

1100A+ Wireless Receiver

Description

The 1100A+ Wireless Receiver provides two-way, supervised communication using 900 MHz frequency hopping-spread-spectrum technology. The receiver provides additional transmit and receive amplification for improved performance at greater distances or harsh building environments. The receiver supports up to 500 wireless zones. Refer to the panel installation guide for number of available wireless zones. The system is designed so only one 1100A+ receiver is used per panel.

Compatibility

XT30/XT50 Series panels

XR100/XR500 Series panels

XR150/XR350/XR550 Series panels

What is Included

The receiver includes the following items:

- One Model 1100A+ Wireless Receiver
- Hardware pack

Installing the Wireless Receiver

Selecting a Location

Choose an optimum location to mount the receiver. A location should be selected that is centrally located between the 1100 Series transmitters used in the installation. Install the receiver away from large metal objects and at least 1 foot away from the panel enclosure. Mounting the receiver on or near metal surfaces impairs performance. Do not use shielded wire between the panel and receiver. When selecting the proper mounting location of a transmitter, refer to the LED Survey Operation section.

The 1100A+ Wireless Receiver contains additional transmit and receive amplifiers to enable greater distances for 1100 Series operation. The additional gain introduced by this amplification may inhibit proper communication with 1100 Series transmitters located within 4 feet of the receiver. This distance may be 8 feet when using the 1121 or 1125 PIR, 1160 Series Smoke Detectors or 9000 Series Keypad.

Tamper Switches

The 1100A+ Wireless Receiver is equipped with a case tamper and a wall tamper. A three position Wall Tamper header (J6) is provided to disable the wall tamper. To disable the wall tamper, place the jumper across pins one (DISABLE) and two of the header. If wall tamper is required, place the jumper over pins two and three (ENABLE) of the header. See Figure 1 and Figure 2.

Mounting the Receiver

1. Insert a small screwdriver and release the cover latches while lifting to remove the cover.
2. Using the four mounting holes shown in Figure 1, secure the base to the wall with the provided #6 screws, ensuring that the wall tamper switch makes proper contact with the wall.

