

EE4216MR 16 Zone Multi-Condition Receiver with Relay Outputs

Overview

Inovonics EchoStream technology is designed to minimize dead spots in transmission areas using diversity reception and advanced signal processing. The EE4216MR receiver allows you to add up to 16 transmitters and six outputs to any application.

Installing an Inovonics Security System

The EchoStream survey kit measures the signal strength of high-power repeater and sensor messages to help optimize your EchoStream system.

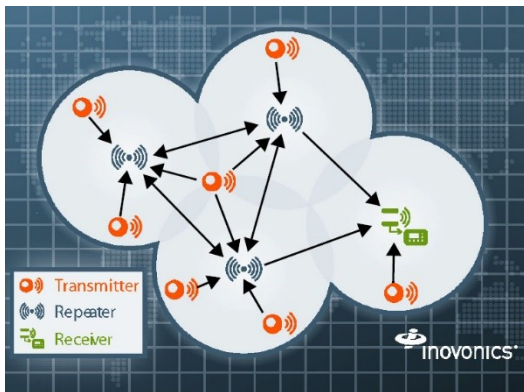


Figure 1 – Sample EchoStream System

The EchoStream survey kit provides you with two signal strength measurements: signal level and signal margin.

Signal level: The signal level is the measurement of the overall decibel level of the message.

Signal margin: The signal margin is the measurement of the decibel level of the message, minus the decibel level of any interfering signals. Inovonics Wireless equipment should be placed within a facility such that all end devices produce signal margin readings of at least 4 decibels.

Both the signal level and signal margin are measured in decibels. Because signal strength and signal margin are measured on a logarithmic scale, the difference between a decibel level of 3 (Weak) and a decibel level of 4 (Good) is a much larger difference than it would be on a linear scale.

RF Signal Propagation

While wood, drywall and glass usually let the RF signals pass, some materials may inhibit or attenuate radio frequency (RF) signal propagation by blocking, reflecting, deflecting or absorbing RF signals.

Consider anything between transmitters and repeaters and/or the receiver. Is there concrete and steel construction? Are there earthen berms or hills? Are there a lot of trees? Devices should be mounted such that they are least affected by these elements.

For best results, transmitters and repeaters should be mounted at the optimal height to achieve line of sight to repeaters and/or the receiver. Usually this means they will be mounted as high as possible.

Following are some typical obstacles to RF signal propagation:

Material	Affect	Recommendation
Metal construction, Including ductwork; pipes; studs; stucco, plaster or concrete with wire mesh; satellite dishes, metal-lined rooms such as walk-in coolers or freezers; metal siding, safes, etc.	Can reflect, absorb and/or disrupt RF signals.	Perform a site survey using an Inovonics wireless survey kit to verify the RF signal is acceptable, and, when necessary, to determine where to locate repeaters.
Completely enclosed metal boxes/enclosures.	Can restrict RF signals.	
Solar panels, cinder block walls, windows with built-in solar tinting.	Can absorb and/or reflect RF signals.	
Vegetation.	Can attenuate RF signals. The RF environment can alter as trees shed or sprout leaves.	Add repeaters as issues arise.
Automobile and truck traffic.	Can disrupt RF signals.	Mount Inovonics devices at a height sufficient to achieve line of sight above traffic.

EE4216MR Front Panel

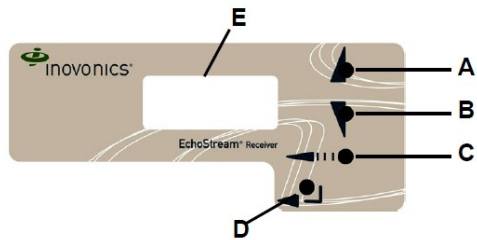


Figure 2 – Receiver front panel

A Up button – scrolls the display up.

B Down button – scrolls the display down.

C Back button - returns display to the previous menu, or, when entering information in the display, returns to the last character entered.

D Enter button - selects the currently displayed menu item. If in normal operating mode, sets the unit to menu mode.

E LCD Display - Shows status, event log and programming information.

Note - The EE4216MR LCD will only display information when an authorized password has been entered.

