

Easy Series/RADION

ICP-EZM2



en

Installation Manual

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1 Agency Approvals and Requirements

1.1 Certifications and Approvals

Compliance with specific standards, such as SIA CP-01 and DD243, reduces false alarms and is required in many locations. The Easy Series control panel is designed to comply with the following certifications, approvals, and standards:

- ANSI/SIA CP-01 False Alarm Immunity
 - €
- EN50131-1: 2006 +a1:2009, Grade 2, Environmental Class II*
- EN 50131-3, EN 50131-5-3, EN 50131-6, IP30 IK04 (EN50529 - EN50102)
- DD243*
- PD6662*
- CCC*
- UL Standards:
 - UL365, Police Station Burglar Alarm Units and systemsUL609, Local Burglar Alarm Units and SystemsUL985, Household Fire Warning System UnitsUL1023, Household Burglar-alarm System UnitsUL1076, Proprietary Burglar Alarm Units and Systems

- cUL Standards:
 - CAN/ULC-S545, Residential Fire Warning System Control Units
 - CAN/ULC-S545, Residential Fire Warning System Control Units
 - CAN/ULC-S303, Local Burglar Alarm Units and Systems
 - C1076, Proprietary Burglar Alarm Units and Systems
 - C1023, Household Burglar Alarm Units
- FCC
- Industry of Canada (IC)
- A-Tick*
- C-Tick*
- TBR21 for PSTN*
- INCERT (Belgium) *
- CSFM Listing Control Unit Household
- Japan Approvals Institute for Telecommunications
 Equipment (JATE) *

1.2 FCC

Part 15

This equipment was tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used according to this document, it might cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user must correct the interference.

Part 68

This equipment complies with Part 68 of FCC rules. A label contains, among other information, the FCC registration number and ringer equivalency number (REN). If requested, this information must be provided to the telephone company.

The Bosch Security Systems Easy Series control panel is registered for connection to the public telephone network using an RJ38X or RJ31X jack.

^{*} Not investigated by Underwriters Laboratories, Inc.

The REN determines the number of devices that can be connected to the telephone line. Excessive REN's on the telephone line might result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five. To determine the number of devices that you can connect to the telephone line, contact the telephone company for the maximum REN for the calling area.

The telephone company notifies you if this equipment harms the telephone network. If advance notice is not practical, the telephone company notifies the customer as soon as possible. Also, you are advised of your right to file a complaint with the FCC if you believe it is necessary to do so.

The telephone company might make changes in its facilities, equipment, operation, or procedures that could affect the operation of this equipment. If this happens, the telephone company provides advance notice so you can make the necessary modifications for maintaining uninterrupted service.

If you experience trouble with the Easy Series control panel, contact Bosch Security Systems customer service for repair and warranty information. If the trouble harms the telephone network, the telephone company might request that you remove the equipment from the network until the problem is resolved. User repairs must not be made, and doing so voids the user's warranty.

Do not use this equipment on public coin service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact your state public utilities commission for more information.

- FCC Registration Number: US:ESVAL00BEZ1; Ringer Equivalence: 0.0B
- Service Center: Contact your Bosch Security Systems, Inc. representative for the location of your service center.

1.3 Industry Canada

This product meets the applicable Industry Canada technical specifications.

The ringer equivalence number (REN) for this terminal equipment is 0.0. The REN assigned to each terminal equipment indicates the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface can consist of any combination of devices subject only to the requirement that the sum of the REN of all devices does not exceed five.

1.4 SIA

Programming Requirements

To comply with ANSI/SIA CP-01 False Alarm Reduction, set these programming items as follows:

Programming Item	Item Number	Default	Section Starting Page
Intrusion Abort Window	110	30 sec	System Programming
Intrusion Cancel Window	112	5 min	Items, page 46
Exit Delay	126	60 sec	
Entry Delay	127	30 sec	
Swinger Bypass Count	131	1	
Auto Protection Level	132	1	

To comply with ANSI/SIA CP-01 False Alarm Reduction, by default, this system:

Sends Intrusion Alarm Verified and Exit Error reports

- Sends a Recent Closing report for any alarm that occurs within two minutes of the end of Exit Delay
- Includes a Fire Verified point type option that is disabled by default

Quick Reference

Refer to the following table for programmable features, shipping defaults, and recommended programming that comply with the ANSI/SIA CP-01 False Alarm Reduction standard. The system test button tests all points, all outputs, the control panel, and the communicator. Refer to *Test the System, page 64* for more information.

Paragraph Number in ANSI/SIA CP-01	Feature	Requirement	Range	Shipping Default	Recommended Programming ¹
4.2.2.1	Exit Time	Required (programmable)			60 sec
4.2.2.2	Progress Annunciation/ Disable for Silent Exit	Allowed	Allowed Individual control centers can be disabled.		All control centers enabled.
4.2.2.3	Exit Time Restart	Required Option	For re-entry during Exit Time	Enabled	Enabled
4.2.2.5	Auto Stay Arm on Unvacated Premises	Required option(except for remote arm)	option(except for arm		Enabled
4.2.4.4	Exit Time and Progress Annunciation/ Disable for Remote Arm	Allowed option (for remote arm)	Can be disabled for remote arm	Enabled	Enabled
4.2.3.1	Entry Delay(s)	Required (programmable)	30 sec to 4 min ²	30 sec	At least 30 sec ²
4.2.5.1	Abort Window for Non-fire Zones	Required option	Can be disabled by zone or zone type	Enabled	Enabled (all zones)
4.2.5.1	Abort Window Time for Non-fire Zones	Required 15 sec to 45 sec (programmable)		30 sec	At least 15 sec ²
4.2.5.1.2	Abort Annunciation	Required option	Annunciate that no alarm was transmitted	Enabled	Enabled
4.2.5.4.1	Cancel Annunciation	Required option	Annunciate that a Cancel was transmitted	Enabled	Enabled

Paragraph Number in ANSI/SIA CP-01	Feature	Requirement	Range	Shipping Default	Recommended Programming ¹	
4.2.6.1 and 4.2.6.2	Duress Feature	Allowed Option	No 1+ derivative of another user code; no duplicates of other user codes	Disabled	Disabled	
4.3.1	Cross Zoning	Required Option	Programming needed	Disabled	Enabled and two or more zones programmed	
4.3.1	Programmable Cross Zoning Time	Allowed	Can program	Per manufacturer	Per walk path in protected premises	
4.3.2	Swinger Shutdown	Required (programmable)	For all non-fire zones, shut down at one or two faults	One fault	One fault	
4.3.2	Swinger Shutdown Disable	Allowed	For non-police response zones	Enabled	Enabled (all zones)	
4.3.3	Fire Alarm Verification	Required option	Depends on control panel and sensors	Disabled	Enabled unless sensors can self- verify	
4.5	Call Waiting Cancel	Required option	Depends on user phone line	Disabled	Enabled if user has call waiting	

¹Programming at installation site might be subordinate to other UL requirements for the intended application.

1.5 Underwriters Laboratories (UL)

Household Fire Warning System

- Install at least one UL Listed four-wire latching type smoke detector rated to operate over the voltage range of 11.2 VDC to 12.3 VDC. The maximum smoke detector load is 50 mA.
- Install one UL Listed 85 dB audible device rated to operate over the range of 11.2 VDC to 12.3 VDC as required for this application. Program the bell cut-off time for at least four minutes. Refer to Programming Item 107 in System Programming Items, page 46.
- Install end-of-line resistor P/N: 47819 after last smoke detector.
- Do not use a printer interface module.
- Where two-wire addressable devices are used, do not place fire and intrusion devices on the same zone.
- The system must be able to operate for at least 24 hr, and generate a full alarm output for at least 4 min without AC power.

Household Burglar Alarm Unit

- Install at least one UL Listed 85 dB audible device rated to operate over the voltage range of 11.2 VDC to 12.3 VDC.
- Install at least one IUI-EZ1-NEW Control Center.

² Combined Entry Delay and Abort Window should not exceed 1 minute.

³ If the cross zone timer ends and a second cross zone point is not faulted, the system sends an intrusion alarm unverified report.

- Program all zones to use end-of-line supervision.
- Install intrusion initiating devices rated to operate over the voltage range of 11.2 VDC to 12.3 VDC.Program all intrusion zones for audible notification.
- Do not exceed 60 sec when programming Exit Delay. Refer to Programming Item 126 in System Programming Items, page 46. Do not exceed 45 sec when programming Entry Delay. Refer to Programming Item 127 in System Programming Items, page 46. Program the bell cut-off time for at least of four minutes. Refer to Programming Item 108 in System Programming Items, page 46.
- The system must be able to operate for at least 24 hr, and generate a full alarm output for at least 4 min without AC power.

Commercial Burglary, Local

- Use the D8108A Attack Resistant Enclosure with the D2402 Mounting Skirt.
- Install at least one UL Listed 85 dB audible device rated to operate over the voltage range of 11.2 VDC to 12.3 VDC. All wiring connections between the control panel and device must be in conduit.
- Do not exceed 60 sec when programming Exit Delay. Refer to Programming Item 126 in System Programming Items, page 46. Do not exceed 60 sec when programming Entry Delay. Refer to Programming Item 127 in System Programming Items, page 46.
- Install a tamper switch to protect the enclosure door.
- Set Programming Item 116 to 1 (Daily) to ensure the automatic test report is sent on a daily basis. Refer to System Programming Items, page 46.
- Ensure that the integrated communicator is enabled (Programming Item 304 = 0; refer to). Ensure that the system can send low battery reports (Programming Item 358 = 1, 2, or 3; refer to).
- Install at least one IUI-EZ1-NEW Control Center.
- Program the bell cut-off time for at least 15 minutes. Refer to Programming Item 108 in System Programming Items, page 46.
- This system was not evaluated for Bank Safe and Vault applications.
- The system must be able to operate for at least 24 hr, and generate a full alarm output for at least 15 min without AC power.

Commercial Burglary, Police Station Connected Protected Premises*

- Refer to for installation requirements.
- Ensure that the integrated communicator is enabled (Programming Item 304 = 0; refer to).
- * Systems are approved for Encrypted Line Security when used in conjunction with the C900V2 Conettix IP Dialer Capture Module and communicating over a packet-switched data network (PSDN).

Commercial Burglary, Proprietary*

- The integrated communicator is enabled (Programming Item 304 = 0; refer to).
- The system has one owner.
- The system must be able to operate without AC power for at least 24 hours. The central station receiver must be able to receive reports without AC power for at least 24 hours.
- * Systems are approved for Encrypted Line Security when used in conjunction with the C900V2 Conettix IP Dialer Capture Module and communicating over a packet-switched data network (PSDN).

See also

System Programming Items, page 46

1.6 PD6662 and DD243 Requirements

To comply with PD6662 and DD243, you must meet all of the EN50131-3 requirements and the following requirements:

- Maintenance: A qualified technician must check the system at least twice a year.
- **AC Power Supply:**
 - Type: A
 - Rated Voltage: 230 V
 - Rated Input Frequency: 50 Hz
 - Rated Input Current: 250 mA maximum Fuse Rating: 0.25 A. 250 V Slow Blow
- Construction Materials: Enclosures and housings for the control panel, control center, DX2010, wireless receiver, and wireless devices are made from materials that are durable, secure, and resistant to attack by hand-held tools.
- Confirmed Alarms: Set Expert Programming Item Number 124 to either Option 3 or 4. Refer to System Programming Items, page 46 for more information.

The Easy Series control panel is designed to comply with PD6662:2004 as a Grade 2 system that supports Notification Options A, B, C, or X with the appropriate notification devices installed (devices not included with system).

1.7 **EN50131 Requirements**

The Easy Series control panel is designed to comply with EN50131-1: 2006 +a1:2009, Grade 2, Environmental Class II.

Installation, Programming, and Maintenance

Installation: Refer to *Install System Components*, page 25.

Programming: Refer to *Programming*, page 42.

Testing: Refer to System Test and Maintenance, page 64.

Maintenance: Refer to System Test and Maintenance, page 64.

Automatic Inhibit

Intruder Alarm and Fault Signal or Message: Set Expert Programming Item Number 131 to a value between 1 and

Refer to System Programming Items, page 46 for more information.

Authorization Code: Set Expert Programming Item Number 892 to a value between 3 and 8.

Refer to Control Center Programming Items, page 58 for more information.

Logical and Physical Keys

Minimum Number of Combinations per User:

- **Passcodes:** 15,625 (passcode length must be six digits)
- **Tokens:** 42,000,000,000
- **Key Fobs:** 2,800,000,000,000,000

Method Used to Determine Number of Combinations:

- Passcodes: Digits 1 to 5 are allowed. For a six-digit passcode, all combinations are allowed.
- **Tokens:** 32 bits. All combinations are allowed.
- **Key Fobs:** 56 bits (48 serialized during manufacturing, 8 remain static)

To comply with EN50131-1, set these programming items as follows:

Programming Item	Item Number	Setting	Section Starting Page
Programming Key Auto Transfer	123	Select Option 0	System
Entry Delay	127	Set to 45 sec or less	Programming Items, page 46
Swinger Bypass Count	131	Select Option 3	
Restrict Installer Passcode	142	Select Option 1	
RPS Automatic Call In Frequency	224	Select Option 0	RPS Configuration Items, page 52
Passcode Length	861	Set passcode length to six digits	User Programming Items, page 59

Additional information for SPT to comply with EN 50136-2: 2013 (section 7.1):

Standard with which the component conformity is declared	EN 50136-2: 2013 and EN 50136-1: 2012
ATS category for which SPT is suitable	SP1-SP3
Declaration of compatibility with the AS type of interface(s) supported	Serial interface
Declaration of the operation mode of acknowledgment	Store and forward

1.8 INCERT

To comply with INCERT, set these programming items as follows:

Programming Item	Item Number	Default	Section Starting Page				
Restrict Installer Passcode	142	1	System Programming				
Passcode Length	861	6 digits	Items, page 46				
Invalid Passcode Attempt	892	3*					
Control Center Lockout Time	893	3*	User Programming Items, page 59				
* To comply with INCERT set th	* To comply with INCEPT, set these programming items to 2 or higher						

^{*} To comply with INCERT, set these programming items to 3 or higher.

1.9 cUL

For Canadian installations, install systems according to ULC-S302. Systems that use the C900V2 Conettix IP Dialer Capture Module meet Level 3 Line Security when communicating over a packet-switched data network (PSDN).

1.10 NF A2P

If you modify system parameters you are responsible for maintaining the system within the scope of the standard and regulations that apply to the hardware and/or the system in which it is used. In a NF A2P compliant installation, use only NF A2P listed components, and check that each parameter is in the authorized range.

Note: RADION devices have not been evaluated by Afnor for NF A2P compliance.

Accessories Authorized in a Certified Installation

Part	Description
IUI-EZ1-NEW	Control center
NP17-12IFR	17AH Yuasa battery
ICP-EZPK	Flash memory
EZPS-FRA	Power supply for motion detectors and sirens
IPP-PSU-2A5	Supervised auxiliary power supply
ICP-EZVM-FRF	Voice module in French
DX2010	8 wire zones expansion board

Siren Wiring in a NF A2P Certified Installation

Use only sirens with a backup battery. Sirens which require a primary voltage of 14.4 V can be powered by the optional module EZPS-FRA, or the auxiliary power supply IPP-PSU-2A5. Bring the hold-on +12 V through panel PO1, set it as the interior siren, as shown on the siren installation guide. Depending on the current requirement of the siren battery, the hold-on + voltage can be taken from the orange terminal, white terminal, +14.4 V of the siren power output of optional board EZPS-FRA, or one of the outputs of auxiliary power supply IPP-PSU-2A5.



Notice!

In an NF A2P certified installation, do not use the same power supply for both the siren and the motion detectors.

Motion detector wiring in an NF A2P certified installation

Power for motion detectors shall be separated from power for sirens. Power for motion detectors can either come from the white terminal + and -, or by the optional board EZPS-FRA when the number of motion detector requires separate power lines, or by the auxiliary power supply IPP-PSU-2A5.

Control panel configuration in an NF A2P certified installation

Check that each parameter is in the range of authorized values for NF A2P certified installations.

Current chart in an NF A2P Type 2 certified installation

To meet the 36 hours of backup power, check that the current required by all the equipments used in the system is lower than the backup current available:

- Max current in idle state: 465 mA (i.e. 270 mA of current for the control panel, with one control center)
- Max current in alarm: 1000 mA (i.e. 675 mA of current for the control panel, with one control center)

Refer to the chart below.

	Max Current in Idle State			Max Current In Alarm State		
Module	I Max		Total	I Max		Total
Easy Series control panel	85 mA	x1	85 mA	160 mA	x1	160 mA
Current for the control panel: A			mA			mA

IUI-EZ1-NEW control center (at least 1)	110 mA	x Qty		165 mA	xQty	
Current on the option bus: B			mA			mA
Motion detector(s)		x Qty			x Qty	
Siren(s)		x Qty			x Qty	
(Autre)		x Qty			x Qty	
Total aux current: C			mA			mA
Total A + B + C		mA			mA	
Max backup current available, with a 17 AH battery (type 2, 36H)		465 mA			1000 mA	

Current chart of the Aux power supply IPP-PSU-2A5

When the current required by additional components is higher than the backup current available from the control panel with the 17AH battery, add one or several auxiliary power supply IPP-PSU-2A5.

The IPP-PSU-2A5 provides also the 14.5V output required by the siren batteries.

	Max Curi	ent in Idle	State	Max Current In Alarm State		
Module	I Max		Total	I Max		Total
IPP-PSU-2A5	55 mA	x1	55 mA	55 mA	x1	55 mA
Detector(s)		x Qty			xQty	
Siren(s)		x Qty			x Qty	
Control center(s)		x Qty			x Qty	
Total aux current: C	·		mA		·	mA
Total in Idle State			mA	Total in aları	m state	mA
Max backup current available, with a 17 AH battery		465 mA			750 mA	

The IPP-PSU-2A5 auxiliary power supply provides a protection against the deep discharge of the battery (active at idle state) and status LEDs. This current has to be taken into account in the current chart.

Max. available current in idle state: 465 mA.

Max. current in alarm: 750 mA.



Notice!

For Aux power supply supervision, use an input from the control panel or from a DX2010, with a two resistors wiring (alarm and tamper)

Connect the output relay "trouble" from the aux power supply to a 24hr/24hr input. Record the zone name with a text meaning "AC loss aux power supply"

On the tamper zone, connect the tamper contact of the aux power supply enclosure

Controller Recorder Wiring

To connect a controller / recorder, connect the coil input of the recorder to + and - of PO2, PO3 and/or PO4.

Set the output as follows:

To record the state "arm unoccupied", set the output to "armed unoccupied"

To record the state "alarm", set the corresponding output to "intrusion and fire 2" (reversed level)

Programming Items

To comply with NF A2P, set these programming items as follows:

Programming Item	Item Number	NF A2P Approved Range	Section Starting Page	
Country Code	102	17	System Programming	
Enclosure Tamper Enabled	103	1	Items, page 46	
Fire Bell Cut-off Time	107	2 or 3		
Intrusion Bell Cut-off Time	108	2 or 3		
Intrusion Abort Window	110	0		
Point Alarm Verification	124	0		
Entry Delay	127	Shorter than Exit Delay		
Auto Protection Level	132	0		
Latching Point and Enclosure Tamper	137	1		
Latching System Device Tamper	138	1		
Restrict Installer Passcode	142	1		
Start Arming With Faulted Points	159	0		
Passcode Length	861	6	User Programming Items, page 59	
Circuit Style	9xx2*	0	Point Programming	
Response Time	9xx5*	4 or 5	Items, page 56	

Table 1.1: NF A2P Certified Configuration Values

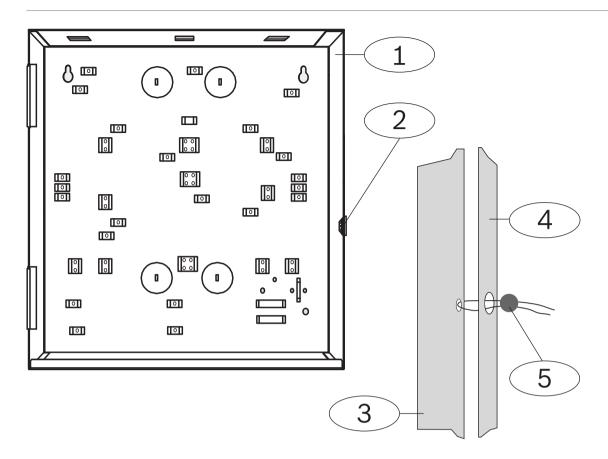


Notice!

For supervised points (dual EOL), 2.2k Ω EOL resistors (P/N: 47819) required.

Seal the Enclosure

- Open the pre-opened hole which is on the right of the enclosure.
- Pass the sealing wire through this hole, and bring the two wires in the corresponding hole of the enclosure door.
- Seal the sealing lead as near as possible from the enclosure.



1	Enclosure	4	Right side of the door
2	Sealing Location (pre-opened)	5	Sealing lead
3	Right side of the enclosure		

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2 Overview

This document contains instructions for a trained installer to properly install, configure, and operate the Easy Series control panel, and all optional peripheral devices.

You will install and configure the system using the figures starting in *System Components and Wiring, page 18* and the information in *System Installation and Configuration, page 25*. The sections following Sections 1 and 2 provide supporting details for installation, configuration, testing, and support.

2.1 Installation Workflow

To properly install, configure, and test the system, use the following workflow:

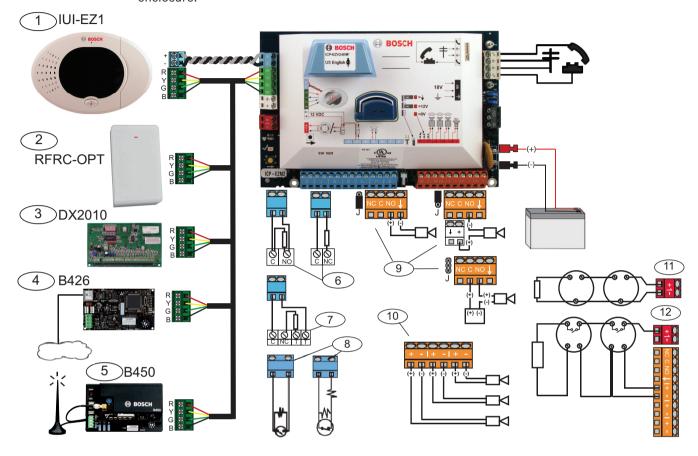
Step	Description	Page
1. Plan the Installation	Identify suitable locations for system components in the installation site.	Plan the Installation, page 25
2. Install the Hardware	Install all system components.	Install System Components, page 25
4. Configure the System	Enroll wireless devices into the system, perform basic programming for the system, and add users to the system.	Configure the System, page 32
5. Program the System	Update the system with expert programming.	Programming Access Options, page 38
6. Test the System	Perform a full system test. Ensure that the central monitoring station received test reports.	Test the System, page 64

Table 2.2: Installation Workflow

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2.2 System Components and Wiring

This section provides an overview of the system components, wiring, and placement in the enclosure.