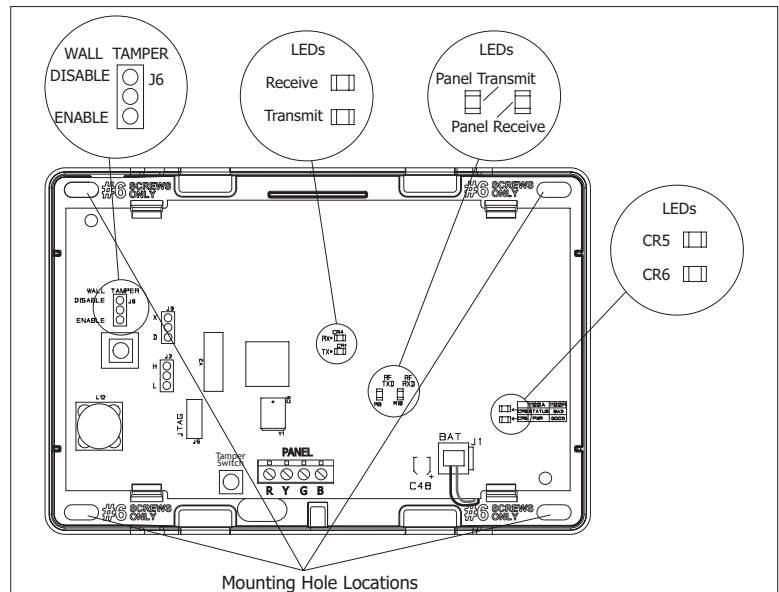


Figure 1: Receiver PCB

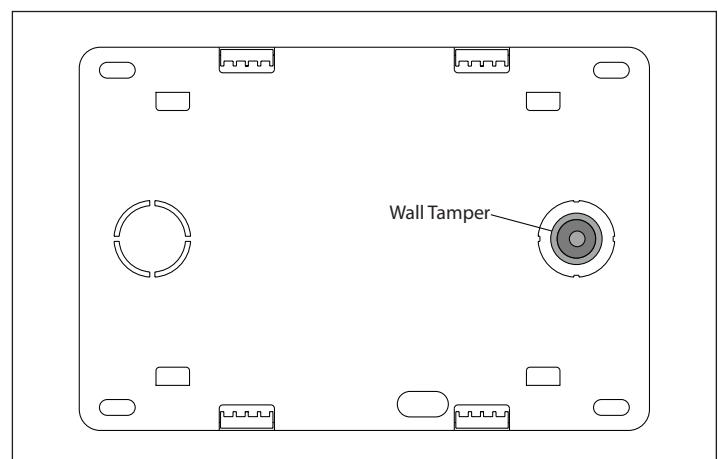


Figure 2: Wall Tamper location

1100A+ Jumper Configuration

The 1100A+ receiver can easily be configured to operate as a standard or high-power receiver to satisfy all wireless applications. The high-power configuration provides additional transmit and receive amplification for improved performance at greater distances or harsh building environments. See Figure 3 for jumper configuration details.

XT Series panels

Standard transmit and receive:

On header pins (J3) install the jumper across the letter "D" and the center pin.

On header pins (J2) next to the letter "L" and the center pin.

High-power transmit and receive:

On header pins (J3) install the jumper across the letter "D" and the center pin.

On header pins (J2) next to the letter "H" and the center pin.

XR Series panels

Standard transmit and receive:

On header pins (J3) install the jumper across the letter "X" and the center pin.

On header pins (J2) next to the letter "L" and the center pin.

High-power transmit and receive:

On header pins (J3) install the jumper across the letter "X" and the center pin.

On header pins (J2) next to the letter "H" and the center pin.

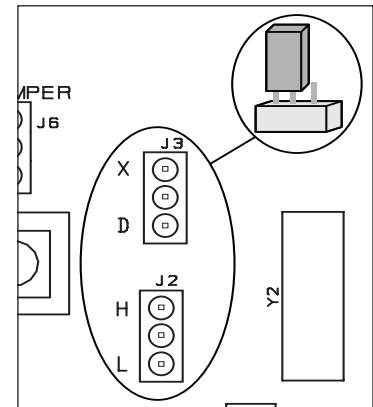


Figure 3: J2 and J3 Jumpers

Wireless Bus Connection

XT Series panels

The 1100A+ Wireless Receiver easily interfaces with the XT30/XT50 Series panels using the keypad bus. The receiver can be hard-wire mounted up to 100 feet from the panel enclosure using 22 AWG wire or 250 feet using 18 AWG wire. This wire run must be a home run to the panel separate from wire runs to other devices on the Keypad Bus. This wiring restriction is due to the higher current draw needed for the high power RF amplification.

If additional wire distance is required, the 1100A+ can be connected anywhere along the Keypad Bus through a 710 Bus Splitter/Repeater module and powered by a 12 VDC power supply (DMP Model 505-12) to separate the receiver power requirements from other devices on the Keypad Bus. Refer to the 710 Installation guide (LT-0310).

Harness Connection XT Series panels.

Refer to Figure 4, and use the following steps to connect the panel and receiver:

1. Connect the panel keypad bus terminals 7, 8, 9, and 10 to the 1100A+ J4 terminal block. Observe wire colors when connecting to the terminals.
2. Snap the front cover on the unit after observing LED operation. Make sure the case tamper spring is installed on the tamper switch. The panel immediately recognizes the 1100A+ Receiver if the panel is programmed with a house code.
3. If no house code is programmed, go to System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

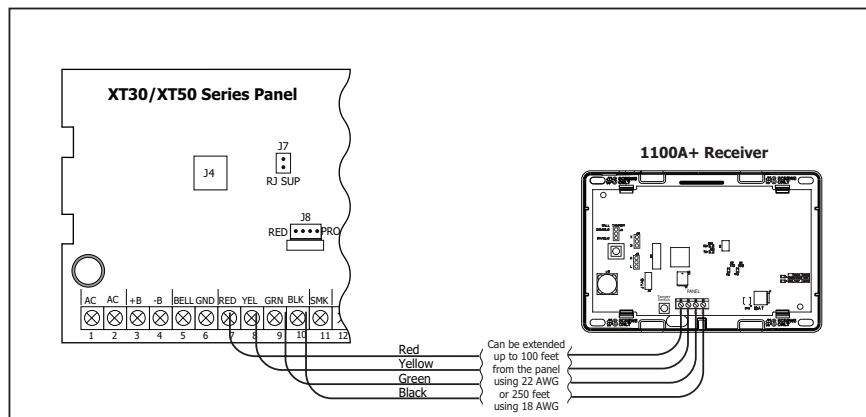


Figure 4: XT30/XT50 Series DMP Wireless Bus Connection

XR Series panels

The 1100A+ easily interfaces with the XR100/XR500 Series panels using the on-board LX-Bus connection (J22). On XR150/XR350/XR550 Series panels, the 1100A+ interfaces using the on-board X-Bus connection (J13). The receiver can be hard-wire mounted up to 100 feet from the panel enclosure using 22 AWG wire or 250 feet using 18 AWG wire. This wire restriction is due to the higher current draw needed for the high power RF amplification.

