[Wireless Door/Window Switch]

SED - WIN/SED - DOR

Wireless Door and Window Switch
Installation Guide

CONTENTS

Schneider Electric

INSTALLATION SED - WIN/SED - DOR

Installation

1. Remove cover by pulling on side where security screw was mounted (Figure-1).
2. Remove cover of magnet unit.
3. Read FCC ID and IC label inside removed cover.
4. Cut out mounting template (end of this manual) for install. Do not place it on hinge side of door unless self tested.
5. Locate template and mark four holes for self-tapping screws.
6. Use self-tapping screws to install both switch and magnet base (Figure-2).
7. Follow pairing process before installing switch and magnet units.
8. After pairing process is successful, install switch and magnet units.
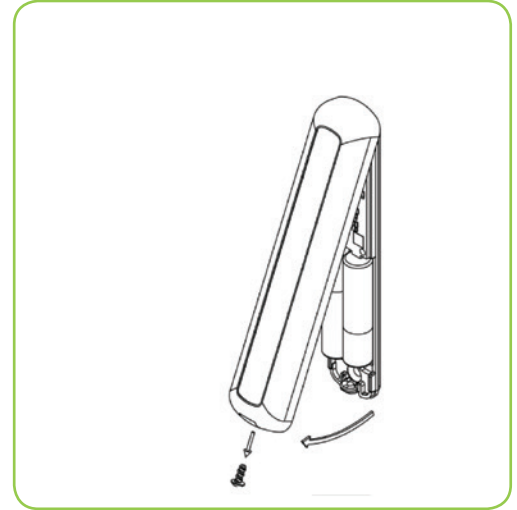9. Install security screw on switch.

Figure-1   Open cover

Self Testing

For best practice, the configuration of the wireless switch and magnet unit should be configured as shown. Use mounting template at the end of this document for installation. Other configurations can be used, such as placing devices on top of door, placed horizontally. Always self-test wireless switch to ensure it works correctly.

Location

- Never install switch unit on moving part (door or window).
- Install only magnet unit on moving part (door or window).
- Never install in direct sun.
- Ensure minimum distance between any wireless node and any WiFi devices is at least 3 feet (1m).

Figure-2   Install Switch and Magnet Bases

Notes

- Electronic controls are static sensitive devices. Discharge yourself properly before manipulating and installing device.
- A short circuit or wrong wiring may permanently equipment.
- All SED-WIN and SED-DOR series controls are designed for use as operating controls only and are not safety devices. These instruments have undergone rigorous tests and verification prior to shipping to ensure proper and reliable operation in the field. Whenever a control failure could lead to personal injury and or loss of property, it becomes the responsibility of the user, installer, electrical system designer to incorporate safety devices (relays, flow switch, thermal protections), or an alarm system to protect the entire system against catastrophic failures. Tampering with devices or unintended application of devices results in void of warranty.
- See data sheet for operating and storage conditions.
- Any occurring condensation can damage wireless switch.
- Respect polarity when replacing batteries. Reversing polarity of batteries can damage wireless switch.
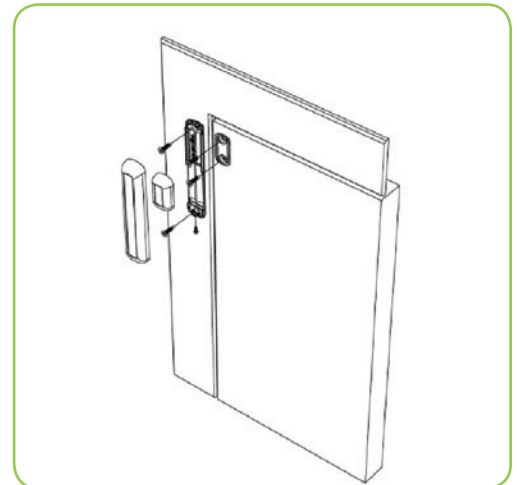
Operation Overview

SED-WIN and SED-DOR series Zigbee Pro™ wireless switches are used with wireless versions of SERx3XX Series Fan Coil Terminal Equipment Controllers. A typical hospitality application SERx3xx wall terminal equipment controller has an on-board PIR sensor. Wireless switches monitor opening and closing of doors and windows. Wireless door switches used with local SERx3xx PIR cover provide advanced local occupancy routines allowing for increased energy savings during occupied hours without sacrificing occupant comfort.