Callout	Description		
1	Control Center		Mount within 3 m of control panel, Use CAT5 cable (twisted pair) for audio bus, Set data bus address (1 - 4), up to 4 controls max
2	RADION receiver	8 0 1 2 7 6 5 4 3	1 = Normal Operation 5 = Maintenance Mode
3	DX2010 Point Expander	ON 123456	Data bus Adr 102: Points 9-16
		ON 123456	Data bus Adr 103: Points 17-24
		ON 123456	Data Bus Adr 104: Points 25-32

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Callout	Description			
4	B426 Network Interface Module	9 0 1 8 2 7 3 6 5 4	Use address 6.	
5	B450 Conettix Plug-in Communicator	9 0 1 8 2 2 7 3 6 5 4	Use address 6.	
6	Supervised Points (single EOL)	Normally open and normally closed options (2.2k Ω)		
7	Supervised Points (dual EOL)	Normally closed (2.2k Ω)		
8	Keyswitch Options (single and dual EOL) ((2.2k Ω)		
	Prog Output (PO) 1	Switched 12v	Switched Ground	Dry Contact
9	Options	Ĵ	ø J	
10	Prog Outputs 2 - 4	NF A2P requires that sirens have a backup battery. When this siren requires a 14,1V to 14,4V supply, use the optional board EZPS-FRA or the auxiliary power supply IPP-PSU-2A5. Set the output as interior burglary alarm.		
11	2-wire Smoke Detector Option	EOL resistor (P/N: 25899) required.		
12	4-wire Smoke Detector Option	EOL resistor (P/N: 25899) and Bosch EOL relay module required		

Note: The system uses a 12 VDC battery, connected as shown.

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3 12 VDC

System component placement in enclosure

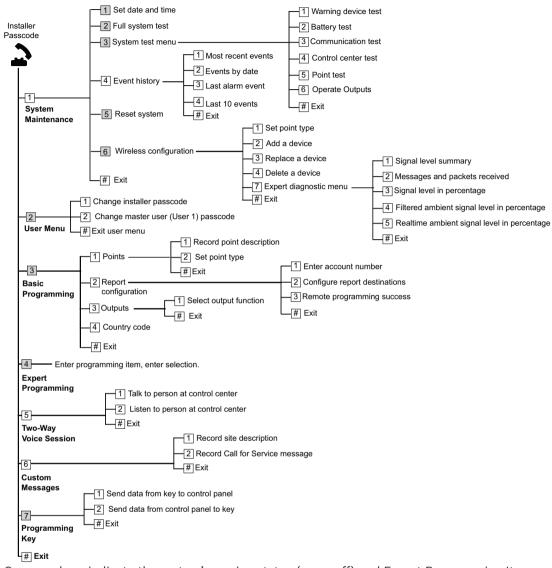
Figure 2.1: Overview of the System Component Location for the ICP-EZM2-EU Enclosure

Callo	uts - Description
1	Port for ICP-EZRU-V3 ROM Update Key and Programming Key
2	Enclosure Cover and Wall Tamper Switch
3	Ground connection Connect ground wire from enclosure to enclosure door.
4	Module mounting location
5	Module mounting location
6	System test button When the system is completely installed and programmed, press the system test button to start a full system test.
7	Port for ICP-EZVM voice module

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2.3 Phone Menus

2.3.1 Installer Phone Menu



Gray numbers indicate the system's arming status (on or off) and Expert Programming Item Number 142 setting of (0 or 1) determines the availability of these menu items. Refer to System Programming Items, page 46.



Notice!

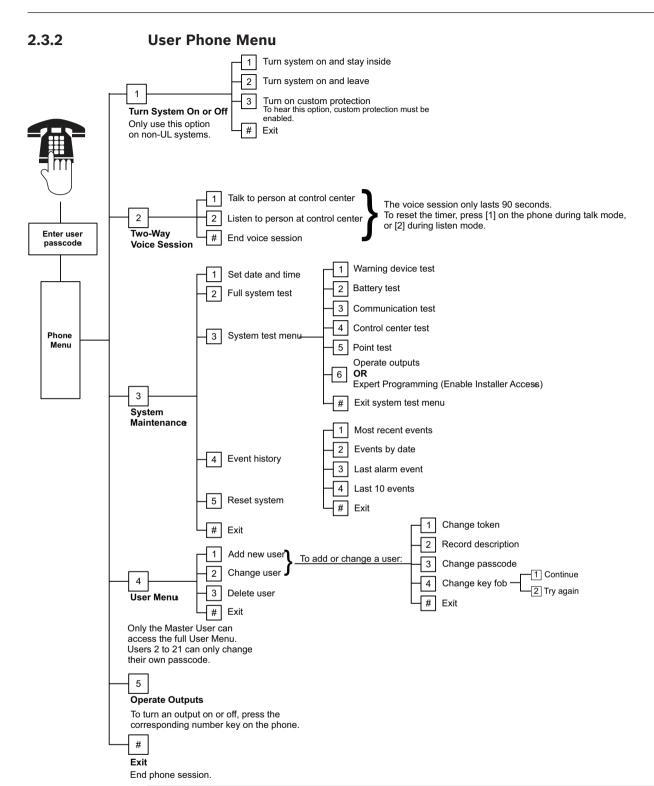
When recording any description (point, output, user, or custom message), do not press any buttons on your phone until prompted by the system.

Expert diagnostic menu values		
Menu number	Report	Value desctiption
1	Signal level summary	OC = Good 04 = Relocate

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Expert dia	Expert diagnostic menu values			
Menu number	Report	Value desctiption		
2	Messages and packets received	First digit = Number of messages Second digit = Number of packets		
3	Signal level in percentage	00 = 0% 64 = 100%		
4	Filtered ambient signal level in percentage	00 = 0% 64 = 100%		
5	Realtime ambient signal level in percentage	00 = 0% 64 = 100%		

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- ¹ Only a user passcode (Users 1 to 21) can access the User Menu.
- ² If the system is on, the System Maintenance option is not available.
- ³ Only the master user can add, change, or delete users. Users 2 to 21 can only change their own passcodes. User voice descriptions are stored in the voice module and are not transferred to the control panel with programming data.

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⁴ Option 6 allows the master user (User 1) to enable the Installer Passcode. Refer to Expert Programming Item Number 142 in *System Programming Items*, page 46, System Programming Items, page 46.

Availability of the menu items shown above depends on the system's status.



Notice!

When recording any description (point, output, user, or custom message), do not press any buttons on your phone until prompted by the system.

3 System Installation and Configuration

3.1 Plan the Installation

When planning the installation, identify suitable locations for the control panel, control center, optionbus, and wireless devices before installing any system components. When identifying these locations, ensure that the following considerations are addressed.

Task	Considerations	
1. Identify the location for the control panel.	 Only use authorized service personnel to install this system. Plan to install the control panel in a centrally located room that is near the AC Power MAINS. Plan to install the control panel in a location with a good earth ground. Because the control panel is permanently connected equipment, a readily accessible disconnect device must be included into the building installation wiring. 	
2. Test for GSM signal strength.	Use your cell phone to identify an area with good GSM signal strength by monitoring the signal strength on your mobile phone. If the intended location of the control panel has poor GSM signal strength, find a new location for the control panel.	
3. Identify the location for the control center.	Plan to install the control center near the primary entry and exit door.	
4. Identify the location for the RADION receiver.	Plan to install the receiver in a location with good radio-frequency (RF) characteristics and within 200 m of the control panel.	
5. Identify the location for the RADION devices.	 RADION devices are intended only for indoor, dry applications. Avoid installing the devices where excessive humidity or moisture, or temperatures outside of the acceptable operating range, exist. Mount RADION devices on flat, rigid surfaces. For more information, refer to each device's installation instructions. Avoid mounting RADION devices in areas with large metallic objects, electrical panels or electric motors. They might reduce the (RF) range of a RADION device. 	

Table 3.3: Installation Considerations

3.2 Install System Components

Notice!

\neg



Use proper anchor and screw sets when installing the enclosure on non-load-bearing surfaces, such as drywall.

Follow anti-static procedures when handling the control panel board. Touch the earth ground terminal on the control panel board to discharge any static charge before working on the control panel board.

If you install more than one control center, mount them at least 1.2 m apart.

Do not install the RADION receiver within 15 cm (6 in) of the control centers metal enclosure.



Notice!

Refer to *System Components and Wiring, page 18* throughout this section for the location to install each of the hardware components in the enclosure.

3.2.1 Install the RADION receiver

Installing the base.

Use the provided anchors and screws to mount the receiver in locations accessible for future maintenance. Mount the receiver onto a wall.

For best receiver reception results, place the receiver in a central location among the transmitters. For optimal communication results in situations where there is a long distance between the transmitting device and the system receiver, it might be necessary to install repeaters.



Notice!

Mount the receiver in a location away from metal objects. Metal objects (duct work, wire mesh screens, boxes) reduce RF range.

Configuring the address switch

The address switch determines the receivers numeric address value which the receiver will use to report receiver status information to the control panel. Set the address to the receiver prior to installation. The receiver address switches provide a single-digit setting for the receiver's address. Address 1 and 5 are valid address settings for the receiver. All other addresses are invalid and cause a communication error preventing the control panel from recognizing the receiver. Use a slotted screwdriver to set the address switch.

Connecting the receiver's data bus to the control panel's data bus



Notice!

Do not install long cable runs next to high-current power feeds. Keep cable lengths as short as possible to minimize noise pickup.

Ensure that the wiring used meets the following specifications:

- Four-conductor unshielded 0.65 mm (22 AWG) to 2.0 mm (18 AWG) maximum.
- Wire length must not exceed 243 m (800 ft) from the control panel

Reconnect the receiver and base, and then lock the RADION receiver.

Mount the receiver temporarily in the desired location. You might need to relocate the receiver if it does not pass RFSS testing.

3.2.2 Install the Control Panel Enclosure

- Remove the desired knockouts from the control panel enclosure and optional mounting skirt.
- 2. Attach the optional mounting skirt to the enclosure.
- 3. Route the wires through the desired knockouts.
- 4. Mount the enclosure to the desired surface. Use proper anchor and screw sets when you install the enclosure on non-load-bearing surfaces, such as drywall.

3.2.3 Install the Control Center

1. Unlock the control center and separate it from the base.

2. If you install more than one control center, each control center must have a unique address. Valid addresses are 1 to 4. Refer to the figure below for the location of the address switch.



Figure 3.1: Control Center Address Switch

1	Control Center's front cover
2	Address switch's default settings

1. Mount the control center base to the desired surface using the appropriate mounting holes. Use the built-in level in the control center base as a guide.



Notice!

Mount the base to a non-metallic surface that is near the primary entry/exit door.

If you install more than one control center, ensure that there is at least 1.2 m between each control center.

Avoid mounting the control center near existing phone lines.

Avoid mounting the control center near other electronic devices.

- 2. Connect the control center data bus terminals to the control panel data bus terminals. Refer to System Components and Wiring, page 18.
- 3. Connect the control center audio bus terminals to the control panel audio bus terminals. Twisted pair wiring is recommended for audio bus terminals. Refer to *System Components* and *Wiring*, page 18.
- 4. Reconnect the control center and base, and then lock the control center.

Refer to Control Center, page 68 for an overview of the various control center display states.

3.2.4 Route Power-limited Wiring

All wiring except primary AC power and standby battery is power-limited. Separate primary AC power and standby battery wires from other wires by at least 6.4 mm (¼ in), and secure to enclosure to prevent movement. Primary AC power and standby battery wiring cannot share the same conduit, conduit fittings, or conduit knockouts with any other wiring. Refer to the figure below.

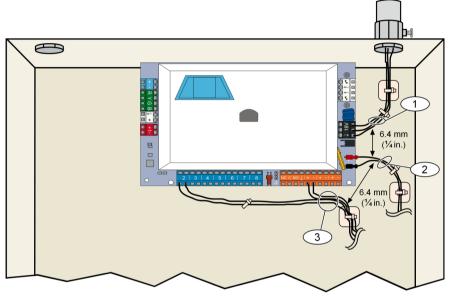


Figure 3.2: Power-limited Wire Routing

3.2.5 Install the B450 with a compatible B44x

The control panel supports one B450 Conettix Plug-in Communicator Interface for cellular connectivity.

Setting the bus address

The B450 Conettix Plug-in Communicator Interface address switch provides the value for the address. Set the address to 6.

Inserting the communication module

Insert the B44x into the B450 according to the Conettix Plug-in Communicator Interface (B450) Installation and Operation Guide (P/N: F01U300740).

Mounting the B450

Notice!

Regulatory requirements



Mount the module in the control panel enclosure, or in a UL listed enclosure. For Commercial Burglary applications, house all communicators in tampered enclosures.

All communicators shall be housed in tampered enclosures. If the unit is used in a commercial burglar environment, and is enclosed in a commercial enclosure, that enclosure must be tampered.

If the installation is a local or police station connection, then the module must be mounted inside an attack resistant enclosure.



Notice!

Wiring considerations

If you use terminal strip wiring instead of interconnect wiring, wire the B450 module to the compatible control panel before you mount it into the enclosure to make the installation easier.

Notice!

Mounting considerations



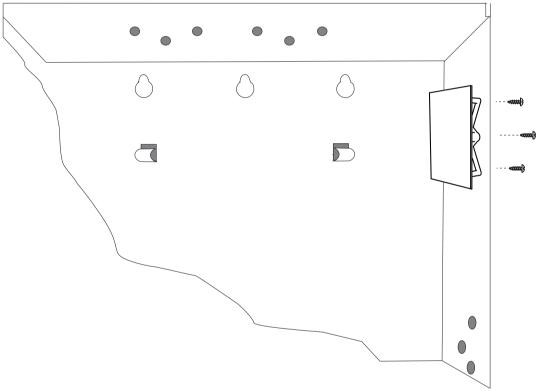
Choose from the following mounting options before you mount the module:

Mount the B450 on the inside enclosure wall that also contains the supported control panel.

The control panel powers the B450 via the terminal block or bus connection.

Mount the B450 on the inside wall of a separate enclosure. The control panel in a nearby, separate enclosure powers the B450 via the terminal block or bus connection.

Mount the B450 on the inside wall of a separate enclosure that also has a separate external power supply such as the B520 Auxiliary Power Supply Module.



- 1. Hold the module mounting brackets on the inside of the enclosure. Match the bracket holes to a 3-hole mounting pattern on the enclosure
- 2. Put the supplied mounting screws through the holes and into the mounting bracket.
- 3. Tighten the screws.
- 1. Place the magnetic antenna on top of the enclosure, or vertically on another metal surface.



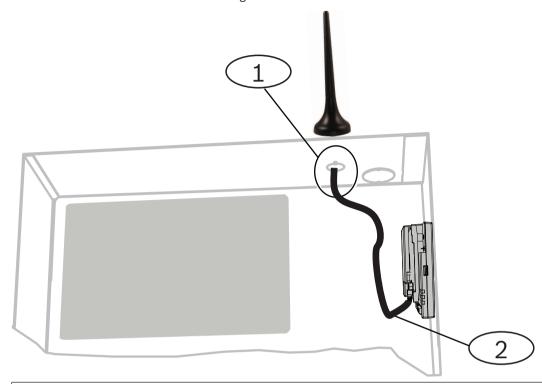
Notice!

Best performance

If the module has a weak signal, position the antenna on top of a metal surface that has a radius of 10.16 cm (4 in).

2. Route the antenna cable through a knockout in the enclosure wall.

- 3. Connect the antenna cable to the module.
- 4. Secure the antenna cable to the inside of the enclosure.
- 5. Secure the extra antenna cable length inside the enclosure.



Callout — **Description**

- 1 Plug-in cellular module antenna (routed through any knockout)
- 2 Antenna cable

3.2.6 Install the B426

The control panel supports one B426 Conettix Ethernet Communication Module for Ethernet connectivity.

Setting the bus address:

The B426 Conettix Ethernet Communication Module address switch provides the value for the module's address. Set the address to 6.

After you set the address switch for the proper address, install the module.

Mount the B426 into the enclosure's 3-hole mounting pattern using the supplied mounting screws and mounting bracket.

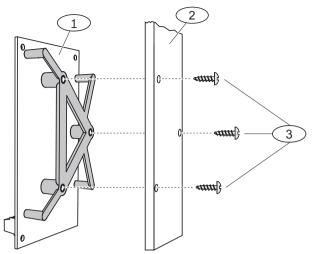


Figure 3.3: Mounting the module

Callout — **Description**

- 1 B426 with mounting bracket installed
- 2 Enclosure
- 3 Mounting screws (3)

3.2.7 **Install the DX2010 Input Expander**

The control panel supports up to three DX2010 Input Expanders for Points 9 to 32. Refer to the DX2010 Installation Instructions (P/N: 49533) for more information.

- 1. Set the module address.
- Mount the module into the control panel enclosure (back wall or either side wall), or other suitable enclosure.
- Connect the module to the control panel. Refer to System Components and Wiring, page

Connect a wire jumper to the TMPR and COM terminals to disable the DX2010's tamper input. For point wiring options, refer to Connect Supervised Points, page 31. To disable the tamper input on the DX2010, connect a wire jumper between the TMPR and COM terminals.



Notice!

In an NF A2P certified installation, mount the DX2010 module on one side of the panel housing, or on one side of the auxiliary power supply IPP-PSU-2A5).

3.2.8 **Connect Supervised Points**

For wiring diagrams, refer to System Components and Wiring, page 18.

Fire Point Wiring

Supervised Point 1 supports two- and four-wire smoke detectors.

Supervised Points 2 to 32 support only four-wire smoke detectors.

To program supervised points as fire points, refer to *Points*, page 43.

For intrusion point configuration, refer to Intrusion Point Wiring.

When using an output to supply power to a four-wire smoke detector, program the output function for System Reset. Refer to Outputs, page 45.

Intrusion Point Wiring

You can wire Supervised Points 1 to 32 as wired or wireless intrusion points. To program Supervised Points 1 to 32 as intrusion points, refer to Points, page 43.

See also

- Points, page 43
- Outputs, page 45
- Points, page 43

3.3 Apply System Power



Notice!

Because the control panel is permanently connected equipment, a readily accessible disconnect device must be included into the building installation wiring.

An external earth ground is required to ensure safe and proper system operation. Failure to ground the system can cause personal injury and degraded system performance, such as problems with tokens or noise on the control center.

Connect battery power to the control panel. Refer to System Components and Wiring, page 18. Use a cable tie to secure the incoming AC wires to the enclosure, where required.

3.4 **Initial System Startup**

- Apply AC power to the system.
- Refer to the table below for the Initial System Startup sequence.

Stage	Time Interval	Control Center		RADION receiver
1	0 to15 sec	*	Intermittent flashing green icon	LED on continuous slow flash: 1 second
2	15 to 45 sec	O	Flashing amber circle	on, 1 second off. Indicates the receiver is being programmed with the zone and transmitter ID's from the compatible control panel.
3	45 to 75 sec		Single rotating amber segment	
4	75 sec	0	Solid green circle	

Table 3.4: Initial System Startup Sequence (No RADION devices discovered)

3.5 **Configure the System**

3.5.1 **Upgrade the Control Panel (Optional)**

Insert the ICP-EZRU-V4 ROM update key.

The upgrade is complete (after 5 to 10 minutes), when the green ($\sqrt{\ }$ LED on the control panel flashes. Remove the green upgrade programming key.

3.5.2 Initiate a Phone Session from the Control Panel

- 1. Connect a phone set to the test posts or to the phone terminals. Refer to *System Components and Wiring*, page 18.
- 2. Press and hold the System Test button for approximately 15 sec. Refer to *System Components and Wiring*, page 18, figure 2 or the location of the Test button.
- 3. When prompted, use the phone set to enter the installer passcode (default is 5432[11]) for the Installer Menu, or the master user passcode (default is 1234[55]) for the User Menu. For the following two procedures, enter the installer passcode.



Notice!

For more information on default passcodes, refer to System Access by Phone, page 38.

3.5.3 Configure Required Control Panel Settings

- 1. From the Installer menu, if prompted to set the control panel date and time, press [1][1]. When finished following the prompts, press [#][#] to return to the Installer Menu.
- 2. If prompted to set the Country Code, press [3][4]. Refer to *Country Codes*, page 108 for the appropriate Country Code. When finished following the prompts, press [#] to return to the Installer Menu.

3.5.4 Walk Test Wireless Devices

Device	To Test		
Motion Detectors	Walk across the detector's coverage pattern.		
Smoke Detector	Press and release the detector's test button, or blow smoke into the detector's chamber to cause an alarm. Restore the alarm.		
Bill Clip	Remove and restore the shim in the gap of the Bill Trap.		
Inertia Detector	Magnetic Switch: Open and then close the magnetic switch. Inertia Only: Cause an alarm and then restore the alarm ¹ , or tamper the detector. ³		
Glass Break Detector	Cause an alarm and then restore the alarm, or tamper the detector. ³		
Mini Door/Window Contact Recessed Door/Window Contact	Open and then close the magnetic switch.		
Door/Window Contact	Open and then close the magnetic switch, or fault and then restore the supervised loop. Perform both tests only if both the magnetic switch and supervised loop are used.		

¹ To test the inertia detector, create a shock to cause an inertia alarm, and then restore alarm.

Table 3.5: Wireless Device Test Procedures

As part of the walk test, the control panel checks the signal strength of each wireless point.

² To test the glass break detector, use a special tool to cause a glass break alarm, and then restore the alarm.

³ If you tamper the detector, the control panel enrolls the detector, but does not test it. You must create the appropriate alarm and restore the alarm to test the detector.