EE4216MR Internal Components

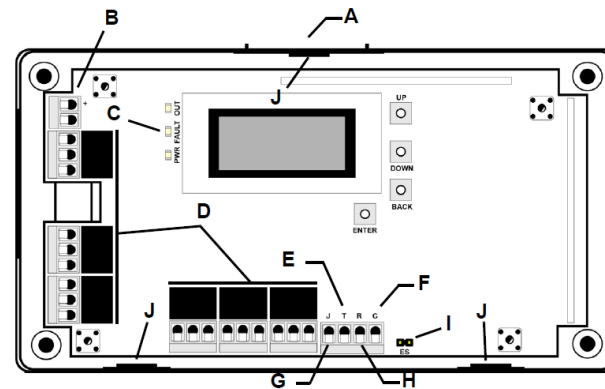


Figure 3 – EE4216MR internal components

A – Housing release tabs

B – Power connections

C – Operation LEDs

D – Output terminals

E – Tamper output

F – Clear to set output

G – Jam output

H – Reset input

I – EchoStream Select pins

J – Housing screw tab

EE4216MR LEDs

Note - The EE4216MR operation LEDs are only visible when the cover is removed.

Output LED: Lights when any output is active.

Fault LED: Lights when any transmitter is sending a fault condition.

Power LED: Lit when receiving power.

What's in the Carton

- Two drywall mounting anchors.
- Two wall mount screws.
- One frequency band selection jumper.
- Two pieces of mounting tape.
- Three housing screws.

Installation Notes

- These products are designed to be maintained by professional security technicians.
- Products are tested for indoor use.
- All products should be manually tested weekly.

Connect Power Cabling

Before beginning startup, you will need to connect power to the receiver. To connect power to the receiver:

1. Use a small screwdriver to press the housing release tab on the top of the repeater.
2. Connect power cabling to the Vs and GND connections.
 - Power source should be 11-14 VDC. Power supply must be unswitched, uninterrupted, and regulated.

Enable EchoStream Select

To meet ETSI requirements, Inovonics has developed a new line of EE 868MHz-only products. These new 868MHz-only products are compatible with older systems that include EchoStream Select products. If you are using any ES products in your current system, you will need to enable EchoStream select compatibility on this new 868MHz-only product; if you are not using any EchoStream select products, skip to “Connect Input/Output Cabling”.

To enable EchoStream Select compatibility:

3. Place a selection jumper on the ES selection pins.

Note – Selection jumpers are included in the EE4216MR hardware packet.

4. Reset the receiver or cycle power.

Connect Input/Output Cabling

5. Connect cabling to the clear to set output.
 - The optional clear to set output provides a clear to set signal to the control panel which can be used to

ensure all security devices in the system are active before allowing the system to be set. If used by the control panel, the system cannot be set if the receiver has not heard from any registered wireless devices within the last 20 minutes. The clear to set output can be set to normally open (N/O) or normally closed (N/C) using the CTS TYPE command in the INSTALL & SERVICE menu.

6. Connect cabling to the tamper output.
 - The optional tamper output is a normally open (N/O) output that reports receiver case tamper to an external device.
7. Connect the cabling to the jam output.
 - The optional jam output is a normally closed (N/C) output that opens for five seconds when noise thresholds on all transmission channels remain above a predetermined value for any 20 seconds in any 60 second window. The jam output is set to the momentary output type.
8. Connect a momentary switch to the reset input and ground.
 - 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.

9. Connect cabling to the output terminals.

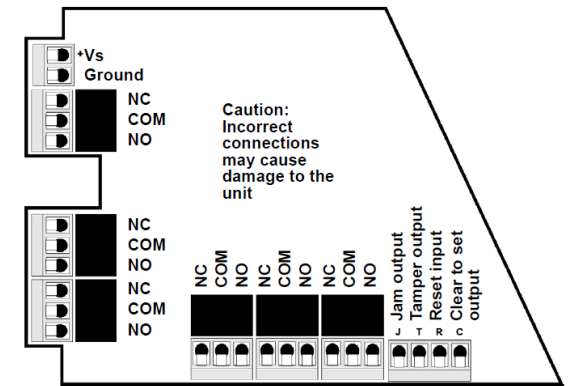


Figure 4 – EE4216MR Terminals

Mount the Receiver

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

10. Use the provided anchors and screws to mount the receiver in a location accessible for future maintenance.

Factory Configuration Defaults – Default Trouble Condition Programming

Condition	Output
Tamper	6
Low Battery	5
Supervision Loss/Inactive	6

Operation and Point Setup Screens – Enter Password

There are three levels of EE4216MR user. Only the level 2 authorized user and level 3 authorized installer are able to access the INSTALL & SERVICE menu.