Wireless window switches monitor outside windows and/or opening/closing of patio/balcony doors, which prevents unnecessary energy consumption. Applications of SERx3xx Series Fan Coil Terminal Equipment Controllers with SED-WIN and SED-DOR series Zigbee Pro™ wireless switches can be used in network ready mode, with or without integration to a central management system. This allows for advanced functions such as central reservation occupancy functions.

A combination of up to twenty SED-WIN and SED-DOR door and/or window switches can be used simultaneously with a single device. The SED-WIN and SED-DOR switches are factory delivered with 2 AAA batteries and can be installed, configured, and used right out of the box. Due to extremely small current consumption of the switches, the expected battery life is approximately 10 years.

No tools are required for commissioning or servicing the door switch. A very simple interface with an on-board LED and hidden switch provides the required functions for local interaction. Local information for battery life and connectivity (heartbeat) are provided at the SERx3xx Series Fan Coil Terminal Equipment Controller local display level, or through the Zigbee Pro™ wireless network. Each switch is also factory supplied with a magnet, locking security tamper proof screw, and self tapping mounting screws for installation.
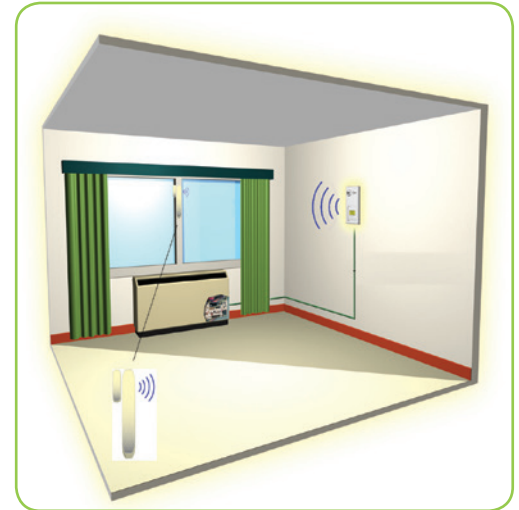
Model Chart

PART NUMBER	DESCRIPTION
SED-WIN-P-5000	Wireless Window Switch (Patio and balcony doors) Complete with magnet, batteries, and required mounting hardware.
SED-DOR-P-5000	Wireless Door Switch Complete with magnet, batteries, and required mounting hardware.

Verify if device is wireless window switch or wireless door switch:
Remove battery for 60 seconds and then insert again. Power cycle switch and verify LED blinking pattern to confirm if it is a window switch or door switch.

Part Number	Number of Blinks
Window Switch (SED-WIN-P-5000)	2 blinks
Door Switch (SED-DOR-P-5000)	3 blinks

WARNING: Respect polarity when replacing batteries or the switch may be damaged. The (+) and (–) terminals are indicated on the board.
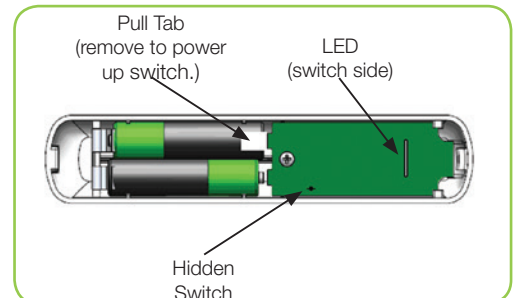**NOTE:** Magnet is located on opposite side of security screw.

Pull Tab
(remove to power up switch.)

LED
(switch side)

Hidden Switch

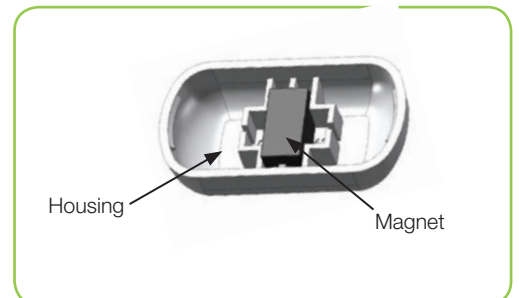**Figure-3 Wireless Switch Components**

Housing

Magnet

Figure-4
Magnet Components and Proper Magnet Orientation

Pairing Process Procedure

NOTE: See SER/SE installation manual for details on PAN ID parameter.