System message	Result
"Point xx was tested"	The signal strength is good. The point test was successful.
"Point xx, test failed, was tested"	The signal strength is unacceptable.
"Point xx"	The point number is assigned, but not tested.

Fix any issues with the devices and re-test until the system announces "Point xx was tested" for each point. When the system completes the testing, the system announces "System test complete."

3.5.5 Add Users, Tokens, and Key Fobs

- From the User Phone Menu, press [4] to enter the User Menu. Refer to Initiate a Phone Session from the Control Panel, page 33.
- 2. Press [1] to add a new user or press [2] to change information for an existing user.
- The next set of options allows you to add tokens, passcodes, or keyfobs to a user, or record a description.

Change keyfob

- Press a keyfob button. 1.
- If the keyfob is not already registered with the system, the control center announces the last four digits of the RFID for the device that it found.
- 3. If this is the correct RFID for the keyfob you want to add, press [1] to continue. The control center announces "Keyfob added. Please wait." During this time, the database and receiver configurations are updated.
- 4. If this is not the correct RFID, press [2] to ignore that RFID and have the control panel look for another keyfob.
- 5. Press [#] to return to the User Menu.
- Repeat the process to add more users.

3.6 Configure Wireless Devices from Installer Phone Menu

- Select Wireless Configuration [6] from the System Maintenance menu.
- 2. After the system prompt, enter the point number (1 to 32) that you want to configure. The control panel announces the point number and the point type.

If the point number is not currently assigned to a Wireless ID:

To set Point Type, press [1].

To add a device, press [2].

Press [#] to exit.

If the point number is currently assigned to a Wireless ID:

To set Point Type press [1].

To replace a device, press [3]

To delete this device, press [4].

Press [#] to exit.

3.6.1 Set Point Type

The control panel selects the default device type based on the point type selection. The following table lists the default device types that are assigned for a given point type:

Point Type	Default Device Type	Wireless Alarm Inputs (default)
Perimeter	RADION mini door/ window	Magnetic
Interior	RADION PIR motion	Motion
Fire Instant	RADION smoke	Smoke
Perimeter Instant	RADION glassbreak	Glass Break
User Emergency	RADION CO	CO Detector
24-hour Trouble	RADION repeater	None
All other types	RADION universal TX	Wired Input

This configures the device type that is displayed in RPS and sets the default alarm mask bits used to decide how the point status will be treated.

3.6.2 Add a device

When you select this menu option, the control panel initiates discovery mode for RADION devices which enables the control panel to detect points that are not currently configured in the RADION Receiver. The control panel periodically repeats the phrase "discovering devices" until the RADION receiver replies with a point's RFID.

- 1. While the "discovering devices" message is active, activate the wireless point that you want to add to the system, or press the [#] to exit discovery mode.
- 2. After you activate a point, the receiver should see the point and notify the control panel. The control panel announces the last 4 digits of the discovered point's RFID and presents the following choices:
- 3. To continue, press [1]. If you choose to continue, the control center announces "Please wait". During this time, the RFID is saved in the database and configured in the RADION receiver.
- 4. To try again, press [2]. If you choose to try again, the control panel ignores the RFID that was discovered and returns to the "discovering devices" message.

3.6.3 Replace a device

This option is presented when the RFID of a selected point has already been configured. If you choose this option, the control panel follows the procedure identical to the "To Add a Device" procedure.

The control panel initiates discovery mode and searches for RFID's that are not currently configured in the RADION receiver. The control center periodically repeats the phrase "discovering devices" until the RADION receiver replies with a point's RFID.

- 1. While the "discovering devices" message is active, activate the wireless point that you want to add to the system, or press the [#] to exit discovery mode.
- 2. After you activate the point, the receiver should see it and notify the control panel. The control panel announces the last 4 digits of the discovered point's RFID and presents the following choices:
- 3. To continue, press [1]. If you choose to continue, the control center announces "Please wait". During this time, the RFID is saved in the database and configured in the RADION receiver.
- 4. To try again, press [2]. If you choose to try again, the control panel ignores the RFID that was discovered and returns to the "discovering devices" message.

3.6.4 Delete a device

This option is presented when the RFID of a selected point has already been configured. When you choose this option, the control panel sets the selected point back to its default condition. The RFID is removed from the receiver's database.

3.7 Configure Wireless Devices from RPS

In addition to the Installer Phone Menu, you may use RPS to configure an Easy Series control panel with RADION support. To configure RADION wireless points, specify the following information for each point:

- Device Type
- Point Type
- Wireless Point ID
- Wireless Alarm Inputs

Since Wireless Alarm Inputs is only available in "Expert Mode", you must use Expert Mode to properly configure the Easy Series control panel for RADION wireless devices.

The following table shows the correlation between the current RPS Device Type values and the RADION Device Types.

- 1. Once the device type has been selected in RPS, enter the Wireless Point ID and Point Type via the "wizard" dialog.
- 2. Enter the RFID for the point as specified in the product packaging.
- 3. Select the desired Point Type from the drop-down menu.
- 4. Enter an appropriate value in the Wireless Alarm Inputs column.

When setting up an Easy Series control panel to use RADION transmitters, only select from the RPS device types listed in the table below.

RPS device type	RADION transmitter	Wireless alarm inputs
PIR motion detector	PIR detector (RFPR-12) PIR curtain detector (RFPR-C12)	Motion
Dual motion detector	Motion detector (RFDL-11)	Motion
Wireless device type 3	Repeater (RFRP)	None
Smoke detector	Smoke detector (RFSM)	Smoke
Door Window contact sensor	Universal transmitter (RFUN)	Wired or magnet
Glass break sensor	Glassbreak detector (RFGB)	Glass break
Wireless Recessed Point	Recessed door/window contact (RFDW-RM)	Magnet
Wireless Bill Clip	Bill trap (RFBT)	Magnet
Mini-Door-Window contact	Door/window contact (RFDW-SM)	Magnetic



Notice!

Do not use any other RPS device types when specifying RADION transmitter configurations.

The columns labeled "Wireless Sensor Sensitivity" and "External Power Input" have no effect on the Radion Wireless Receiver/Transmitter configuration. These fields are not used by the Easy Panel Radion configuration.

The wireless repeater is the only RADION transmitter that supports an external AC power supply. The RADION wireless repeater reports a trouble if a problem is discovered with the AC Power.

Configure the B426 3.8

When installing under the following conditions, the B426 needs no further configuration:

- DHCP is available on your network.
- AES encryption is not required.
- Default B426 port settings (UDP on Port 7700) are permitted by the network administrator.

For installations requiring non-default configuration, use the B426 web-based configuration

Refer to the B426 Installation and Operation Guide for details.

4 Programming Access Options

You can access the system to make programming changes using:

- The Phone Menu
- Remote Programming Software (RPS)
- A Programming Key (using programming copied from a control panel previously programmed using the Phone Menu or RPS)

4.1 System Access by Phone



Notice!

Once you configure a control panel using the Phone Menus, you can copy the programming from the control panel to a programming key for use on another control panel, or for backup. Refer to *Programming Keys*, page 41.

The Installer Phone Menu and User Phone Menu provide access to system functions such as testing the system, programming the system, and adding or changing users.

The Installer Phone Menu requires the installer passcode.

The User Phone Menu requires either the master user (User 1) passcode for full menu access, or a user passcode for limited menu access.

If the passcode length = four digits:

- The default installer passcode is 5432
- The default master user passcode is 1234

If the passcode length = six digits:

- The default installer passcode is 543211
- The default master user passcode is 123455

To access the system menus, select one of the options shown in the table Phone System Access Options.

Options	Steps		
House Phone	 Press [#][#][#]. Listen for the voice prompt to enter a passcode. Enter the installer passcode to access the installer menu, or a user passcode to access the user menu. 		
Outside Phones	 Call the premises phone number. After the call is answered by a person or by a telephone answering device, press [*][*][*] to disconnect the answering party and access the system. Listen for the voice prompt to enter a passcode. If the phone is not answered by a person or telephone answering device, the system answers after a programmed number of rings. Refer to Expert Programming Item Number 222 listed in on Route Destination Items. Enter the installer passcode to access the installer menu, or a user passcode to access the user menu. 		

Select this option if a phone line is not available, or a local connection is required. The system must be off to use this option. - Connect a phone set to the test posts or to the phone terminals. - Press and hold the System Test button for approximately 15 sec. - Listen for the voice prompt to enter a passcode. - Enter the installer passcode to access the Installer Menu, or a user

Table 4.6: Phone System Access Options



Notice!

For an overview of the Installer Phone Menu and User Phone Menu, refer to *Phone Menus*, page 21.

For detailed Phone Menu programming options, refer to Programming, page 42.

4.2 RPS

RPS (Remote Programming Software) is a Windows-based account management and control panel programming utility designed to remotely set up and program specific control panels. You can use RPS to program the control panel from a laptop or PC that is on-site or off-site from the control panel.

For complete installation and operation instructions, refer to the *RPS Installation and Operation Guide* (P/N: 4998141259) that is available on the RPS CD-ROM.



Notice!

Once you configure a control panel using RPS, you can copy the programming from the control panel to a programming key for use on another control panel, or for backup. Refer to *Programming Keys*, page 41.

4.2.1 RPS Connection Methods

Connect to the Easy Series control panel to make changes interactively.

To connect RPS to the control panel:

- 1. Open the control panel account by double-clicking the account, or select the account and click Open.
- 2. Click Connect. The Panel Communication window opens.
- 3. Select a connection method from the Connect Via menu that best meets the system's needs for remote programming. Refer to the following sections for descriptions of each connection method.

Automatic

This option is the primary method for establishing a connection between RPS and the control panel.

Connect the internal modem on the RPS PC, or an external modem, to the control panel.

Manual Dial

- 1. Establishes a phone connection between the control panel and RPS:
 - Dial the RPS phone number using the house phone, or connect a test telephone to the control panel's test posts,

OR

- From the RPS site, use a telephone connected in parallel to the RPS modem and manually dial the house phone number.
- 2. Select Manual Dial as the connection option on the RPS Panel Communication window.
- 3. To answer the incoming call, click Connect on the RPS Panel Communication window to establish a remote connection between RPS and the control panel.

Modem Dial

Use a telephone connected in parallel to the RPS modem and click Connect To in the RPS Panel Communication Window to dial the premises phone number.

- 1. Connect the internal modem on the RPS PC, or an external modem, to the control panel.
- 2. When the control panel answers the incoming call, the system announces "Enter your passcode."
- When you hear the control panel modem tones, press the Connect To button on the RPS
 Panel Communication window. RPS then sends the DTMF tone to connect to the control
 panel.

Direct Connect

Select this method to establish a local, on-site connection between the RPS PC (or laptop) and the control panel.

- 1. On the Telco side of the phone line, ensure that Tip and Ring are disconnected.
- 2. Connect the internal modem on the RPS PC, or an external modem, to the control panel. Refer to the figure below.

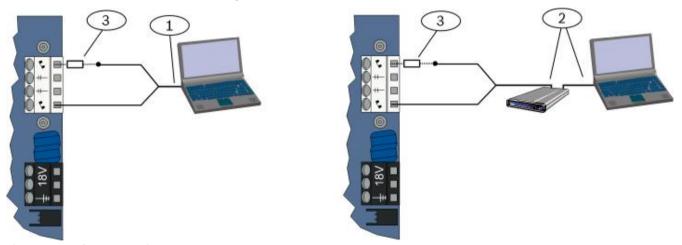


Figure 4.1: Modem Connections

- Connection using internal modem
 Connection using external modem
 270 Ω to 330 Ω, ¼ W resistor (for Direct Connection option only)
- 3. If the first communication attempt fails, connect a 270 Ω to 330 Ω , $\frac{1}{4}$ W resistor in series with the Tip House side.

Network

Select this method to establish a network connection between the RPS computer and the control panel using the B450 or the B426.

4.3 **Programming Keys**

After you program a control panel using the Phone Menus or RPS, you can use a programming key to transfer data from that control panel to another control panel. You can also use a programming key to back up control panel data.

- 1. If the system is on, turn it off.
- Place the key's lock switch in the desired position. Refer to the figure below.

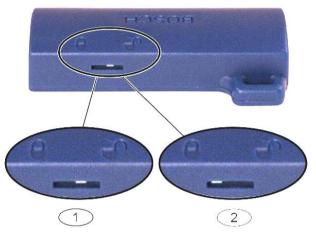


Figure 4.2: Programming Key Lock Positions

- Send data from control panel to key 2 Send data from key to control panel
- 1. Insert the key into the control panel board.
 - Auto Transfer: If Expert Programming Item Number 123 = 1 (refer to Programming Key Auto Transfer in System Programming Items, page 46), the programming key automatically transfers data depending on the position of the lock switch.
 - Manual Transfer: If Expert Programming Item Number 123 = 0, you must use the Installer Menu to access the programming key.
 - The control center announces when data transfer is completed.
- When the $(\sqrt{\ })$ LED flashes green, data transfer is successful. If the $(\sqrt{)}$ LED flashes red, the data transfer is unsuccessful. Remove and reinstall the key.

5 Programming

Method	Description
Basic Programming	Basic Programming consists of a voice menu that contains the essential programming items. Generally, finishing this programming section is usually all that is required for a complete system.
Expert Programming	Expert Programming allows access to all programming categories for full system configuration. Only use expert programming if you have a special programming requirement.

Table 5.7: System Programming Methods



Notice!

You can program control panels using the remote programming software RPS. Like Expert Programming, RPS allows access to all programming categories. For more information on RPS and how to use a programming key to streamline a multiple-panel install, refer to *Programming Access Options*, page 38.



Notice!

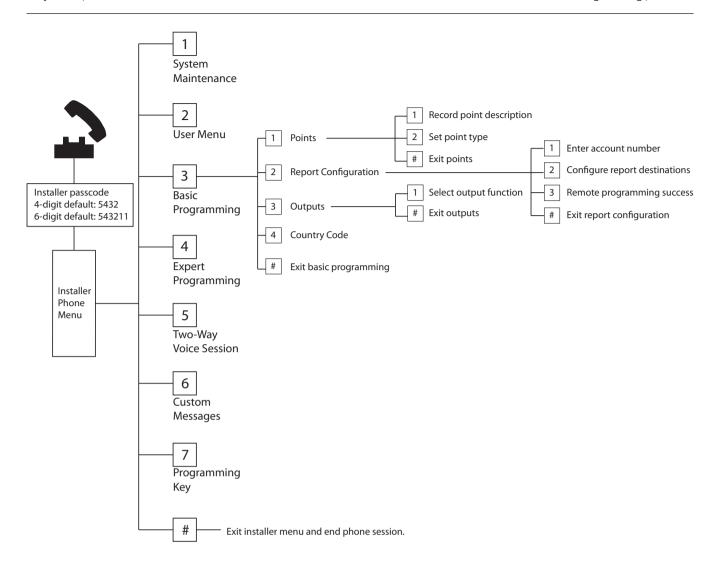
For additional instructions and information for select programming items, refer to *Programming Details and Defaults, page 104.*

For country code specific defaults for programming items, refer to *Country Code Specific Default Programming Codes*, page 109.

5.1 Basic Programming

5.1.1 Enter Basic Programming

- 1. Select a system access option. Refer to System Access by Phone, page 38, System Access by Phone, page 38.
- 2. Enter the installer passcode to enter the Installer Phone Menu. Refer to *Configure the System, page 32*.
- 3. Press [3] to enter Basic Programming. Refer to the figure below for the Basic Programming Menu options.

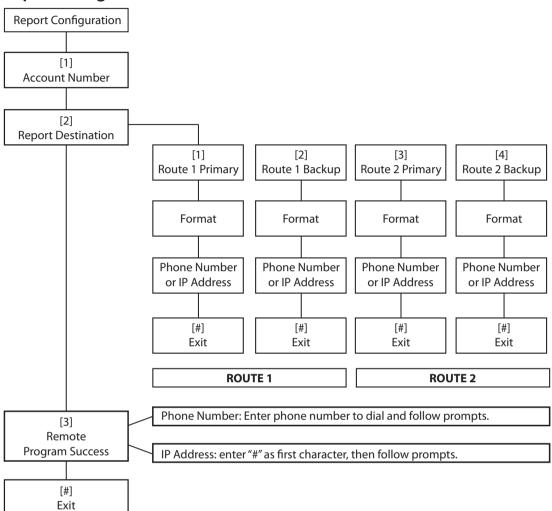


5.1.2 Points

Points	Enter a point number from 1 to 32.				
1	Record Point Description For example, if Point 1 is located at the building's front door, say "Front Door" at the tone. When recording your description, do not press any buttons on your phone until prompted. Press [1] to continue programming the selected point. Press [2] to re-record your current point description.				
2	Set Point Type (Refer to Point Type table) Press [1] to select the current option. Press [2] to hear more options. Press [#] to exit Point Type.	Point Types: Disabled Perimeter (Entry or Exit) Interior (Follower) Perimeter Instant 24-Hour Fire Verified Fire Verified Fire Instant	Point Types (cont.): - Silent Panic - Interior Walkthrough - Perimeter Exit Cancel - Momentary Keyswitch - Maintained Keyswitch - 24-Hour Trouble - User Emergency		

Exit Points Return to the Installer Menu.

5.1.3 Report Configuration



Account Number Entries		Phone Number/IP Address Entries		
Entry	Key Press	Entry	Key Press	
0 to 9	[0] to [9]	0 to 9	[0] to [9]	
В	[*][1]	*	[*][*]	
С	[*][2]	#	[*][#]	
D	[*][3]		[*]1	
E	[*][4]	Pause	[#]	
F	[*][5]	Exit with Save	[#][#]²	
		Disable phone number	[0][#]	
		Disable IP address	240.0.0.0	

Account Number Entries		Phone Number	Phone Number/IP Address Entries			
Entry	Key Press	Entry	Entry Key Press			
			en each IP address notation. ce within two seconds to exit without saving			

5.1.4 Outputs

Output devices consist of horns, bells, strobes, or sirens.

Outputs	Enter an output number from 1 to 4			
1	Set Output Function - Press [1] to select the current option. - Press [2] to hear more options. - Press [#] to exit Output Function.	Output Functions: - Disabled - Intrusion - Intrusion Latching - Fire - Fire Latching - Intrusion and Fire - Intrusion and Fire Latching - System Reset	Output Functions (cont.): - System On - System Ready - Key Fob On/Off - Key Fob 2-sec Pulse - User Controlled - Interior Intrusion and Fire - System On (Unoccupied)	
#	Exit Points Return to Installer Menu.			



Notice!

When the installer PIN is entered at the keypad or phone, a 3 sec time window starts. During that time window, a tamper alarm activates the interior siren for only 1 sec. Open the enclosure door during this time to silence the sirens during maintenance. Once the enclosure is closed, tamper alarm is restored after a 3 minute delay. Tampers are logged and reported.



Warning!

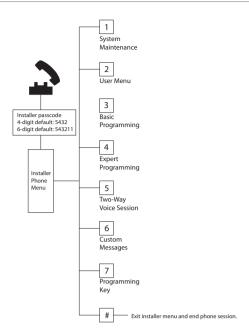
If you modify system parameters you are responsible for maintaining the system within the scope of the standard and regulations that apply to the hardware and/or the system in which it is used. In a NF A2P compliant installation, use only NF A2P listed components, and check that each parameter is in the authorized range.

5.2 Expert Programming

Each category consists of several related programming items. Each programming item is assigned a three- or four-digit number.

For No. 4 in the next figure, perform these steps:

- 1. Enter an expert programming item number. For example, 201, Phone Line Supervision.
- 2. Enter the desired value using your phone's keypad. For example, press [1] to enable phone line supervision.
- 3. Repeat Steps 1 and 2 to configure other programming items, or press [#] to exit Expert Programming.



The following sections list programming items, item numbers, possible selections, and default values. Record custom values in the Entry column next to the respective default value.