Level 2 authorized user access: A level 2 authorized user has the ability to view system status indicators and enter system test mode in the INSTALL & SERVICE menu. A level 2 user does not have the ability to change receiver parameters or perform receiver functions (signal strength, test, register points, etc.). For more information on system test mode, see "System Test Mode".

Note – The default level 2 authorised user password is 3446.

Level 3 authorized installer access: A level 3 authorized installer has the ability to access all INSTALL & SERVICE menus. A level 3 authorized installer can also view receiver system status indicators as well as change receiver system parameters and perform all receiver functions.

Note – The default level 3 authorised installer password is 1234.

During normal operation there is no visual indication of system status or activity on the front display of the EE4216MR receiver. Unless the level 2 authorized user or the level 3 authorized installer enters a valid password, the LCD will remain completely blank.

To enter either the level 2 authorized user or the level 3 authorized installer password:

1. Press any button; PASSWORD displays.
2. Use the **Up** and **Down** buttons to scroll through the first numeral; press **Enter** to select.
3. Repeat step 2 for each numeral in the password.
4. When all the numerals in the password have been entered, press **Enter** to submit the password.

Operation and Point Setup Screens – Select Display Language

On initial startup you will need to select the display language. Once selected, the language will be maintained unless changed using the CHANGE

LANGUAGE option in the INSTALL & SERVICE menu.

To select the display language, see "Select Language".

Operation and Point Setup Screens – Navigate to the Install & Service Menu

There are three main menus: POINT STATUS, INSTALL & SERVICE and EVENT LOG. The INSTALL & SERVICE menu is used to program outputs, select language, change password, view the signal strength, delete points, register transmitters, and setup points for any of the programmed points.

Note - If changing programming for a point that already has a transmitter registered to it, there is no need to re-register the transmitter. Changes to point programming are automatically assigned to the transmitter registered to that point.

To access the INSTALL & SERVICE menu:

1. From the READY prompt, press the **Enter** button to access the receiver's three main menus.
2. Use the **Up** and **Down** buttons to navigate the INSTALL & SERVICE menu; press the **Enter** button.

Operation and Point Setup Screens – Setup Point

1. From the INSTALL & SERVICE menu, press **Enter** at the SETUP POINT prompt.
2. Use the **Up/Down** buttons to scroll through the points; press the Enter button to select a point.

TX REGISTR'D displays if a transmitter or repeater is currently registered to this point; TX NOT REGISTR'D displays if no transmitter is registered to this point.

3. Press **Enter** to setup the point. The following setup options are available:

Supervision Time - Sets time limit on missing transmitter reporting.

The valid range is 0 to 99 hours. The default is 60 minutes. Selecting 0 turns off supervision.

Caution - Turning off supervision can jeopardize the integrity of your system. Inovonics does not recommend turning off supervision. For supervision to function correctly, the supervision time must be set for an interval greater than the transmitter check-in time.

- a) Use the **Up** and **Down** buttons to adjust the supervision time; press the **Enter** button to select.
- b) Use the **Up** and **Down** buttons to toggle between Hrs (hours) and Min (minutes); press the **Enter** button to select.

Select Security/Repeater Configures point's alarm and alert bits as either a repeater or a security transmitter.

- a) Use the **Up** and **Down** buttons to choose SELECT SECURITY for a security transmitter or SELECT REPEATER for a repeater; press the **Enter** button to select.

1-4 Alarm Inputs Allows security transmitters with multiple alarm conditions to be assigned a separate alarm point and output type for each individual condition.

- a) Use the **Up** and **Down** buttons to select the number of alarm inputs for the transmitter; press the **Enter** to select.

Alarm Out: Maps the security transmitter's alarm condition(s) to alarm outputs.

- a) Use the **Up/Down** buttons to scroll through the output numbers.
Choosing - - will disable alarm output.
- b) Press **Enter** to select the output to use for the alarm condition.

Alarm Output Type Selects the output type for the alarm condition.

