Overview
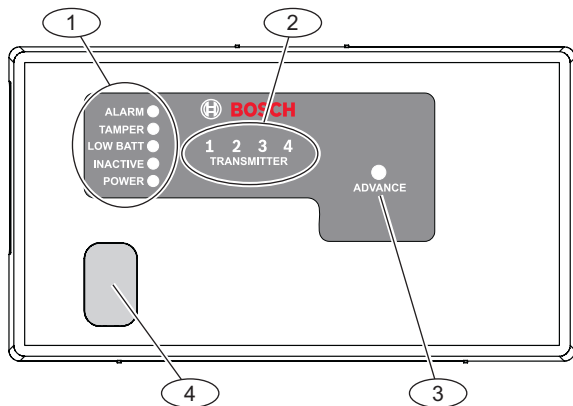
The ISW-EN4204R LED Receiver allows you to add up to four transmitters to any application. With diversity reception and advanced signal processing, the LED receiver is designed to minimize dead spots in transmission areas.

The LED receiver also provides four Form C relay outputs and a relay fault output.

Figure 1: Front Panel Components

1 -   Status LEDs
2 -   Transmitter LEDs
3 -   ADVANCE button
4 -   Access door

| Table 1:	Status LEDs and Buttons
LED/Button	**Description**
Alarm LED	Lights when the selected transmitter sends an alarm signal.
Tamper Fault LED	Lights when the selected transmitter sends a tamper signal.
Low Battery Fault LED	Lights when the selected transmitter has a low battery.
Inactive Fault LED	Lights when the selected transmitter is inactive.
Power LED	Lights when the receiver has power.
Transmitter Number LED	Shows status of the transmitter assigned to that number. Use the ADVANCE button to scroll through transmitters.
Decode LED	Blinks when the receiver receives a recognizable signal. This LED is visible only when you remove the access door on the front panel.
ADVANCE Button	Scrolls through the transmitters to display status.
RESET Button	Clears the current status for all points and resets all outputs and LEDs. Resets the supervision window timers. This button is accessible only when the access door on the front panel is removed.

If no transmitter is selected, the status LEDs do not light. LEDs light only to display the transmitter currently selected.
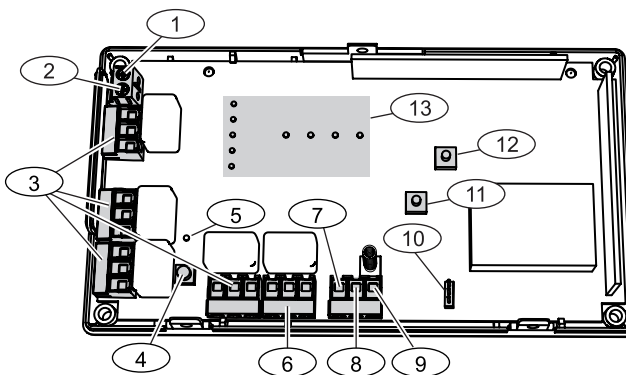
1.0   Open the Receiver Housing

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

Figure 2: Housing Release Tabs
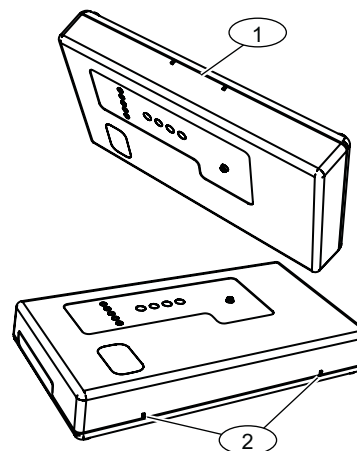
1 -   Top housing release tab
2 -   Bottom housing release tabs

Figure 3: Printed Circuit Board Components

1 -	*Power*	*8 -*	*Tamper output*
2 -	*GND connection*	*9 -*	*Reset input*
3 -	*Output terminals*	*10 -*	*Frequency Band pins*
4 -	*RESET button*	*11 -*	*PROGRAM button*
5 -	*Decode LED*	*12 -*	*ADVANCE button*
6 -	*Fault output*	*13 -*	*Programming LEDs*
7 -	*Jam output*		

BOSCH

2.0 Connect the Power Cabling

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

The power source should be between 11 and 14 VDC, and must be unswitched, uninterrupted, and regulated.

Connect the power cabling from the power source to the power and GND terminals on the receiver.

3.0 Select the Frequency Band

Select the appropriate frequency band for your geographic area. Refer to *Figure 4*.

Figure 4: Frequency Band Settings

1 - *Australia (915 MHz to 928 MHz)*
2 - *New Zealand (921 MHz to 928 MHz)*
3 - *North America (902 MHz to 928 MHz)* **(default)**

4.0 Program the Receiver

> **i** If you are changing the programming for a point that is already registered to a transmitter, you do not need to re-register the transmitter. Changes to point programming are automatically assigned to the transmitter that is registered to that point.