5.2.1 ROM Firmware Version Items

Programming Item	Item Number	Description
Control Panel Firmware Version	090	System announces the control panel's firmware version.
Control Center 1 Firmware Version	091	System announces the control center's firmware
Control Center 2 Firmware Version	092	version.
Control Center 3 Firmware Version	093	
Control Center 4 Firmware Version	094	

5.2.2 System Programming Items

Programming Item	Item Number	Selections	Manuf. Default
Country Code (refer to Country Codes, page 108)	102	00 to 65	58
Enclosure Tamper Enabled	103	0 = Disabled 1 = Enabled	1
Fire Bell Cut-Off Time	107	0 to 90 min	5
Intrusion Bell-Cut off Time	108	0 to 90 min	5
Intrusion Abort Window	110	15 to 45 sec	30
Fire Alarm Cancel Window	111	0 to 10 min	0
Intrusion Cancel Window	112	5 to 10 min	5

Programming Item	Item Number	Selections	Manuf. Default
Chime Tone Select	114	1 = Chime door bell 2 = Single chime 3 = Standard door bell	1
Chime Mode Operation After System Off	115	0 = Off 1 = On 2 = Follows previous setting	0
Automatic Test Report Frequency	116	0 = None 1 = Daily 2 = Weekly 3 = Monthly	0
Access Code	119	6 digits, using 0 to 9	999999
Daylight Saving Time Operation	121	0 = None 1 = North America (before 2007) 2 = Europe and Asia 3 = Tasmania, Australia 4 = Rest of Australia 5 = New Zealand 6 = Cuba 7 = South America and Antarctica 8 = Namibia, Africa 9 = USA after 2006	1
Installer Passcode Override Enabled	122	0 = Disabled 1 = Enabled	1
Programming Key Auto Transfer	123	 0 = Enable the programming key from the Installer Menu. 1 = Programming key automatically sends or receives stored programming data. 	1
Point Alarm Verification	124	0 = None 1 = Cross zone 2 = Intelligent threat assessment 3 = Confirmed alarms 1 4 = Confirmed alarms 2	0
Faulted Points Allowed Threshold	125	0 to 8	3
Exit Delay	126	45 to 255 sec	60
Entry Delay	127	30 to 255 sec	30
Exit Time Restart	128	0 = User cannot reset Exit Delay timer 1 = User can reset Exit Delay timer one time	1
Recent Close Enabled	129	0 = Report not sent 1 = Report sent	1
Swinger Bypass Count	131	0-15	1

Programming Item	Item Number	Selections	Manuf. Default
Auto Protection Level	132	0 = System turns on (unoccupied). 1 = System only turns on (unoccupied) if a perimeter point is faulted during Exit Delay.	1
System On Order Options	133	1 = "Stay," "Leave," "Custom" 2 = "Stay," "Custom," "Leave" 3 = "Leave," "Stay," "Custom" 4 = "Leave," "Custom," "Stay" 5 = "Custom," "Leave," "Stay" 6 = "Custom," "Stay," "Leave";	1
Cross Zone Timer	134	60 to 3600 sec	120
Clear Alarm Memory	136	0 = By user, 1 = By master user	0
Latching Point and Enclosure Tamper	137	0 = Any user can clear condition 1 = Only the installer can clear condition	0
Latching System Device Tamper	138	0 = Any user can clear condition 1 = Only the installer can clear condition	0
Verbose System Test Enabled	139	0 = Test results announced only at end of all tests 1 = Test results announced after each test	1
Demo Mode	140	0 = Telephone messages heard only on phone 1 = Telephone messages heard on phone and control centers 2 = Turn announcement of telephone messages over the control center on or off at the control center	0
Restrict Installer Passcode	142	0 = Master user not needed 1 = Master user needed	0
Test Report Hour	143	0 to 23	
Test Report Minute	144	0 to 59	0
Test Report Day of Week	145	0 to 6, where 0 = Sunday and 6 = Saturday	0
Test Report Day of Month	146	1 to 28	1
Clear Confirmed Alarm Memory	147	0 = User can clear a confirmed alarm 1 = Only the installer can clear a confirmed alarm	0
Arming Beeps/Graduated Annunciation	148	 0 = No arming beeps or outputs during Entry Delay 1 = Outputs activate during Entry Delay, but no arming beeps occur. 2 = Sound arming beeps, but outputs do not activate during Entry Delay 3 = Sound arming beeps, and outputs activate during Entry Delay 	0
Wireless Jam Detect Level	150	0 to 15	12

Programming Item	Item Number	Selections	Manuf. Default
Wireless Device Supervision Interval	151	1= 1 Hour 2= 2 Hours 3= 4 Hours 4= 12 Hours 5= 24Hours 6= 2.5 Hours	
Key Fob Arming	153	0 = Do not turn system on if there are faulted points 1 = Force arm faulted points if the number of faulted points is within the range set in Expert Programming Item Number 125 2 = Force arm faulted points even if the number of faulted points exceeds the range set in Expert Programming Item Number 125	0
Two-Way Voice Session Configuration	158	0 = Allow at any time 1 = Allow only during alarm conditions	0
Start Arming with Faulted Points	159	0 = Force arm all faulted points 1 = Exit Delay starts with faulted points	1
Speak Active Faults	160	0 = "Call for Service" announced 1 = Fault condition announced	0
Wireless Transmission Attenuation	161	Temporary attenuation for installation and maintenance only. Not intended for normal operation. 0 = None (normal operation) 1 = 3 dB 2 = 6 dB 3 = 9 dB 4 = 12 dB	0
Missing Wireless Device Conditions	162	0 = Creates a tamper condition (required for EN50131-compliant countries). 1 = Creates a trouble condition.	0
Silence Trouble Tones	163	0 = All trouble tones announced 1 = Fire and 24-Hour trouble tones announced	0
System Inactivity Time (Hours)	164	0 to 255	0
System Inactivity Time (Days)	165	0 to 255	0
System Inactivity Time (Weeks)	166	0 to 255	0
Force Arm/Exit Error	167	0 = Off-normal points create an Exit Error at the end of Exit Delay 1 = Off-normal points are force armed at the end of Exit Delay	0

Programming Item	Item Number	Selections	Manuf. Default
Audio Verification Command Set	168	0 = Complies with SIA AV-01-1997.11 1 = Use alternate verification command set	
Key Fob Duress	601	0 = Duress event disabled 1 = Duress event enabled	0
Key Fob Button Configuration	616	0 = Status request only 1 = Turn system on (occupied)	0
Key Fob Button Configuration	626	2 = Turn system on (custom protection) 3 = Turn output on or off 4 = Turn output on for 2 sec.	0

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.

5.2.3 Communicator Programming Items



Notice!

To enable reporting, configure the following programming items:
Account Number (Expert Programming Item Number 100)
Route 1 Primary Destination (Expert Programming Item Number 206)
Format for Route 1 Primary Destination (Expert Programming Item Number 211)

Route Destination Items

Programming Item	Item Number	Selections	Manuf. Default
Account Number	100	4 or 6 digits, using 0 to 9 and B to F. Refer to <i>Report Configuration, page 44</i> for account number, phone number, and IP address entry instructions.	000000
Phone Line Supervision	201	0 = Unsupervised. 1 = Supervised.	0
PSTN or IP Connection	202	0 = PSTN telephone line 1 = B426 Ethernet communication module	
Voice Format Repeat Count	203	1 to 15	3
Voice Format Message Delivery Attempts	204	1 to 5 in increments of 5 sec	1
Dial Tone Detect	205	0 = Do not wait for dial tone. 1 = Wait for dial tone.	1

Programming Item	Item Number	Selections	Manuf. Default
Route 1 Primary Destination	206	Enter a phone number (up to 32 digits) or IP address	0
Route 1 Backup Destination	207	(000.000.000.000 to 255.255.255.255) for each destination:	0
Route 2 Primary Destination	208	0 to 9 = [0] to [9]	0
Route 2 Backup Destination	209	* = [*][*] # = [*][#] Pause = [*][1] Exit with save = [#] Exit without save = [#][#] Press [#] twice within two seconds to exit without saving your entry. Disable phone number = [0][#] Disable IP address = 240.0.00	0
SMS Service Provider Number	210	Up to 32 digits.	0
Format for Route 1 Primary Destination	211	0 = Disabled 1 = Contact ID	0
Format for Route 1 Backup Destination	212	2 = SIA 3 = Voice 4 = SMS Text	0
Format for Route 2 Primary Destination	213	4 = SMS Text 5 = Fast Format 6 = Network (requires a 4-digit account number)	0
Format for Route 2 Backup Destination	214		0
Call Waiting Disable	215	Enter a 3-digit string. * = [*][*]; # = [*][#]	0
Emergency Call Override Number	216	Enter a 3-digit emergency number, such as 911.	000
Emergency Call Override Number Delay	217	0 to 60 min	5
Auto Detect Pulse Dial	218	0 = Tone dialing only 1 = Auto Detect Pulse or Tone	0
Phone Answer Ring Count	222	1 to 255 rings Enter 11 to bypass an answering machine.	10
Bell Test	223	0 = Disabled 1 = Enabled	0

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.

Alternate Communication Items

Programming Item	Item Number	Selections	Manuf. Default
Port Number for Route Destination:	241	0 to 65535	7700
Route 1 Primary = 241	242		7700
Route 1 Backup =242 Route 2 Primary = 243	243		7700
Route 2 Backup = 244	244		7700
Heartbeat for Route Destination:	281	0 = Disabled	0
Route 1 Primary = 281 Route 1 Backup = 282	282	1 to 65535 min	0
Route 2 Primary = 283	283		0
Route 2 Backup = 284	284		0
Acknowledge Wait Time for Route Destination	285	5 to 255 sec	15
Route 1 Primary = 285 Route 1 Backup =286 Route 2 Primary = 2887	286		15
	287		15
Route 2 Backup = 288	288		15
Anti-Replay for Route Destination:	289	0 = Disabled	1
Route 1 Primary = 289	290	1 = Enabled	1
Route 1 Backup =290 Route 2 Primary = 291	291		1
Route 2 Backup = 292	292		1
Heartbeat Attempt for Route Destination:	293	1 to 99	5
Route 1 Primary = 293	294		5
Route 1 Backup =294 Route 2 Primary = 295	295		5
Route 2 Hamary 200	296		5
Extend Heartbeat Period	297	0 = Disabled 1 to 255 min	

See also

- Country Code Specific Default Programming Codes, page 109

5.2.4 RPS Configuration Items

Programming Item	Item Number	Selections	Manuf. Default
RPS Passcode	118	6 digits, using 0 to 9 and A to F.	12345 6
RPS Automatic Call In Frequency	224	0 = Never 1 = Daily 2 = Weekly 3 = Monthly	

Programming Item	Item Number	Selections	Manuf. Default
RPS Automatic Call In Time (Hours)	225	0 to 23	
RPS Automatic Call in Time (Minutes)	226	0 to 59	
RPS Automatic Call in Time (Day of Week)	227	0 to 6, where 0 = Sunday and 6 = Saturday	
RPS Automatic Call in Time (Day of Month)	228	1 to 28	
RPS Automatic Call in Phone Number	229	Enter a phone number (up to 32 digits) or IP address (000.000.000.000 to 255.255.255.255) for each destination: 0 to 9 = [0] to [9] * = [*][*] # = [*][#] Pause = [*][1] Exit with save = [#] Exit without save = [#][#] Press [#] twice within two seconds to exit without saving your entry. Disable phone number = [0][#] Disable IP address = 240.0.00	
RPS Automatic Call in Method	245	0 = Phone number 1 = IP address	
RPS Port Number	246	0 to 65535	7750

5.2.5 Route Reporting Options

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Point Report and Restoral Routing

Programming Item	Item Number	Manuf. Default	Programming Item	Item Number	Manuf. Default
Point Reports and Restorals (all)*	301	3	Fire Trouble	328	3
Intrusion Alarm	307	3	Fire Trouble Restoral	329	3
Intrusion Alarm Verified	308	3	24-Hour Trouble	331	3
Intrusion Alarm Unverified	309	3	24-Hour Trouble Restoral	332	3
Intrusion Alarm 24-hr	310	3	Point Missing	333	3
Intrusion Alarm 24-hr Restoral	311		Point Missing Restoral	334	3
Intrusion Alarm Restoral	312	3	Supervisory Alarm	335	3
Duress	313	3	Supervisory Alarm Restoral	336	3
Fire Alarm	315	3	Wireless Point Low Battery	360	3
Fire Alarm Unverified	316	3	Wireless Point Low Battery Restoral	361	3

Programming Item		Manuf. Default	Programming Item		Manuf. Default
Fire Alarm Restoral	317	3	Fire Cancel	371	3
Panic	318	3	Point Tamper	388	3
Cancel	323	3	Point Tamper Restoral	397	3
Intrusion Trouble	324	3	Cross Zone Trouble	393	3
Intrusion Trouble Restoral	325	3	Alarm Recent Close	394	3
Intrusion Zone Bypass	326	3	Panic Restoral	399	3
Intrusion Zone Bypass Restoral	327	3	Cross Zone Trouble Restoral	400	3

^{*}Enter a value to globally set all of the following reports to the same value.

To modify one a specific report, enter a value in that report's item number:

- 0 = Neither route
- 1 = Route 1 only; Primary and Backup
- 2 = Route 2 only; Primary and Backup
- 3 = Both routes; Primary and Backup

System On and Off Report Routing

Programming Item	Item Number	Manuf. Default	Programming Item	Item Number	Manuf. Default
System On and Off* (open and close) Reports (all)	302	3	Open	341	3
Exit Error	314	3	Open Keyswitch	342	3
Recent Closing	330	3	Open Remote	343	3
Close (System On) Unoccupied	337	3	Close (System On) Custom	344	3
Close (System On) Occupied	338	3	Opening by Guard Code	386	3
Close Keyswitch	339	3	Partial Close (System On)	403	3
Close Remote	340	3			3

^{*}Enter a value to globally set all of the following reports to the same value.

To modify only a specific report, enter a value in that report's item number.

- 0 = Neither route
- 1 = Route 1 only; Primary and Backup
- 2 = Route 2 only; Primary and Backup
- 3 = Both routes; Primary and Backup

System Report and Restoral Routing

Programming Item	Item	Manuf.	Programming Item	Item	Manuf.
	Number	Default		Number	Default
System Reports and Restorals (all) ¹	303	3	Communication Restoral	352	3
User Emergency ²	319	3	Control Center Supervision Fail	353	3
User Fire ³	320	3	Control Center Supervision Restoral	354	3

Programming Item	Item Number	Manuf. Default	Programming Item	Item Number	Manuf. Default
User Fire Restoral	321	3	Control Center Tamper	355	3
User Panic	322	3	Control Center Tamper Restoral	356	3
AC Fail	345	3	System Inactive	385	3
AC Fail Restoral	346	3	Watchdog Reset	390	3
Auto System Test Normal	347	3	Passcode Tamper	391	3
Auto System Test Off-Normal	348	3	Date/Time Changed	410	3
Auxiliary Power Fault	349	3	Network Fail	413	3
Auxiliary Power Restoral	350	3	Network Restoral	414	3
Communication Fail	351	3			3
Local Programming Success*	357	3	Bus Device Trouble	373	3
Low Battery	358	3	Bus Device Trouble Restoral	374	3
Low Battery Restoral	359	3	ROM Fault	375	3
Communication Test, Manual	362	3	Bell Trouble	376	3
Phone Line Fault	363	3	Bell Restoral	377	3
Phone Line Fault Restoral	364	3	Walk Test End	378	3
Remote Programming Failure	365	3	Walk Test Start	379	3
Remote Programming Success	366	3	Bus Device Missing	380	3
Wireless Receiver Jammed	367	3	Bus Device Missing Restoral	381	3
Wireless Receiver Jammed Restoral	368	3	Battery Missing	382	3
Bus Device Tamper	369	3	Battery Missing Restoral	383	3
Bus Device Tamper Restoral	370	3	RAM Checksum Failed	384	3

 $^{^{\}mbox{\tiny 1}}$ Enter a value to globally set all of the following reports to the same entry.

- 1 = Route 1 only; Primary and Backup
- 2 = Route 2 only; Primary and Backup
- 3 = Both routes; Primary and Backup

Global Report Routing Items

Programming Item	Item Number		Manuf. Default
Communicator Disable	304	0 = Enable reporting 1 = Disable reporting (local-only system)	0
Route Attempts	305	1 to 20	10

² To modify only a specific report, enter a value in that report's item number.

^{0 =} Neither route

³To enable the control center's emergency buttons, set Expert Programming Items 889, 888, and 890.

Programming Item	Item	Selections	
	Number		Default
Send Reports During Walk Test	306	0 = No reports 1 = Only Walk Test Start and Walk Test End reports	0

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.

5.2.6 Point Programming Items

Programming Item Number (bold digits = Point Number)	Programming Item	Selections
9011, 9021, 9031, 9041910191519201 .9321	Point Type	0 = Disabled 1 = Perimeter 2 = Interior 3 = Perimeter Instant 4 = 24-Hour 5 = Fire Verified* 6 = Fire Instant 7 = Silent Panic 8 = Interior Walkthrough 9 = Perimeter Exit Cancel 11 = Momentary Keyswitch 12 = Maintained Keyswitch 13 = 24-Hour Trouble 14 = User Emergency
9 01 2, 9 02 2, 9 03 2, 9 04 29 10 29 15 29 20 29 32 2	Circuit Style	0 = Dual 2.2 kΩ♦ alarm and tamper circuit 2 = Single 2.2 kΩ♦ alarm circuit
9 01 3, 9 02 3, 9 03 3, 9 04 39 10 39 15 39 20 3	Include in Custom Protection	0 = Point not included 1 = Point included
9 01 4, 9 02 4, 9 03 4, 9 04 49 10 49 15 49 20 4	Cross Zone/Exit Route	0 = Cross zoning disabled, point is on the exit route. 1 = Cross zoning enabled, point is on the exit route 2 = Cross zoning disabled, point is not on the exit route (must force arm). 3 = Cross zoning enabled, point is not on the exit route.
9 01 5, 9 02 5, 9 03 5, 9 04 59 10 59 15 59 20 5	Response Time	1 to 10 in 50 ms increments
9016, 9026, 9036, 9046910191519201 .9321	Alarm Verification	0 = Disable alarm verification 1 = Enable alarm verification

Programming Item Number (bold digits = Point Number)	Programming Item	Selections
9018, 9028, 9038, 9048910891589208 .9328	Wireless Detector Sensitivity	Motion Detector (PIR and dual) 0 = Standard 4 = Intermediate Inertia Detector: Gross Attack Options 0 = Tap off, low sensitivity 1 = Tap off, low/medium sensitivity 2 = Tap off, medium/high sensitivity 3 = Tap off, high sensitivity Inertia Detector: Minor Attack Options 8 = Tap on, 8 taps, low sensitivity 9 = Tap on, 8 taps, low/medium sensitivity 10 = Tap on, 8 taps, medium/high sensitivity 11 = Tap on, 8 taps, high sensitivity 12 = Tap on, 4 taps, low sensitivity 13 = Tap on, 4 taps, low/medium sensitivity 14 = Tap on, 4 taps, medium/high sensitivity 15 = Tap on, 4 taps, high sensitivity

Point Type (9**01**1 ... 9**32**1): Point 1 = 6, Points 2 - 5 = 1, Points 6 - 8 = 2, Points 9 - 32 = 0

Circuit Style (9**01**2 ... 9**32**2): Points 1 - 32 = 2

Custom Protection (9**01**3 ... 9**32**3): Points 1 - 32 = 0

Cross Zone Enabled (9021 ... 9321): 1

Response Time (9**01**5 ... 9**08**5): Points 1 - 8 only = 6

Wireless Sensitivity (9018 ... 9328): Points 1 - 32 = 0

Alarm Verification (9**01**6 ... 9**32**6): Points 1 - 32 = 0

Table 5.8: Manuf. Default for Point Programming Items

5.2.7 Output Programming Items

Programming Item	Item	Selections	Manuf.
	Number		Default
Fire Output Cadence	600	0 = Temporal Code 3 cadence 1 = Pulse cadence (two-sec on, two-sec off)	0

Programming Item	Item Number	Selections	Manuf. Default
Output 1 Function (wired)	611	<pre>0 = Disabled 1 = Intrusion 2 = Intrusion Latching 3 = Fire 4 = Fire Latching 5 = Intrusion and Fire 6 = Intrusion and Fire Latching 7 = System Reset 8 = System On 9 = System Ready 10 = Key Fob On/Off 11 = Key Fob 2-sec Pulse 13 = User Controlled 14 = Interior Intrusion and Fire 15 = System On (Unoccupied) 16 = Intrusion and Fire 2</pre>	5
Output 2 Function (wired)	621		5
Output 3 Function (wired)	631		5
Output 4 Function (wired)	641		7
Output 4 Supervised Speaker Driver (wired)	642	0 = Supervised 8 Ω speaker driver 1 = Unsupervised open collector	0

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.

See also

- Country Code Specific Default Programming Codes, page 109

5.2.8 Control Center Programming Items

Speech Configuration Items

Programming Item	Item Number	Selections	Manuf. Default
Alarm Message Minimum Repeat Time	880	(1 to 255 hrs).	12
"No Alarm Report Sent" Announcement	883	0 = Announcement disabled. 1 = Announcement enabled.	1
"Cancel Report Sent" Announcement	884		1
Time Format	887	0 = Determined by voice module 1 = Always use 12-hr mode 2 = Always use 24-hr mode	0

Global Control Center Items

These programming items affect all control centers connected to the control panel.

To send a user fire, emergency (medical) or panic report, the appropriate control center button and report must be enabled. Refer to *Route Reporting Options*, page 53 to enable reports.

Check the appropriate box in the Easy Series User Guide (P/N: F01U025111B) to identify which buttons are enabled.

Programming Item	Item Number	Selections	Manuf. Default
Fire Button Alarm	888	0 = Disabled. 1 = Enabled.	0
Medical Button Alarm	889	0 = Disabled. 1 = Enabled	0
Panic Button Alarm	890	0 = Disabled. 1 = Enabled (audible). 2 = Enabled (silent).	0
One Button Arming [i]	891	0 = Disabled (token or passcode required). 1 = Enabled (token or passcode is not required).	0
Invalid Passcode Attempt Limit	892	3 to 8.	3
Control Center Lockout Time	893	1 to 30 min.	3

Individual Control Center Items

Programming Item	Item Number	Selections	Manuf. Default
Control Center	Control Center 1: 811	1 (dim) to 5 (bright).	Control Center 1: 5
Brightness	Control Center 2: 821		Control Center 2: 5
	Control Center 3: 831		Control Center 3: 5
	Control Center 4: 841		Control Center 4: 5
Control Center Backlight Extinguish Mode	Control Center 1: 814	0 = Always on.	Control Center 1: 0
	Control Center 2: 824	1 = Dim until user presence is detected.	Control Center 2: 0
	Control Center 3: 834	2 = Off until user presence is	Control Center 3: 0
	Control Center 4: 844	detected. 3 = Off until user presents token or enters passcode.	Control Center 4: 0

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.

5.2.9 User Programming Items

Programming Item	Item Number		Manuf. Default
Passcode Length	861	Set the length of all passcodes (4 or 6 digits).	4

Programming Item	Item Number	Selections	Manuf. Default
Installer Passcode (User 0)	7001	Four-digit Range: 1111 to 5555 Six-digit Range: 111111 to 55555	5432 54321 1
Master User Passcode (User 1)	7011		1234 12345 5
Duress User (User 22) Enabled	862	0 = Duress user disabled 1 = Duress user enabled 2 = Guard code enabled Duress User passcode: Six digits: 111111 Four digits: 1111	0
RFID Token Password	863	Use this item to prevent unauthorized copying of tokens (00000000 to FFFFFFFF).	12345 678

Default = Country-specific default. Select this programming item to hear the updated default value, or refer to Country Code Specific Default Programming Codes, page 109.



Caution!

Do not change the RFID Token Passwords item once tokens are added to the system.

5.2.10 Factory Default

1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Item Number	Selections
Factory Default	9999	Enter 9999 to restore all factory default values. All programming items, except for the country code, are reset when you restore the factory default values. This item also deletes all wireless data.



Warning!

For NF A2P installations, once the control panel is configured, check that all parameters are within the range of authorized values. Refer to *EN50131 Requirements*, page 11.

5.3 Exit Programming

Press [#] repeatedly until the system says "goodbye." This ends the phone session.

