1100DI Wireless Receiver

Description

The 1100DI Wireless Receiver provides up to 16 wireless zones for XRSuper6 and XR20 Command Processor™ panels and up to 32 wireless zones (28 zones using one keypad) for XR40 Command Processor™ panels. The 1100DI is compatible with all DMP wireless devices. The 1100DI provides two-way, supervised communication using 900 MHz frequency hopping-spread-spectrum technology. The receiver can be installed anywhere on the panel keypad bus.

What is Included

The 1100DI Wireless Receiver includes the following items:

- One Model 1100DI Wireless Receiver
- One 4-wire Harness
- Hardware pack

Compatibility

The 1100DI Wireless Receiver is compatible with any XRSuper6, XR20, or XR40 Command Processor™ panels using firmware Version 300 or higher. In addition to firmware Version 300 or higher, XR20 Command Processor™ panels need to be hardware Level L or higher released October 2000. No specific receiver programming is required. Once installed, a panel programmed with wireless information will automatically recognize the wireless receiver.

Installing the 1100DI Wireless Receiver

The 1100DI Wireless Receiver can be mounted anywhere along the panel keypad bus. A location should be selected that will be centrally located between the 1100 Series transmitters used in the installation. Install the receiver away from large metal objects. Mounting the receiver on or near metal surfaces impairs performance. Do not used shielded wire between the panel and receiver. When selecting the proper mounting location and operation, refer to the LED Survey Operation section of the specific installation guide for the transmitter being installed.
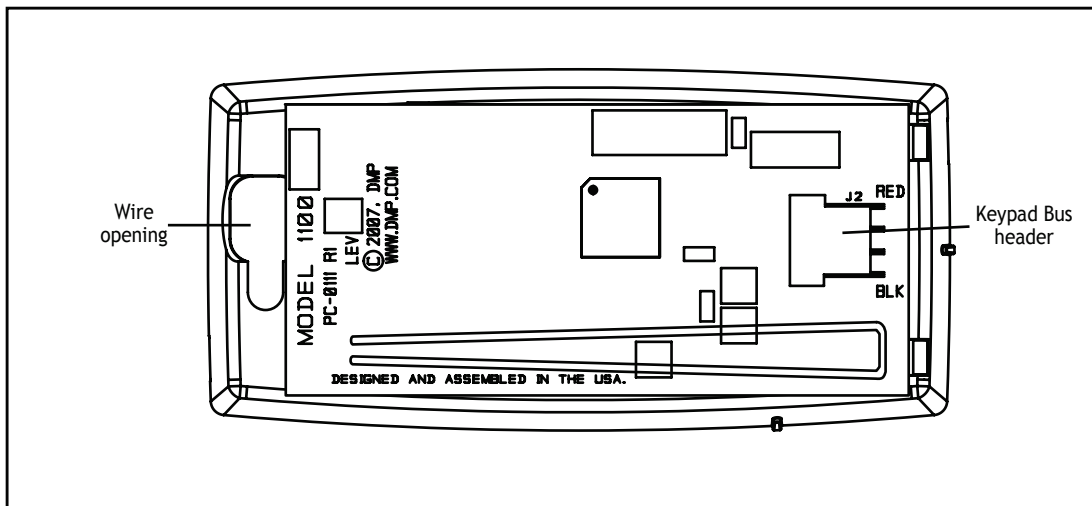

Figure 1: Receiver PCB

Installing the Receiver behind a Keypad

The following instructions cover installing the receiver inside the wall behind the keypad. If the installation requires the receiver to be mounted, refer to Installing the Optional Mounting Bracket or Installing the Receiver without the Mounting Bracket.

1. Remove the cover from the plastic housing by squeezing both sides toward each other.
2. Connect the receiver to the panel keypad bus using the supplied 4-wire harness. Route the wires through the opening in the back of the housing.
3. Snap the cover back in place and suspend the receiver inside the wall behind the keypad. Do not install the receiver inside of a gang box.

Installing the Optional Mounting Bracket

The following instructions cover installing the receiver using the included mounting bracket. If the installation does not require the mounting bracket, refer to Installing the Receiver behind the Keypad or Installing the Receiver without the Mounting Bracket.

1. Secure the mounting bracket using the supplied screws or double-sided tape.
2. Remove the cover from the plastic housing by squeezing both sides toward each other.
3. Connect the receiver to the panel keypad bus using the supplied 4-wire harness. Route the wires through the opening in the back of the housing.
4. Snap the cover back in place.
5. Line up the receiver base with the mounting bracket snap connectors and press the housing into place.
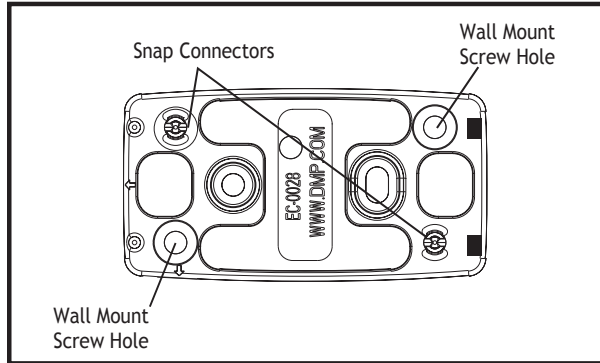

Figure 2: Optional Mounting Bracket

Installing the Receiver without the Mounting Bracket

These instructions cover installing the receiver without the mounting bracket. If the installation requires the mounting bracket, refer to Installing the Receiver behind the Keypad or Installing the Optional Mounting Bracket.

