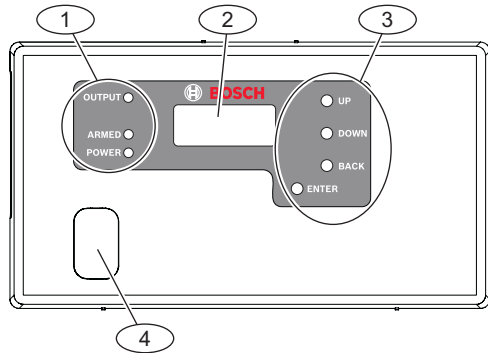


**Overview**

The ISW-EN4216R LCD Receiver allows you to add up to 16 transmitters to any application. With diversity reception and advanced signal processing, the ISW-EN4216R is designed to minimize dead spots in transmission areas.

The ISW-EN4216R also provides six Form C relay outputs and a relay fault output.

**Figure 1: Front Panel Components**



- 1 - Status LEDs (OUTPUT, ARMED, POWER)
- 2 - LCD Display
- 3 - Function buttons
- 4 - Access door

**Table 1: Front Panel Components**

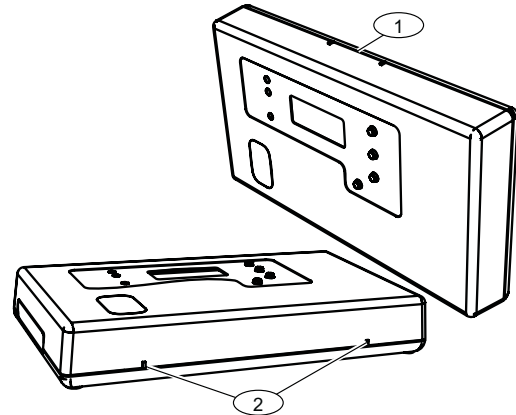
LED/Button	Description
OUTPUT LED	Lights when any transmitter sends an alarm signal.
ARMED LED	Lights when the receiver is armed.
POWER LED	Lights when the receiver has power.
LCD Display	Shows status, event log, and programming information.
UP button	Press to scroll up through the display.
DOWN button	Press to scroll down through the display.
BACK button	Press to return the display to the previous menu. If the display shows the Main Menu options, press to return the receiver to normal operation. When entering information, press to return to the last entered character.
ENTER button	Press to select the currently displayed menu item. If the receiver is in normal operation, press to enter the Main Menu.
Access door	Remove the access door to see the Decode LED or press the RESET button.
Decode LED	Blinks when the receiver receives a recognizable signal. This LED is visible only when you remove the access door.
RESET button	Press to clear the current status for all points and to reset all outputs and LEDs. Pressing this button records a Receiver Reset entry in the event log, and resets the Supervision Window timers. This button is visible only when you remove the access door.

If no transmitter is selected, none of the status LEDs turn on. LEDs turn on only to display the transmitter currently selected.

**1.0 Open the Receiver Housing**

Use a small flat-blade screwdriver to press either the top or bottom housing release tabs and separate the cover from the base.

**Figure 2: Open the Receiver Housing**



- 1 - Top housing release tabs
- 2 - Bottom housing release tab

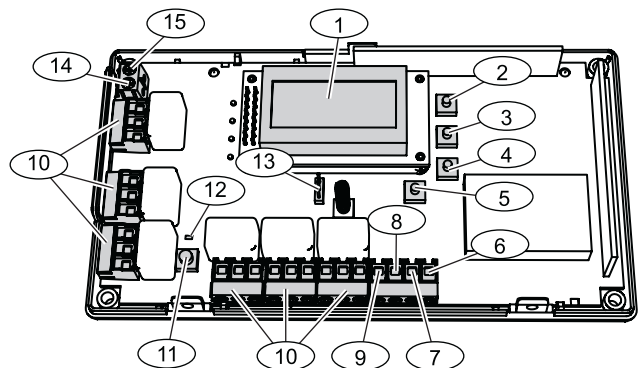
**2.0 Connect the Power Cabling**

Connect power and input/output cabling to the receiver's terminals. Refer to Figure 3 for the location of each terminal, and Table 2 on page 2 for a description of each terminal.

In order to program the receiver, you must connect the power cabling between the power source and the receiver.

The LCD Display shows the installed firmware revision, and then shows the READY message.