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Control Panel Event Codes (SIA and Contact ID) 6

Event	SIA	Report	Contact ID	Report
Intrusion Alarm	ВА	Burglary Alarm	1 130	Burglary
Intrusion Alarm Verified	BV	Burglary Alarm Verified	1 139	Burglary
Intrusion Alarm Unverified	BG	Unverified Event Burglary	1 130	Burglary
Intrusion Alarm 24-hr	ВА	Burglary Alarm	1 133	24 Hour (Safe)
Intrusion Alarm 24-hr Restoral	вн	Burglary Alarm Restore	3 133	Restoral
Intrusion Alarm Restoral	BR	Burglary Restoral	3 130	Burglary
Duress	НА	Hold Up Alarm	1 121	Duress
Exit Error	EA	Exit Alarm	1 374	Exit Error (zone)
Fire Alarm	FA	Fire Alarm	1 110	Fire
Fire Alarm Unverified	FG	Unverified Event-Fire	1 110	Fire
Fire Alarm Restoral	FH	Fire Alarm Restore	3 110	Fire
Panic	НА	Holdup Alarm	1 120	Panic
Panic Restoral	НН	Holdup Alarm Restore	3 120	Panic
User Emergency (Medical)	QA	Emergency Alarm	1 101	Personal Emergency
User Fire	FA	Fire Alarm	1 110	Fire
User Fire Restoral	FH	Fire Alarm Restore	3 110	Fire
User Panic	НА	Holdup Alarm	1 120	Panic
Cancel	вс	Burglary Cancel	1 406	Cancel
Intrusion Trouble	вт	Burglary Trouble	1 380	Sensor Trouble
Intrusion Trouble Restoral	BJ	Burglary Trouble Restore	3 380	Sensor Trouble
Intrusion Point Bypass	ВВ	Burglary Bypass	1 570	Zone/Sensor bypass
Intrusion Point Bypass Restoral	BU	Burglary Unbypass	3 570	Zone/Sensor bypass
Fire Trouble	FT	Fire Trouble	1 373	Fire Trouble
Fire Trouble Restoral	FJ	Fire Trouble Restore	3 373	Fire Trouble
Recent Closing	CR	Recent Closing	1 459	Recent Closing
Close (System On) Unoccupied	CL	Closing Report	3 401	Unoccupied Arm by User
Close (System On) Occupied	CL	Closing Report	3 441	Occupied Arm by User
Close (System On) Custom	CL	Closing Report	3 441	Custom Arm by User
Close (System On) Partial	CL	Closing Report	3 456	Partial Arm by User
Close (System On) Keyswitch	CS	Closing Keyswitch (User 255)	3 409	Keyswitch O/C (User 255)
Open (System Off)	ОР	Opening Report	1 401	O/C by User

Event	SIA	Report	Contact ID	Report
Open (System Off) Keyswitch	OS	Opening Keyswitch (User 255)	1 409	Keyswitch O/C (User 255)
AC Fail	АТ	AC Trouble	1 301	AC Loss
AC Fail Restoral	AR	AC Restoral	3 301	AC Loss
Auto System Test (Normal)	RP	Automatic Test	1 602	Period Test Report (User 0)
Auto System Test (Off-Normal)	RY	Test Off Normal	1 608	Period Test Report, System Trouble Present
Auxiliary Power Fault	IA	Equipment Failure Condition	1 310	Ground Fault
Auxiliary Power Restoral	IR	Equipment Fail Restoral	3 310	Ground Fault
Communication Fail	YC	Communications Fail	3 310	Failure to communicate event
Communication Restoral	YK	Communications Restoral	3 354	Failure to communicate event
Control Center Supervision Fail	EM	Expansion Device Missing	1 333	Expansion module failure
Control Center Supervision Restoral	EN	Expansion Missing Restore	3 333	Sensor Trouble
Control Center Tamper	ES	Expansion Device Tamper	1 341	Expansion Device Tamper
Control Center Tamper Restoral	EJ	Expansion Device Tamper Restore	3 341	Expansion Device Tamper
Local Programming	LX	Local Programming Ended	1 628	Program mode exit
Low Battery	YT	System Battery Trouble	1 302	Low System Battery
Low Battery Restoral	YR	System Battery Restoral	3 302	Low System Battery
Communication Test	RX	Manual Test	1 601	Manual trigger test report
Phone Line Fault	LT	Phone Line Trouble	1 351	Telco 1 fault
Phone Line Fault Restoral	LR	Phone Line Restoral	3 351	Telco 1 fault
ROM Fault	YF	Parameter Checksum Fail	1 304	ROM Checksum Bad
Bell Trouble	YA	Bell Fault	1 320	Sounder/ Relay
Bell Restoral	YH	Bell Restored	3 320	Sounder/ Relay
Walk Test Start	TS	Test Start 1 607		Walk Test Mode
Walk Test End	TE	Test End 3 607		Walk Test Mode
Bus Device Missing	EM	Expansion Device Missing 1 333 Exp. Mc		Exp. Module Failure
Bus Device Missing Restoral	EN	Expansion Missing Restore 3 333 Exp. Module		Exp. Module Failure
Battery Missing	YM	System Battery Missing	1 311	Battery Missing/Dead
Battery Missing Restoral	YR	System Battery Restoral	3 311	Battery Missing/Dead

Event	SIA	Report	Contact ID	Report
RAM Checksum Failed	YF	Parameter Checksum Fail	1 303	RAM Checksum bad
Point Tamper	TA	Tamper Alarm	1 137	Tamper
Point Tamper Restoral	TH	Tamper Alarm Restoral	3 137	Tamper Restoral
Cross Zone Trouble	BG	Unverified Event - Burglary	1 378	Cross-zone Trouble
Cross Zone Trouble Restoral	BR	Burglary Restoral	3 378	Cross-zone Trouble
Point Missing	UY	Untyped Missing Trouble	1 381	Loss of Supervision - RF
Point Missing Restoral	UJ	Untyped Trouble Restore	3 381	Loss of Supervision - RF
Wireless Point Low Battery	XT	Transmitter Battery Trouble	1 384	RF Low Battery
Wireless Point Low Battery Restoral	XR	Transmitter Battery Restoral	3 384	RF Low Battery
Wireless Receiver Jammed	XQ	RF Interference	1 344	RF Receiver Jam Detect
Wireless Receiver Jammed Restoral	ХН	RF Interference Restoral	3 344	RF Receiver Jam Detect
Bus Device Tamper	XS	RF Receiver Tamper	1 341	Exp Module Tamper
Bus Device Tamper Restoral	XJ	RF Receiver Tamper Restoral	3 341	Exp Module Tamper
Bus Device Trouble	ET	Expansion Trouble	1 330	System Peripheral Trouble
Bus Device Trouble Restoral	ER	Expansion Restoral	3 330	System Peripheral Trouble
Remote Programming Success	RS	Remote Program Success	1 628	Program mode exit
Remote Programming Failure	RU	Remote Program Fail	1 628	Program mode exit
24-Hour Trouble	UA	Untyped Zone Alarm	1 150	24-Hour Non-Burglary
24-Hour Trouble Restoral	UR	Untyped Zone Restoral	3 150	24-Hour Non-Burglary
Opening by Guard Code	OR	Disarm From Alarm	1 450	Exception Open/Close
System Inactive	CI	Fail to Close	1 454	Failed to Close
Network Fail	NT	Network Failure	1 350	Communication Trouble
Network Restoral	NR	Network Restoral	3 350	Communication Trouble
Passcode Tamper	JA	User Code Tamper 1 461		Wrong Code Entry
Firmware Updated	YZ	Service Completed	1 412	Successful Download/ Access
Watchdog Reset	YW	Watchdog Reset	1 305	System Reset
Date/Time Change	JT	Time Changed	1 625	Time/Date Reset

7 System Test and Maintenance

7.1 Test the System

Test the system for proper operation when installation and configuration are complete.

- Press the System Test button on the control panel board for one sec. The system provides instructions throughout the test. Follow all instructions.
- Contact the central monitoring station (CMS) to verify that all necessary test reports were received, including test reports from all installed input and output devices.

7.2 Maintain the System



Notice!

After system installation and any control panel programming, perform a complete system test. A complete system test includes testing the control panel, all devices, and communication destinations for proper operation.

7.3 Installer History Event Announcements

The Installer Menu speaks the event report status for each event. Refer to *Configure the System, page 32*.

After the event entry and its parameters (if any) are spoken, the system will beep and then speak the status using two numbers. The first number indicates the route 1 event status. The second number indicates the route 2 event status.

The numbers in each announcement indicate the status as follows:

- 0 = The event was logged only
- 1 = The event was successfully transmitted for this route
- 2 = The transmission of this event failed for this route
- 3 = The event is still pending for this route

Refer to the following table for a history event announcement example.

Entry	Event	Tone	Route 1 Status	Route 2 Status
Announcement	"AC Fail"	Веер	"One"	"Zero"

7.4 Event Messages

The following table shows:

- Non-standard event messages that appear in the history log, and
- Event messages for SMS Text and Voice formats

Event	History Log Entry	SMS Text Format	Voice Format
Tamper Enclosure	Tamper 0	Point Trouble 0	Tamper 0
Duress	Duress; System Off User 22	Intrusion Alarm System Off	Duress System Off User 22
Quick Arm	System On Occupied User System On Unoccupied User 0 System On Custom User 0	System On User 0	System On Occupied User 0 System On Unoccupied User 0 System On Custom User 0
Keyswitch On	System On Unoccupied 255	System On User 255	System On Unoccupied 255

Event	History Log Entry	SMS Text Format	Voice Format
Keyswitch Off	System Off 255	System Off User 255	System Off 255
Recent Close	Recent Close User X	Intrusion Alarm	Recent Close User X

8 Device Specifications and Overview

8.1 Control Panel

Enclosure	
Dimensions (H x W x D):	37 cm x 31.8 cm x 8.5 cm (14.5 in x 12.5 in x 3.25 in)
Construction Material:	Cold-rolled steel, zinc seal, 0.36 mm thick (20 Ga.)
Environmental Considerations	
Relative Humidity:	93% at 32°C 2°C (89.6°F 35.6°F)
Operating Temperature:	-10°C to +49°C (14°F to +120°F) CE: -10°C to +40°C (+14°F to +104°F) NF A2P: -10°C +55°C (+14°F to +131°F)
Storage Temperature:	-10°C to +55°C (+14°F to +131°F)
Protection Level	IP 30 - IK 04
Supervised Points	,
On-board Hardwire:	8 Single or dual end-of-line (2.2 k EOL) tamper point support Point 1 supports two-wire smoke detectors All points support four-wire smoke detectors Enclosure tamper input (does not reduce point capacity) Reaction time lower than 250ms
Programmable Outputs (PO)	
On-board:	4 PO 1 only: Configurable relay PO 2 to PO 4: Configurable solid state PO 4 only: Internal supervised speaker driver option
PO 1 Relay Rating:	Contacts: 2 A with no jumper installed; resistive loads only; in a NF A2P certified installation: 1 A Output: 1.2 A with jumper installed; resistive loads only; in a NF A2P certified installation 1 A Operating Voltage: 30 VDC maximum
PO 2 to PO 4 Rating:	400 mA current sink
Number of	<u>'</u>
Users:	User 1: Master user Users 2 to 21: System users User 22: Duress user
Events:	500 history events, stamped with time and date
Tokens and Key Fobs:	One per user (User 22 does not receive a token or key fob)
Phone Line	•

Phone line trouble voltage	Trouble condition occurs when the phone line voltage is between 1.10 V and 4.75 V			
Control Panel Power Requireme	ents			
AC Input Line Voltage	Use a UL Listed 18 V Class 2 transformer (22 VAC, VA 50/60 Hz)			
Total Alarm Power:	 1.4 A (AC power and standby battery; intrusion applications only). With a 7.0 Ah battery, the following current draws apply to all outputs and devices connected to the system: Up to 170 mA for 24 hr for fire and combined fire/burglary applications Up to 1.2 A for other applications 			
Auxiliary Power:	12 VDC, 1.0 A maximum. Includes 110 mA for each control center connected to the system, and up to 400 mA for the programmable outputs.			
Current Draw:	85 mA standby; 160 mA alarm with all outputs activated			
Voltage:	12 VDC nominal (11.2 VDC to 12.3 VDC) The control panel stops processing point faults when the voltage drops below 9.5 VDC.			
Battery:	D126 (7 Ah) or D1218 (18 Ah) sealed, lead acid rechargeable 1.7 A maximum recharging current Low battery condition occurs when battery drops below 12 VDC If AC power fails and the battery drops below 9.5 VDC, the control panel stops processing point faults. Disconnect the battery under these conditions. Maximum auxiliary current to recharge standby battery within 72 hours: 12 V, 7 Ah Battery: 400 mA 12 V, 18 Ah Battery: 900 mA In an NF A2P certified installation, use a battery Yuasa NP17-12IFR			

8.1.1 **Standby Battery Calculation**

Use the following formula to calculate standby battery capacity for 24 hr of standby power: (Total B ____ x 24 hr) + (Total C ___ x 0.067 hr) + 10% reserve = Total battery Ah requiredIf the Column C total exceeds 1.4 A, use an external power supply.

		A AC Power On Normal Current		mal	B AC Power Off Minimum Current			C In Alarm Maximum Current		
Model	Qty Used	Each Unit (mA)		Total (mA)	Each Unit (mA)		Total (mA)	Each Unit (mA)		Total (mA)
Control Panel		85	x1	85	85	x1	85	160	x1	160
Control Center		110	x Qty		110	xQty		165	xQty	

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Wireless Receiver (RFRC-OPT)	100	x Qty		100	x Qty		100	xQty
DX2010	35	x Qty		35	x Qty	0	35	xQty
Sounders Connec	ted to PO 4					'	-	
D118 8 Ω� Speaker	0	xQty	0	0	xQty	0	330	xQty
Ratings of other of	devices in sys	tem that a	re not	shown above	l	'		
		x Qty			x Qty			x Qty
		x Qty			x Qty			x Qty
		x Qty			x Qty			x Qty
		x Qty			x Qty			x Qty
		x Qty			x Qty			x Qty
		Total A			Tota I B			Tota I C

8.2 Control Center

Control Center Specifications

Control Center	
Dimensions (H x W x D):	12 cm x 17.7 cm x 2.5 cm (4.7 in. x 7 in. x 1 in.)
Total Number Supported:	4
Recommended Mounting Surface:	Non-metallic surface
Minimum Mounting Distance:	1.2 m (4 ft) between each control center
Current Draw:	110 mA standby; 165 mA alarm
Minimum Wire Length:	3 m (10 ft)
Maximum Wire Length:	Total: 400 m (1312 ft) using 0.8 mm (22 AWG) wire; Single run: 100 m (328 ft) using 0.8 mm (22 AWG) wire
Data Bus Wire Type Options:	1 four-conductor, power-limited 1.2 mm (18 AWG) or 0.8 mm (22 AWG) wire At least 0.6 mm (24 AWG) twisted pair CAT5 wire. UL installations require power-limited wiring.

Control Center	
Audio Bus Wire Type Options:	1 two-conductor or 1 four-conductor, power-limited 1.2 mm (18 AWG) or 0.8 mm (22 AWG) wire. Only two conductors are used. At least 0.6 mm (24 AWG) twisted pair CAT5 wire. UL installations require power-limited wiring. Unless using CAT5 cable, audio bus connections require a dedicated wire.
CAT5 Wire Requirements:	Refer to Install the Control Center, page 26.
Protection Level	IP 30 - IK 04

Control Center Display States

Display	Color	Description
0	Green circle	No alarm or trouble conditions exist. You can turn on the system.
—————————————————————————————————————	Flashing green circle	System trouble exists. You can still turn on the system. Alarm memory active.
V	Flashing amber circle	System trouble exists. You cannot turn on the system. Alarm memory active.
0	Broken green circle	Wired point(s) are faulted. Turn on the system to bypass faulted point(s). Chime point faulted. Chime tone sounds.
	Broken amber circle	Wired point(s) are faulted. You cannot turn on the system.
O	Broken red circle; flashing red icons	Fire or intrusion alarm occurred.
0	Single rotating segment	Alarm memory announcement. Add or change user token. Waiting for information from wireless network.
• •	Green circle and icons	Add or change user passcode. Outside icon appears for first passcode entry. Inside icon appears for second passcode entry.
***	Green or amber	Point walk test. Green single circle segments represent tested points.
* *	Green flashing icons	Control center test. Icons alternately flash.

Table 8.9: System Off Display States

Display	Color	Description
*O	Flashing red icon	Exit Delay in progress. Circle segments turn on, one at a time, to provide a visual status of Exit Delay.
(1)	Red	System is on (occupied or custom protection).

Display	Color	Description
*On	Flashing icon (amber then red)	Entry Delay in progress. Circle segments turn off, one at a time, to provide a visual status of Entry Delay. Amber icon: First half of Entry Delay. Red icon: Second half of Entry Delay.
	Broken red circle; flashing red icons	Fire or intrusion alarm occurred.
	Flashing red circle	Active alarm memory (if system is on). System trouble exists.
(i) a	Single red rotating segment	Alarm memory announcement (if system is on).
①	Broken red circle	At least one point is faulted or bypassed; no trouble exists.

Table 8.10: System On (Occupied or Custom Protection) Display States

Display	Color	Description
*0	Flashing red icon	Exit Delay in progress.
†Oª	Red	System is on (unoccupied).
	Flashing icon	Entry Delay in progress.
-12/-	(amber then red)	Amber icon: First half of Entry Delay.
	•	Red icon: Second half of Entry Delay.
	Broken red circle;	Fire or intrusion alarm occurred.
	flashing red icons	
	Flashing red circle	Active alarm memory (if system is on).
† ()a	Single red rotating segment	Alarm memory announcement (if system is on).
①	Broken red circle	At least one point is faulted or bypassed; no trouble exists.

Table 8.11: System On (Unoccupied) Display States

8.3 **DX2010 Input Expander**



Notice!

If Points 9 to 32 contain wired and wireless points, install all required DX2010 Input Expanders before adding any wireless points to the system.

The DX2010 Input Expander connects directly to the data bus of a compatible control panel. Each expander adds eight input loops.

DX2010 Input Expander		
Operating Voltage:	8 VDC to 14 VDC	
Current Draw:	35 mA standby; 135 mA maximum with connected accessories	
Outputs:	100 mA, 12 VDC supervised output for accessories	
Sensor Loop Terminal Wire Size:	0.8 mm (22 AWG) to 1.8 mm (14 AWG)	
Wire Length:	Control panel to DX2010 (DX2010 auxiliary output not used): - 0.8 mm (22 AWG) = 305 m (1000 ft) - 1.2 mm (1.2 mm) = 610 m (2000 ft) Control panel to DX2010 (DX2010 auxiliary output supplying 100 mA): - 0.8 mm (22 AWG) = 30 m (100 ft) - 1.2 mm (1.2 mm) = 76 m (250 ft)	
Operating Temperature:	0°C to +50°C (+32°F to +122°F)	
Relative Humidity:	5% to 85% at +30°C (+86°F)	
Sensor Loop Resistance:	60 Ω maximum	
Sensor Loop:	Up to eight inputs; input contacts can be normally open (NO) or normally closed (NC) with appropriate EOL resistors for supervision.	

Add a DX2010 Before Adding Wireless Points

The control panel supports up to three DX2010 modules. Each module occupies a group of

The DX2010's DIP switch address determines which group of points the DX2010 occupies:

- Address 102: DX2010 occupies Points 9 to 16
- Address 103: DX2010 occupies Points 17 to 24
- Address 104: DX2010 occupies Points 25 to 32

As each DX2010 module is added to the system, it occupies the next available group of points. For Points 9 to 32, wireless points also occupy points in the same groups of eight as the DX2010 modules:

- If you add two DX2010 modules using Addresses 102 (Points 9 to 16) and 103 (Points 17 to 24), wireless points can only occupy Points 25 to 32.
- If you add three DX2010 modules, wireless points can only occupy Points 1 to 8.
- If you add a DX2010 module using address 102 (Points 9 to 16), wireless points can only occupy Points 17 to 32.

Add a DX2010 after adding wireless points

If you add a DX2010 module after wireless points are added, based on its DIP switch address, the DX2010 replaces the conflicting group of wireless points.

For example, if wireless points occupy Points 9 to 24, and you need Points 17 to 24 as wired points, a DX2010 module with Address 103 replaces the wired points occupying Points 17 to 24.

To prevent this, be sure that the wireless point assignments do not conflict with the point expanders.

B426 Ethernet Communication Module 8.4

The B426 Ethernet Communication Module creates two-way communications over Ethernet networks for compatible control panels.

Environmental considerations

Relative humidity	Up to 93% non-condensing
Temperature (operating)	0° - +49°C (+32° - +120°F)

Properties

|--|

Power requirements

Current (maximum)	100 mA max
Current (standby)	80 mA
Voltage	12 VDC nominal

Connectors

LAN/WAN RJ-45 modular port (Ethernet)	
---------------------------------------	--

Cabling

Ethernet cable	Category 5 or better unshielded twisted pair
Ethernet cable length	100 m (328 ft) max length

Wiring

Data bus wire gauge	18 AWG or 22 AWG
Data bus wire length	Maximum distance – Wire size : 150 m (500 ft) - 0.65 mm (22 AWG) 300 m (1000 ft) - 1.02 mm (18 AWG)

B450 Conettix Plug-in Communicator Interface 8.5

The Conettix Plug-in Communicator Interface creates two-way communications over commercial cellular networks for compatible control panels using a plug-in communicator (available separately).

Electrical

	Standby: B450 with B440/B441/B442/B443 = 60 mA Alarm: B450 with B440/B441/B442/B443 = 180 mA
Voltage (operating)	(B450 bus operation): 12 VDC nominal

Environmental

Relative humidity	Up to 93% at +32°C (+90°F) non-condensing
Operating temperature	0°C to +50°C (+32°F to +122°F)

Mechanical

Board dimensions	79 mm x 128 mm x 38 mm (3.11 in x 5.03 in x 1.50 in)
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Wiring

Data bus wire gauge	12 AWG to 22 AWG
USB cable	USB cable (Type A to A male-to-male) – not supplied
Data bus wire length	Maximum Distance - wire size: 22 AWG (0.65 mm)> 12 m (40 ft) 18 AWG (1.0 mm)> 30 m (100 ft) 16 AWG (1.3 mm)> 48 m (158 ft) 12 AWG (2.0 mm)> 122 m (400 ft) Using a separate power supply, such as the B520 Auxiliary Power Supply Module, connected to the B450 within the specification listed above, the wire distance can be extended up to 300 m (1000 ft)

8.6 **RADION** repeater

The RADION repeater is a wireless repeater device that re-transmits messages received from system detectors, for the purpose of improving the overall communication reliability of the wireless system. This is achieved by providing a secondary communication path for system detectors. Repeaters might be used to extend the range of a detector that must be installed beyond its maximum communication range, but when used in a life safety application (such as in a fire warning system) two repeaters must be used to provide redundant communication paths.