If additional wire distance is required, the 1100A+ can be connected to the Wireless Bus through a 710 Bus Splitter/Repeater module and powered by a 12 VDC power supply (DMP Model 505-12). Please see the 710 Installation guide (LT-0320) for maximum distance information from the panel to the 710 module.

Note: The 1100A+ Wireless Receiver will not operate with XR100/XR500 Series or XR150/XR350/XR550 Series panels if connected to the keypad bus.

Harness Connection XR100/XR500 Series panels

Refer to Figure 5, and use the following steps to connect the panel and receiver:

1. Install a jumper across the header pins next to the letter "X" on the XR100/XR500 Series panel connection (J23) to enable on-board DMP Wireless operation.
2. Connect the XR100/XR500 Series panel LX connection (J22) to the 1100A+ using the J4 terminal block. Observe wire colors when connecting to the terminals.
3. After power-up, briefly reset the panel using the Reset jumper (J16) to activate wireless zone operation.
4. Snap the front cover on the unit after observing LED operation. Make sure the case tamper spring is installed on the tamper switch. The panel immediately recognizes the 1100A+ Receiver if the panel is programmed with a house code.
5. If no house code is programmed, go to System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

Note: Once J23 is set to "X" the J22 header is for the 1100A+ receiver only and any hardwired LX modules must be connected to an expansion card on the J6 header.

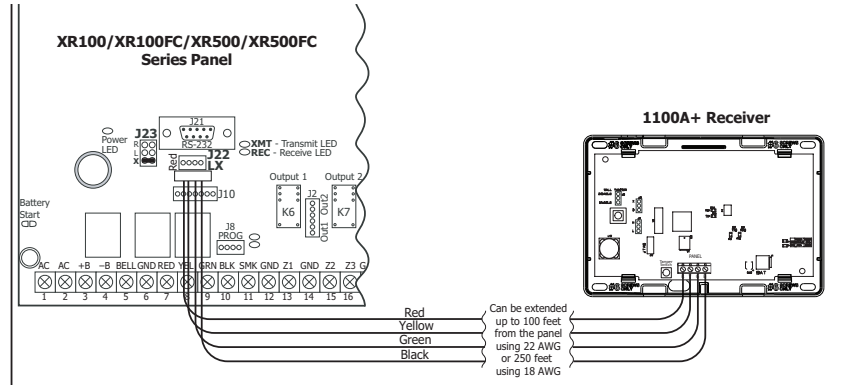


Figure 5: XR100/XR500 Series DMP Wireless Bus Connection

Harness Connection XR150/XR350/XR550 panels

Refer to Figure 6, and use the following steps to connect the panel and receiver:

1. Connect the XR150/XR350/XR550 Series panel XBUS connection (J13) to the 1100A+ using the J4 terminal block. Observe wire colors when connecting to the terminals.
2. After power-up, briefly reset the panel using the Reset jumper (J16) to activate wireless zone operation.
3. Snap the front cover on the unit after observing LED operation. Make sure the case tamper spring is installed on the tamper switch. The panel immediately recognizes the 1100A+ Receiver if the panel is programmed with a house code.
4. If no house code is programmed, go to System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