PAN ID for Centralized Networked Applications with MPM

SER8300 Series	SE 72 / 73 Series*
1 - 500	1 - 250

PAN ID for Stand-alone Applications with no MPM

SER8300 Series	SE 72 / 73 Series*
501 - 1000	251 - 500

Note: SE7000 Room Controllers are only compatible if a network with a Coordinator is present.

Configuring Actions

Short Switch Duration	Result
Approximately 1 second	Enter Pairing Mode (page 8)
Approximately 1 second (after being paired)	Displays MAC address (page 8)
4+ seconds and less than 10 seconds	Battery Status (page 13)
10+ seconds and less than 20 seconds	Diagnostic Mode (page 12)
20+ seconds	Resets Switch

Using SER8300 Controllers for Stand-alone Systems

When PAN ID is used with Range of 501 - 1000 for Stand-Alone Systems

In this application, the SER8300 controller(s) are the coordinators to their own systems and are network masters for each wireless switch reporting to them. A unique network is needed for proper functionality according to the following:

- Wireless controller factory default Channel and PAN ID = controller(s) offline.
- Each SER8300 controller is its own network coordinator.
- Range of PAN ID on all controllers to use is 501 - 1000. This range is reserved for stand-alone system operation.
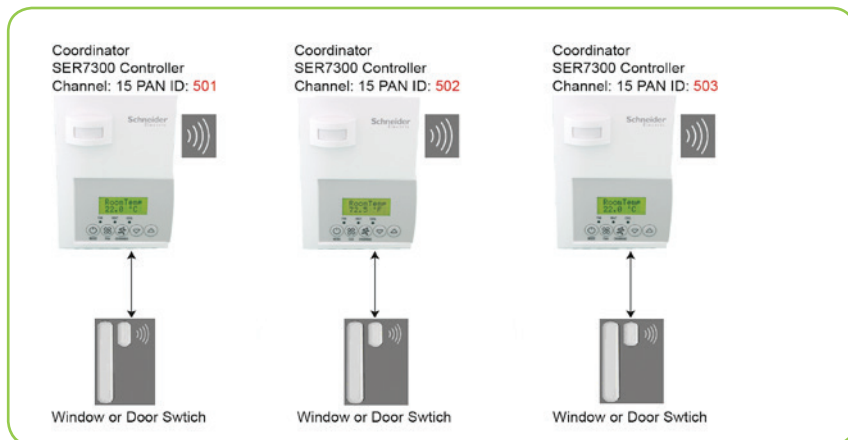
Notes:

- Each SER8300 Controller uses a unique PAN ID and/or Channel settings.
- If all available PAN ID's are used (501-1000), use a different channel.
- Up to 20 switches can be linked to each SER8300 Controller.