An LED on the front provides device status.

Features include:

- LED Display
- Cover and Wall Tamper protection



Notice!

Use a supported transformer as defined in the specification table for the repeater. Do not connect power supply to a receptacle controlled by a switch.

8.6.1 Installation considerations

Use the provided anchors and screws to mount the repeater in locations accessible for future maintenance. Mount the repeater onto a wall.



Notice!

Mount the repeater in a location removed from metal. Metal objects (duct work, wire mesh screens, boxes) reduce RF range

8.6.2 Wiring considerations



Notice!

Do not install long cable runs next to high-current power feeds. Keep cable lengths as short as possible to minimize noise pickup.

Ensure that the wiring used meets the following specifications:

- Two-conductor unshielded wire.
- The minimal requirement for wire length is 1.83 m (6 ft) from the repeater

8.6.3 **Specifications**



Notice!

The use of a plug-in power transformer must meet country specific requirements.

Dimensions	139.70 mm x 209.60 mm x 31.80 mm (5.50 in x 8.25 in x 1.25 in)
Power/Voltage	16.5 V (~) to 18 V (~), 40 VA
Standby battery (input)	Rated 3.7 VDC, 3050mAH EVE ENERGY CO Part No P0046-LF (Not user replaceable). For standby battery to be operative, the tamper switch is required to be engaged. Power source type: A Low battery level: 3.5 V
Typical current draw	60 mA
Wire gauge	0.65 mm (22 AWG) to 2.0 mm (18 AWG)
Temperature (operating)	Functional range: -10° C to +49° (+14° F to +120° F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Relative humidity	0% to 93% (non-condensing)
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Wall and Cover Tamper Switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.12: Specifications

8.6.4

The repeater utilizes an external LED indicator to status the operation of the repeater. Refer to the table below for LED descriptions.

LED Condition	Pattern Description
On (Normal)	- Indicates the repeater is functioning normally.
Off	- Indicates there is a power failure to the repeater, or that the receiver is not wired correctly.
Continuous Flash: 1 sec rate for 5 sec	 Indicates the repeater is being powered up, and conduction manufacturing test initializations.
Continuous Flash: A 3- pulse signal, followed by a short delay after the 3 rd pulse	Indicates the repeater has experienced a low battery condition.
Continuous Flash: A 2 flash pattern continuous pulse between On and Off states with a short delay after the 2 nd pulse	 Indicates an AC power failure is detected. A communication failure within internal hardware components inside the receiver

Tab. 8.13: LED descriptions

8.7 **RADION** glassbreak

The RADION glassbreak is a wireless transmitter used for detecting breaking glass. Throughout this document, the term "glassbreak" refers to glass break. Features include:

Monitored battery status

Dimension	101.42 mm x 112.90 mm x 35.00 mm (3.99 in x 4.44 in x 1.38 in)
Power/Voltage	Battery/CR123A, 3 VDC (= = =) Power source type: C Low battery level: 2.15V
Battery replacement	Duracell DL123A, Lithium, Panasonic CR123A Lithium, or Sanyo CR123A Lithium. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year.

	Glass types and thickness	Туре	Thickness
		Plate	2.4 mm to 6.4 mm (3/32 in to 1/4 in)
		Tempered	3.2 mm to 6.4 mm (1/8 in to 1/4 in)
		Laminated	3.2 mm to 6.4 mm (1/8 in to 1/4 in)
		Wired	6.4 mm (1/4 in)
	Minimum pane size for all types of glass	1.2 m (4 ft)	
Microphone	Omni-directional 360° electret		
Operating Temperature	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)		
Relative Humidity	0% to 93% (non-condensing)		
Wall and Cover Tamper Switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.		
Frequency	433.42 MHz		

Tab. 8.14: Specifications

8.7.1 Installation considerations

For the best detector performance, select a mounting location that is:

- Mounted on the ceiling within a maximum range of 20 ft (6 m)
- For armor-coated glass installations, mount the sensor no more than 12 ft (3.65 m) from the glass
- Mount the detector in the direct line of sight of the glass to be protected
- On an opposite, or adjoining wall, within a range of 20 ft (6 m) for plate, tempered, laminated, and wired glass
- In a suitable environment: temperature between -18 and 50°C (0 and 120°F); and humidity between 10 and 90% non-condensing

Avoid mounting the detector in:

- Glass airlocks and glass vestibule areas
- Humid rooms
- Small utility rooms
- Rooms with noisy equipment (white noise) such as air compressors, bells, and power
- Rooms smaller than 10 ft x 10 ft (3 m x 3 m)
- Rooms with lined, insulating, or sound supressing drapes
- A corner of a room

Avoid locations that expose the detector to possible false-alarm sources such as:

- Glass airlocks and vestibule areas;
- Kitchens;
- Corner mounting;
- Residential car garages;
- Stairwells

- Bathrooms; and
- Small acoustically live rooms



Notice!

Glassbreak detectors are intended only as a component of a perimeter protection system. Use glassbreak detectors in conjunction with motion detectors.

8.7.2 **Testing**

Test the detector at least once yearly. Use the Sentrol 5709C hand-held tester to enter the sensor into test mode and to test the alarm.

Test the sensor alarm

To test the sensor functionality, enter the detector into test mode. In normal mode, the sensor does not generate an alarm on sound signals from the tester unless the tester is held next to the sensor.

Each time the sensor alarms, it also goes into test mode for one minute.

Initiating test mode with the Sentrol 5709C hand-held tester:

- Set the tester for tempered or laminated glass, unless the protected glass is plate glass. 1.
- Hold the tester on top of the detector. 2.
- Activate the tester. The detector alarms and goes into test mode for one minute. During test mode, the LED blinks continuously. To extend test time, activate the tester within the range of the sensor at least once each minute.

Performing the alarm test with Sentrol 5709C hand-held tester:

Hold the tester near the surface of the glass to be protected and aim the speaker at the sensor. Be sure the tester is at the point on the glass farthest from the detector.



Notice!

If blinds or drapes are present, test the area by holding the hand-held tester behind the closed blinds or drapes.

Press the test button on the tester. The LED on the detector stays on for 4 seconds to indicate the glass is within detection range of the sensor. If the LED does not stay in a solid state momentarily, but continues to blink, adjust the positioning of the detector so that it is closer to the window, and re-test. Check the battery strength of the hand-held testing device before the test.

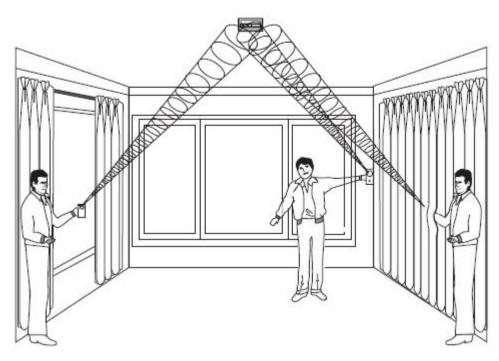


Figure 8.1: Testing behind curtains

The detector switches from test mode to normal mode after at least 1 minute of silence from the hand-held tester.



Notice!

When the detector is in normal mode, the LED is off unless a loud sound is detected.

Room acoustics can artificially extend the range of a glassbreak sensor. The specified sensor range is for worst-case conditions. While the sensor likely functions at a greater range, it might not detect a low volume breaking sound, or room acoustics might change at a later point in time. Do not exceed the rated range of the sensor, regardless of what the tester shows.

Test the sensor operability

When the detector is in normal mode, the LED is off unless a loud sound is detected. Therefore, to ensure the glassbreak has power and that the microphone is functional, perform a simple hand clap test.

To perform a hand clap test, simply clap your hard loudly under the sensor. Verify the LED blinks twice.

8.7.3 Low battery

When a low battery state is detected, the detector measures the battery, and sends a report to the receiver/control panel.

8.7.4 Wall Tamper Tab

Use the wall tamper tab to activate an alarm when the glass break has been removed from the wall.

8.7.5 Maintenance

Clean the cover with a damp (water) cloth as needed to keep it free of dust and dirt. Always test the sensor after cleaning it.

RADION TriTech 8.8

The RADION TriTech is a motion detector which uses artificial intelligence to detect motion and provide immunity to false alarms. An integral RF transmitter reports low battery and tamper status, and sends a supervisory signal to the control panel. Features include:

- 11m x 11m (35 ft by 35 ft) coverage
- Flexible mounting height
- Compatible with Bosch RADION wireless systems
- Draft and Insect immune
- Cover activated tamper indication. Optional wall-activated tamper is included

Dimension	138.00 mm x 72.00 mm x 64.00 mm (5.43 in x 2.83 in x 2.52 in)
Relative humidity	0% to 93%, (non-condensing)
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Internal coverage directionality	Vertical: -4° to -10°
Sensitivity selection	Field selectable for standard or intermediate sensitivity
Power/voltage	Four AA Alkaline batteries, 1.5 VDC (). 1.5 VDC x 4 = 6 VDC total. Power source type: C Low battery level: 3.6V
Battery replacement	Duracell MN1500, Panasonic AM-3PIX. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Wall and cover tamper switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.15: Specifications

8.8.1 Mounting height and range adjustment

Loosen the vertical adjustment screw. Adjust the board to the desired angle. Choose mounting height and desired range, and set the vertical angle. Reference the table below for proper height and adjustment values.

Mounting height	Range	
	6.1 m (20 ft)	10.7 m (35 ft)
2 m (6.5 ft)	-7°	-5°
2.1 m (7.0 ft)	-9°	-6°

2.4 m (8.0 ft)	-10°	-7°

Tab. 8.16: Mounting height



Notice!

The mounting height must be 2 m (6.5 ft) and the vertical angle must be set at -5° for installations containing pets.

The vertical adjusting screw must be securely tightened after setting the angle.

8.8.2 Sensitivity settings

Standard sensitivity

Use this setting when pets are present in the monitored area. Standard sensitivity provides excellent detection performance and is the least sensitive to false alarms.

Intermediate sensitivity

Only use this setting in non-pet installations with minimal environmental disturbances. Intermediate sensitivity provides the highest level of detection performance.

8.8.3 Walk testing



Notice!

To maximize battery life, the LED elements do not activate unless the unit is in the Walk Test mode.

Perform a walk test to determine the boundaries of the coverage area. Perform this test at the time of installation and monthly thereafter. To ensure continual daily operation, instruct the end user to walk through the far end of the coverage pattern. This ensures an alarm output prior to arming the system.

Start Walk Test mode from the detector. Insert a slotted screwdriver to open the detector cover and then close the detector cover to start a 90-sec Walk Test mode.



Notice!

In the normal operating mode, an alarm can be transmitted only after three (3) minutes have passed since the previous alarm restoral. This 3 minute lockout time reduces unnecessary RF transmissions in high traffic areas, thereby extending battery life.

During this test mode, motion detected within the detector's coverage area causes a transmitted alarm and LED activation. Each alarm will also extend the Test Mode. Watch for the green LED to indicate the edges of the Microwave pattern. Adjust as necessary. Please reference the LED table below for LED descriptions.

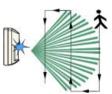
LED Condition	Cause
Steady LED	PIR activation (Walk Test)
Steady green	Microwave activation
Steady blue	Alarm signal
Flashing blue	Warm-up period after power-up

LED Condition	Cause
No LED upon initial power up	PIR failure. Replace unit.

Tab. 8.17: LED description

Walking Testing the system

Start at the pattern's expected boundary and walk across the pattern moving closer to the detector. Set the adjustment as low as possible for proper catch performance.



Adjust the Microwave Range Adjustment Potentiometer to as low a setting as possible for proper catch performance.

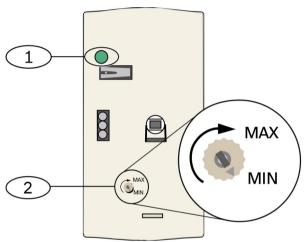


Figure 8.2: Sensitivity settings

Callout - Description

- 1 Alarm LED (blue, green, or red)
- 2 Microwave Range Adjustment Potentiometer
- 3. At each pass, observe the color on the Alarm LED (refer to the Sensitivity settings figure above).
- 4. Walk test from the opposite direction to determine the coverage pattern boundaries from both sides.
- When walk test is completed, the detector returns to normal operation after 90 sec of inactivity.

8.9 **RADION PIR**

The RADION PIR is a high performance PIR motion detector that uses advanced signal processing. An integrated wireless transmitter sends a battery report with each transmission, and transmits a supervisory signal to the control panel. Features include:

- 12 m x 12 m (40 ft x 40 ft) coverage
- Flexible Mounting Height

Dimensions	111.00 mm x 60.00 mm x 43.00 mm (4.40 in x 2.40 in x 1.70 in)
Relative humidity	0% to 93%, non-condensing
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Power/voltage	One CR123A Lithium battery, 3 VDC (====) Power source type: C Low battery level: 2,15V
Battery replacement	Duracell DL123A, Panasonic CR123A, or Sanyo CR123A. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Wall and cover tamper switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.18: Specifications

8.9.1 Walk testing

Perform a walk test to determine the boundaries of the coverage area.

Insert a slotted screwdriver into the designated hole to open the cover and then close the detector cover to start a 90-sec Walk Test mode.

During this test mode, motion detected within the detector's coverage area causes a transmitted alarm and LED activation. Each alarm will also extend the Test Mode. Adjust as necessary.



Notice!

Excessive use of the Walk Test Mode may reduce battery life. Use only for initial setup and maintenance testing.



Notice!

In the normal operating mode, an alarm can be transmitted only after three (3) minutes have passed since the previous alarm restoral. This 3 minute lockout time reduces unnecessary RF transmissions in high traffic areas, thereby extending battery life.

Refer to the LED table below for LED descriptions.

LED condition	Cause
Steady blue	PIR activation (Walk Test)
Flashing blue	Warm-up period after power-up

LED condition	Cause
Flashing blue (four-pulse sequence)	PIR failure. Replace unit.

Tab. 8.19: LED description

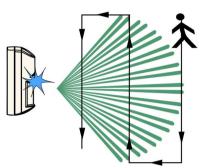


Figure 8.3: Walk test

- Start at the pattern's expected boundary and walk across the pattern moving closer to the detector (refer to the Walk test figure above).
- 2. While the detector is in the Walk Test Mode, turn ON all heating and air conditioning sources which would normally be active during the protection period. Stay away from the sensor and outside the coverage pattern and watch for alarms.
- The LED flashes at the completion of a 90-sec span of time, indicating that the Walk Test mode is ending. This occurs when there is no activity in the sensor's coverage pattern during the 90-sec interval.
- When walk testing is completed, the detector returns to normal operation after 90 seconds of inactivity.

8.10 **RADION PIR C**

The RADION PIR with curtain detecting capability is a high performance curtain PIR motion detector that uses advanced signal processing to provide outstanding catch performance and unsurpassed false alarm immunity. The detector contains an integrated RF transmitter. The transmitter sends a battery report with each transmission, and transmits a supervisory signal to the control panel. Features include:

- 12 m x 1.5 m (40 ft x 5 ft) curtain coverage
- Flexible Mounting Height

Dimensions	111.00 mm x 60.00 mm x 43.00 mm (4.40 in x 2.40 in x 1.70 in)
Relative humidity	0% to 93%, non-condensing
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Power/voltage	One CR123A Lithium batteries, 3 VDC () Power source type: C Low battery level: 2,15V
Battery replacement	Duracell DL123A, Panasonic CR123A, or Sanyo CR123A. Check your battery yearly to ensure proper functionality.

Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Wall and cover tamper switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.20: Specifications

8.10.1 Walk testing

Perform a walk test to determine the boundaries of the coverage area.

Insert a slotted screwdriver into the designated hole to open the cover and then close the detector cover to start a 90-sec Walk Test mode.

During this test mode, motion detected within the detector's coverage area causes a transmitted alarm and LED activation. Each alarm will also extend the Test Mode. Adjust as necessary.



Notice!

Excessive use of the Walk Test Mode may reduce battery life. Use only for initial setup and maintenance testing.



Notice!

In the normal operating mode, an alarm can be transmitted only after three (3) minutes have passed since the previous alarm restoral. This 3 minute lockout time reduces unnecessary RF transmissions in high traffic areas, thereby extending battery life.

Refer to the LED table below for LED descriptions.

LED condition	Cause
Steady blue	PIR activation (Walk Test)
Flashing blue	Warm-up period after power-up
Flashing blue (four-pulse sequence)	PIR failure. Replace unit.

Tab. 8.21: LED description

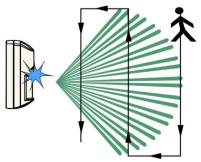


Figure 8.4: Walk test

- Start at the pattern's expected boundary and walk across the pattern moving closer to the detector (refer to the Walk test figure above).
- 2. While the detector is in the Walk Test Mode, turn ON all heating and air conditioning sources which would normally be active during the protection period. Stay away from the sensor and outside the coverage pattern and watch for alarms.
- The LED flashes at the completion of a 90-sec span of time, indicating that the Walk Test mode is ending. This occurs when there is no activity in the sensor's coverage pattern during the 90-sec interval.
- 4. When walk testing is completed, the detector returns to normal operation after 90 seconds of inactivity.

8.11 **RADION** smoke

The RADION smoke is a non-latching wireless smoke detector that sends an alarm signal to the receiver.

The following features include:

- A visual status LED
- A built-in sounder for alarm alerts
- Under normal conditions, the red LED flashes once every 8 sec while the sensor monitors the surrounding environment. When the sensor detects smoke, the LED changes from flashing to steady ON and the sounder produces a loud, continuous tone. Refer to the LED table for more information.

Replaceable optical chamber	For easy maintenance
Power/voltage	Two CR123A Lithium batteries, 3 VDC (====) Power source type: C Low battery level: 2.15V
Current draw	Standby: 45 uA Alarm: 70 mA
Battery replacement	Duracell DL123A, Panasonic CR123A, or Sanyo CR123A. Check your batteries yearly to ensure proper functionality.
Battery life	Minimum of 5 years or greater
Device testing	To ensure proper functionality, the device must be tested at least once every year.
Sensitivity	0.14+/- 0.04 bM/m (0.97 - 2.99%/ft obscuration - RFSM-A only)
Temperature (operating)	Functional range: -10° C to +49° (+14° F to +120° F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Relative humidity	0% to 93% (non-condensing)
Cover and wall tamper switch	Transmits a tamper switch signal when the detector is removed from its base, or the unit is pulled away from the wall.

Drift compensation adjustment	-1.64%/m (0.5%/ft) maximum
Sounder	85 dBA at 3 m
Self-diagnostics feature	Monitors detector sensitivity and operational status.
Frequency	433.42 MHz

Tab. 8.22: Specifications

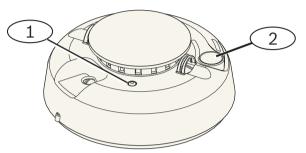


Figure 8.5: Smoke detector

- 1 High intensity LED
- 2 Test/Silence button

8.11.1 Battery replacement

Under normal conditions, the LED normally flashes every 8 sec to indicate normal operating conditions. Replace the battery when the LED stops flashing, and the sensor chirps every 45 sec.

Silence the low battery trouble chirps for 24 hr by pushing the **Test/Silence** button. Refer to the Smoke detector illustration for locating the **Test/Silence** button.

8.11.2 Smoke test

Test smoke detectors annually by using a listed aerosol smoke tester to simulate an alarm. Follow the instructions on the can.

The LED should remain ON while the detector provides a continuous tone. The detector automatically resets when smoke is no longer present. A detector that fails to activate with the smoke test might require cleaning or replacement.



Notice!

To avoid a fire department dispatch, contact central monitoring station, or put the system into Test mode before activating the detector using this method.

8.11.3 Sensitivity test



Notice!

The control panel recognizes Test Mode as a test. It does not send an alarm.

The detector includes a Sensitivity Level Test mode for determining the detector's sensitivity:

- 1. Press and hold the **Test/Silence** button for 4 sec. The LED flashes 1 to 9 times.
- 2. Count the number of LED flashes and use the Smoke detector sensitivity conditions table to determine the status of the detector's sensitivity and the recommended action.

Flashes	Action Recommended
1	Self-diagnostics failure. Return detector for service or replacement.
2 to 3	Detector is becoming insensitive. Clean detector and re-test. If error persists, replace the detector.
4 to 7	Detector is within normal sensitivity settings.
8 to 9	Detector is becoming too sensitive. Confirm that the smoke chamber is snapped down securely. Clean the sensor and retest.

Tab. 8.23: Smoke detector sensitivity conditions

8.11.4 Test/Silence button

Refer to the RADION smoke detector illustration for location of the **Test/Silence** button.

- Testing. Press the Test/Silence button for 4 sec. The detector performs a Sounder test and a Sensitivity test.
- Silence alarm. Press to silence the sounder during an alarm. After a few minutes, the sounder and alarm resume if smoke is still present.

Remote monitoring station alarm test

Press the button for fifteen (or 20) seconds to send a fire alarm signal to the remote monitoring station.



Notice!

To avoid a fire department dispatch, contact the remote monitoring station or put the control panel into the corresponding test mode before performing this test.

8.11.5 **LED**

LED	Status
Flashing	Flashes every 8 sec under normal operation.
ON	Detects smoke, sending an alarm.
OFF	Malfunction, replace the batteries, clean the detector, or replace the optical chamber as required.

Tab. 8.24: LED

8.11.6 Clean the detector and replace the optical chamber

Clean the detector cover with a dry or damp cloth as needed to keep it free from dust and dirt. Clean the detector interior at least yearly.

Cleaning the detector:

- Remove the detector from the mounting base.
- 2. Remove the batteries.
- Slide a slotted screwdriver into the slot on the detector cap and gently push down to pry off the cap.