Refer to *Table 2* for the default point settings.

Table 2:	Programming Defaults			
Point	**Supervision Window**	**Output**	**Type**	**Switch**
1	4 hr	Transmitter 1	Follow	NO
2	4 hr	Transmitter 2	Follow	NO
3	4 hr	Transmitter 3	Follow	NO
4	4 hr	Transmitter 4	Follow	NO
F	N/A	Fault	Follow or Latching*	NO

* Inactive is set to follow; low battery and tamper are set to latching.

4.1 Select an Output

To program any of the four transmitter outputs or the fault output:

1. Use a small screwdriver to press the housing release tab on either side of the receiver and separate the receiver housing.

2. Press the ADVANCE button to select any of the four transmitter outputs or the fault output.
   For the location of the ADVANCE button, refer to *Figure 3*, page 1.

Figure 5: Select an Output

> **i** The only option you can program on the fault output (F) is its switch setting (normally open or normally closed).

3. Press the PROGRAM button to start programming the point.

   - If no transmitter is registered to the selected point, the receiver advances to the supervision window option.
     For the location of the PROGRAM button, refer to *Figure 3*, page 1.

   - If a transmitter is already registered to the selected point, the Delete LED turns on. To delete the point and return to normal operation, press the ADVANCE button. To advance to the supervision window option, press the PROGRAM button.

4.2 Program the Supervision Window (SUP WIND)

1. Press the ADVANCE button to select a supervision window option of **None**, **2h**, **4h** or **96h**.

Figure 6: Program the Supervision Window

2. Press the ADVANCE button to select the output number.

3. Press the PROGRAM button to save the selection.

## 4.3 Program the Output Number (OUTPUT)

1. Press the ADVANCE button to select the output number.

Figure 7: Program the Output Number

2. Press the PROGRAM button to save the selection.

4.4 Program the Output Type (OUT TYPE)

1. Press the ADVANCE button to select an output type option:
   - **Follower (Follow):** The output follows the transmitter's alarm status.
   - **Momentary (Moment):** The output turns on for 7 sec, then turns off, regardless of the device status.
   - **Toggle:** The output changes state each time the device sends a new activation. A minimum of 5 sec must elapse before the output can send a new activation.
   - **Latching (Latch):** The output turns on when activated and remains on until the receiver is reset.

Figure 8: Program the Output Type
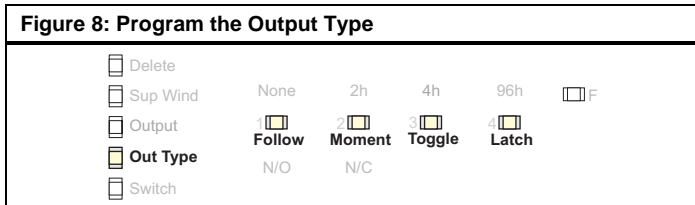
2. Press the PROGRAM button to save the selection.

4.5 Program the Switch Type (SWITCH)

1. Press the ADVANCE button to select a switch type option (**N/O** or **N/C**).

Figure 9: Program the Switch Type
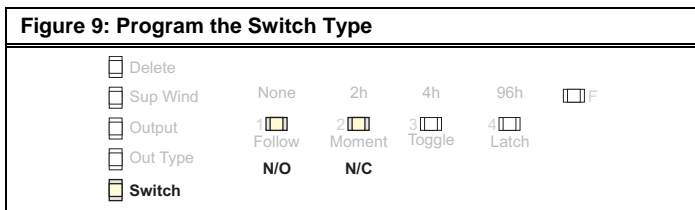
2. Press the PROGRAM button to save the selection.

4.6 Completing the Programming

When you complete the programming for a selected point, all of the programming LEDs blink.

- To return the receiver to normal operation, press the PROGRAM button.
- To program a different point, repeat the steps in *Sections 4.1* to *4.5*.
- To register a transmitter, refer to *Section 5.0 Register* a Transmitter.