- a) Use the **Up/Down** buttons to scroll through the options:

- i. Follower: The output reflects the transmitter's alarm status. Press the Enter button to select.
- ii. Latching: The output turns on when activated and remains on until the receiver is reset. Press the Enter button to select.
- iii. Toggle: The output changes state each time the device sends a new activation. Press the Enter button to select.
- iv. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.
- v. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.

Inactive Out: Maps transmitter/repeater inactivity fault output.

- a) Use the **Up/Down** buttons to scroll through the output numbers.
Choosing - - will disable inactivity reporting.
- b) Press **Enter** to select the output to use for this transmitter/repeater's inactivity transmission.

Inactive Output Type Selects the output type for the inactive condition.

- a) Use the **Up/Down** buttons to scroll through the following options:
 - i. Follower: The output reflects the transmitter's inactive status. Press the Enter button to select.
 - ii. Latching: The output turns on when an inactive condition is sent and remains on until the receiver is reset. Press the Enter button to select.
 - iii. Toggle: The output changes state each time the device sends a new inactive condition. A minimum of five seconds must elapse before the output can send a new inactive condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.
 - iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.

Tamper Out: Maps transmitter/repeater tamper fault output.

- a) Use the **Up/Down** buttons to scroll through the output numbers.
Choosing - - will disable tamper output.

- b) Press **Enter** to select the output to use for this transmitter/repeater's tamper transmission.

Tamper Output Type Selects the output type for the tamper condition.

- a) Use the **Up/Down** buttons to scroll through the following options:
 - i. Follower: The output reflects the transmitter's tamper status. Press the Enter button to select.
 - ii. Latching: The output turns on when a tamper condition is sent and remains on until the receiver is reset. Press the Enter button to select.
 - iii. Toggle: The output changes state each time the device sends a new tamper condition. A minimum of five seconds must elapse before the output can send a new tamper condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.
 - iv. Momentary: The output turns on for the programmed duration, then turns off,

regardless of the device status. Press the Enter button to select.

MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.

Low Batt Out: Maps transmitter/repeater low battery fault output.

- a) Use the **Up/Down** buttons to scroll through the output numbers.

Choosing - - will disable low battery output.

- b) Press Enter to select the output to use for this transmitter/repeater's low battery transmission.

Low Battery Output Type Selects the output type for the low battery condition.

- a) Use the **Up/Down** buttons to scroll through the following options:
 - i. Follower: The output reflects the transmitter's low battery status. Press the Enter button to select.
 - ii. Latching: The output turns on when a low battery condition is sent and remains on until the receiver is reset. Press the Enter button to select.
 - iii. Toggle: The output changes state each time the device sends a new low battery condition.

A minimum of five seconds must elapse before the output can send a new low battery condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.

- iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.

Line Power Loss Out: Maps repeater line power loss fault output.

- a) Use the **Up/Down** buttons to scroll through the output numbers.

Choosing - - will disable line power loss output.

- b) Press Enter to select the output to use for this repeater's line power loss transmission.

Line Power Loss Output Type Selects the output type for the line power loss condition.

- 1. Use the **Up/Down** buttons to scroll through the following options:
 - i. Follower: The output reflects the repeater's line power loss status. Press the Enter button to select.
 - ii. Latching: The output turns on when a line power loss condition is sent and remains on until the receiver is reset. Press the Enter button to select.
 - iii. Toggle: The output changes state each time the device sends a new line power loss condition. A minimum of five seconds must elapse before the output can send a new line power loss condition.

- iv. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.
- v. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to select; press the Enter button to select.
- vi. Text: Enter eight-character descriptive text for the transmitter/repeater
 - a. Use Up/Down buttons to scroll through the alphanumeric characters; press Enter to select and advance to the next character. To select a space, press Enter without selecting a digit.
 - b. When finished, press Enter again to complete selection.

Note – If you do not use all eight characters, you must enter spaces to the end of the line.

Operation and Point Setup Screens - Register Transmitter

The REGISTER TRANSMITTER option allows you to register a transmitter or repeater.

- a) Use the **Up** and **Down** buttons to toggle between N for no and Y for yes to choose

whether or not you wish to register a transmitter/repeater to the point; press **Enter** to select.

- b) If you chose to register a transmitter/repeater at this time, press the transmitter/repeater's Reset button at the RESET XMITTER prompt.
- c) If you have registered a transmitter, perform a walk test, activating each transmitter assigned to the receiver and ensuring a good signal.