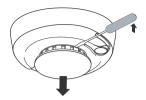


Figure 8.6: Remove the detector cap

4. Squeeze the optical chamber where indicated and pull it up and away from the detector.

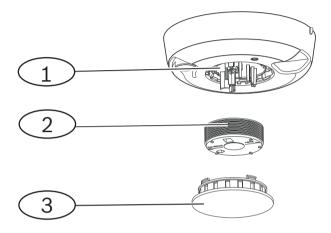


Figure 8.7: Remove the detector cap

- 1 Optical base
 2 Optical chamber
 3 Alarm cap
- 5. Use compressed air or a soft-bristled brush to remove dust and dirt from the smoke chamber base.
- 6. Align the optical chamber with the base and snap down into place.
- 7. To attach the detector cap, line the cap up with the detector, press the cap onto the detector, and turn clockwise to snap it firmly into place.
- Observing the proper polarity, install the batteries and the battery cover. If the batteries
 are not installed properly, the detector will not fit onto the mounting base. Ensure that
 the batteries are properly installed.
- 9. Mount the detector onto the mounting base.
- 10. Test the detector's sensitivity.

8.12 RADION contact SM

The RADION contact SM door/window contact is a standard surface-mount wireless transmitter device used for monitoring doors and windows.

Features include:

- An internal reed switch
- A cover and wall tamper switch

Power/voltage	One AAA Lithium battery, 1.5 VDC (====)
	Power source type: C
	Low battery level: 0.9V

Battery replacement	Energizer L92. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Dimensions (transmitter)	19.50 mm x 82.55 mm x 12.80 mm (0.76 in x 3.25 in x 0.50 in)
Dimensions (magnet)	24.5 mm x 18.5 mm x 12.5 mm (0.97 in x 0.72 in x 0.49 in)
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Relative humidity	0% to 93% (non-condensing)
Wall and Cover Tamper Switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.25: Specifications

8.12.1 Installation considerations

You have a variety of installation options to consider when installing the device. You must acknowledge the unique installation approach prior to installation. Some installation considerations include:

- Suitable surfaces for installation include wood, steel, and aluminum.
- The location of the magnet and transmitter in relationship to the door/window frame dimensions. Verify you have proper clearance with the latch of the window or door you are installing the device onto. Failure to do so will make it extremely difficult to access and open the device for maintenance purposes.
- In some cases, you might need an additional spacer when installing the transmitter and magnet in the corner of a recessed door or window frame to close the gap in height between the magnet and transmitter.
- For additional security, you can use an adhesive with the screws to secure the transmitters and magnets during installation.
- When installing the magnet, verify that the notches in the magnet base, line up with the notches in the transmitter base, otherwise the magnet and transmitter do not function effectively.
- When installing the magnet base, install the face of the magnet base flush to the surface edge of the installation location. This prevents damage to the magnet plastic base whenever a window or door is opened.
- Adhere to the distances prescribed in the graphical table found in the graphical Installation and Operation Guide when installing the magnet adjacent to the transmitter.

How to read the Graphical Magnet Distances table

Contained in the RADION contact SM *Installation Guide* is a graphical table along with the *X* – *Y* – Z coordinates graphic. Use the table in conjunction with the graphic to determine desired distances between the magnet and the transmitter based on the type of installation (wood or metal).



Notice!

The content in the Installation Guide table applies to EN installations.

8.13 RADION contact RM

The RADION contact RM is a recessed-mounted wireless transmitter device used for monitoring doors and windows. Features include:

- Self-contained transmitter with magnetic reed switch
- Tamper protection
- Recessed mounting on doors or windows

Power/voltage	One AAA Lithium battery, 1.5 VDC (====) Power source type: C Low battery level: 0.9V
Battery replacement	Energizer L92. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Dimensions (transmitter)	19.00 mm x 104.80 mm (0.75 in x 4.12 in)
Dimensions (magnet)	22 mm x 28 mm x 15 mm (0.87 in x 1.10 in x 0.59 in)
Relative humidity	0% to 93%, non-condensing
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Frequency	433.42 MHz

Tab. 8.26: Specifications

8.13.1 Installation considerations

You have a variety of installation options to consider when installing the device. You must acknowledge the unique installation approach prior to installation. Some installation considerations include:

- The installation of this device is suitable for wood surfaces. This device is not suitable for steel surfaces.
- The transmitter housing was designed to be open with a coin. Using a screwdriver may cause damage to the plastic top.

- When reinserting the PCB (battery and antenna assembly), verify that the PCB assembly fits into the grooves of the transmitter housing.
- When reinserting the plastic top, verify that the top fits into the designed grooves of the transmitter housing.
- When installing the transmitter in an overhead location, be mindful that the PCB assembly may fall out of the transmitter housing.
- The removal of the plastic flaps is optional, depending on your installation needs.
- For added security, you can use an adhesive with the screws to secure the transmitters and magnets.



Notice!

EN requirements

For further information regarding certified installations, please refer to EN product requirements.

How to read the Graphical Magnet Distances table

Contained in the recessed door/window contact *Installation Guide* is a graphical table along with the X - Y coordinates graphic. Use the table in conjunction with the graphic to determine desired distances between the magnet and the transmitter based on the type of installation.

8.14 RADION specialty

RADION specialty is a designed transmitter (bill trap) specifically used in financial or retail environments. It transmits a silent, wireless alarm signal without local notification (no LED activation) when a bill, or any other form of paper currency is removed from the transmitter typically, the last bill in the bottom of a cash drawer.

Features include:

- Brief illumination of LED to signify armed and operational status
- Wall tamper alarm when removed from the cash drawer.

Dimensions	48.80 mm x 154.10 mm x 23.60 mm (1.92 in x 6.06 in x 0.93 in)
Power/voltage	1.5 VDC, Lithium (====) Power source type: C Low battery level: 0.9V
Battery replacement	Energizer L92. Replace your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year.
Relative humidity	0% to 93%, non-condensing
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Frequency	433.42 MHz

Tab. 8.27: Specifications

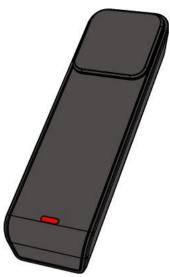


Figure 8.8: Specialty

8.14.1 Applications for this product

Usage of this product is to provide concealed protection against theft in a financial institution such as a bank, or in other commercial environments such as retail businesses and shops. In some cases, the cash drawer is removed from the teller or cashier station, and stored inside a bank vault at the close of each business day. In this scenario, the bank vault system is always armed, and the bill trap remains in a non-faulted condition. It is recommended to use the 3M double sided tape when inserting into the cash drawer.

In other occasions, the bill trap itself may be removed from the cash drawer at the end of a workers shift. In this situation, the bill trap unit will generate a tamper condition upon removal. In this type of application, it is important that the system must be configured such that the tamper does not generate a silent alarm. For this occasion, the hook and loop may be a more suitable mounting technique.

8.14.2 Installation consideration

During the installation process, use the self-adhesive Velcro strips located on the bottom of the bill trap base, to secure and stabilize the bill trap in the cash drawer. This is achieved by performing the following:

- Separate the Velcro strips from one another.
- Peel off the protective backing of the Velcro strips. 2.
- 3. Press the two bottom sections of the Velcro onto the bottom of the cash drawer, in the desired location.
- Line up and press down on the bill trap so that the Velcro on the bottom of the bill trap is aligned with the Velcro strips inside the cash drawer.



It is important to check the Velcro strips on a weekly basis for wear and replace when appropriate in order to prevent potential false alarms.

RADION universal transmitter 8.15

The RFUN-A is a wireless transmitter used for monitoring doors, windows, and other dry contact devices.

Features include:

- A cover and wall tamper switch
- Single input with magnetic contact
- Ability to connect to an external detector

Wire gauge	0.65 mm (22 AWG) to 1.5 mm (16 AWG)
Wiring distance	Maximum distance of 7.62 m (25 ft)
Power/voltage	Lithium battery, 3 VDC (Power source type: C Low battery level: 2.15V)
Battery replacement	One Duracell DL123A, or Panasonic CR123A, or Sanyo CR123A. Check your battery yearly to ensure proper functionality.
Battery life	Up to 5 years
Device testing	To ensure proper functionality, the device must be tested at least once every year by an installer.
Temperature (operating)	Functional range: -10° C to +49° (+14° F to +120° F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)
Relative Humidity	0% to 93% (non-condensing)
Terminal block	For connecting other dry contact devices such as another magnetic reed switch.
Wall and cover tamper switch	Transmits a tamper signal when someone removes the device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.28: Specifications

Dual EOL Resistor Option

Use a 2.2 k Ω EOL and 1.5 k Ω EOL resistor. Refer to the diagram below.

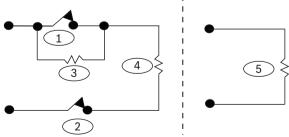


Figure 8.9: Dual EOL resistor option

1 - Normally-closed (NC) alarm

- 2 Normally-closed (NC) tamper
- 3 1.5 k Ω alarm EOL
- $4 2.2 \text{ k} \Omega \text{ tamper EOL}$
- 5 Input disabled no contact, 2.2 k Ω EOL

8.15.1 Installation considerations

You have a variety of installation options to consider when installing the device. You must acknowledge the unique installation approach prior to installation. Some installation considerations include:

- The location of the magnet and transmitter in relationship to the door/window frame dimensions. Verify you have proper clearance with the latch of the window or door you are installing the device onto. Failure to do so will make it extremely difficult to access and open the device for maintenance purposes.
- In some cases, you might need an additional spacer when installing the transmitter and magnet in the corner of a recessed door or window frame to close the gap in height between the magnet and transmitter.
- On surface areas that are not conducive to mounting via the screws, you can secure transmitters and magnets using an industrial strength adhesive.
- When installing the magnet, verify that the notches in the magnet base, line up with the notches in the transmitter base, otherwise the magnet and transmitter do not function effectively.
- When installing the magnet base, install the face of the magnet base flush to the surface edge of the installation location. This prevents damage to the magnet plastic base whenever a window or door is opened.
- Adhere to the distances prescribed in the graphical table found in the graphical Installation and Operation Guide when installing the magnet adjacent to the transmitter.

How to read the Graphical Magnet Distances table

Contained in the universal transmitter Installation and Operation Guide is a graphical table along with the X - Y - Z coordinates graphic. Use the table in conjunction with the graphic to determine desired distances between the magnet and the transmitter based on the type of installation (wood or metal).



Notice!

The content in the graphical table applies to EN installations.

8.15.2 Reed switch settings

Set the detector to enable or disable the reed switch.



Notice!

Please note, insert the jumper onto the pin prior to installing the battery. Failure to do so may result in unexpected operation of the device.

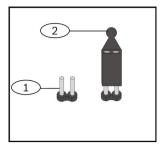


Figure 8.10: Reed switch

Callout - Description

- 1 No jumper disables the internal reed switch
- 2 Jumper on enables the internal reed switch

8.16 **RADION** inertia

The RFIN-A is a vibration detector combined with a wireless transceiver used for monitoring doors or windows. Features include:

- A magnetic contact and external loop
- High and Low sensitivity settings
- Gross and Minor attack settings
- A cover and wall tamper switch

Maximum distance between	<12.7 mm (1/2 in)
detector and magnet	Place the magnet on either side of the detector.
Dimensions (transmitter)	22 mm x 91 mm x 35 mm
	(0.87 in x 3.20 in x 1.38 in)
Dimensions (magnet)	22 mm x 28 mm x 15 mm
	(0.87 in x 1.10 in x .59 in)
Power/voltage	CR123A Lithium battery, 3 VDC ()
Battery replacement	One Duracell DL123A, or Panasonic CR123A, or Sanyo
	CR123A. Check your battery yearly to ensure proper
	functionality.
Device testing	To ensure proper functionality, the device must be
	tested at least once every year.
Temperature (operating)	0° C to +49° C (+32° F to +120° F)
Relative humidity	0% to 93% (non-condensing)
Wall tamper switch	Transmits a tamper signal when someone removes the
	device from its base or pulls it away from the wall.
Frequency	433.42 MHz

Tab. 8.29: Specifications

Dual EOL Resistor Option

Use a 2.2 k- Ω and 1.5 k- Ω EOL resistor. Refer to the following figure.

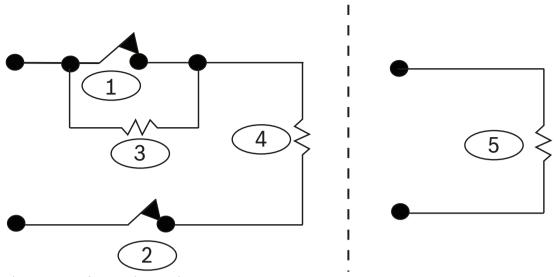


Figure 8.11: Dual EOL resistor options

- 1 Normally-closed (NC) alarm
- 2 Normally-closed (NC) tamper
- 3 1.5 k Ω alarm EOL
- $4 2.2 \text{ k} \Omega \text{ tamper EOL}$



Notice!

To disable the alarm input, insert the EOL resistor directly into the inertia terminal block, minus wiring to external devices.

8.16.1 Installation considerations

You have a variety of installation options to consider when installing the device. You must acknowledge the unique installation approach prior to installation. Some installation considerations include:

- Suitable surfaces for installation include wood, steel, and aluminum.
- The location of the magnet and transmitter in relationship to the door/window frame dimensions. Verify you have proper clearance with the latch of the window or door you are installing the device onto. Failure to do so will make it extremely difficult to access and open the device for maintenance purposes.
- In some cases, you might need an additional spacer when installing the transmitter and magnet in the corner of a recessed door or window frame to close the gap in height between the magnet and transmitter.
- For additional security, you can use an adhesive with the screws to secure the transmitters and magnets during installation.
- When installing the magnet, verify that the notches in the magnet base, line up with the notches in the transmitter base, otherwise the magnet and transmitter do not function effectively.
- When installing the magnet base, install the face of the magnet base flush to the surface edge of the installation location. This prevents damage to the magnet plastic base whenever a window or door is opened.

Adhere to the distances prescribed in the graphical table found in the graphical Installation and Operation Guide when installing the magnet adjacent to the transmitter.

How to read the Graphical Magnet Distances table

Contained in the RADION contact SM Installation Guide is a graphical table along with the X-Y - Z coordinates graphic. Use the table in conjunction with the graphic to determine desired distances between the magnet and the transmitter based on the type of installation (wood or metal).



Notice!

The content in the Installation Guide table applies to EN installations.

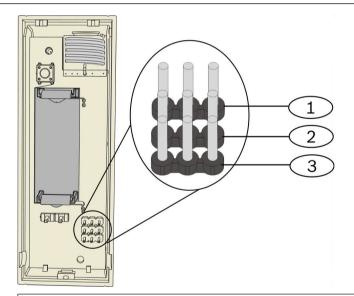
8.16.2 **Jumper switch settings**

You can set the detector to enable or disable various sensitivity settings, depending on the positioning of the jumper. Refer to this section for desired jumper locations. The following illustration shows the jumper switch pins, as well as their description.



Notice!

Insert the jumper onto the pin prior to installing the battery. Failure to do so may result in unexpected operation of the device.



Callout - Description

- 1 Used for Minor Attack programming
- 2 Used for Major Attack programming
- 3 Used for enabling, or disabling the reed switch

Minor Attack setting

The location of the jumper determines how many repetitive taps (single vibrations) detected by the sensor in a minor attack. The Minor Attack setting is either enabled or disabled, depending on the positioning of the jumper. If enabled, there are two sensitivity settings:

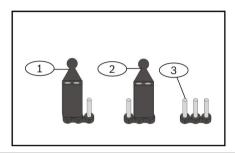
- Low. Requires 8 taps to generate an alarm
- High. Requires 4 taps to generate an alarm

When a tap occurs, a 90-sec timer starts. If the tap exceeds the four or eight count threshold within 90-sec, an alarm is transmitted.



Notice!

A single tap such as a branch in the wind lightly brushing a window can start the minor attack timer and tap count. To avoid false alarms, do not use the Minor Attack setting where stray vibrations might occur.



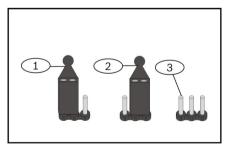
Callout - Description

- 1 Jumper installed in this position activates the Low setting.
- 2 Jumper installed in this position activates the High setting.
- 3 No jumper installed disables the Minor Attack setting.

Major Attack setting

A single, strong vibration detected by the sensor causes a major attack. Select one out of three sensitivity options from the list below:

- Medium
- High
- Low

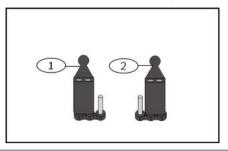


Callout - Description

- 1 Jumper installed in this position activates the Medium setting.
- 2 Jumper installed in this position activates the High setting.
- 3 No jumper installed activates the Low setting.

Reed switch setting

You can set the detector to enable or disable the reed switch, depending on the positioning of the jumper. Use the following procedure for the desired outcome.



Callout - Description

- 1 Jumper installed in this position enables the reed switch.
- 2 Jumper installed in this position disables the reed switch.



Notice.

Failure to install the jumper switch on causes the reed switch to be faulted, resulting in a reed alarm state.

8.17 RADION keyfob

RADION keyfobs (two button and four button) are personal transmitters carried by the user that allow the user to remotely arm or disarm a security area.



Notice!

RADION encrypted keyfobs

Use of the RADION encrypted keyfobs requires use of RADION receivers having the latest firmware version. Refer to the following tables for compatible receiver firmware versions.

Encrypted keyfobs	Non-encrypted keyfobs
RFKF-FBS (P/N: F.01U.313.182)	RFKF-FB (P/N: F.01U.253.609)
RFKF-TBS (P/N: F.01U.313.185)	RFKF-TB (P/N: F.01U.260.847)

Dimensions	63.70 mm x 35.50 mm x 13.00 mm (2.51 in x 1.40 in x 0.51 in)
Power/voltage	One Lithium battery (CR2032) 3 VDC Power source type: C Low battery level: 2.1V
Battery replacement	Panasonic CR2032, Duracell DL2032. Check your Battery yearly to ensure proper functionality
Battery life	Up to 5 years

Temperature (operating)	Functional range: -10°C to +49°C (+14°F to
	+120°F)
	EN 50130-5 Class II only: -10° C to 40° C (+14°
	F to +104° F)
Relative humidity	0% to 93% (non-condensing)
Frequency	433.42 MHz

Tab. 8.30: Specifications



Notice!

Please note, the battery does not come installed. Refer to the specification table for the correct battery type when replacing an old battery.

Keyfob buttons

Refer to your control panel's documentation to program the functions of the programmable buttons.

Pressing either the arm or disarm button causes the LED to flash for about 2 sec., indicating the keyfob sent commands to the control panel.



Notice!

Pressing the Arm and Disarm buttons in unison for 1 sec transmits a panic alarm.

8.17.1 RADION keyfob FB

The RADION keyfob FB four button keyfobs are designed for arming (lock icon) and disarming (unlock icon) the system remotely. You can configure the programmable buttons at the control panel for additional control functionality. To operate the programmable buttons, simply press and hold either button for at least one sec in order for the desired feature to work.

- Uniquely coded arm and disarm buttons
- Panic alarm
- LED indicator
- Programmable option buttons

The RFKF-FBS-CHI keyfob includes synchronized encryption and is compatible only with RADION receivers having firmware v1.3 or higher.

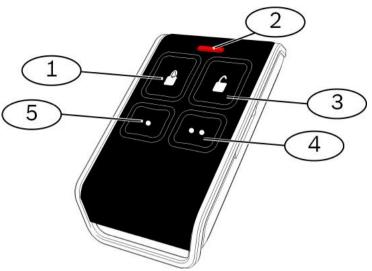


Figure 8.12: Keyfob buttons and LED

- 1 Arm button
- 2 LED
- 3 Disarm button
- 4 Programmable button
- 5 Programmable button

8.17.2 RADION keyfob TB

The RADION keyfob TB two button keyfobs are designed for arming (lock icon) and disarming (unlock icon) the system remotely. To operate these buttons, simply press and hold either button for at least one sec in order for the desired feature to work.

- Uniquely coded arm and disarm buttons
- Panic alarm
- LED indicator

The RFKF-TBS-CHI keyfob includes synchronized encryption and is compatible only with RADION receivers having firmware v1.3 or higher.

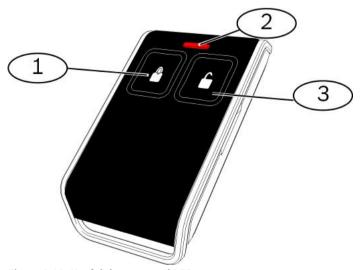


Figure 8.13: Keyfob buttons and LED

1 – Arm button	
2 - LED	
3 - Disarm button	

8.18 RADION panic

The RADION panic is a transmitter that sends a panic alarm signal to the security system when one (single button panic), or both panic buttons (2-button panic) are pressed for 1 sec. The single-button, or two-button panic transmitter can be used in a variety of options such as a pendant, wrist strap, belt clip, depending on the desired accessory.



Notice!

To achieve optimal RF range performance, the RADION panic should be activated while held in the hand, and not mounted to a fixed surface

The RADION panic offers the following features:

- Each transmitter has a unique code
- Panic alarm signal
- One or two button versions
- LED indicator
- Optional accessories

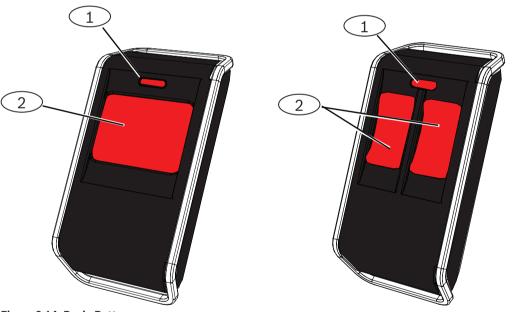


Figure 8.14: Panic Buttons

Callout - Description
1 - Panic buttons
2 - LED

Relative humidity	0% to 93% (non-condensing)
Temperature (operating)	Functional range: -10°C to +49°C (+14°F to +120°F) EN 50130-5 Class II only: -10° C to 40° C (+14° F to +104° F)

Dimensions	63.70 mm x 35.50 mm x 13.00 mm (2.51 in x 1.40 in x 0.51 in)
Power/voltage	One CR2032 Lithium battery, 3 VDC Power source type: C Low battery level: 2.1V
Battery replacement	Panasonic CR2032, Duracell DL2032. Check your Battery yearly to ensure proper functionality
Battery life	Up to 5 years
LED	Red
Frequency	433.42 MHz

Tab. 8.31: Specifications



Notice!

Please note, the battery does not come installed. Verify that the correct battery as defined in the specification table is installed in the proper polarity.