5.0 Register a Transmitter

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

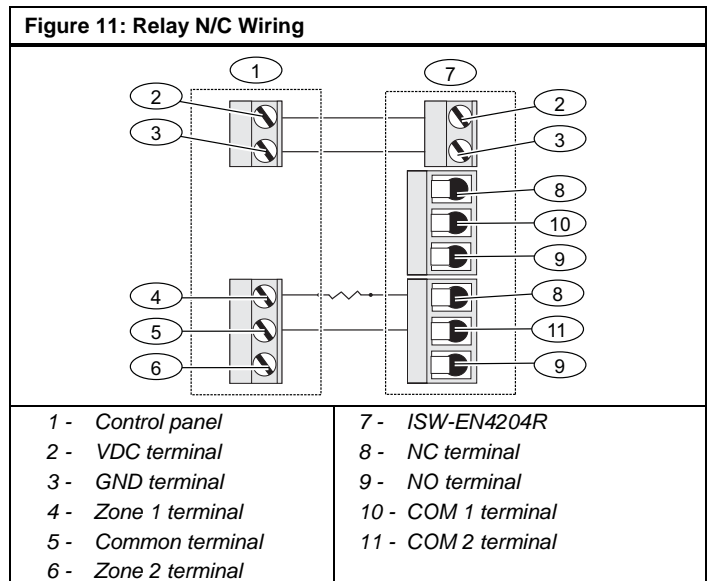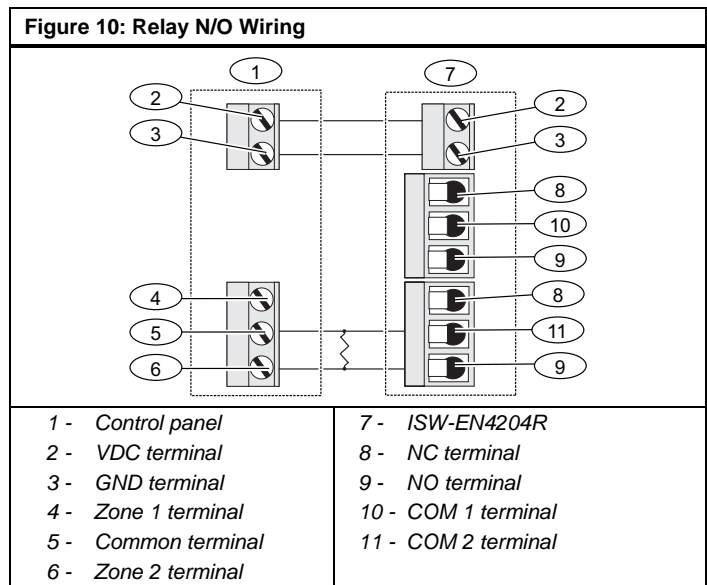To register a transmitter, press the RESET button on the transmitter.

All LEDs on the receiver turn off when the receiver receives the transmitter's registration message. If the LEDs **do not** turn off, press the RESET button on the transmitter again. The registration process is not complete until all LEDs turn off.

6.0 Connect Input/Output Cabling
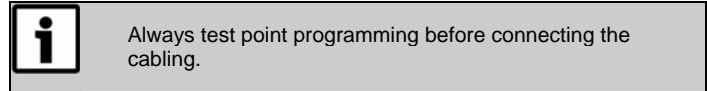
> ℹ️ Always test point programming before connecting the cabling.

1. Connect cabling to the tamper output.
   The optional tamper output is a normally open (N/O) output that reports a receiver case tamper condition to an external device.

2. Connect cabling to the jam output.
   The optional jam output is a normally closed (N/C) output that opens when noise thresholds on all transmission channels remain above a predetermined value for more than 20 sec.

3. Connect cabling to the reset input.
   The optional reset input circuit permits installation of a remote momentary normally open (N/O) switch to clear faults, unlatch outputs, and reset the receiver to a normal state.

4. Connect cabling to the output terminals.
   Refer to *Figure 10* and *Figure 11*.

Figure 10: Relay N/O Wiring

1 - Control panel	7 - ISW-EN4204R
2 - VDC terminal	8 - NC terminal
3 - GND terminal	9 - NO terminal
4 - Zone 1 terminal	10 - COM 1 terminal
5 - Common terminal	11 - COM 2 terminal
6 - Zone 2 terminal	

Figure 11: Relay N/C Wiring

1 - Control panel	7 - ISW-EN4204R
2 - VDC terminal	8 - NC terminal
3 - GND terminal	9 - NO terminal
4 - Zone 1 terminal	10 - COM 1 terminal
5 - Common terminal	11 - COM 2 terminal
6 - Zone 2 terminal	

7.0   Mount the Receiver

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

8.0   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 VDC to 14 VDC
Current Consumption:	~400 mA max with all five relays energized
Output Specifications:	Form C relay 1A @ 28 VDC, 0.5A @ 30 VAC resistive load; N/O receiver case tamper contact closure, N/C receiver jam input indication
Input Specifications:	< 0.5 V = low; >2.5 V = high **Reset input:** Contact closure, momentary low
Receiver Type:	Frequency hopping spread spectrum
Operating Frequencies:	– **USA:** 902 MHz to-928 MHz – **Australia:** 915 MHz to-925 MHz – **New Zealand:** 921 MHz to 928 MHz
Number of Points/Transmitters:	4
Number of Alarm Outputs:	4 Form C relay outputs
Number of Fault Outputs:	1 Form C relay output
Operating Temperature:	0°C to +60°C (+32°F to +140°F)
Relative Humidity:	Up to 90% (non-condensing)