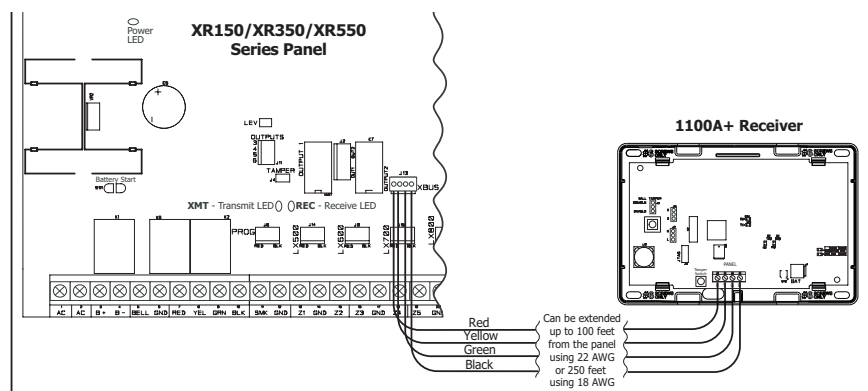


Figure 6: XR150/XR350/XR550 Series DMP Wireless Bus Connection

1100A+ Receiver Operation

The 1100A+ receiver automatically sends the panel house code to wireless transmitters when the unique transmitter serial number is programmed into the panel. The house code identifies the panel, receiver, and transmitters to each other. The receiver only listens for transmissions using the specified house code and/or programmed transmitter serial number.

Note: When setting up a wireless system, it is recommended to program zones and connect the receiver before installing batteries in the transmitters.

Transmitters can be programmed for supervised operation. When programmed as supervised, the transmitter must communicate with the receiver within the programmed number of minutes. If the transmitter fails to communicate, the panel generates a missing condition.

Note: When a receiver is installed, powered up, or the panel is reset, the supervision time for transmitters is reset. If the receiver has been powered down for more than one hour, wireless transmitters may take up to an additional hour to send a supervision message unless tripped, tampered, or powered up. This operation extends battery life for transmitters. A missing message may display on the keypad until the transmitter sends a supervision message.

When any wireless zone programming is changed in the panel, receiver zone programming is updated. At that point, all wireless zones display as normal for approximately one minute, regardless of the actual state of the contact.

1100A+ LED Operation

Six LEDs display receiver operation and activity. Refer to the table below as required.

Label	Operation
RX	Flashes yellow to indicate data is being received from the panel.
TX	Flashes green to indicate data is being sent to the panel.
STATUS (CR6)	Steady red to indicate memory upload. Off when upload is complete.
POWER (CR5)	Steady green to indicate power applied to receiver.
RF RXD	Flashes yellow to indicate data is being received from a transmitter.
RF TXD	Flashes green to indicate data is being sent to a transmitter.

Transmitter Survey LED Operation

DMP 1100 Series transmitters provide two-way (transmit acknowledge) operation. This advanced data protocol allows each transmitter to confirm that each of its messages (alarm, checkin, tamper, low battery) are received and acknowledged by the 1100 Series receiver. The confirmation is indicated visually by use of an LED on each transmitter. This Survey LED should be used during installation to test each transmitter for proper operation. A full definition of the Survey LED follows:

The red LED on an 1100 Series transmitter turns on when the processor wakes up to send a message. Then after a series of communication steps are completed (successful or not), the LED turns off when the processor goes back to sleep.

99.9% of the time the processor is asleep in normal operation. The following list summarizes various indications that can be observed on the LED and a definition for each. Note this is for a single message. For example, pressing and holding the tamper switch.

Single 1/16 second flash

- Processor wakes up
- Transmitter receives immediate synchronization from receiver
- Transmitter transmits
- Transmitter receives immediate acknowledgement from receiver
- Processor goes to sleep

Single Pulse greater than 1/16 second but shorter than 8 seconds

- Processor wakes up
- Transmitter receives synchronization from receiver - possibly not immediate
- Transmitter transmits
- Transmitter receives acknowledgement from receiver - possibly not immediate
- Processor goes to sleep

Steady for 8 seconds

- Processor wakes up
- Transmitter never receives synchronization from receiver, or might receive synchronization
- Transmitter transmits if synchronization was received
- Transmitter never receives any further data from receiver
- Processor times out and goes to sleep

Multiple short flashes

- Processor wakes up
- Transmitter receives synchronization from receiver
- Transmitter transmits
- Transmitter receives data from receiver, but not a valid acknowledgement
- Processor briefly goes to sleep
- Entire sequence is repeated, each short flash indicates a cycle

Troubleshooting Using the Transmitter Survey LED

If a transmitter is unable to reliably communicate a message to the receiver, or is reported as missing, the Survey LED can be used to help diagnose the issue. If the missing transmitter cannot be explained by obvious reasons such as a damaged transmitter, failed battery, or changes in building construction; then the Survey LED should be used.

To use the Survey LED operation to help diagnose a field issue, complete the following steps on an 1100 Series transmitter. Repeat the following sequence 5 times and write down the LED operation for each tamper switch action.