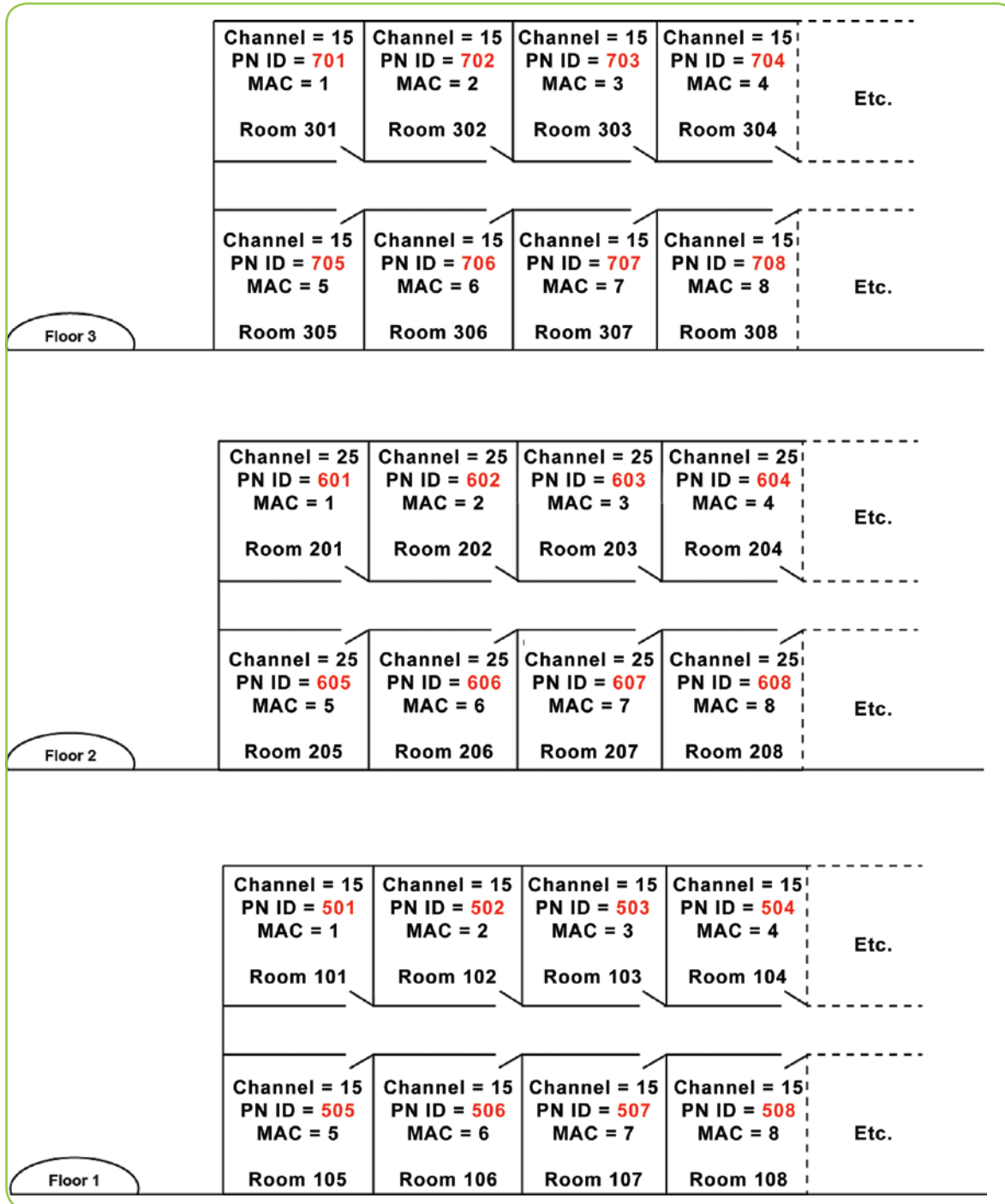## Floor Plan Stand-Alone Systems with SER8300 Controllers

This example shows a typical floor plan of a unique network for a stand-alone system.

Channel = 15	Channel = 15	Channel = 15	Channel = 15	
PN ID = 701	PN ID = 702	PN ID = 703	PN ID = 704	Etc.
MAC = 1	MAC = 2	MAC = 3	MAC = 4	
Room 301	Room 302	Room 303	Room 304	

Channel = 15	Channel = 15	Channel = 15	Channel = 15	
PN ID = 705	PN ID = 706	PN ID = 707	PN ID = 708	Etc.
MAC = 5	MAC = 6	MAC = 7	MAC = 8	
Room 305	Room 306	Room 307	Room 308	

Floor 3

Channel = 25	Channel = 25	Channel = 25	Channel = 25	
PN ID = 601	PN ID = 602	PN ID = 603	PN ID = 604	Etc.
MAC = 1	MAC = 2	MAC = 3	MAC = 4	
Room 201	Room 202	Room 203	Room 204	

Channel = 25	Channel = 25	Channel = 25	Channel = 25	
PN ID = 605	PN ID = 606	PN ID = 607	PN ID = 608	Etc.
MAC = 5	MAC = 6	MAC = 7	MAC = 8	
Room 205	Room 206	Room 207	Room 208	

Floor 2

Channel = 15	Channel = 15	Channel = 15	Channel = 15	
PN ID = 501	PN ID = 502	PN ID = 503	PN ID = 504	Etc.
MAC = 1	MAC = 2	MAC = 3	MAC = 4	
Room 101	Room 102	Room 103	Room 104	