Note - You can always register a transmitter/repeater to the point at a later time using the REGISTER XMITTER prompt in the INSTALL & SERVICE menu.

Operation and Point Setup Screens - Delete Point

The DELETE POINT option allows you to delete transmitter registration information from all registered points, or a specific point. Programmed point information is not deleted; just the registration identification number associated with the transmitters or repeaters. To delete points:

1. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the DELETE POINT prompt; press the **Enter** button.
2. The DELETE ALL? prompt displays. Use the **Up** and **Down** buttons to choose N for no or Y for yes; press **Enter** to select.
3. If you selected no, the DELETE POINT prompt displays. Use the **Up** and **Down** buttons to select a point to delete; press **Enter** to select.
4. Press the **Enter** button to return to the INSTALL & SERVICE menu.

Operation and Point Setup Screens - Monitor Signal Strength

The SIGNAL STRENGTH option is used to measure signal strength and troubleshoot installation problems.

1. At the SIGNAL STRENGTH prompt, press **Enter**.
 - o POINT 01 displays, along with a signal quality of GOOD, WEAK or NO SIG.

Note – The point must have an active transmitter associated with it to display signal strength.

2. Use the **Up/Down** buttons to scroll through the registered transmitters.
3. Press **Enter** again to view Level (LV) and Margin (MA).
 - o LV indicates the overall signal strength; MA indicates the signal strength minus the background noise.
4. To reset signal data, use the **Up/Down** buttons to leave and return to the transmitter you are monitoring.

Operation and Point Setup Screens - CTS Type

The EE4216MR provides a signal to the control panel which can be used to ensure all security devices in the system are active before allowing the system to be set. If used by the control panel, the system cannot be set if the receiver has not heard from any registered wireless devices within the last 20 minutes.

Note - The CTS signal can be used to block alarming conditions. This is useful when performing system tests. For more information on this see "System Test Mode"

The CTS TYPE option allows the clear to set signal to be set to either N/O or N/C. To set the CTS type:

1. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the CTS TYPE prompt; press the **Enter** button.
2. The CTS OP N/O, N/C prompt displays. Use the **Up** and **Down** buttons to choose N/O or N/C; press **Enter** to select.
3. The CTS OP SAVED prompt displays; press the **Enter** button.
4. Use the **Back** button to return to the INSTALL & SERVICE menu.

Operation and Point Setup Screens – Factory Config

The FACTORY CONFIG option is used to restore the EE4216MR to its factory defaults.

Caution - Choosing FACTORY CONFIG will erase all programmed point and output information.

To restore the factory configuration defaults to the EE4216MR:

1. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the FACTORY CONFIG prompt; press the **Enter** button.

2. The RESET CONFIG prompt displays. Use the **Up** and **Down** buttons to choose Y for yes; press **Enter** to select.
3. The CONFIG RESET prompt displays; press the Enter button to return to the INSTALL & SERVICE menu.

The receiver can also be brought back to the factory default configuration through a hardware initiated sequence.

1. Connect a wire between the reset terminal and the ground terminal
2. While pressing the **Back** button, cycle the power to the unit
3. Release the **Back** button and remove the wire between the reset terminal and ground
4. RESET CONFIG? displays. Use the Up and Down buttons to choose Y for yes; press Enter to select.

Operation and Point Setup Screens – Select Language

1. At the SELECT LANGUAGE prompt, press **Enter**.
2. Use the **Up/Down** buttons to scroll through the language options. The CLEAR LANG option resets the language to the default and exits the INSTALL & SERVICE menu.
3. Press **Enter** to select language.
4. When LANGUAGE SELECTED displays, press **Enter** to return to the INSTALL & SERVICE menu.

To reset the language selection:

1. Press the **Up** and **Enter** keys while cycling the power.

2. The SELECT LANGUAGE prompt displays. Follow the steps above to choose a new language.

Operation and Point Setup Screens – Change Password

Note - The CHANGE PASSWORD option only displays when the level 3 authorized installer is logged in. Level 2 authorized users do not have the ability to change passwords.

Passwords can be up to eight digits long. The default authorized user password is 3446; the default authorized installer password is 1234. To change the password:

1. From the INSTALL & SERVICE menu, press **Enter** at the CHANGE PASSWORD prompt.
2. Use the **Up/Down** buttons to select either USER PASSWORD or INSTALL PASSWORD; press **Enter** to select.
3. Use the **Up/Down** buttons to scroll through the digits; press **Enter** to select and advance to the next digit.