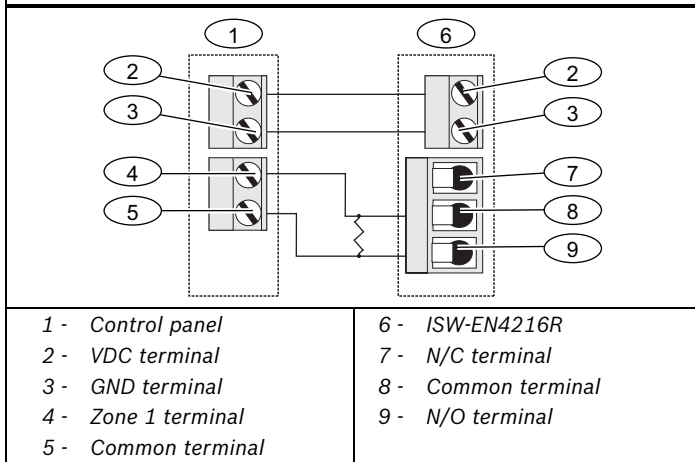
**Figure 3: Receiver Components**



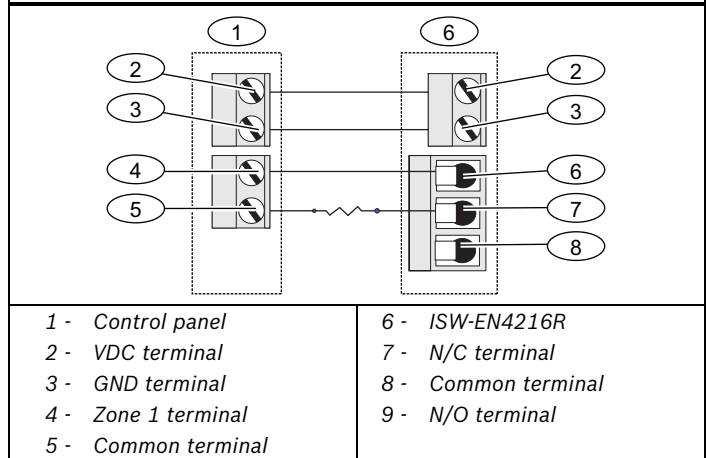
- 1 - LCD display
- 2 - UP button
- 3 - DOWN button
- 4 - BACK button
- 5 - ENTER button
- 6 - Arm Input terminal
- 7 - Reset Input terminal
- 8 - Tamper Output terminal
- 9 - Jam Output terminal
- 10 - Output terminals
- 11 - RESET button
- 12 - Decode LED
- 13 - Frequency Band pins
- 14 - GND terminal
- 15 - Power terminal

Table 2: Receiver Terminals	
Terminal	Description
Power/GND	Connect the power cabling from the power source to the Power and GND terminals on the receiver. The power source should be between 11 and 14 VDC, and must be unswitched, uninterrupted, and regulated.
Arm Input	This input controls event logging for points set to LOG ARMED. If the Arm Input terminal is not connected, events from points set to LOG ARMED are not logged. <b>IMPORTANT:</b> A low at the Arm Input terminal enables event logging for points set to LOG ARMED, but does not disarm the receiver.
Tamper Output	This normally-open (N/O) output reports receiver case tamper conditions to an external device.
Jam Output	This normally-closed (N/C) output opens when noise thresholds on all transmission channels remain above a predetermined value for more than 20 sec.
Reset Input	This input allows the installation of a remote momentarily normally open (N/O) switch to clear faults, unlatch outputs, and reset the receiver to a normal state.
Outputs	These open collector outputs provide 6 Form C relay circuits. Refer to Figure 4 and Figure 5 for cable connections.

**Figure 4: Relay N/O Wiring**



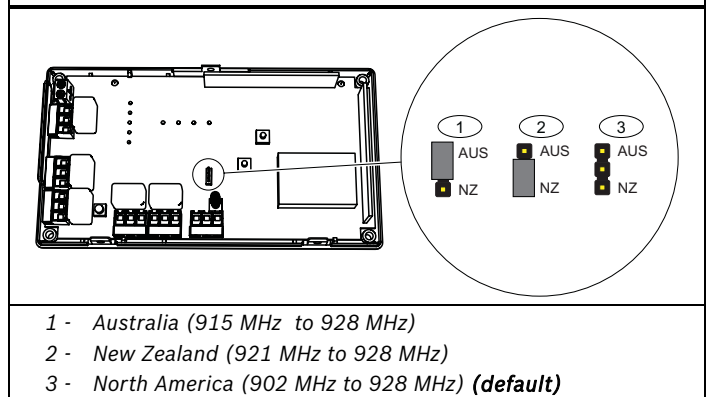
**Figure 5: Relay N/C Wiring**



### 3.0 Select the Frequency Band

1. Select the appropriate frequency band for your geographic area. Refer to Figure 6.
2. Press the RESET button. Refer to Figure 3 on page 1.