- Press and hold the tamper switch
- Observe the LED until it turns off for at least 5 seconds
- Release the tamper switch
- Observe the LED until it turns off for at least 5 seconds

You now have observed the LED 10 times. Based on the results you have recorded use the list below to assist in troubleshooting.

LED turns on a single time for less than 1 second 8 to 10 times.

- System is working properly

LED turns on for more than 1 second 3 to 9 times.

- The transmitter or receiver needs to be relocated

LED turns on for more than 1 second all 10 times.

- The receiver is not turned on, or is not operating
- The transmitter is not programmed into the receiver
- The transmitter or receiver needs to be relocated

LED flashes multiple times with a single tamper press or release 3 to 10 times.

- The transmitter or receiver needs to be relocated

LED never turns on.

- The transmitter battery is dead
- The tamper switch is being pressed or released too quickly
- The tamper switch or other part of the transmitter is broken

LED stays on constantly and is dim

- The transmitter battery is almost dead
- The transmitter is broken

General Wireless Troubleshooting

If ALL wireless devices do not operate, refer to the following checklist:

- Verify the receiver is an 1100A+ and the panel is an XT Series, XR100/XR500 Series or an XR150/XR350/XR550 Series panel.
- Verify the 1100A+ J2 and J3 jumpers are correctly configured for the installation.
- Verify the XR100/XR500 Series panel J23 jumper is in the "X" position and J22 is on the panel is connected to J4 connector on the receiver.
- Verify J13 on the XR150/XR350/XR550 Series panel is connected to J4 connector on the receiver.
- Briefly reset panel using J16 jumper to activate wireless operation and wait one minute to test wireless zone(s).
- Verify the House Code (1-50) is programmed in System Options.
- Verify appropriate zone numbers are assigned as wireless zones.
- Verify that the panel XMIT and REC LEDs alternately flash on and off at a rate of 1/4 second each. If the LEDs are On steady or Off, the panel and receiver are not communicating properly. (See Figure 3 and 4).
- Verify the 1100A+ LEDs operate correctly as listed in 1100A+ LED Operation.
- Verify transmitters have batteries correctly inserted.

Transmitter Supervision Time

For UL Listed installations, program the transmitter supervision time in panel zone programming as listed in the following table. Refer to the panel programming guide for complete wireless programming information.

UL Listing		Listed Accessories	Supervision Time
UL 1023	Household Burglary Alarm System Units Accessory	1100R+ Repeater 1101/1102/1103/1105 Universal Transmitters 1125/1127W/1127C PIR Motion Detector 1135 Wireless Sounder 1142 Two-Button Hold-Up Transmitter 9060/9063 Wireless Keypad	60
UL 636	Holdup Alarm Units and Systems Accessory	1142 Two-Button Hold-Up Transmitter	60
UL 634	Connections and Switches for use with Burglar Alarm Systems Accessory	1100R+ Repeater 1101/1102/1103/1105 Universal Transmitters	60
UL 639	Intrusion Detection Units Accessory	1100R+ Repeater 1125/1127W/1127C PIR Motion Detector	60
UL 365	Police Station Connected Burglar Accessory	1100R+ Repeater 1103 Universal Transmitter	60
UL 609	Local Burglar Alarm Units and System Accessory	1100R+ Repeater 1103 Universal Transmitter	60
UL 1076	Proprietary Burglar Alarm Units Accessory	1100R+ Repeater 1103 Universal Transmitter	60
UL 1610	Central Station Burglar Alarm Units Accessory	1100R+ Repeater 1103 Universal Transmitter 1135 Wireless Sounder 9060/9063 Wireless Keypad	60
UL 268	Smoke-Automatic Fire Detectors	1100R+ Repeater 1161/1162 Residential Smoke Detectors 1165/1165H/1165HS Commercial Smoke	3
UL 346	Waterflow Indicators for Fire Protective Signaling Systems	1181 PIV/1182 OS&Y	3
UL 521	Heat Detectors for Fire Protective Signaling Systems	1100R+ Repeater 1183-135F/1183-135R Heat Detector	3
UL 985	Household Fire Warning System Accessory	1100R+ Repeater 1101/1102/1105 Universal Transmitter 1135 Wireless Sounder 9060/9063 Wireless Keypad	240
UL 864	Fire Protective Signaling	1103 Universal Transmitter 1100R+ Repeater	3
UL 2075	Gas and Vapor Detectors and Sensors	1184 Wireless Carbon Monoxide Detector	240

FCC Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications made by the user and not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been 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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The 1100 Series wireless system is a two-way supervised wireless design. It is compliant with FCC rules as they pertain to 900 MHz Spread Spectrum devices. In rare instances it has been observed that certain 900 MHz cordless telephones may occasionally experience a clicking sound on the telephone while in use. If this occurs, it may be resolved by selecting a different channel on the cordless telephone, or replacing the cordless phone with a different brand or model of 900 MHz telephone or other cordless telephone.