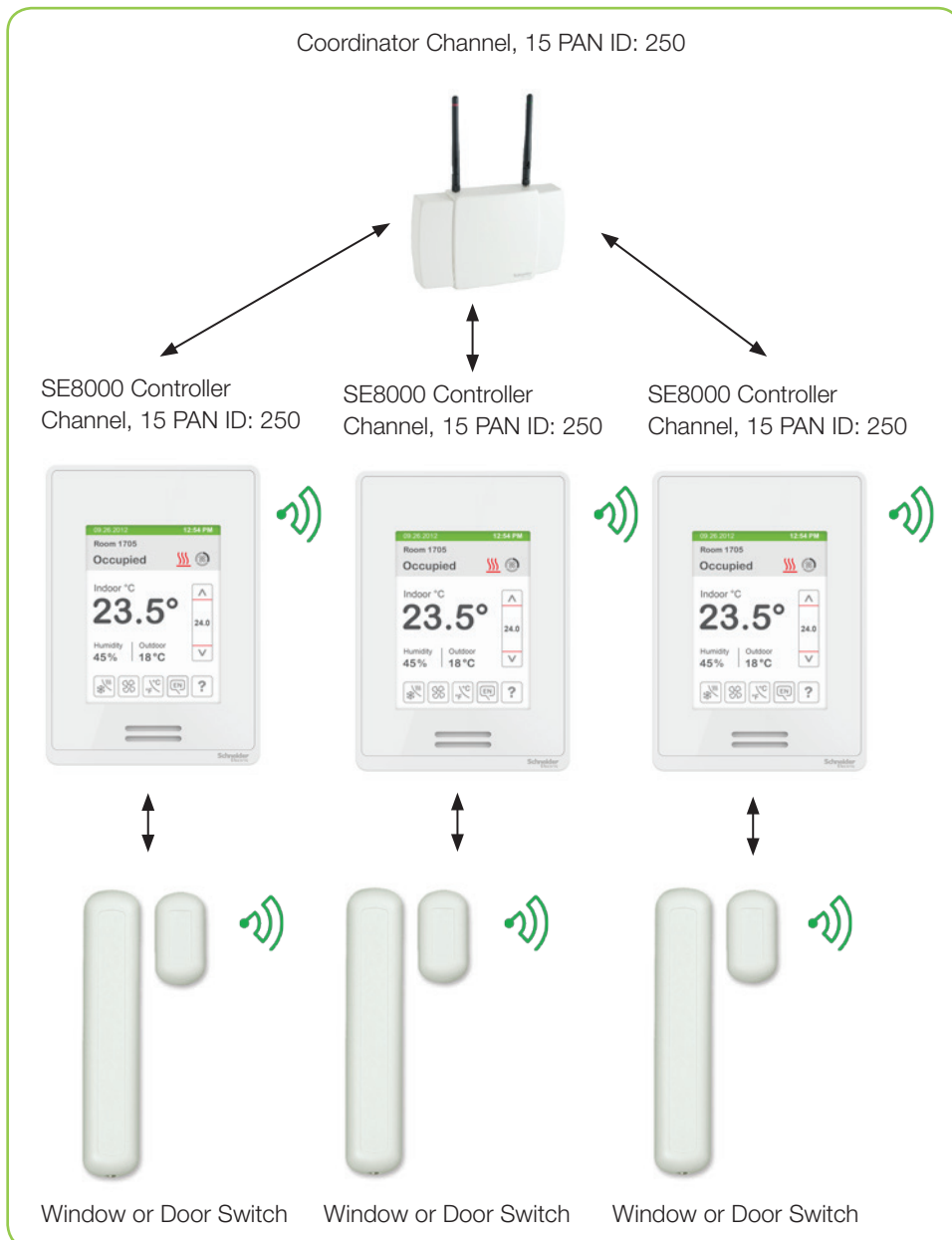| Channel = 15	Channel = 15	Channel = 15	Channel = 15	
PN ID = 505	PN ID = 506	PN ID = 507	PN ID = 508	Etc.
MAC = 5	MAC = 6	MAC = 7	MAC = 8	
Room 105	Room 106	Room 107	Room 108	

Floor 1

PAN ID used with a Range of 1 to 500 for Networked Systems

In this application, any controller(s) are routers to the system. The MPM is the coordinator to the system as the MPM is the network master for **any** controller(s) reporting to them.

- Wireless controller factory default Channel and PAN ID = controller(s) offline.
- MPM is network coordinator.
- SER8300/SE7000 controllers act as a router.
- Range of PAN ID on all controllers use 1 - 500. Reserved for networked system operation.