**Figure 6: Frequency Band Settings**



### 4.0 Program the Receiver

#### 4.1 Main Menu

1. When the LCD Display shows the READY message, press the ENTER button to enter the Main Menu.  
The Main Menu consists of three submenus. Refer to Table 3 for an overview of the Main Menu.  
To navigate through the menus and make selections, refer to Table 1 on page 1 for descriptions of the UP, DOWN, ENTER, and BACK buttons.

**Table 3: Main Menu**

Submenu	Description
POINT STATUS	Use this menu to check the current status of a programmed point.
INSTALL & SERVICE	Use this menu to program an output, change the login password, check signal strength, set up a point, delete a point, and register a transmitter.
EVENT LOG	Use this menu to review events that were recorded in the event log.

2. From the Main Menu, press ENTER to select a submenu. Refer to Sections 4.2 through 4.4 on pages 3 and 4 for programming guidelines.

## 4.2 INSTALL & SERVICE Submenu

1. From the Main Menu, press ENTER to select the INSTALL & SERVICE submenu.
2. Enter the password.  
A numeric password is required to access the INSTALL & SERVICE submenu. The default password is **3446**.
3. Press UP or DOWN to scroll through the menu options. Press ENTER to select a menu option.

### 4.2.1 Program Output

1. From the INSTALL & SERVICE submenu, select PROGRAM OUTPUT.
2. Scroll through the list of available outputs (01 ñ 06), and press ENTER to select the desired output.
3. Scroll through the list of available options.  
Refer to *Table 4* for descriptions of the options.
4. Press ENTER to select an option.  
The display shows the PGM DONE message to indicate that the output is now programmed. To program another output, press ENTER. To return to the INSTALL & SERVICE submenu, press ENTER and then BACK.

Option	Description
Toggle	The output changes state each time the device sends a new activation. At least 5 sec must pass before the output can send a new activation. To prevent output noise, set the inactive time between 2.0 sec and 99.5 sec (increments of 0.5 sec). The default is 4.0 sec.
Momentary	The output turns on for the programmed duration, and then turns off regardless of the device status. Set the time that the output remains active between 0.5 sec and 99.5 sec (increments of 0.5 sec). The default is 4.0 sec.
Follower	The output follows the transmitter's alarm status.
Latching	The output turns on when activated and remains on until the receiver is reset.

### 4.2.2 Change Password

1. From the INSTALL & SERVICE submenu, select CHANGE PASSWORD.
2. Enter a new numeric password up to eight digits in length.  
To select a blank space, press ENTER without selecting a digit.
3. When finished, press ENTER to complete the selection.  
When the PASSWORD CHANGED message appears, press ENTER to return to the INSTALL & SERVICE submenu.

### 4.2.3 Monitor Signal Strength

Use the signal strength option to measure signal strength and troubleshoot installation problems.

1. From the INSTALL & SERVICE submenu, select SIGNAL STRENGTH.  
The LCD display shows Point 1 and its current signal quality (GOOD, WEAK, or NO SIG).
2. Press UP or DOWN to scroll through the registered transmitters.
3. Press ENTER again to view Level (LV) or Margin (MA).
  - **Level:** Indicates the overall signal strength.
  - **Margin:** Indicates the signal strength minus the background noise.

4. To reset signal data, press UP or DOWN to exit and return to the transmitter currently selected.

### 4.2.4 Setup Point



When programming points, ensure that you do not map faults to the same output as alarms.

1. From the INSTALL & SERVICE submenu, select SETUP POINT.
2. Press UP or DOWN to scroll through the available points (1-16).
3. Press ENTER to select a point.
  - **TX REGISTRiD:** This message appears if a transmitter is currently registered to the selected point.
  - **TX NOT REGISTRiD:** This message appears if no transmitter is registered to the selected point.
4. Press ENTER to program the selected point.
5. Press UP or DOWN to scroll through the programming options.  
Refer to *Table 5* for descriptions of the options.
6. Press ENTER to select an option for the point being programmed.  
Selecting -- disables the selected option.