To comply with RF exposure requirements, a minimum distance of 20cm must be maintained between the antenna and all persons.

Attention! Older Cordless Telephones

Your wireless alarm system is comprised of a state-of-the-art two-way secure network created by sophisticated transmitters and receivers. It is compliant with all FCC rules as they pertain to 900 MHz Spread Spectrum devices which require devices to share the same frequencies. This creates a possibility of interference with other devices in your home. It has been reported that certain older 900 MHz cordless telephones may on rare occasions experience interference (an audible clicking sound) while in use. (This may also occur with some 2.4 GHz and 5.8 GHz telephones as many still use 900 MHz frequencies). If this occurs on your cordless telephone, it may be resolved by selecting a different channel on your telephone. If your telephone does not have this selection, it can also be resolved by replacing your old cordless telephone with a DECT 6.0 cordless telephone.

What is DECT 6.0?

DECT 6.0 (Digital Enhanced Cordless Telecommunications) is the current standard for cordless telephones, and it provides several benefits over 900 MHz, 2.4 GHz and 5.8 GHz systems.

- No More Interference - unlike older cordless technology, DECT 6.0 telephones are virtually immune to household interference, and vice versa. If you have a wireless computer network in your home, DECT 6.0 won't disrupt internet use.
- Encrypted Privacy - DECT 6.0 has a layer of security that older cordless telephones just don't have. As information and identity theft is on the rise, DECT encryption helps keep your personal communications safe.
- Call Quality - Extra security isn't just for safety; it gives you clearer calls without crossover traffic.
- Battery Life - A DECT 6.0 phone will last as much as 30% longer than a 5.8 GHz phone.

More information can be found on DECT technology at www.DECT.org.

DECT 6.0 Cordless phones can be found at any major retailer including: Wal-Mart™, Target™, Best Buy™ & Radio Shack™.

Listed Compliance Specifications

Commercial Fire

Transmitters must be programmed as supervised. Refer to the Transmitter Supervision Time table for the supervision time.

The maximum line impedance of the 4-wire bus is 16.2 Ohms for 1000 feet.

The recommended wire gauge for panel to receiver connection is 22 AWG.

After all transmitters are in position, the WLS option of the panel's Walk Test must be operated and all transmitters programmed for Fire (FI) or Supervisory (SV) must show that their checkin message was received. Refer to the panel programming guide for Trip Counter for DMP Wireless check-in Test (WLS) which describes that both numbers of the counter must match. If not and a failed wireless zone is displayed at END, decrease that transmitters range with the receiver and perform the WLS Walk Test again.

The wall tamper must be enabled for commercial fire applications.

Specifications

Operating Voltage	8.0 to 14 VDC
Current Draw	TBD
RF Power Rating	TBD
Frequency Range	903-927 MHz
Dimensions	
Receiver Housing	5.5" W x 3.75" H x 1" D
Antenna	Internal
Color	White
Housing Material	Flame retardant ABS

Patents

U. S. Patent No. 7,239,236

Compatibility

XT30/XT50 Series panels
XR100/XR500 Series panels
XR150/XR350/XR550 Series panels

Certifications

FCC Part 15: CCKPC0114	
Industry Canada: 5251A-PC0114	
ANSI/UL 365	Police Station Connected Burglar
ANSI/UL 609	Local Burglar Alarm Units and Systems
ANSI/UL 634	Connections and Switches for use with Burglar Alarm Systems Accessory
ANSI/UL 636	Holdup Alarm Units and System
ANSI/UL 639	Intrusion Detection Units Accessory
ANSI/UL 1023	Household Burglar Alarm System Units
ANSI/UL 1076	Proprietary Burglar Alarm Units
ANSI/UL 1610	Central Station Burglar Alarm Units
ANSI/UL 985	Household Fire Warning System
ANSI/UL 864	Fire Protective Signaling Systems



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