Notes:

- Each controller uses same PAN ID and Channel as MPM coordinator.
- MPM supports network integration for required GUI/System/Status objects.
- Up to 20 switches can be linked to each SER8300/SE7000 Controller.

Coordinator Channel, 15 PAN ID: 250

SE8000 Controller
Channel, 15 PAN ID: 250

SE8000 Controller
Channel, 15 PAN ID: 250

SE8000 Controller
Channel, 15 PAN ID: 250

Window or Door Switch   Window or Door Switch   Window or Door Switch

Before Starting Pairing Procedure

Verify the following parameters on the SER8300 controller are set correctly to avoid failure.

PAN ID Personal Area Network Identification Default value = 0 Range: 0 -1000	This parameter only appears when a wireless network adapter is present. If the Terminal Equipment Controller is installed as a stand-alone unit or with a BACnet™ or Echelon™ adapter, this parameter is not used or displayed. The default value of 0 is not a valid PAN ID. The valid range of available PAN ID is from 1 - 1000. Range 1 - 500 is for centralized networked applications using a MPM. Range 501 - 1000 is for stand-alone applications where no MPM with wireless stat driver is used.
Channel Channel selection Default value = 10 Range: 10 - 26	This parameter only appears when a wireless network adapter is present. If the Terminal Equipment Controller is installed as a stand-alone unit or with a BACnet™ or Echelon™ adapter, this parameter is not used or displayed. Schneider-Electric recommends using only channels 15 and 25 only. The default value of 10 is not a valid channel. The valid range of available channel is from 11 to 26.

Pairing Associating Switches with Controllers

1. Remove pull tab from battery holder to power-up switch.
2. Verify or set configuration parameter BI1 or BI2 to None to erase current associated devices.
3. Set configuration parameter BI1 to Window and BI2 to DoorDry.
4. To reset wireless switch to its factory default settings if previously associated, short switch and hold for 20+ seconds. 5 short blinks will confirm reset (see Figure-5).
5. Short switch once for less than 3 seconds and bring switch to left of controller where COM module is located.
6. Hold switch as close as possible to controller during pairing process (see Figure-6).
7. LED displays one long blink followed by one short blink to indicate switch is in pairing mode.
8. LED displays 2 short blinks in succession. Make sure to place switch closely to COM module of controller.
9. LED displays five short blinks to indicate switch is paired.
10. Quickly short switch and LED displays a blinking pattern matching the corresponding MAC address:

Example: MAC = 43 if LED shows 4 short blinks followed by a pause and another 3 short blinks.

Multiple Switch Configuration

In a multiple switch configuration, up to 20 switches can be linked to one controller. Repeat steps 5 to 9 in pairing process procedure to add multiple wireless switches.

When a multiple switch configuration is modified, such as removing a switch, a reset is required according to the following:

1. To reset wireless switch to its factory default settings, short switch and hold for 20+ seconds. Five short blinks confirm reset.
2. Set configuration parameter BI1 or BI2 to None and then back to BI1 or BI2 to erase removed wireless switch.

Figure-5 Shorting the Switch

Figure-6 Switch/Controller Proximity During Pairing

Troubleshooting Guide

NOTE: Restart pairing procedure if wireless switch is not yet paired.

Condition	Possible Cause	Solution
Wireless switch not activating	Batteries not installed properly	Correctly install batteries by respecting polarity
Switch does not function properly	Not installed correctly	See page 2 and mounting template at the end of this document
Always displaying Low Battery	A switch was removed	See Multiple Switch Configuration
Wireless switch not pairing with device	Configuration parameters must be reset	Set configuration parameters BI1 and BI2 to None and then reset them to Window and/or BI2 to DoorDry
	Wireless switch must be reset	Jump switch for 20+ seconds and restart pairing
	Incorrect PAN ID or Channel	Set to appropriate PAN ID or Channel

Status and Monitoring

Once the switch is commissioned, it can be monitored by the status LED when diagnostic mode is enabled. Once diagnostic mode is enabled, when the magnet is placed near the switch, the LED stays off. Conversely, when the magnet is away from the switch, the LED stays on.

The switch status can also be viewed as a present value on the network front end.