Option	Description
SPV TIME	Set the supervision time limit between 1 min and 99 hr to report missing transmitters. Select <b>00</b> to disable supervision time. The default is 60 min. <b>IMPORTANT:</b> Disabling supervision time is not recommended.
INACTIVE OUT	Map the device to the Inactivity Fault output.
TAMPER OUT	Map the device to the Tamper Fault output.
LOW BATT OUT	Map the device to the Low Battery Fault output.
ALARM OUT	Map the transmitter to the Alarm output.
AC LOSS OUT	Map the repeater to the AC Loss output.
LOG ALWAYS	Select whether to log events for this device at all times or only when armed. <b>IMPORTANT:</b> The log armed option logs events only when a low is applied at the Arm Input terminal.
TEXT	Enter up to eight characters of descriptive text for the transmitter/repeater. <ul style="list-style-type: none"> <li>- Press UP or DOWN to scroll through the available alphanumeric characters.</li> <li>- Press ENTER to select a character and advance to the next space.</li> <li>- To select a blank space, press ENTER without selecting a character.</li> </ul> <b>IMPORTANT:</b> If you do not use all eight characters, you must enter blank spaces at the end of the line.

7. After making the programming selections, press ENTER again to complete the programming.


#### 4.2.5 Register a Transmitter

After you program a point on the receiver, you can register a transmitter to that point.

1. From the INSTALL & SERVICE submenu, select REGISTER XMITTER.
2. Press UP or DOWN to scroll through the available points.
3. Press ENTER to select and register a point.
4. When the RESET XMITTER message appears, press the Reset button on the transmitter.
5. When the TX REGSTRiD message appears, press ENTER to finish and move to the next point.

#### 4.3 POINT STATUS Submenu


1. From the READY, ALARM, or FAULT message, press ENTER.
2. Press ENTER to select POINT STATUS.
3. Press UP or DOWN to scroll through the available points.
4. Press ENTER to select a point and view its status:
  - **A:** Alarm (transmitter only)
  - **T:** Tamper
  - **B:** Low battery
  - **L:** AC loss (repeater only)
  - **I:** Inactive

 If -- appears, the displayed condition was mapped to a null output.

#### 4.4 EVENT LOG Submenu

1. From the READY, ALARM, or FAULT message, press ENTER.
2. Press UP or DOWN to scroll to EVENT LOG.
3. Press ENTER.
4. Press UP or DOWN to scroll through the list of events. When viewing transmitter events, press ENTER to see the output to which the events are mapped. If the event is mapped to a disabled output, no output shows.

#### 5.0 Mount the Receiver

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

1. Use the supplied screws and anchors to mount the receiver in a location that is accessible for future maintenance.
2. Close the receiver housing.

#### 6.0 Alarms and Faults

If a point goes into alarm, the LCD Display shows ALARM along with the point number. If more than one point is in alarm, the LCD display scrolls through each point.

If a fault condition occurs, the LCD Display shows FAULT only if no points are in an alarm condition. Point numbers are not shown for fault conditions.

Use the POINT STATUS or EVENT LOG menu options to see more information about fault conditions.

## 7.0 Specifications

Dimensions (H x W x D)	162 mm x 92 mm x 28 mm (6.38 in. x 3.60 in. x 1.10 in.)
Power Requirement	11 to 14 VDC
Current Consumption	~400 mA max with all six relays energized
Output Rating	1 A, 28 VDC, or 0.5 A, 30 VAC (resistive)
Output Types	<ul style="list-style-type: none"> <li>• 6 on-board Form C relays for connecting to any control panel or for stand-alone wireless applications (N/O or N/C)</li> <li>• 1 N/O receiver case tamper contact closure</li> <li>• 1 N/C receiver jam input indication</li> </ul>
Input Specifications	< 0.5 V = low; >2.5 V = high
Receiver Type	Frequency hopping spread spectrum
Operating Frequencies	<b>USA:</b> 902 MHz to 928 MHz <b>Australia:</b> 915 MHz to 925 MHz <b>New Zealand:</b> 921 MHz to 928 MHz
Number of Points/Transmitters	16
Number of Alarm Outputs	6 Form C relay outputs
Event Log Capacity	50 events (first-in, first-out replacement)
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Relative Humidity	Up to 90% (non-condensing)