	Optional Accessories
Pendant	Pendant transmitters provide single or two-button activation confirmed by emitting LED flashes with all transmissions to clearly show users when the unit is operating. Users can wear the pendants on a neck cord. The pendants are ideal to meet the needs of patrolling guards, bank employees, and retail store employees.
Belt Clip	Belt Clip transmitters provide single or two-button activation confirmed by emitting LED flashes with all transmissions to clearly show users when the unit is operating. The single-button design is ideal for assisted living installations whereas the two-button design reduces accidental activation.
Wrist Strap	Wrist Strap transmitters provide single or two-button activation confirmed by emitting LED flashes with all transmissions to clearly show users when the unit is operating.

9 Programming Details and Defaults

This section defines the primary function of the major programming items.

This section also lists the programming defaults for the most frequently used country codes.

9.1 Programming Item Programming Details

102. Country Code

Select the appropriate code for country-specific operation.

107. Fire Bell Cut-off Time

Enter how long the fire alarm sounds at bell outputs and at the control center.

108. Intrusion Bell Cut-off Time

Enter how long the intrusion alarm sounds at bell outputs and at the control center.

110. Intrusion Abort Window

Enter how long the control panel waits to send an alarm report after an alarm occurs.

111. Fire Alarm Cancel Window

Enter how long a user has to cancel a fire alarm report after the system sends the report to the central station. If a fire alarm is acknowledged during the cancel window, the system sends a cancel report to the central station. An entry of 0 disables this feature.

112. Intrusion Cancel Window

Enter how long a user has to cancel an intrusion alarm report after the system sends the report to the central station.

115. Chime Mode Operation after System Off

Determines Chime Mode operation after the system is turned off.

116. Automatic Test Report Frequency

Determines how often the control panel sends the automatic test report.

118. RPS Passcode

Enter the 6-digit passcode that allows access to the control panel from RPS.

124. Point Alarm Verification

Determines the level of alarm verification required by point before generating an intrusion alarm condition.

125. Faulted Points Allowed Threshold

Determines the maximum number of faulted points that are disabled while the system is on.

126. Exit Delay

Enter how long the user has to exit the building before the system turns on.

127. Entry Delay

Enter how long the user has to enter the building and turn off the system before an alarm condition occurs.

131. Swinger Bypass Count

Enter the number of alarm reports allowed from a point while the system is on before the point is bypassed.

133. System On Order Options

Determines the order that system-on options are announced to the user.

134. Cross Zone Timer

Enter how long the system waits for at least two Cross Zone points to be faulted before the control panel sends a Verified Alarm report to the central station.

140. Demo Mode

Demo Mode controls how telephone messages are announced by the system: either only over the telephone, or over the telephone and through all idle control centers (control centers that are not currently engaged in a command). Set Demo Mode to **2** (Demo Mode Auto On/Off). Enter the telephone menu.

On an idle control center, press the [i] button to either turn on or off the announcement of telephone messages through all idle control centers. When you exit the telephone menu and end the phone session, the system turns Demo Mode off.

142. Restrict Installer Passcode

If set to 0, the Master User must enable the Installer passcode before a person logged in with the Installer passcode can perform any tasks through the phone menu or RPS; enabling the Installer passcode grants it Level 3 access. The Installer passcode remains at Level 3 until an exit delay.

If set to 0, and the Installer is granted access while the control panel is armed, the programming items are limited.

To enable the Installer Passcode:

- 1. From the control center, the Master User enables enters the passcode. When the validation for the Master User passcode expires, the Installer passcode is enabled.
- 2. Using a token, the Master User presents the token several times until the control center speaks "Turning your system off". If the Master User token is presented again, the Installer passcode is disabled.
- 3. From the phone interface, the Master User enters the passcode, then presses [3] for System Maintenance, [3] for System Test menu, and then [6] to enable the Installer's passcode.

145. Test Report Day of Week

Select the day that the control panel sends the test report.

146. Test Report Day of Month

Enter the day of the month that the control panel sends the test report.

148. Arming Beeps/Graduated Annunciation

Select whether the Intrusion and Intrusion and Fire Output Function types beep when the key fob is used to arm or disarm the control panel.

150. Wireless Jam Detect Level

Configure the jam detect level of the wireless devices.

163. Silence Trouble Tones

Silence annunciation of trouble tones.

164. System Inactivity Time (Hours)

Enter the number of hours that the system must be turned off before it sends the System Inactive report.

165. System Inactivity Time (Days)

Enter the number of days that the system must be turned off before it sends the System Inactive report.

166. System Inactivity Time (Weeks)

Enter the number of weeks that the system must be turned off before it sends the System Inactive report.

168. Audio Verification Command Set

Select the command set that the control panel uses for internal alarm verification. Press the [*] key on the phone to enable the microphone on the control centers. This allows the central station operator to hear noise on the premises. This option only effects the button presses on the phone while an audio verify session is active between the control panel and the central station operator.

224. RPS Automatic Call In Time (Hours)

202. PSTN, IP or Cellular Connection

Select the type of connection the system will use to send reports to the central station.

203. Voice Format Repeat Count

Enter the number of times the system repeats a voice report during the phone call.

204. Voice Format Message Delivery Attempts

Enter how many times the system attempts to deliver a voice format message.

217. Emergency Call Override Number Delay

Enter the amount of time the system waits before sending reports if an emergency number is dialed.

222. Phone Answer Ring Count

Enter the number of rings before the system answers an incoming call.

223. Bell Test

This programming item applies to all Intrusion output functions and to all arming modes.

0 = No closing ring-back or bell test; 1 = Enabled

If closing reports are disabled, the outputs turn on for 1 sec at the end of Exit Delay.

If closing reports are enabled, the outputs turn on for 1 sec when the control panel receives a closing report acknowledgement from the central station.

Select the hour when the control panel calls RPS.

225. RPS Automatic Call in Time (Minutes)

Select the minute when the control panel calls RPS.

227. RPS Automatic Call in Time (Day of Week)

Select the day of the week when the control panel calls RPS.

228. RPS Automatic Call in Time (Day of Month)

Select the day of the month when the control panel calls RPS.

229. RPS Automatic Call in Phone Number

Enter the phone number that the control panel uses to call RPS.

245. RPS Automatic Call in Method

Select whether the control panel uses a phone number or an IP address to call RPS.

246. RPS Port Number

Enter the port number for contacting RPS when the automatic call in occurs over a network connection.

305. Route Attempts

Enter the number of times the system attempts each destination in the selected route if the first attempt fails.

601. Key Fob Duress

Select whether or not a wireless key fob sends a Duress event when the Arm and Disarm buttons are pressed and held together.

611. Output 1 Type

- Disabled: Output is disabled.
- Intrusion: Output turns on when intrusion alarm occurs. To turn off output, turn off system, or wait until end of intrusion bell cut-off time.
- Fire: Output turns on when a fire alarm occurs. To turn off output, turn off system if it is already on, or wait until end of fire bell cut-off time.
- **Fire Latching:** Output turns on when a fire alarm occurs. To turn off output, turn off system if it is already on, or acknowledge alarm if system is off.
- Intrusion and Fire: Output turns on when an intrusion or fire alarm occurs. To turn off
 output, turn off system, or wait until end of bell cut-off time. Fire alarms take priority over
 intrusion alarms.
- Intrusion and Fire Latching: Output turns on when an intrusion or fire alarm occurs. To turn off output, turn off system if it is already on, or acknowledge alarm if system is off.
 Fire alarms take priority over intrusion alarms.

- System Reset: Output is normally on. Output turns off for approximately 10 sec when system is reset. Use this function to supply power to devices such as four-wire smoke detectors that require power interruption to reset a latching alarm condition
- System On: Output turns on when the system is turned on, and remains on until system is turned off.
- System Ready: Output turns on when the system is ready to turn on (no faulted points or system troubles exist).
- Key Fob On/Off: Output turns on or off when the user presses the key fob's arm (lock) or disarm (unlock) button.
- User Controlled: Output turns on or off when a user or the installer uses the Operate
 Outputs option from the phone menus.
- Interior Intrusion and Fire: Output turns on when an interior intrusion or fire alarm occurs. To turn off output, turn off system, or wait until end of bell cut-off time. Fire alarms take priority over intrusion alarms.
- System On (Unoccupied): Output turns on when the system is turned On (Unoccupied) and there are no bypassed or force-armed points.
- Intrusion and Fire:
 - Output turns on when any alarm (Intrusion or Fire) occurs. To turn off the output, turn off the system, or wait until the end of the bell cut-off time.
 - When a fire alarm occurs, this output function provides only a steady output (no Temporal Code 3 or Pulsed cadence).
 - Fire alarms take priority over Intrusion alarms.

880. Alarm Message Minimum Repeat Time

Enter how long the control center waits between alarm message announcements before repeating the message even if the control center's proximity sensor detects motion.

9xx1. Point Types

- Disabled: Point is disabled.
- Perimeter (Entry or Exit): If faulted and the system is on, Entry Delay starts. An alarm occurs if the system is not turned off when Entry Delay ends.
- Interior (Follower): If the system is on occupied, it ignores these points. If the system is
 on unoccupied, a faulted interior point starts an alarm. These points are ignored during
 Exit and Entry Delay times.
- **Perimeter Instant :** If faulted when the system is on, a local alarm occurs
- 24-Hour: If faulted, an alarm always occurs. To restore a 24-hour point, turn the system off if it is on, or acknowledge the alarm if the system is off.
- Fire Verified: If faulted, fire verification occurs. If a second fire event occurs during the
 two minute wait period, a fire alarm occurs. If no second fire event occurs, the system
 returns to normal.
- Fire Instant: If faulted, a fire alarm always occurs.
- Silent Panic: If faulted, an alarm always occurs. There is no visual or audio indication of the alarm.
- Interior Walkthrough: If faulted and the system is on custom protection, Entry Delay starts. If the system is on occupied or unoccupied, this point functions as an interior point.
- Perimeter Exit Cancel: If faulted and restored during Exit Delay, Exit Delay stops and the system immediately turns on.
- Momentary Keyswitch: Turn the system on or off using a momentary keyswitch.
- Maintained Keyswitch: Turn the system on or off using a maintained keyswitch.

24-Hour Trouble: If faulted, a trouble condition always occurs. To restore a 24-hour trouble point, turn they system off if it is on, or acknowledge the alarm if the system is off.

User Emergency, 24-hour supervisory point type:

- If the point's circuit style = **0**, an open or shorted circuit creates a tamper condition. An off-normal circuit creates an alarm condition.
- If the point's circuit style = 1, an open or shorted circuit creates an alarm condition.
- Refer to Circuit Style on page 68 for more information.
- If User Emergency is assigned to a wireless detector, any off-normal alarm condition creates an alarm condition.
- To restore a user emergency point, turn the system off if it is on, or acknowledge the alarm if the system is off.

9xx6. Alarm Verification

Select whether or not the central station can verify the alarm when it receives an alarm report from the point and the report is acknowledged.

9.2 **Country Codes**

The country code sets the control panel to the appropriate country-specific defaults for your installation.

Country	Code	Country	Code
Argentina	01	Israel	63
Australia	02	Italy	25
Austria	03	Japan	26
Belarus	62	Lithuania	29
Belgium	04	Luxembourg	20
Bosnia	65	Malaysia	32
Brazil	05	Mexico	34
Bulgaria	06	Netherlands	35
Canada	07	New Zealand	36
China	08	Norway	38
Croatia	10	Poland	41
Czech Republic	12	Portugal	42
Denmark	13	Romania	43
Egypt	14	Russian Federation	44
Finland	16	Spain	51
France	17	Sweden	52
Germany	18	Taiwan	54
Greece	19	Thailand	55
Hong Kong	20	Turkey	56
Hungary	21	Ukraine	62

Country	Code	Country	Code
India	22	United Arab Emirates	65
Indonesia	23	United Kingdom	57
Ireland	24	United States	58

9.3 Country Code Specific Default Programming Codes

Prog						Co	untry C	odes						
Item	3	4	6	10	12	13	14	16	17	18	19	21	24	25
107	5	3	5	5	1	3	5	5	3	5	7	5	15	3
108	5	3	5	5	1	3	5	5	3	5	7	5	15	3
125	0	3	3	3	3	0	3	3	3	0	3	3	0	3
126	60	60	60	60	30	45	60	30	45	60	60	60	45	30
127	30	30	30	30	30	45	30	25	30	30	30	30	45	20
133	1	1	1	1	1	3	1	3	3	1	1	3	3	1
136	0	1	0	0	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	1	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204	3	3	1	1	3	3	1	2	3	3	5	3	3	5
211	0	0	0	0	0	0	0	0	0	0	0	0	5	3
212	0	0	0	0	0	0	0	0	0	0	0	0	5	3
213	0	0	0	0	0	0	0	0	0	0	0	0	5	3
214	0	0	0	0	0	0	0	0	0	0	0	0	4	3
216	110	112	000	112	112	112	000	112	112	110	000	112	999	113
306	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9011	6	1	6	6	1	6	6	6	1	6	6	6	1	1
9021	1	3	1	1	2	1	1	1	2	1	1	1	8	3
9031	1	3	1	1	2	3	1	2	2	1	3	1	3	3
9041	1	3	1	1	2	3	1	2	2	1	3	1	3	3
9051	1	3	1	1	2	3	1	3	3	1	2	1	3	2
9061	2	3	2	2	2	2	2	3	3	2	2	2	3	2
9071	2	3	2	2	2	2	2	4	3	2	2	2	2	2
9081	2	3	2	2	2	2	2	3	4	2	4	2	2	4
9012	2	0	2	2	2	2	2	2	0	2	2	2	0	0
9022	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9032	2	0	2	2	2	0	2	2	0	2	2	2	0	0

Prog						Co	untry C	odes						
Item	3	4	6	10	12	13	14	16	17	18	19	21	24	25
9042	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9052	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9062	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9072	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9082	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9092	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9102	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9112	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9122	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9132	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9142	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9152	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9162	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9172	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9182	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9192	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9202	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9212	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9222	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9223	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9242	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9252	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9262	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9272	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9282	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9292	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9302	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9612	2	0	2	2	2	0	2	2	0	2	2	2	0	0
9322	2	0	2	2	2	0	2	2	0	2	2	2	0	0
814	0	1	0	0	1	1	0	0	1	0	0	0	2	0
824	0	1	0	0	1	1	0	0	1	0	1	0	2	2
834	0	1	0	0	1	1	0	0	1	0	1	0	2	2

Prog						Со	untry C	odes						
Item	3	4	6	10	12	13	14	16	17	18	19	21	24	25
844	0	1	0	0	1	1	0	0	1	0	1	0	2	2
861	4	6	4	4	4	4	4	6	6	4	4	6	4	4
611	5	5	5	5	5	5	5	5	14	5	5	5	5	5
621	5	5	5	5	5	5	5	5	5	5	5	5	5	6
631	5	6	7	7	7	7	7	7	6	5	7	7	1	8
641	5	7	5	5	5	6	5	5	7	5	5	5	9	5
642	0		0	0	1	1	0	0	1	0	0	0	0	1
121	2	2	2	2	2	2	8	2	2	2	2	2	2	2
600	0	1	1	1	1	1	1	1	1	0	1	1	1	1
115	0	2	2	0	2	2	0	0	2	0	0	0	0	2
116	0	0	0	0	0	0	0	0	0	0	0	1	0	0
128	1	1	0	1	1	1	1	1	1	1	1	1	1	1
132	0	0	1	1	1	0	1	0	0	0	1	1	1	0
147	0	0	0	0	0	0	0	0	0	0	0	0	1	0
153	1	1	1	1	1	0	1	1	1	1	1	1	0	1
159	0	1	1	1	1	1	1	1	1	0	1	1	1	0
160	1	1	1	1	1	1	0	1	1	1	1	1	1	1
344	3	3	3	3	3	3	3	3	3	3	3	3	3	3
403	3	3	3	3	3	3	3	3	3	3	3	3	3	3
9015	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9025	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9035	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9045	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9055	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9065	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9075	6	6	6	6	6	6	6	5	4	6	6	6	6	6
9085	6	6	6	6	6	6	6	5	4	6	6	6	6	6
163	1	0	1	1	1	1	1	1	1	1	1	1	1	1
168	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Prog						Cou	ntry Co	des					
Item	29	30	35	38	41	42	43	44	51	52	53	56	57
107	5	3	3	5	5	2	5	5	2	5	5	5	15
108	5	3	3	5	5	2	3	5	2	5	5	5	15
125	3	3	3	3	3	8	3	3	3	3	0	3	0
126	60	60	60	60	60	30	30	60	30	60	60	60	45
127	30	30	20	30	30	30	15	45	20	30	30	30	45
133	1	1	3	3	1	3	1	3	3	3	1	1	4
136	0	0	0	0	0	0	1	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0
204	1	3	3	3	1	2	1	1	3	3	3	1	3
211	0	0	0	0	0	3	0	1	1	0	0	0	5
212	0	0	0	0	0	0	0	1	1	0	0	0	5
213	0	0	0	0	0	0	0	0	0	0	0	0	5
214	0	0	0	0	0	0	0	0	0	0	0	0	5
216	000	112	000	112	000	112	000	000	000	112	110	000	000
306	0	0	0	0	0	0	0	1	0	0	0	0	0
9011	6	1	6	6	6	6	6	6	6	6	6	6	1
9021	1	3	1	1	1	1	1	1	1	1	1	1	8
9031	1	3	1	2	1	2	1	2	2	2	1	1	3
9041	1	3	1	2	1	2	1	2	2	2	1	1	3
9051	1	3	1	2	1	2	1	2	2	2	1	1	3
9061	2	3	2	2	2	2	2	2	2	2	2	2	3
9071	2	3	2	2	2	2	2	2	2	2	2	2	2
9081	2	3	2	2	2	2	2	2	2	2	2	2	2
9012	2	0	2	2	2	2	2	2	0	2	2	2	0
9022	2	0	0	0	2	2	2	2	0	0	2	2	0
9032	2	0	0	0	2	2	2	2	0	0	2	2	0
9042	2	0	0	0	2	2	2	2	0	0	2	2	0
9052	2	0	0	0	2	2	2	2	0	0	2	2	0
9062	2	0	0	0	2	2	2	2	0	0	2	2	0
9072	2	0	0	0	2	2	2	2	0	0	2	2	0
9082	2	0	0	0	2	2	2	2	0	0	2	2	0

Prog						Cou	ntry Co	des					
Item	29	30	35	38	41	42	43	44	51	52	53	56	57
9092	2	0	0	0	2	0	2	2	0	0	2	2	0
9102	2	0	0	0	2	0	2	2	0	0	2	2	0
9112	2	0	0	0	2	0	2	2	0	0	2	2	0
9122	2	0	0	0	2	0	2	2	0	0	2	2	0
9132	2	0	0	0	2	0	2	2	0	0	2	2	0
9142	2	0	0	0	2	0	2	2	0	0	2	2	0
9152	2	0	0	0	2	0	2	2	0	0	2	2	0
9162	2	0	0	0	2	0	2	2	0	0	2	2	0
9172	2	0	0	0	2	0	2	2	0	0	2	2	0
9182	2	0	0	0	2	0	2	2	0	0	2	2	0
9192	2	0	0	0	2	0	2	2	0	0	2	2	0
9202	2	0	0	0	2	0	2	2	0	0	2	2	0
9212	2	0	0	0	2	0	2	2	0	0	2	2	0
9222	2	0	0	0	2	0	2	2	0	0	2	2	0
9223	2	0	0	0	2	0	2	2	0	0	2	2	0
9232	2	0	0	0	2	0	2	2	0	0	2	2	0
9242	2	0	0	0	2	0	2	2	0	0	2	2	0
9252	2	0	0	0	2	0	2	2	0	0	2	2	0
9262	2	0	0	0	2	0	2	2	0	0	2	2	0
9272	2	0	0	0	2	0	2	2	0	0	2	2	0
9282	2	0	0	0	2	0	2	2	0	0	2	2	0
9292	2	0	0	0	2	0	2	2	0	0	2	2	0
9302	2	0	0	0	2	0	2	2	0	0	2	2	0
9312	2	0	0	0	2	0	2	2	0	0	2	2	0
9322	2	0	0	0	2	0	2	2	0	0	2	2	0
814	0	1	0	0	0	1	0	0	0	0	0	0	2
824	0	1	0	0	0	1	0	0	0	0	0	0	2
834	0	1	0	0	0	1	0	0	0	0	0	0	2
844	0	1	0	0	0	1	0	0	0	0	0	0	2
861	4	6	4	4	4	4	4	4	4	4	4	4	4
611	5	5	5	5	5	5	5	1	5	5	5	5	5
621	5	5	5	5	5	5	5	3	5	5	5	5	5

Prog						Cou	ntry Co	des					
Item	29	30	35	38	41	42	43	44	51	52	53	56	57
631	7	6	5	7	7	7	7	7	7	7	5	7	1
641	5	7	5	6	5	8	5	5	5	6	5	5	5
642	0	1	1	1	0	1	0	1	1	1	0	0	0
121	2	2	2	2	2	2	2	2	2	2	2	2	2
600	1	1	1	1	1	1	1	1	1	1	0	1	1
115	0	2	0	0	0	0	0	2	0	0	0	0	0
116	0	0	0	0	0	0	1	1	1	0	0	0	0
128	1	1	1	1	1	1	1	1	1	1	1	1	1
132	1	0	0	0	1	1	1	0	0	0	0	1	0
147	0	0	0	0	0	0	0	0	0	0	0	0	1
153	1	1	0	0	1	1	1	0	1	1	1	1	0
159	1	1	1	1	1	1	1	0	1	1	0	1	1
160	1	1	1	1	1	1	1	1	1	1	1	1	1
344	3	3	3	3	3	3	3	1	3	3	3	3	0
403	3	3	3	3	3	3	3	1	3	3	3	3	3
9015	6	6	6	6	6	6	6	6	6	6	6	6	6
9025	6	6	6	6	6	6	6	6	6	6	6	6	6
9035	6	6	6	6	6	6	6	6	6	6	6	6	6
9045	6	6	6	6	6	6	6	6	6	6	6	6	6
9055	6	6	6	6	6	6	6	6	6	6	6	6	6
9065	6	6	6	6	6	6	6	6	6	6	6	6	6
9075	6	6	6	6	6	6	6	6	6	6	6	6	6
9085	6	6	6	6	6	6	6	6	6	6	6	6	6
163	1	1	1	1	1	1	1	1	1	1	1	1	1
168	0	0	0	0	0	0	0	0	0	0	0	0	0



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