File Nbr:

E 11461

For further technical assistance, please contact us...

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MS 3B-50
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Monday-Friday
Phone: (888) 862-3289
Fax: (901) 252-1321
Email:techsupport@tnb.com



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Not Approved:



Side Mount Bracket



"F" bracket



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