Enter/enable diagnostic mode

Short Switch Duration	Duration of Diagnostic Mode
10+ seconds and less than 20 seconds	2 minutes

Alarms

If a low battery alarm is detected, it automatically shows at the end of the wall controller scrolling status display. When an alarm message shows, the backlit screen on the controller illuminates at the same time as the message, and shuts off during the rest of the status display.

Low Batt	Indicates an attached wireless switching device (door or window contact) has a low battery condition. Only functional when used with a wireless communication adapter, OR, a switch was removed.

Important: It is recommended batteries of all switches under a single controller be replaced when this alarm shows.

Battery Status

To verify battery strength of the wireless switch, jump switch
for 4+ seconds and less than 10 seconds and ensure a blinking pattern shows. After the blinking pattern
shows, the switch enters diagnostic mode for 10 seconds.

| Number of Blinks	Indication
1 blink	Replace batteries
2 blinks	Replace batteries soon
3 blinks	Battery strength is fair
4 blinks	Battery strength is good
5 blinks	Battery strength is excellent

Important: Respect polarity when replacing batteries. Reversing polarity of batteries can damage wireless
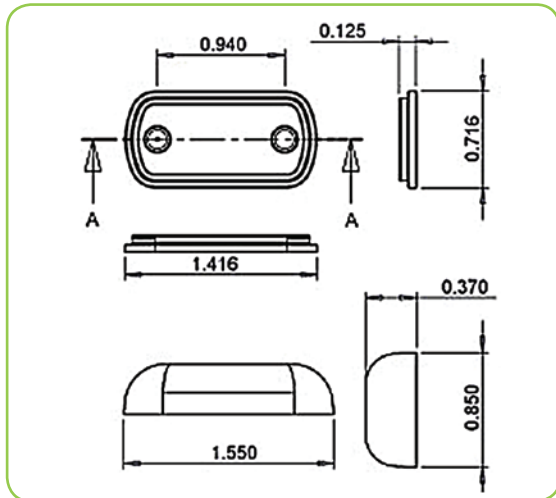switch.

Specifications

Power requirements	3.0 VDC 2 x AAA batteries. Factory supplied
Operating conditions	0 °C - 50 °C (32 °F to 122 °F)
	0% - 95% R.H. non-condensing
Storage conditions	-30 °C - 65 °C (-22 °F to 122 °F)
	0% - 95% R.H. non-condensing
Agency approvals for all models	CE: RTTE 1999/5/EC
Agency approvals for wireless models	FCC compliant to: Part 15, Subpart C

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1)
THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED
MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE
EQUIPMENT

Check with your local government for instruction on disposal of this product

Drawing and Dimensions

The illustration below shows dimensions for the switch and switch base.
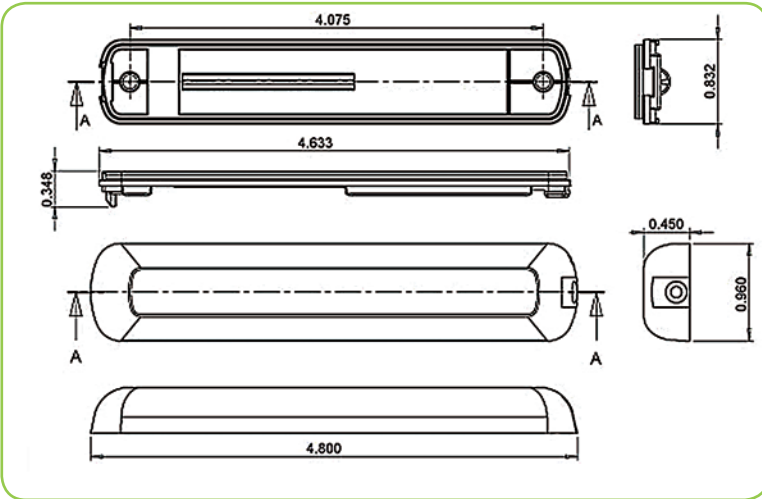
The illustration below shows dimensions for the magnet and magnet base.

Marking Templates for Mounting

FOR LEFT SIDE
DOOR OPENINGS

FOR RIGHT SIDE
DOOR OPENINGS

DOOR

DOOR

DOOR FRAME

DOOR FRAME

Location of Security Screws