1. Remove the cover from the plastic housing by squeezing both sides toward each other.
2. Connect the receiver to the panel keypad bus using the supplied 4-wire harness. Route the wires through the opening in the back of the housing.
3. Snap the cover back in place.
4. Secure the receiver housing to the wall in the desired location using the supplied double-sided tape.

Programming the Panel

Refer to the XRSuper6/XR20/XR40 Programming Guide (LT-0305) as needed. In System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

1100DI Receiver Operation

The 1100DI 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 or unsupervised 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 displays 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 when exiting panel programming. During the update, all wireless zones display as normal for approximately one minute, regardless of the actual state of the wireless device(s).

LED Operation

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

Operation
Green LED - Flashes to indicate data is being sent to the panel.
Red LED - Steady to indicate memory upload. Off when upload is complete.

Zone Configuration

Refer to the XRSuper6/XR20/XR40 Programming Guide (LT-0305) for complete wireless programming information.

Note: When any wireless input zone for a particular address is programmed (Ex: 11-14 = Addr 1), the 1100DI responds to the panel for this address. Other devices, such as keypads or hardwired zone expanders, cannot use this address. Zones connected directly to the panel cannot be wireless.

Keypad Address	Zone Numbers		
	XRSuper6	XR20	XR40
1	7-10	11-14	11-14
2	21-24	21-24	21-24
3	31-34	31-34	31-34
4	41-44	41-44	41-44
5	*	*	51-54
6	N/A	N/A	61-64
7	N/A	N/A	71-74
8	N/A	N/A	81-84
* Note: Address 5 can be used with unsupervised keypads. This allows all 16 zones to be used by wireless transmitters.			

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. 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 is turns off for at least 5 seconds
- Release the tamper switch
- Observe the LED until is 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 equipment model numbers.
- Verify the House Code (1-50) is programmed in System Options.
- Verify the 4-wire connector from the receiver J3 is connected to the XRSuper6, XR20, or XR40 panel terminals 7, 8, 9, and 10.
- Verify what zone numbers are assigned as wireless zones and check the address settings of other device(s) connected to the keypad bus to ensure no duplicate addresses have been used.
- Verify the 1100DI LEDs are operating as listed in 1100DI LED Operation on the previous page.
- Verify transmitters have batteries correctly inserted.

Transmitter Supervision Time

For NRTL Listed installations, program the transmitter supervision time in panel zone programming as listed in the following table. Refer to the XRSuper6/XR20/XR40 Programming Guide (LT-0305) for complete wireless programming information.

UL Listing	Listed Accessories	Supervision Time
ANSI/UL 1023 Household Burglary Alarm System Units Accessory	1101/1102/1103 Universal Transmitters 1125 PIR Motion Detector 1142 Two-Button Hold-Up Transmitter	60 60 60
ANSI/UL 636 Holdup Alarm Units and Systems Accessory	1142 Two-Button Hold-Up Transmitter	60
ANSI/UL 634 Connections and Switches for use with Burglar Alarm Systems Accessory	1101/1102/1103 Universal Transmitters	60
ANSI/UL 639 Intrusion Detection Units Accessory	1125 PIR Motion Detector	60
ANSI/UL 365 Police Station Connected Burglar Accessory	1103 Universal Transmitter	60
ANSI/UL 609 Local Burglar Alarm Units and System Accessory	1103 Universal Transmitter	60
ANSI/UL 1076 Proprietary Burglar Alarm Units Accessory	1103 Universal Transmitter	60
ANSI/UL 1610 Central Station Burglar Alarm Units Accessory	1103 Universal Transmitter	60
ANSI/UL 985 Household Fire Warning system Accessory	1101/1102/1103 Universal Transmitter 1161/1162 Residential Smoke Detectors	3 3

Receiver/Panel Software Version Table

The table below provides a list of the required panel and wireless receiver software versions needed to support each transmitter. In each case the version must be the level indicated or higher.

Model	Description	1100DI Receiver	XRS6/XR20/XR40 Panel
1101	Universal Transmitter, Internal/External Contacts	100	300
1102	Universal Transmitter, External Contact	100	300
1114	Four Zone Expander	100	300
1116	Relay Output	104	304
1117	LED Annunciator	104	304
1118	Remote Indicator Light	104	304
1121	PIR Motion Detector	100	300
1125	PIR Motion Detector	100	300
1129	Glassbreak Detector	100	300
1139	Wireless Bill Trap	100	300
1142	Two-Button Hold-Up Transmitter	100	300
1145, 1146, 1147	Four, Two, or One-Button Key Fobs	100	302
1161, 1162	Residential Smoke Detector	100	300

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.

Specifications

Operating Voltage	8.0 to 14 VDC
Current Draw	xxmA
Frequency Range	903-927 MHz
Dimensions	
Receiver Case	3.3" L x 1.6" W x 1.2" H
Color	White
Housing Material	Flame retardant ABS

Patents

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

Listings and Approvals

FCC Part 15 Registration ID CCKPC0111

IC Registration ID 5251A-PC0111

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