Note - Choosing a null as the first digit of the password will disable the function, allowing users to perform receiver functions and/or change parameters without a password.

4. When finished, press **Enter** again to complete selection.
5. When PASSWORD CHANGED displays, press **Enter** to return to the INSTALL & SERVICE menu.

Caution - Store the new password in a secure place. If

the new password is lost, you will not be able to access the receiver without restoring it to factory defaults as described in section 4.9, "Factory Config".

Operation and Point Setup Screens – System Test Mode

System test mode is used to perform a functional test of all of the transmitters programmed into the system. Upon entry into test mode, the receiver outputs will be cleared, and transmissions during the test interval will not generate the defined outputs.

To perform a system test:

1. Enter system test mode.
2. Activate each of the transmitters in the system.

Note - An activation from any condition of a multiple condition transmitter will satisfy the test requirement for the entire transmitter. For example, pressing any button on an EN1236 three-condition pendant will satisfy the test requirement for the entire transmitter.

3. Use the **Up** and **Down** buttons to scroll through the transmitters.
 - a. Transmitters which have not sent an activation signal will display only the point number.
 - b. Transmitters which have sent an

activation signal will display the point number followed by ****

4. When all transmitters have been verified, press the **Back** button to cancel system test mode.

Caution - During system test all alarm outputs are repressed and will have to be read locally on the receiver's display by the technician.

Note - During system test, CTS will be set (for more information about CTS, see "CTS Type"). The CTS output should be registered to an unmonitored point to prevent central station reporting, and the point setup so that during system test alarms alarming conditions are inhibited.

Note - The test mode will automatically terminate after 30 minutes.

Operation and Point Setup Screens – Operation

The POINT STATUS and EVENT LOG options allow you to view system status information.

Point Status

1. From the READY, ALARM or FAULT prompts, press **Enter**.
2. When POINT STATUS displays, press **Enter** to display point status details.
3. Use the **Up/Down** buttons to scroll through the points; press **Enter** again to view the outputs the displayed conditions are mapped to.

Point status flags are defined as follows: A = Alarm (transmitter only); T = Tamper; B = Low Battery; L = AC loss (repeater only); I = Inactive.

Note - If - - displays, the displayed condition has been mapped to a null output.

Event Log

The event log displays the last 50 events that have occurred, whether they be alarms, restorals or tamper, inactive, or low battery faults. Event log information is available without a password.

1. From the READY, ALARM or FAULT prompts, press **Enter**.
2. When POINT STATUS displays, press **Up** to advance to EVENT LOG, and press **Enter** to select.
3. Use the **Up/Down** buttons to scroll through events.
4. When viewing transmitter events, press **Enter** to see the output the events map to.

Note - No output will be displayed if the event is mapped to a null output.

Operation and Point Setup Screens – Alarms and Faults

Points in alarm are immediately displayed as ALARM, with the point number. If more than one point is in alarm, the display scrolls to each point. If a point has more than one alarm, the displays will scroll to each alarm.

Fault conditions are indicated by the fault LED and by FAULT in the LCD display if there is no ALARM already displayed; point numbers are not displayed. POINT STATUS or EVENT LOG can be used to determine exact fault data.

Specifications

Dimensions: 165 mm x 89 mm x 25 mm (6.5" x 3.5" x 1").

Weight: 280 g (.62 lb).

Operating environment: -10° to 60°C (14° to 140°F), 90% relative humidity, non-condensing.

Power requirement: 11 - 14 VDC; 400 mA.

Current consumption: Approx. 400 mA.

Output specifications: Form C relay 1A @ 28 VDC, 0.5 @ 30 VAC resistive load.

Input specifications: A low is less than .5 V; a high is greater than 2.5 V.

Reset input: Contact closure, momentary low.

Receiver type: Frequency hopping spread spectrum.

Operating frequency: 868-869 MHz.

Tamper: Type B, fixed device.

Number of points/transmitters: 16.

Number of outputs: Six Form C relay outputs.

Event history log capacity: 50 events (first-in, first-out replacement).

Output power: N/A.

Firmware revision: 90577, v1.5